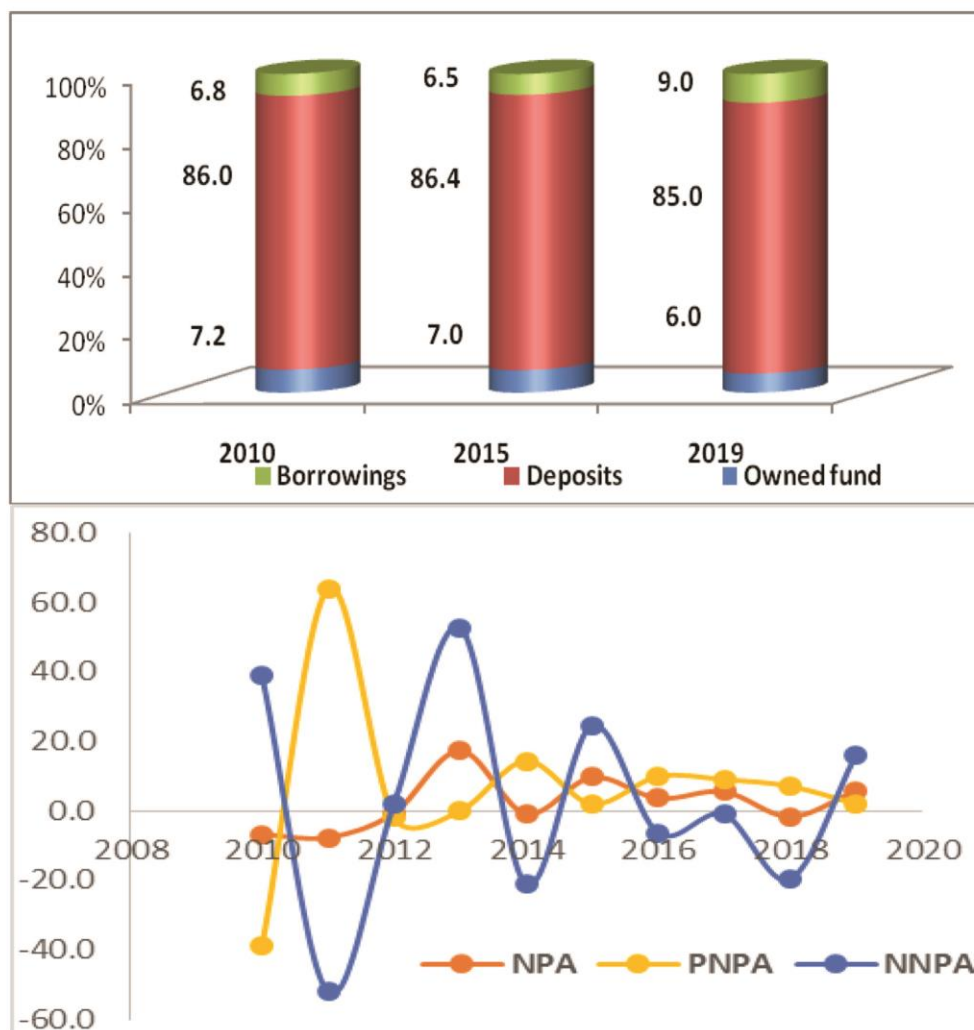


Sustainability, Viability and Governance of DCCB in India

A case study of Vidyasagar DCCB in West Bengal



**Bankers Institute of Rural Development
(BIRD), Kolkata
April 2020**



दृष्टि

ग्रामीण समृद्धि के लिए राष्ट्रीय विकास बैंक

ध्येय

सहभागिता, संधारणीयता और समानता पर आधारित वित्तीय और गैर-वित्तीय सहयोगों, नवोन्मेषों, प्रौद्योगिकी और संस्थागत विकास के माध्यम से समृद्धि लाने के लिए कृषि और ग्रामीण विकास का संवर्धन.

VISION

Development Bank of the Nation for Fostering Rural Prosperity.

MISSION

Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology and institutional development for securing prosperity.

Sustainability, Viability and Governance Of DCCBs in India

A case study of Vidyasagar DCCB in West Bengal

OVERALL GUIDANCE

Department of Economic Analysis and Research
(DEAR), Head Office, Mumbai

SUPERVISION & DIRECTION

Dr. K.C. Badatya, Joint Director

DATA ANALYSIS & DRAFTING OF REPORT

Dr. B. B. Sahoo, Dy. Gen. Manager

Bankers Institute of Rural Development (BIRD)
Kolkata, April 2020

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Study team
BIRD Kolkata

Foreword

Rural cooperative banks occupy an important position in rural financial system. They have inherent advantages as member-owned and member-driven institutions. They play a crucial role in providing livelihood support to farmers and disadvantaged sections of people in rural areas by offering credit facilities for agriculture and other economic activities. Despite the phenomenal outreach and volume of the operations, the health of a large proportion of the cooperative banks has deteriorated significantly. They are beset with problems such as poor governance, infrastructural weaknesses, operational inefficiencies and weak financial health. Several factors such as low borrowing membership, low resource base, lack of professionalism, high incidence of overdues and almost stagnant recovery performance have led to the deterioration in the financial soundness of the cooperatives.

The District Central Cooperative Bank (DCCB) is an important link between State Cooperative Bank and Primary Agricultural Cooperative Societies. It plays a critical role in the delivery of credit to farmers and others in rural areas. Therefore, an attempt has been made in the present study to understand the status and determinants of financial viability and sustainability of DCCBs through a case study of Vidyasagar DCCB in West Bengal.

Vidyasagar DCCB in West Bengal is a profit-making bank. To understand financial viability and sustainability of the bank, select parameters under liquidity, solvency, efficiency, risk and profitability were studied from 31 March 2009 to 31 March 2019. Most of the financial ratios of the bank were found satisfactory. For instance, the NPA to loans and advances of the bank decreased from 10.1 percent as on 31 March 2009 to 4.7 percent as on 31 March 2019. Similarly, the net NPA to loans and advances decreased from 4.6 percent to 1.5 percent. Financial ratios such as Return to Capital Employed, Return on Assets and Return on Equity have been showing rising trends. But concerns are raised for low capital base, low CD ratio, reducing net interest margin, reducing loan to asset ratio and increasing cost of fund.

Of late, competition among the banks is growing, the size of non-performing assets is rising and regulatory measures for long term viability and sustainability is increasing. It is felt that the cooperatives should practice good governance and social responsibility. Professionalism should also be introduced and adequate training opportunities should be provided to the employees for skill up-gradation.

I am thankful to Chief General Manager, DEAR for assigning this study to BIRD, Kolkata. I hope the observations of this case study will be useful for policy makers, researchers and bankers to make necessary policy interventions for making the cooperative banks viable and sustainable.

Dr. K. C. Badatya
Joint Director

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Executive summary

Rural cooperatives play a vital role in providing financial services to farmers and others in rural areas. Despite various regulatory measures put in place, weak financial condition, lack of professionalism, weak corporate governance and unwillingness in adopting technology are some of the factors that continue to plague the sector. In order to understand the factors influencing viability and sustainability of the cooperative banks, the present study made an attempt to understand the financial viability and sustainability of the DCC Banks, which is an important link between State Cooperative Banks at the apex level and Primary Agricultural Cooperative Societies (PACS) at the grass root level, with the help of a case study of Vidyasagar DCC Bank in West Bengal.

Methodology: *The study was based on secondary data. Required information was collected from the bank for the last 11 years. Methods such as Trend line, Compound Annual Growth Rates (CAGRs), Financial Ratios, Correlation and Regression were applied to understand the viability and sustainability of the bank.*

Growth of the cooperative banks under ST structure: *The share of share capital in owned fund of StCBs and DCCBs, which were 13.7 percent and 25.4 percent in 2009, increased to 28.4 percent and 31.1 percent respectively in 2018. But during the same period, the share of share capital of the PACS decreased from 59.4 percent to 45.7 percent. The NPA to Loan outstanding of StCBs decreased from 11.2 percent in 2009 to 4.72 percent in 2018 and that of the DCC banks decreased from 17.89 percent to 11.2 percent.*

DCC Banks in West Bengal vis-à-vis All India: *In terms of the size of rural population, West Bengal is one of the leading States in India after Uttar Pradesh and Bihar. In West Bengal, there are 17 DCC Banks spread across 30 districts. As on 31 March 2018, the average membership in DCC Banks in West Bengal was 2,510 as against 8,222 members at All India level.*

Growth & Status of DCC Banks in West Bengal: *During the last five years, while the share capital, net worth and investments of the DCC Banks in West Bengal increased by more than 10 percent per year, their annual growth rates in deposits and loans and advances were 8.5 percent and 6.8 percent respectively. Although the NPA position of the DCC banks improved during the period between 2015 and 2019, net profit of these banks decreased from Rs.61.13 crore in 2015 to Rs.6.38 crore in 2019 at an annual rate of 31.2 percent. Further, the Capital to Risk Weighted Assets ratio of these banks increased from 7.5 percent in 2015 to 11.9 percent in 2019, but their CD ratios have decreased.*

Growth & Performances of Vidyasagar DCC Bank

Resource mobilization: *Year-on-Year growth rates of owned fund, deposits and borrowings of the bank were 8.9 percent, 20.6 percent and 7.4 percent respectively in 2010 over 2009 and these rates in 2019 over 2018 were 11.1 percent, 13.2 percent and 20.7 percent respectively.*

Performing & Non-Performing Assets: The Gross NPA to loans and Advances, which was 10.1 percent in 2009, decreased to 4.7 percent in 2019. Similarly, the Net NPA to loans and advances decreased from 4.6 percent to 1.5 percent. The sub-standard assets, doubtful assets and loss assets of the bank decreased from 1.7 percent, 4.1 percent and 0.2 percent in 2013 to 0.8 percent, 4.0 percent and 0.1 percent in 2019 respectively.

Income, Expenditure & Net Income: During the period between 2009 and 2019, income, expenditure and earnings after interest and tax of the bank increased at an annual rate of 9.2 percent, 9.4 percent and 6.2 percent respectively.

Viability & Sustainability of Vidyasagar DCC Bank

- **Liquidity ratios:** Out of the five select ratios under financial liquidity of the bank, increasing growth trend was observed in Cash to Demand Deposit Ratio, Cash to Assets Ratio and Working Fund to Asset Ratio. Although the growth trend for Cash to Deposit Ratio declined from 5.7 percent in 2009 to 4.8 percent in 2019, it is in tolerable limit. But it is a matter of concern for CD ratio. The CD ratio declined from 63.7 percent in 2009 to 51.5 percent in 2019.

- **Solvency ratios:** Increasing Loan to Asset ratio (LAR) brings in improved profitability for a bank. But in case of Vidyasagar DCC Bank, the LAR came down from 45.9 percent in 2009 to 41 percent in 2019.

- **Efficiency ratios:** Cost of Fund and Overhead Efficiency Ratio for the bank decreased from 6.7 percent and 24.7 percent in 2009 to 6.0 percent and 10.8 percent in 2019. Further, Efficiency Ratio for the bank improved from 33.8 percent in 2009 to 41.5 percent in 2019. Further, over the years, Business per Employee increased.

- **Risk ratios:** Vidyasagar DCC bank has shown signs of improvement in different financial ratios under risk. The Gross NPA to Advances, Net NPA to Advances and Gross NPA to Assets of the bank have been declining over the years. Capital to Risk weighted Assets Ratio increased from 9.1 percent in 2009 to 12.0 percent in 2019.

- **Profitability ratios:** Four out of five select ratios under profitability such as Return on Capital Employed, Return on Assets, Return on Net Worth and Return on Equity were found rising over the years from 2009 to 2019. However, Net Interest Margin Ratio for the bank declined from 3.2 percent in 2009 to 2.1 percent in 2019.

- **Determinants of viability and sustainability of the bank:** Various ratios under liquidity, solvency, efficiency, risk and profit were considered for identifying the determinants of viability and solvency of Vidyasagar DCC Bank. Two regression models were fitted. In model 1, it was found out that CD Ratio, Loan Asset Ratio and Cost of Fund influence Return on Assets significantly. Similarly, in model 2, CD Ratio, Loan Asset Ratio and Efficiency Ratio were found to influence Return on Equity significantly.

Areas of Concern

1. As capital is the lifeline for the banks, Vidyasagar DCC Bank must address the issue urgently.
2. The Net Interest Margin is an essential factor for improving income of the bank, but it is declining over the years. Therefore, the bank may initiate action to reverse the trend.

3. The non-interest expenditure outweigh non-interest income of the bank, which needs immediate attention for reversal.
4. The CD ratio of the bank has been declining. Therefore, the bank must explore new areas for financing.
5. The share of long-term loan in the total loan of the bank has been declining. The bank may adopt suitable measures for financing long-term projects and increase the proportion of long-term loan in total loan portfolio.
6. The regression model shows that Loan to Asset Ratio (LAR) improves the profit of the bank by influencing Return on Assets (ROA) and Return on Equity (ROE), but it has been decreasing for the bank. The bank may take steps to improve the situation.
7. The annual growth rate of expenditure of the bank at 9.47 percent was little more than that of income at 9.45 percent. The bank may take curative action to reverse the trend.

Suggestions for Improvement

1. *The bank may increase the share capital by increasing the membership and the per capita share contribution.*
2. *The bank may explore new areas of financing including long-term avenues, which will enhance net interest margin, loan asset ratio, CD ratio, return on asset, return on equity and profit. Further, the bank may try to reduce the non-interest expenditure.*
3. *The bank has financed a large number of Self Help Groups. New areas of financing such as Self Help Groups and Joint Liability Groups in group-mode may be explored, which will increase the outreach and business of the bank.*
4. *Of late, use of technology has been increasing in agriculture. The number of Farmer Producer Organisations/Companies has also been increasing. The bank may explore the possibilities in financing FPOs, in infrastructure creation, which will enhance loan portfolio of the bank and also increase farmers' employment and income.*
5. *The bank may explore the possibilities for increasing fee-based income. For the same, the bank may tie up with other agencies such as Commercial Banks, Trading Houses/Units and other such agencies.*
6. *The bank must explore means to cut cost and enhance income so as to improve its financial position.*
7. *Annual growth rate of expenditure of the bank at 9.47 percent was little more than the income at 9.45 percent. Therefore, the bank must take curative actions to reduce expenditure and increase income of the bank.*

Chapter I

Role of Cooperatives in deployment of ST Credit

Rural cooperatives play a crucial role in financing agriculture and other activities. In terms of structure, clientele and credit delivery, these credit institutions are unique. Despite their inherent weaknesses in terms of capital, business acumen and governance and management, they are the most trusted banking partner for the rural people. The structure of the cooperatives is designed on the principle of cooperation, mutual help, democratic decision and open membership. Further, these banks belong to their members who are both owners and customers of the bank. Originally, they were envisaged as a mechanism for pooling resources of people with small means and providing them access to cheap and cost-effective financial services. They are the key instrument of credit delivery for production and investment needs of the farmers. They extend financial services to large sections of low and middle income group people in rural areas.

They are the key players in the banking system and they have a substantial impact on the lives of millions of agricultural households. Originally, they were envisaged as a mechanism for pooling resources of people with small means and providing them access to cheap and cost-effective financial services. They are the key instrument of credit delivery for production and investment needs of the farmers. During the past over hundred years, these credit cooperatives have witnessed many successes and failures. Of late, they have been plagued by numerous problems such as poor governance and management, high overdue, increasing accumulated losses and financial indiscipline and growing Non-Performing Assets (NPAs).

Although cooperative banks are one of the important instruments of rural development, their importance in purveying credit to farmers and others in rural areas has been declining. In the short-term cooperative credit structure, the District Central Cooperative (DCC) Banks play a crucial role in providing link between State Cooperative Bank and Primary Agricultural Cooperative Societies. Considering this aspect, the present study intends to study, among others, the viability and sustainability of DCC Banks in India with the help of a case study of Vidyasagar DCC Bank in the State of West Bengal.

Ground Level Credit (GLC) flow for agriculture

At the ground level, Commercial Banks, Regional Rural Banks and Cooperative Banks are the three major Primary Financial Institutions dealing with financing agriculture and allied activities. The share of the cooperative banks, one of the oldest financial institutions, in the Ground Level Credit (GLC) flow has been declining very fast. As on 31 March 2019, the share of cooperative banks in the GLC flow was only 12.3 percent as against the share of Commercial Banks and Regional Rural Banks at 75.6 percent and 12.1 percent respectively, Table 1.1 presents the agency-wise ground level credit flow for agriculture and allied activities during the last 10 years.

Although the cooperatives are the oldest institutions and are present in almost all the villages, their share in the GLC flow has been declining. During the last 10 years from 2009-10 and 2018-19, the overall annual growth rate of the GLC flow was 14.3 percent.

But the annual growth rate of the credit flow for the cooperative banks was 10.2 percent, which was lower than that of Commercial Banks at 14.6 percent and 18.1 percent for Regional Rural Banks. Therefore, it is a matter of concern for the cooperative banks in purveying rural credit.

Table 1.1: Details of GLC flow for agriculture in India from 2009-10 to 2018-19 (% of Total)				
Year	Commercial Banks	Regional Rural Banks	Cooperative Banks	Total
2009-10	74.3	9.2	16.5	100.0 (384514)
2010-11	73.8	9.5	16.7	100.0 (468291)
2011-12	72.1	10.7	17.2	100.0 (511029)
2012-13	71.2	10.5	18.3	100.0 (607375)
2013-14	72.3	11.3	16.4	100.0 (730122)
2014-15	71.5	12.1	16.4	100.0 (845328)
2015-16	70.2	13.1	16.7	100.0 (915509)
2016-17	75.0	11.6	13.4	100.0 (1065755)
2017-18	74.9	12.2	12.9	100.0 (1162617)
2018-19	75.6	12.1	12.3	100.0 (1254762)
<i>(Figures in brackets are amount in Rs.Crore)</i>				
Source: Basic Statistical Returns, RBI, Various Issues; NABARD, Various sources				

Importance of Rural Credit Cooperatives

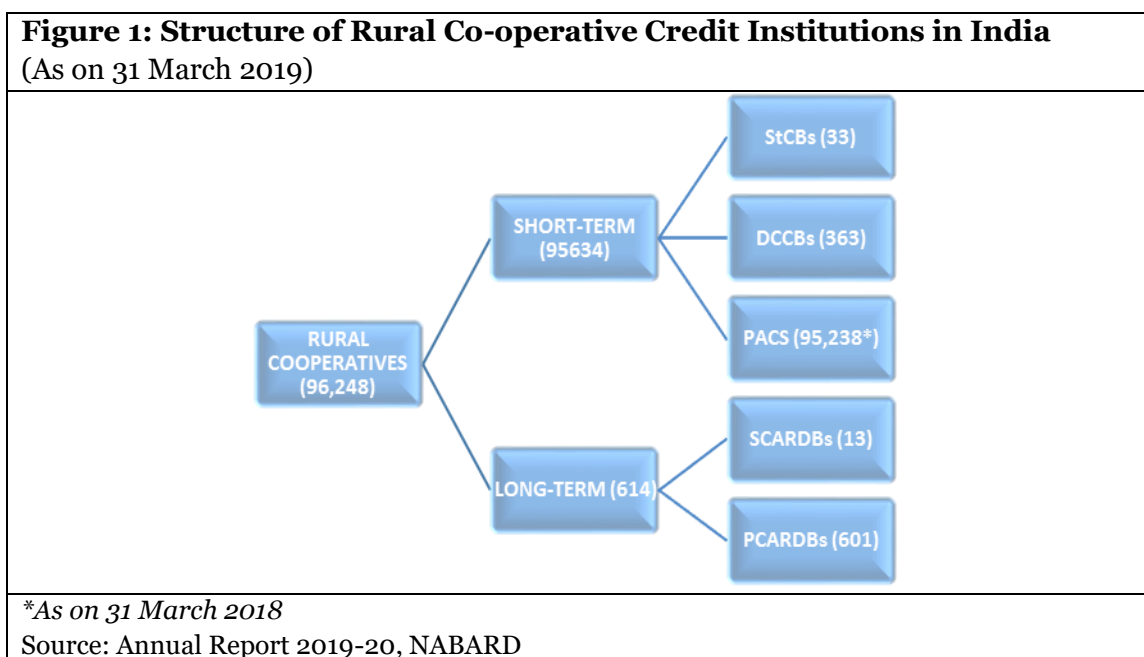
The cooperatives as people's institutions have a long legacy and a rich tradition in India. They are considered as an instrument of economic development combining the advantages of private ownership of public good. They were the first formal institutions to be conceived and developed to purvey credit to rural India and have been a key instrument of credit delivery to enable farmers to meet their production needs. In the process, they help increasing farm production and productivity. Therefore, the cooperatives occupy an important position in the Indian financial system. Due to the growing importance of this sector, particularly in rural areas, many opine that *Cooperation is the best hope of rural India*. The various advantages of cooperative credit institutions are as under:-

- An alternate credit source for the rural customers
- Helps reducing hegemony of private moneylenders
- Protects farmers and others from moneylenders
- Helps farmers and other rural people in developing the habit of savings and borrowing from formal financial institutions
- Helps in introducing better production methods, post-harvest management and marketing of the agricultural produce

An overview of the Cooperative sector

Like other banks, the cooperative banks are founded by collecting funds through shares and accepting deposits and grant loans. They have a substantial impact on the lives of millions of farmers, artisans, carpenters and others in rural areas. These institutions are unique in terms of structure, clientele and credit delivery mechanism. They work on the principle of cooperation, self-help and mutual help. They are set up to provide access to credit mainly to the farmers, the poor and others in the low income groups living in rural areas. Unlike the commercial banks, the cooperative banks play an active role in encouraging rural business, increasing the income of farmers and working towards inclusive growth.

Typically, the cooperative institutions are part of two distinct structures, commonly known as Short Term Cooperative Credit Structure (STCCS) and Long Term Cooperative Credit Structure (LTCCS). The STCCS, comprising primary agricultural credit societies (PACS) at the village level, Central Cooperative Banks (CCBs) at the District level and the State Cooperative Bank (StCB) at the State level, primarily provides short term crop loans and other working capital loans to farmers, artisans, carpenters, etc. Of late, the ST cooperatives have been also providing long duration loans for investments in the rural sector. The LTCCS, comprising State Cooperative Agriculture and Rural Development Bank (SCARDB) at the State level and Primary Cooperative Agriculture and Rural Development Bank (PCARDBs) at the taluk/village level, has been providing medium and long term loans for making investments in agriculture, rural industries, and housing. As on 31 March 2019, there were a total of 96,248 rural cooperatives in the country. Figure 1 depicts the details on the number of banks under ST and LT structure as on 31 March 2019.



Growth of the cooperative banks under ST structure

The State Cooperative Bank is an apex level ST cooperative bank at State level. It acts as a link between Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD) and the District Central Cooperative Banks. The funds of the

cooperative banks are obtained mainly from share capital, deposits, loans and overdrafts. The StCBs lend money to DCC Banks and PACS. Table 1.2 presents the growth of the cooperative banks in terms of select parameters such as owned fund, deposits, borrowings and loan outstanding of StCBs, DCCB and PACS. The table shows the average position of StCBs, DCCBs and PACS in two different years.

It can be observed from the table that owned funds of the StCBs, DCCBs and PACS increased by 71.9 percent, 120.4 percent and 163.2 percent respectively from 2008-09 to 2017-18. The share of share capital in the owned fund of StCBs and DCCBs, which were 13.7 percent and 25.4 percent in 2008-09, increased to 28.4 percent and 31.1 percent respectively in 2017-18. But the share of share capital of the PACS decreased from 59.4 percent in 2008-09 to 45.7 percent in 2017-18. The overdue to demand position of StCBs, DCCBs and PACS in 2017-18 was lower than that in 2008-09. Over a period of the last 10 years, the deposits, borrowings, loans & advances and loan outstanding position of the cooperative banks improved.

Table 1.2: Decadal growth of an average cooperative bank/society in India under ST structure (Rs.lakh)							
Year	Share capital	Owned Funds	Deposits	Borrowings	Loans/ Advances	Loan outstanding	Overdue to Demand (%)
State Cooperative Banks (StCBs)							
2008-09	4485.4	32756.2	230048.6	69620.0	167310.4	149035.0	8.7
2017-18	15994.1	56307.5	365467.4	215830.5	387745.8	385173.2	5.5
% Increase	256.6	71.9	58.9	210.0	131.8	158.4	--
District Central Cooperative Banks (DCCBs)							
2008-09	1627.7	6402.0	33169.4	7634.8	23600.2	26060.8	32.7
2017-18	4382.2	14112.6	93867.2	23668.9	66682.8	71679.9	25.0
% Increase	169.2	120.4	183.0	210.0	182.6	175.0	--
Primary Agriculture Cooperative Societies (PACS)							
2008-09	7.3	12.3	27.4	51.2	61.5	67.0	44.8
2017-18	14.8	32.5	125.6	134.8	217.7	178.1	24.4
% Increase	102.7	163.2	357.7	163.3	254.1	166.0	--
Source: Basic Data on StCBs, DCCBs and PACS, Various Issues from NABSCOB website							

Non-Performing Assets

Rising NPAs has been an area of concern for the banking sector all over the world. Over the years, there has been a change in profit and loss of the cooperative banks. In 2008-09, there were 5 StCBs running on loss. But the loss-making StCBs came down to one in 2017-18. As a result, the overall profit of the StCBs increased from Rs.324 crore in 2008-09 to Rs.1031 crore in 2017-18 by 218.2 percent. On the other hand, the profit of the DCCBs at the aggregate level decreased by 33.2 percent from Rs.1274 crore in 2008-09 to Rs.851 crore in 2017-18. While the Gross NPA of the StCBs increased by 8 percent from 2008-09 to 2017-18, the increase for the DCCBs was 72.3 percent during the same period. But the NPA to loan outstanding of the StCBs and DCCBs, which were 11.20 percent and 17.89 percent in 2008-09, decreased to 4.72 percent and 11.20 percent respectively in 2017-18. Table 1.3 presents the details of the status of StCBs and DCCBs at All India level in 2008-09 and 2017-18.

Table 1.3 : Details of the status of StCBs and DCCBs at All India level in 2008-09 and 2017-18 (Rs. Crore)						
Particulars	State Cooperative Banks (StCBs)			District CCBs (DCCBs)		
	2008-09	2017-18	% Increase	2008-09*	2017-18	% Increase
Number (Profit/Loss)	31 (324)	33 (1031)	218.2	370 (1274)	363 (851)	--
- Profit	26 (395)	32 (1038)	23.1	320 (1611)	311 (1744)	-2.8
- Loss	5 (71)	1 (7)	-80.0	50 (337)	52 (893)	4.0
Total NPA	(5763.50)	(6223.00)	8.0	(17929.15)	(30894.00)	72.3
NPA to Loan O/s (%)	11.20	4.72		17.89	11.20	
(Figures in brackets are amount in Rs. Crore)						
*Data for StCBs and DCCB in Bihar and DCCB in Jharkhand repeated from 2007-08						
Source: Annual Report, Various Issues, NABARD						

Rationale of the Study

The DCC Banks play an important link between apex level financial institutions such as RBI, NABARD and StCBs and Primary Agricultural Cooperative Societies (PACS) at the grassroots level. Therefore, the viability and sustainability of the ST structure of the cooperative system largely depends on the viability and sustainability of DCC Banks. It is, therefore, felt necessary to study the viability and sustainability of the DCC Banks. Randomly Vidyasagar DCC Bank in West Bengal was selected for the study. The other objective of the study was to suggest a set of interventions for improvement of DCC Banks in general and Vidyasagar DCC Bank in particular.

Chapter outline

The report consisted of Five Chapters. First Chapter provided the background details on the status of the cooperative banks under short term credit structure in the country and the rationale for the conduct of the present study. Second Chapter described the objectives and methodology used for the conduct of the study. Chapter Three dealt with the status of the DCC Banks in West Bengal vis-à-vis All India. Financial health, viability, sustainability, areas of concern and suggestions for improvement of Vidyasagar DCC Bank was presented in Chapter Five. Finally, summary and conclusions were given in Chapter Six.

Chapter II

Objectives and Methodology

This chapter presents the objectives of the study and the methodology followed in the conduct of the study. The methods used in analysis of data and scope of the study are also discussed in this chapter.

Objectives of the study

As the core of the solution is to study the status and growth of the cooperative banks and identify the determinants of viability and sustainability of the cooperative banks, a DCC Bank, i.e., Vidyasagar DCC Bank situated in Midnapore of West Bengal, the middle tier of the ST Cooperative Credit Structure, which is an important pillar in terms of growth and viability of the cooperative banks, has been studied. In particular, the key research questions addressed in the study were the following:

Research questions

- What is the current status of the cooperative banks in West Bengal vis-à-vis All India?
- How is the growth and performances of the DCC Banks in West Bengal in general and Vidyasagar DCC Bank in particular?
- What are the determinants of financial viability and sustainability of Vidyasagar DCC Bank?
- What are the areas of concern for improvement of the bank and suggestions for intervention?

Methodology

There are 17 DCC Banks in West Bengal. Randomly Vidyasagar DCC Bank was chosen for the case study. The study was based on secondary data.

Data Collection

For studying the current status and growth of the cooperative banks in India and the state of West Bengal, information on various aspects of banking such as share capital, owned fund, reserve fund, working capital, deposits, borrowings, loans & advances, loan outstanding, profits & loss and non-performing assets were collected from the Annual Reports of National Federation for State Cooperative Banks (NAFSCOB), Annual Reports of National Bank for Agriculture and Rural Development (NABARD), Annual Reports of West Bengal State Cooperative Banks (WBSCB) and other publication on cooperative banks. Further, to study the growth and viability of Vidyasagar DCC Bank, relevant information were collected for the last 11 years from 2008-09 to 2018-19.

Approach followed

Collected information was tabulated, compiled, analysed and presented in tabular forms. Select methods such as Trend, Compound Annual Growth Rates (CAGRs) and Financial Ratios were calculated and applied to understand the financial soundness, viability and sustainability of the bank. Suitable graphs were drawn to show the performance of select

ratios. Select statistical tools such as correlation and regression were performed to draw relevant inferences.

Software Used

MS Excel and R were used for the analysis of data.

Methods used for the analysis

Trend analysis

Trend analysis evaluates the financial performance of a company or bank over a period of time. Based on the performance of the bank in past and present, the trend lines tried to predict the future. The goal of the trend analysis was to calculate and analyze the percentage change of the variables from one point of time to the next. In the present case, the period was in terms of year. Based on the information for the last ten years, trend lines of some of the important parameters such as owned fund, deposits, borrowings, loans & advances, operating income, expenditure and income, non-performing assets and net profit were attempted.

Annual growth rate

Generally, exponential trend function is preferred over Compound Annual Growth Rate (CAGR) to calculate the annual growth rate, because the former considers the values of all the years and the later considers only the ending value and starting value. Therefore, in the present case, exponential trend function was used, which takes into consideration the values of all the years. For getting the CAGR, excel function was used. The formula used for the same is as given below:

$$y = a \times (1 + r)^t$$

Or, $y = a \cdot b^t$, Where, $b = 1 + r$, y = Amount after growth

a = Initial value, b = Growth factor, t = Time (Years), r = Annual growth rate

Financial ratios

From the Annual Reports, Diagnostic Reports and other documents of the bank, a number of financial ratios can be calculated, measured and monitored. A good way to measure the performance of a bank is to calculate the financial ratios, which are important for studying financial soundness, consistency and sustainability of the bank. In general, liquidity, efficiency, risk, solvency and profitability are the key financial areas that are useful for understanding viability and sustainability of a bank. Besides, some important financial ratios relating to financial stability for the bank have also been studied under 'Other Ratios'. Under each head, five financial ratios were calculated and studied. Based on the same relevant trend lines were fitted and analysed. These financial ratios were as under:

Liquidity Analysis - The liquidity of DCCBs was tested with four liquidity ratios. They were I) Cash to Deposit ratio, II) Cash to Demand Deposit ratio, III) Cash to Asset ratio, IV) Credit to Deposit ratio and V) Working Funds to Assets ratio. Table 2.1 presents the select financial ratios relating to liquidity of the bank.

Table 2.1: Select financial ratios relating to liquidity of the bank	
Liquidity Ratios	Formula
Cash to Deposit ratio (SDR)	Liquid asset/Total Deposits * 100
Cash to Demand Deposit ratio (CDD)	Cash at Hand/Demand Deposits * 100
Cash to Asset ratio (CAR)	Cash at Hand/Total Asset *100
Credit to Deposit Ratio (CDR)	Loans & Advances/Deposits *100
Working Fund to Asset Ratio (WAR)	Working Capital/Assets * 100

Solvency Analysis- The solvency of DCCBs was tested with four solvency ratios. They were I) Loan to Asset Ratio, II) Leverage Ratio, III) Debt to Equity Ratio, IV) Capital Gearing Ratio and V) Debt to Asset Ratio. Table 2.2 presents the select financial ratios relating to solvency of the bank.

Table 2.2: Select financial ratios relating to solvency of the bank	
Solvency Ratios	Formula
Loan to Asset Ratio (LAR)	Loans & Advances/Assets * 100
Leverage Ratio (LVR)	Tier I capital/Total Assets * 100
Debt to Equity ratio (DER)	Long Term Debt/Own capital
Capital Gearing ratio (CGR)	Owners' fund/Total Fixed Interest Bearing Liabilities
Debt to Asset ratio (DAR)	Borrowings/Assets * 100

Efficiency Analysis- To measure the efficiency of DCCBs, the following five ratios, i.e., I) Cost of Fund, II) Efficiency Ratio, III) Overhead Efficiency Ratio, IV) Business Per Employee and V) Business Per Branch were collected. Table 2.3 presents the select financial ratios relating to the efficiency of the bank.

Table 2.3: Select financial ratios relating to efficiency of the bank	
Efficiency Ratios	Formula
Cost of fund (COF)	Interest Expenses/Total Borrowings * 100
Efficiency ratio (EFR)	Non-Interest Expenses/(Non-Interest Income + Interest Income Received) * 100
Overhead efficiency ratio (OER)	Non-Interest Income/Non-Interest Expenses * 100
Business per Employee (BPE)	Deposits + Advances)/No of Employees
Business per Branch (BPB)	Deposits + Advances)/No of Branches

Risk Analysis- Five key ratios were calculated to understand the level of risk for the bank. These ratios were - I) Equity Ratio, II) Gross NPA to Assets Ratio, III) Net NPA to Advances Ratio, IV) Gross NPA to Advances Ratio and V) Capital to Risk weighted Asset Ratio. Table 2.4 presents the select financial ratios relating to risks of the bank.

Table 2.4: Select financial ratios relating to risk of the bank	
Risk Ratios	Formula
Equity Ratio (ETR)	Shareholders' capital/Total Assets * 100
Gross NPA to Assets Ratio (GPA)	Gross NPA/Total Assets * 100
Net NPA to Advances Ratio (NPL)	Net NPA/Net Loans & Advances * 100
Gross NPA Ratio (GPL)	Gross NPA/Total Loans & Advances * 100
Capital to Risk weighted Asset ratio (CRA)	Capital (Tier I + Tier II)/Total Risk Weighted Assets * 100

Profitability Analysis – The present study analysed five ratios under profitability of DCC Bank. These ratios were I) Net Interest Margin Ratio, II) Return on Capital Employed, III) Return on Assets Ratio, IV) Return on Net worth Ratio and V) Return on Equity Ratio. Table 2.5 presents the select financial ratios relating to profit of the bank.

Table 2.5: Select financial ratios relating to profitability of the bank	
Profitability Ratios	Formula
Net Interest Margin Ratio (NIM)	$(\text{Interest Income} - \text{Interest Expenses}) / \text{Avg. Earning Assets} * 100$
Return on Capital Employed Ratio (RCR)	$\text{Earnings Before Interest and Tax} / \text{Total Capital} * 100$
Return on Assets Ratio (ROA)	$\text{Earnings Before Interest and Tax} / \text{Total Assets} * 100$
Return on Net Worth Ratio (RWR)	$\text{Earnings Before Interest and Tax} / \text{Total Net Worth} * 100$
Return on Equity Ratio (ROE)	$\text{Earnings Before Interest and Tax} / \text{Total Equity} * 100$

Other ratios – The study also analysed six other financial ratios having bearing on the financial viability of the bank. These ratios were I) Non-Interest Income Ratio (NNI), II) Equity to Asset Ratio (EAR), III) Deposit to Asset Ratio (DAR), IV) NPA Provision to Asset Ratio (PNR), V) Liquid Asset to Total Asset Ratio (LQR) and VI) Net Interest Margin to Total Asset Ratio (NMR). Table 2.6 presents the select financial ratios relating to profit of the bank.

Table 2.6: Select financial ratios relating to other ratios of the bank	
Other Ratios	Formula
Non-Interest Income Ratio (NNI)	$(\text{Interest Income} - \text{Interest Expenses}) / \text{Total Income} * 100$
Equity to Asset Ratio (EAR)	$\text{Share capital equity} / \text{Total Asset} * 100$
Deposit to Asset Ratio (DAR)	$\text{Total Deposits} / \text{Total Asset} * 100$
NPA Provision to Asset Ratio (PNR)	$\text{Provision for NPA} / \text{Total Asset} * 100$
Liquid Asset to Total Asset Ratio (LQR)	$\text{Liquid Asset} / \text{Total Asset} * 100$

Correlation & Regression analysis

An Ordinary Least Square (OLS) method of regression analysis was fitted to understand the influence of the financial ratios on viability of Vidyasagar DCC Bank. In the regression analysis, profitability has been used as the proxy for the viability of the bank. Therefore, select ratios under profitability were taken as the dependent variables and the ratios under liquidity, solvency, risk and efficiency were taken as the independent variables in the model. Different ratios under profitability, liquidity, solvency, efficiency and risk were considered. Correlation analysis was performed to understand the association among the various financial ratios. Ratios with high correlation coefficient signaling the possibility of multi-collinearity were dropped from the model. Finally, one ratio each from profitability, liquidity, solvency, efficiency and risk were taken for the analysis. The regression model was run, t-statistics and correlation coefficients were calculated and relevant relationship was established. The correlation and regression analysis was done using R software. The models used in the analysis were as under:

Table 2.7:: Select models for the regression equation	
Model 1	Model 2
$ROE = \alpha + \beta_1 CDR + \beta_2 LAR + \beta_3 EFR + \mu$ Where, ROE = Return on Equity (Profitability Ratio) CDR = Credit Deposit Ratio (Liquidity Ratio) LAR = Loan Asset Ratio (Solvency Ratio) EFR = Efficiency Ratio (Efficiency Ratio) α, β_1, β_2 and β_3 are the constants μ , the error term	$ROA = \alpha + \beta_1 CDR + \beta_2 LAR + \beta_3 COF + \mu$ Where, ROA = Return on Assets (Profitability Ratio) CDR = Credit Deposit Ratio (Liquidity Ratio) LAR = Loan Asset Ratio (Solvency Ratio) COF=Cost of Fund (Efficiency Ratio) α, β_1, β_2 and β_3 are the constants; μ , the error term

Scope and Limitation of the study

The study concentrated on Vidyasagar DCC Bank in West Bengal. Further, only select financial parameters were used for analyzing different financial ratios and for understanding factors influencing viability and sustainability of Vidyasagar DCC Bank in West Bengal. Therefore, the findings of the study may not always be relevant to other banks in the state and/or country.

Chapter III

Status of the DCC Banks: West Bengal vis-à-vis All India

The DCC Banks, by providing production and investment credit, maximise farmers' welfare and thus promote financial inclusion at the grass root level. The DCC Banks are the federations of PACS in the districts and are linked with higher financial institutions such as Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD). They get membership from the affiliated primary societies and the individuals. The funds of the DCC Banks consist of share capital, deposits, loans and overdrafts from State Co-operative Banks. They provide finance to member societies within the limits of their borrowing capacity.

DCC Banks in West Bengal vis-à-vis All India

In terms of size of rural population, West Bengal is the third leading States in India after Uttar Pradesh and Bihar. There are 17 DCC Banks in West Bengal. At the aggregate level, the share capital, net worth and investments of the DCC Banks in West Bengal increased by more than 10 percent per year during the last five years. On an average, there were 2,510 members in a DCC Bank in West Bengal as against 8,222 members at All India level. As a result of the low membership, the share capital, reserve fund, deposits, borrowings and investments of the DCC Banks in West Bengal were lower than those at All India level. As on 31 March 2018, on an average, there were 121 employees working in a DCC Bank in West Bengal against 224 employees at All India level. Table 3.1 presents the details of the salient features of the DCC Banks in West Bengal and at All India level as on 31 March 2018.

Table 3.1: Select parameters of the DCC Banks in India and West Bengal as on 31 March 2018 at All India vis-à-vis West Bengal			
(Rs. Lakh)			
Particulars	All India	West Bengal	% of All India
No. of DCC Banks	370	17	4.6
No. of Members	30,42,226	42,675	1.40
Share capital	15,90,723	27,620	1.74
Reserve Fund	35,32,154	1,10,432	3.13
Deposits	340,73,787	12,23,166	3.59
Borrowings	85,91,798	1,39,947	1.63
Investment	1,68,37,945	6,68,265	3.97
No of Employees	82,939	2,056	2.48
Source: Basic Data on DCC Banks, Various Issues from NABSCOB website			

Growth & Status of DCC Banks in West Bengal

Table 3.2 presents key parameters of the DCC Banks of West Bengal as on 31 March of different years during the last five years. When the growth rate in deposits was 8.5 percent per year, the growth rate in loans and advances was 6.8 percent. The net worth of the DCC Banks increased at an annual rate of 11.2 percent. Investment of these banks increased from Rs.3297.79 crore in 2015 to Rs.6222.15 crore in 2019 at an annual rate of

12.1 percent. Further, the net profit of the total 17 DCC Banks in West Bengal was Rs.6.38 crore as on 31 March 2019.

Table 3.2: Key financial indicators of the DCC Banks in West Bengal as on 31 March of the year						(Rs. Lakh)
Parameters	2015	2016	2017	2018	2019	CAGR-%
Paid up capital	6871	7667	8707	9293.00	10107	10.1
Reserves	22560	22085	22934	24706.00	25985	4.0
Net Worth	17956	18761	21310	24147.00	26941	11.2
Deposits	677808	777974	687904	703974.00	1073645	8.5
Advances	499491	550791	602006	571328.00	680079	6.8
Investments	329779	404441	337963	356043.00	622215	12.1
Net Profit/Loss	6113	57	119	124.00	638	(-) 31.2
Source: West Bengal State Cooperative Bank At A Glance: -WBStCB Website						

CD Ratio and Non-Performing Assets of DCC Banks

There has been a perceptible improvement in the performance of the DCC Banks in the State in terms of Gross NPA and Net NPA. Over the last five years, gross NPA and Net NPA ratios of the DCC Banks improved. The Capital to Risk weighted Assets (CRAR) of these banks improved from 7.5 percent in 2015 to 11.9 percent in 2019. But the CD Ratio of the DCC Banks has been reducing from year to year. Table 3.3 presents the key ratios of the DCC Banks in the state of West Bengal as on 31 March of different years during the last five years.

Table 3.3: Details of CD Ratio, CRAR and NPA of the DCC Banks in West Bengal as on 31 March of the year						(Rs. Lakh)
Parameters	2015	2016	2017	2018	2019	
CD Ratio	73.7	70.8	87.5	81.2	63.3	
CRAR	7.5	9.4	11.2	12.5	11.9	
Gross NPA	7.9	7.3	5.1	5.2	5.1	
Net NPA	4.9	4.4	2.0	1.4	1.4	
Source: West Bengal State Cooperative Bank At A Glance: -WBStCB Website						

IT in DCC Banks

In the present day banking, costs have been rising faster than revenues and the average ROE has been falling to unsustainably low level. Low interest rates have eliminated margins on deposits and competition has constrained banks' ability to compensate by increasing fees. At the same time, the prospects for increasing revenue are slim. In the near to medium term, interest rates are unlikely to rise much above present levels. In order to remain in the race, the banks need to cut costs and increase profit margin. Advancement of technology and digitization of banking has the ability to reduce risk, improve efficiency and offer better services to customers. It allows customers to withdraw money, transfer money, apply for bank loan and make payments online on their smart phones.

With the advancement of technology, demand for easy and sophisticated banking facility has been on the rise. The digitization journey has already started. Many banks have already been working in a technology-driven environment. Therefore, only branch-led financial services may not be enough in retaining the client base. Customers have also started demanding access to sophisticated products and services through multiple channels like the telephone, Internet, cellular phones and the ATM. In a bid to remain relevant, the cooperative banks need to embrace technology, which would empower them in terms of customers and business.

As the customers have been banking with them for generations, the way they know their customers, nobody else knows. To retain the client base, increase business, reduce transaction cost, provide prompt & error-free services, win customers' trust & confidence and above all, to remain at par with other stakeholders in the financial market, they must adopt technology at a fast pace. By doing so, they can also attract young customers. A considerable number of cooperative banks have also increased their computerization base by adding Any Branch Banking, Tele-Banking and ATM interface wherever required. This has facilitated the banks to provide efficient and effective customer services and has resulted in economizing on the costs per transaction.

Chapter IV

Growth and Performance of Vidyasagar DCC Bank

Vidyasagar DCC Bank: A snapshot

The Vidyasagar Central Cooperative Bank Ltd., Midnapore was registered on 06 February (Registration No. 50 dated 06 February 1965) and it commenced banking business on the same day by amalgamating Balarampur Samabay Samity and Khelar Rural Credit Co-operative Society, Kharagpur, Beliaberah Central Co-operative bank Ltd., Beliaberah and Midnapore Central Co-operative Bank Ltd., Midnapore. The Reserve Bank of India granted license to the bank vide RPCD.CAL No. 85-C dated 25 November 1998 under Section 22 (1) read with Section 56(o) of the BR Act, 1949 (AACS) to carry out Banking Business in India. However, the bank confined its' are of operation to Midnapore Sadar and Kharagpur Sub Divisions under Paschim Midnapore District, entire Jhargram District and the areas under Egra and Contai Sub-divisions under Purba Midnapore District as per provisions of its bye-laws. Total number of branches including Head Office and 2 Evening branches stood at 39. With 13 ATMs and more than 10 lakh customers, Vidyasagar DCC Bank is the premier Cooperative bank in erstwhile Midnapore District.

All the branches of the bank are computerized and are working in CBS platform with ATM, NEFT and RTGS facilities. There are 641 PACS and 678 ECCS as its members functioning at block/village level. Besides, 203 Fertilizer Centers, 436 Fair Shops and 165 Paddy Purchase Centers are run by the affiliated PACS. These PACS also own 333 Godowns with 31,950 Metric Tonnes storage capacity. The bank is also a member of National Payment Corporation of India (NPCI) and the customers enjoy Direct Benefit Transfer like LPG Subsidy through their accounts directly.

Key features of Vidyasagar DCC Bank are as follows:

- Set up a residential Co-operative Training Centre at New Digha, where training programmes are organised for the employees of the bank, Societies and SHG groups
- Considered as one of the best Cooperative Banks in West Bengal
- Awarded as 'the best performer in cooperative sector' by the State Government in 2001-02
- NABARD awarded the bank as 'NABARD's Best Performances Award' thrice for 1997-98, 1999-2000 and 2000-2001
- 222 PACS out of 257 Deposit Mobilizing PACS have been selected as Customer Service Point for providing banking service to the rural poor people and they are functioning in online mode
- 48 PACS have been selected as Farm Machinery Hub
- Disbursed loan amounting Rs.964.91 lakh for poultry farming and goat rearing to 7,658 SHG members through 90 PACS
- The bank has been in profit for the last couple of years
- With grant assistance from NABARD, Financial Literacy Centres (FLCs) are set up and awareness programmes on financial inclusion were conducted during the last three years.
- Vidyasagar DCC Bank was sanctioned 528 FLCs by NABARD during the last three years and for the same, an amount of Rs.13,96,352/-had been reimbursed to the bank. (Table 4.1)

Table 4.1:: Grant assistance received from NABARD for conduct of Financial Literacy Programmes by Vidyasagar DCC Bank, Midnapore during the last three years			
Financial year	No of Camps sanctioned	No. of Camps organised	Amount reimbursed by NABARD (Rs.)
2017-18	60	7	32960.00
2018-19	126	51	238291.00
2019-20	342	213	1096352.00

- The bank participates in various Government of India schemes such as Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Sukraksha Bima Yojana (PMSBY) and State Government schemes such as Krishak Bandhu Scheme and Jaago Scheme.
- In order to promote digital financial literacy, grant support of Rs.15 lakh was extended to Vidyasagar DCC Bank from NABARD in the financial year 2017-18 for demonstration of banking technology through mobile van under Financial Inclusion Fund (FIF).

Role of Vidyasagar DCC Bank in developing the PACS

- The bank guided the deposit mobilizing PACS in fixing interest rate on deposits.
- The bank extended legal assistance to PACS on recovery of its dues.
- The bank facilitated fund remittance to PACS and obtained Money Transit Insurance for PACS affiliated to the bank.
- The bank arranged for training at BIRD and ACMART on various skill development programmes.
- The bank arranged to organize financial literacy camps under NABARDs financial assistance on financial inclusion, in collaboration with PACS.

The real or exchangeable value of paid up capital and reserves of the bank stood at 11878.90 lakhs as on March 31, 2019. The bank had, therefore, complied with the provisions of Section 11(1) of the BR Act, 1949 (AACS).

- Realisable value of assets at 2352,44.33 lakhs was more than the total outside liabilities 2233,65.43 lakhs as on March 31, 2019. The bank had therefore complied with the provision of Section 22(3) (a) of the Act.
- The bank had maintained the required CRR and had complied with the provision of Section 18 of the Act.
- The bank had maintained the required SLR and had complied with the provision of Section 24 of the Act.
- CRAR of the bank stood at 12 percent as on March 31, 2019 as against the minimum requirement of 9% prescribed by the RBI.
- Gross NPA of the bank 4.72 % as on March 31, 2019 was lower than the tolerable level of 5%.

Technology adoption in the DCC Banks in West Bengal

The developments of IT infrastructure in the cooperative banks in the state of West Bengal are as follows:

Core Banking Solution

Core Banking Solution (CBS) is the networking of branches, which enables customers to operate their accounts and avail banking services from any branch of the bank on CBS network, regardless of where he maintains his account. In the process, he becomes the bank's customer. All the 17 DCC Banks have been brought under CBS platform. Many DCC Banks have ATMs. All DCCBs are well connected with internet facility. This has helped a lot in improvement of communication with the branches. The branch managers can also now easily access the knowledge stores of internet and disseminate latest information to the customer.

Point of Sale (POS)

The point of sale (POS) or point of purchase (POP) is the time and place where a retail transaction is completed. It is the point at which a customer makes a payment to the merchant in exchange for goods or after provision of a service. At the point of sale, the merchant would prepare an invoice for the customer (which may be a cash register printout) or otherwise calculate the amount owed by the customer and provide options for the customer to make payment. After receiving payment, the merchant will also normally issue a receipt for the transaction. Usually the receipt is printed, but it is increasingly being dispensed electronically. Since the introduction of RuPay Debit card, all the clients are allowed only to withdraw cash from the ATMs. The RuPay Debit cards are POS enabled. All customers of the DCC Banks are now purchasing merchandise from shop using the RuPay Debit card.

RuPay KCC for the farmers

Since inception Crop loan is being provided to the farmer-members of the Primary Agricultural Cooperative Society (PACS) by our Bank through a manual Conventional method. For a long time the bank had been contemplating about introduction of debit card in farm loan delivery system. The technology involved in roping in the loan delivery system of PACS into the Core Banking Solution (CBS) of the bank is very complicated. This bank deliberated the matter with member –central Cooperative Bank and CBS service provider at length and decided to introduce RuPay KCC in some societies on pilot basis. The software has been developed and tested successfully at the PACS level. The farmers will now be able to get loan using RuPay KCC card.

Website of the Bank Launched

In this day of Information technology people want information on internet. People from all walks of life like to visit the website of a Bank to know about the service being provided by it to the customer. In the banking business information is critical. The area of operation of The West Bengal State Cooperative Bank extends from the Cosmopolitan city to the remote rural areas of the State. Today rural people like their urban counterpart use internet either on their PC, Laptop or mobile. Website of the bank will bring information about the latest services/ activities of the bank concerning rural farmers as well as urban people. Many will be more likely to visit the website, rather than driving a car to the physical location of the bank and browsing for Bank's products. From a customer's point of view, it's better for them if they don't have to ask anything. They can just find what they're looking for on the online site.

Technology adoption in Vidyasagar DCC Bank

Vidyasagar DCC Bank has already been in the Core Banking Solution (CBS) platform. All branches of the bank are on CBS platform. The CBS solutions have since moved on to enhance payment offerings for consumers, payments like NEFT/RTGS and others. The bank is On Boarded to DBT and to NACH. IT policy is in place. The bank issues RuPay Kisan Cards. As at end of April 2020, the bank had issued a total of 1.01 lakh RuPay KCC. The bank is live on Unified Payments Interface (UPI), AePS (Aadhaar Enabled Payments) and IMPS (Immediate Payment Service). The customers of the bank make transactions digitally from their savings accounts. ATM infrastructure is another space for the bank. The bank has deployed/installed 13 ATMs and 59 micro ATMs across its coverage area. The bank is PoS certified and also part of C-KYC registry.

Corporate Governance

Cooperatives operate within the legal framework formulated by the State Governments. However, many of the legal provisions of the State Cooperative Societies Acts are not complied with by the cooperatives. Corporate governance of the banks is a major issue, which affects the functioning of the cooperatives. Some issues relating to governance are transparency in lending and grant of loans, audit, internal checks and control, recovery of dues and recruitment of staff. Vidyasagar DCC Bank has not yet implemented “fit & proper criteria” for appointment of Directors and Chief Executive Officers (CEO). It is believed that appointment of professional experts in the Board and qualified CEO in State Cooperative Banks and DCC Banks will provide dynamic leadership, efficient management and accountability.

Absence of prudent interest rate policies

Cooperatives have access to deposits from public but there is no system to ensure prudent deployment of these funds. It is a matter of concern that these banks accept deposits at a high rate, but they fail to follow prudent policy in loan pricing. In the absence of prudent interest policies on deposits and advances, many cooperatives are unable to generate enough revenue or surplus to sustain their operations and boost capital formation on account of very thin or negative margins.

Lack of HR Policies and professionalism

Success of any organization largely depends on the quality of human resources. But this has not received due importance in the cooperatives. Most of the cooperative banks are headed by a committee of elected members who are not professionals and do not possess sound knowledge in banking functions. However, the Committee takes business decisions involving sanction of loans, investments, interest rates on deposits and loans, etc. They do not have well-defined capacity building and HR policies in recruitment, placement, training, career progression, succession planning, etc. They do not make any systematic manpower assessment. As a result, the productivity and efficiency of the cooperative banks are affected.

There is a system of training in place for the cooperative banks. They get training from various institutions such as Cooperative Training College, NABARD Training Colleges (BIRD-Lucknow, Mangaluru and Kolkata). The staff members of the DCC Banks must be encouraged to achieve skill up-gradation in areas related to project appraisal, agricultural

finance, audit and expenditure, human resources and risk management. The staff members need to be sufficiently motivated and their performances must be recognized.

Poor recovery performance

Growing NPA is one of the biggest challenges for the cooperatives. Weak finances, growing default rate and poor resource base are responsible for declining performances of the cooperatives.

Inadequate Internal control and audit

The cooperatives do not pay attention to implementation of internal checks and control. Incidence of fraud is noticed in the cooperative banks mainly because of delay in reconciling of statements and balancing of books. Many banks do not conduct timely audits and submission of reports. Quality of audit is another area for introspection.

Lack of member participation

For proper functioning of the cooperatives, the members having a voting right should take active part in the affairs of the cooperatives. Since the control and management is vested in a few members. Besides, depositors, whose money is intermediated by the cooperatives, have no voting right or any say in the management.

Not keeping pace with changes

With change in time, demand for financial products/services is also changing. To meet the growing demand, many banks design new products and services, improve skill of their staff members, create awareness about their products and adopt effective technology. But due to shortage of fund, poor manpower, less/no technology, the cooperative banks fail to match the pace of changes in the financial sector. It is becoming difficult for the cooperatives to retain their market share.

Duality of control

Under the Constitution, 'Cooperation' is a state subject governed by the respective State Cooperative Societies Acts. Registration, incorporation, management, election, and audit are governed by the State Acts. Some aspects relating to banking activities are regulated and supervised by the Reserve Bank of India/NABARD under the Banking Regulation Act, 1949. However, it is felt that banking functions should be brought completely under the Banking Regulation Act. Further, the provisions of the Banking Regulation Act should override the provisions of the State Acts/bye-laws/rules. This will lead to clear demarcation of the areas of activities of cooperative banks.

Cooperatives have inherent advantages as member-owned and member-controlled institutions. But to remain viable and sustainable, the cooperatives should practice good corporate governance and social responsibility. These institutions should be purely 'member-driven' keeping the principle of cooperation in letter and spirit. Professionalism should be introduced in staffing and adequate training opportunities should be provided to the employees for skill up-gradation. They should frame sound and prudent policies for loans and investments and conduct themselves in the larger interests of the depositors and the general public. They should be technology-driven and well-managed institutions to inspire confidence in the public and secure their survival.

NABARD's support to RCBs from Financial Inclusion Fund (FIF)

A Financial Inclusion Fund has been established in NABARD to provide financial assistance to eligible institutions engaged in financial inclusion programme as prescribed under the Financial Inclusion Fund Guidelines. The Fund supports "developmental and promotional activities" including creating of FI infrastructure across the country, capacity building of stakeholders, creation of awareness to address demand side issues, enhanced investment in Green Information and Communication Technology (ICT) solution, research and transfer of technology, increased technological absorption capacity of financial service providers/users with a view to securing greater financial inclusion. Some of the important activities supported to Rural Cooperative Banks are given below:

Support for conducting Financial Literacy Programmes

Grant support is extended to Rural Cooperative Banks for setting up and operational cost for running Financial Inclusion & Literacy centers. The cost of technical manpower employed by banks for running the Financial Inclusion & Literacy centers will be funded from the fund.

Pilot project for supporting StCBs/DCCBs in Financial Inclusion through use of technology in PACS / other multipurpose cooperative societies (FSS, LAMPs, Milk Cooperatives, etc.,

For adopting latest banking technology in order to provide financial inclusion services and products to rural customers, the DCC Banks will be provided support for installation of ATMs. However, the support for ATMs will also be linked to setting up of FLCs. The DCC Banks participating in the project are expected to set up FLCs in the blocks covered by them.

Support for purchase of hand held projector and portable speaker to facilitate Financial Literacy efforts by FLCs and rural branches

Grant assistance under FIF is extended for purchase of hand held projector and portable speakers for the rural branches and FLCs of Commercial Banks, Regional Rural Banks and Cooperative Banks to be used for financial literacy activities.

Operational support for ATM add-on for CBS

Cooperative Banks are being encouraged to provide RuPay Kisan Cards to their clients. These cards will be used in the ATM/ micro ATMs and PoS/mPoS with Agri. vendors which will result in operational expenditure for the Cooperative Banks. In order to encourage ATM penetration in rural areas also, NABARD has designed a scheme to assist Cooperative Banks to venture into ATM domain of personal banking. NABARD support for ATMs for all Cooperative Banks under this scheme will cover only operational Cost and no capital expenditure is covered. All Cooperative Banks which are fully CBS enabled and have been issuing RuPay Kisan cards are eligible for the support under this scheme.

Support for Issuance of EMV chip based RuPay Kisan Cards

There is thrust on digital transactions and a need to provide an impetus to cashless transactions amongst the farming community also. In view of the above, the Advisory Board of FIF, as a special case, had decided that Cooperative Banks may be supported for

procuring EMV chip and PIN-based RuPay KCC cards, up to a maximum of Rs.25.00 or 80% of the cost, whichever is less.

Purchase of microATMs

Under the scheme for “Support for ICT solutions under FIF”, the support for microATMs continues to be available from FIF. The support under FIF is available for microATMs, all-in-one integrated devices, or mobiles/PCs/tablets with accessories. The microATMs should provide both card and pin based as well as biometric and Aadhaar based transactions and should be interoperable. 90 percent of the cost of the device, maximum Rs.22,500/- will be supported to the cooperative banks.

Support for Demonstration of Banking Technology through Mobile Van

In order to promote digital financial literacy, grant support is extended for demonstration of banking technology through mobile van under Financial Inclusion Fund (FIF). Support of up to a maximum cap of Rs.15 lakh per demo mobile van is given. However the extent of support will be limited to actual capital expenditure incurred by the bank.

Support for operationalization of Central KYC Records Registry

The Government of India vide notification dated 07 July 2015 amended the Prevention of Money Laundering (Maintenance of Records) Rules, 2005, (Rules), for setting up of the Central KYC Records Registry (CKYCR). The Central Registry of Securitisation Asset Reconstruction and Security Interest of India (CERSAI) has been authorised to act as and to perform the functions of Central KYC Records Registry. Further, the RBI vide its Master Direction dated 08 December 2016 has notified that all Regulated Entities (REs) other than Scheduled Commercial Banks (SCBs) are to upload the KYC data pertaining to all new individual accounts opened on or after from 01 April 2017, with Central KYC Registry.

To encourage Rural Cooperative Banks and RRBs to onboard to the CKYCR system, financial support up to Rs. 4.00 lakh or 90% of the cost whichever is lower per bank for StCBs/DCCBs and up to Rs. 3.60 lakh or 80% of the cost whichever is lower, per bank for RRBs is extended from Financial Inclusion Fund.

Support for Cost of Integration between micro ATMs and CBS server

Grant support is extended to rural cooperative banks for cost of integration between micro ATM and CBS Server under FIF. This will enable the clients of Cooperative Banks to connect to National Payment System and avail all types of financial services.

Support for data migration/feeding of PACS data to CBS

Great impetus has been placed by NABARD for issuance of RuPay Kisan Card to the farmers. Their issuance to PACS members will involve migration/feeding of member account details into the CBS of Cooperative Banks. Therefore, grant support is extended to rural cooperative banks for data migration/feeding of PACS data to CBS platform so that they can comply with the Government of India timeliness for the issuance of RuPay Kisan card to their customers.

Select financial statements of Vidyasagar DCC Bank

Table 4.2 presents summary of select financial parameters of Vidyasagar DCC Bank during 2009 and 2019. It can be observed from the table that the mean net profit before interest and tax of the bank at Rs.872.7 lakh was 0.69 percent of the total business during the last 11 years. It can be observed from the table that net profit before interest and tax of the bank has a mean of 0.58 percent of total assets and a coefficient variation of 35.4 percent. The mean value of loan to assets ratio is 44.8 percent but with a Coefficient of Variation (CV) of 29.8 percent.

Equity is, on average, 6.20 percent of total assets but with a variation of 27.5 percent. The average CD ratio of the bank during the last 11 years was 57.69 percent. The net NPA of the bank has a mean of 2.13 percent of total loans and advances but with a variation of 22 percent. Worth mentioning is the fact that there is no negative standard deviation among the select variables. The general rule states that the higher value of variation implies greater spread of data, smaller the variation shows the data is concentrated around mean. In such a case, variability of all the select variables is positive as well as higher, so the variables spread over the mean value.

Table 4.2::Summary statement of select financial parameters of Vidyasagar DCC Bank from 2009 to 2019 (Rs.Lakh)					
Particulars	Minimum	Maximum	Mean	Median	CV (%)
Own Resources/capital	5380.9	13459.7	9319.3	9517.3	27.5
Total Assets	80574.5	240992.9	150270.1	138455.8	34.7
Total Deposits	58074.4	192170.5	116607.5	108196.6	37.9
Total Borrowings	4738.9	20365.0	9601.8	7498.9	58.0
Total Loans & Advances	36982.4	98872.2	67269.9	69220.4	29.8
Total Investments	34791.2	126172.6	70878.6	61468.4	44.8
Total Income	7068.2	17350.1	11968.0	11822.5	28.8
Total expenditure	6751.8	15940.7	11095.4	10818.5	29.1
Net Profit Before Interest and Tax	316.5	1409.3	872.7	951.5	35.4
Total Performing Assets	33236.3	94207.0	63351.2	65485.1	31.0
Total Non-Performing Assets	3208.1	4665.2	3916.7	3765.2	12.8
Provision for Standard Assets	121.4	337.8	232.9	244.7	30.1
Provision for NPA	1338.4	3294.1	2483.5	2464.4	23.0
Net NPA	1032.0	2156.8	1433.1	1469.7	22.0

Chapter V

Financial viability and sustainability of Vidyasagar DCC Banks

This chapter presents the growth and performances of Vidyasagar DCC Bank over a period of 11 years in terms of financial soundness, viability and sustainability through ratio analysis. Further, it attempted to find out the determinants of viability and soundness of the bank with the help of regression analysis.

I. Growth and performances of Vidyasagar DCC Bank

Owned capital

The owned capital of Vidyasagar DCC Bank consists of paid-up share capital, reserves and surplus. The growth of various components of owned fund has been presented in Table 5.1. It can be observed from the table that reserves constituted the maximum share, followed by share capital and surplus. But over the years, the share of both free reserves and other reserves has been declining. Similarly, the share of share capital, which was 24.1 percent in 2009, came down to 21.9 percent in 2019. But it is a positive sign that the contribution of surplus in the owned fund of the bank has been rising over the years. The owned capital, which was Rs.5380.90 crore as on 31 March 2009, increased to Rs.13459.71 crore as on March end 2019 at an annual rate of 9.1 percent. During these 11 years, the annual growth rates of share capital, free reserves, other reserves and surplus 8.6 percent, 7.1 percent, 7.3 percent, 17.6 percent respectively.

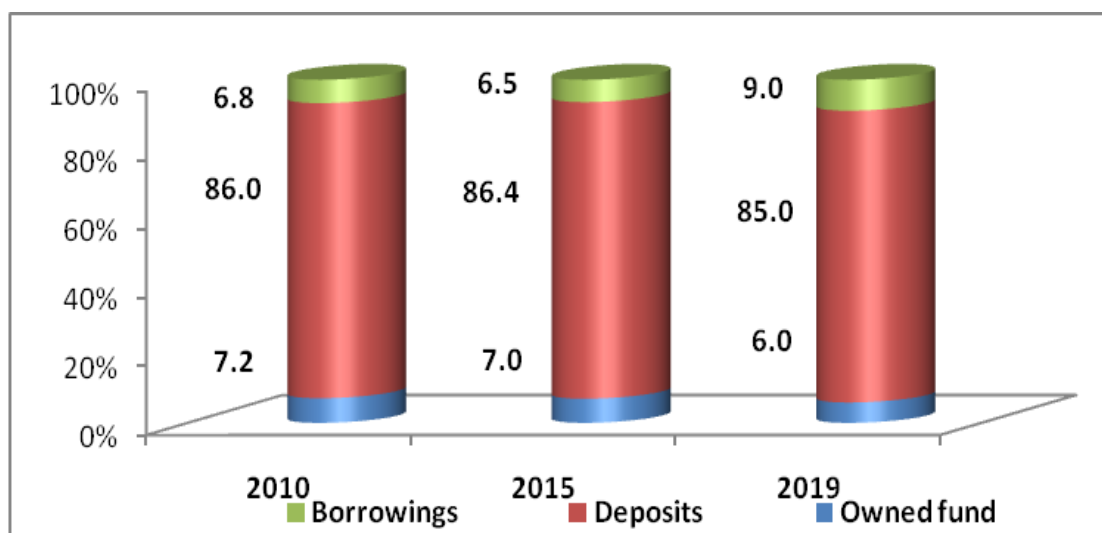
Table 5.1: Year-wise break-up of Owned capital of Vidyasagar DCC Bank as on 31 March of the year					
(In %)					
Year	Share Capital	Free Reserves	Other Reserves	Surplus	<i>Owned capital</i>
2009	24.1	23.4	42.5	10.0	100.0 (5380.90)
2010	22.7	21.9	43.7	11.6	100.0 (5859.85)
2011	19.5	19.7	47.9	12.9	100.0 (7034.74)
2012	17.1	20.2	47.6	15.1	100.0 (8350.92)
2013	17.6	20.1	44.2	18.0	100.0 (8712.66)
2014	17.3	19.2	42.7	20.8	100.0 (9517.28)
2015	18.1	19.1	42.1	20.7	100.0 (9974.44)
2016	18.6	19.1	41.0	21.3	100.0 (10793.22)
2017	19.7	19.1	40.3	20.9	100.0 (11312.62)
2018	21.4	19.0	38.9	20.7	100.0 (12115.90)
2019	21.9	18.6	38.8	20.6	100.0 (13459.71)
(Figures in brackets are the amount in Rs. Crore)					
Source: Annual Report, Various issue, Vidyasagar DCC Bank					

Resource mobilization

Resource mobilization constitutes a significant aspect of financial management of a bank. The size, source and composition of financial resources have a direct bearing on its operation and profitability. Sufficiency of resources gives a bank an opportunity to become self-sufficient and to explore the possibility of financing newer sectors and

activities. Financial prudence, on the other hand, requires that the composition of resources should be consistent with the nature, profitability and riskiness of the avenues in which these are to be channelised. Deposits of the bank constitute about 85 percent of total funds and share capital, reserves and surplus occupy the balance 15 percent of the fund in the capital structure.

Figure 2: Resource composition of Vidyasagar DCC Bank as on 31 March of 2010, 2015 and 2019 (% of Total)

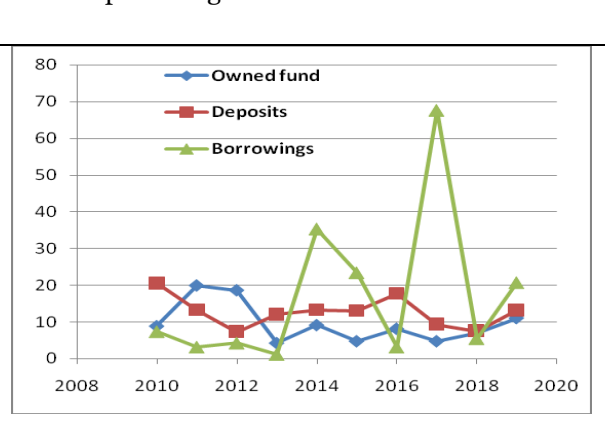


Deposits constituted more than 85 percent of total resources of Vidyasagar DCC Bank and the balance 15 percent of the resources were occupied by share capital, reserves and surplus. The Year-on-Year growth rates of owned fund, deposits and borrowings of the bank were 8.9 percent, 20.6 percent and 7.4 percent respectively in 2010 over 2009 and these rates became 11.1 percent, 13.2 percent and 20.7 percent respectively in 2019 over 2018. Table 5.2 presents Year-on-Year growth rate of different resources of the bank during the last 10 years. While Figure 2 depicts the resource composition of Vidyasagar DCC Bank in 2010, 2015 and 2019, Figure 3 presents the incremental growth trends of owned fund, deposits and borrowings of the bank from 2010 to 2019.

Table 5.2: Resource status of Resources of Vidyasagar DCC Bank (Incremental growth over year in %)

Year	Owned fund	Deposits	Borrowings
2010	8.9	20.6	7.4
2011	20.0	13.3	3.2
2012	18.7	7.3	4.3
2013	4.3	12.1	1.2
2014	9.2	13.3	35.3
2015	4.8	13.1	23.4
2016	8.2	17.8	3.2
2017	4.8	9.4	67.5
2018	7.1	7.6	5.5
2019	11.1	13.2	20.7

Figure 3: Incremental growth of resources of the bank in percentage



Sector-wise and term-wise loans and advances

The loans and advances of the bank were discussed in both term-wise and sector-wise. Table 5.3 presents the loans and advances of the bank from 2012-13 to 2018-19. It can be observed from the table that loan issued by the bank increased from Rs.56937.89 lakh in 2012-13 to Rs.86898.34 lakh in 2018-19 at an annual rate of 7.8 percent. The loan issued for short-term purposes was 28.2 percent of the total loan in 2012-13 and it increased to 35.2 percent in 2018-19. Similarly, loans issued for agriculture purposes increased from 22.4 percent in 2012-13 to 32.3 percent in 2018-19. During the last 7 years, loans issued for agriculture purposes increased at an annual rate of 14.5 percent as against 5.4 percent for non-agricultural purposes. Similarly, the annual rate of growth of short-term loan at 11.8 percent was more than the long-term loans at 6 percent.

Table 5.3: Year-wise loan issued by Vidyasagar DCC Bank as on 31 March of the year (Rs.lakh)					
Year	Total loan issued	Term-wise (% of Total)		Sector-wise (% of Total)	
		Short-Term	Long-Term	Agriculture	Non-Agriculture
2012-13	56937.89	28.2	71.8	22.4	77.6
2013-14	57671.97	28.0	72.0	22.9	77.1
2014-15	60929.97	30.4	69.6	25.4	74.6
2015-16	68221.04	27.0	73.0	26.9	73.1
2016-17	81767.30	28.7	71.3	25.6	74.4
2017-18	75612.38	34.2	65.8	30.8	69.2
2018-19	86898.34	35.2	64.8	32.3	67.7
Source: Diagnostic study report of the bank, Various issues					

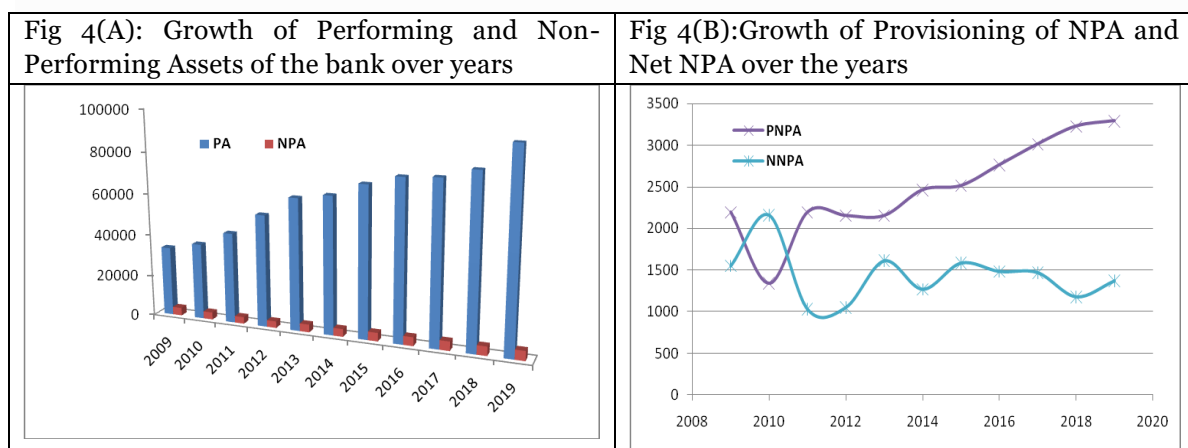
Loan outstanding and Assets position

Table 5.4 presents the details of loan outstanding and NPA position of Vidyasagar DCC bank from 2009 to 2019. The loan outstanding of the bank increased at an annual rate of 10.0 percent from Rs.36982.40 lakh in 2009 to Rs.98872.19 lakh in 2019. While performing assets increased at an annual rate of 10.5 percent, the non-performing assets increased at 3.4 percent.

The NPA to loan outstanding ratio decreased from 10.1 percent in 2009 to 4.7 percent in 2019. The provision made against NPA, which was 58.6 percent in 2009, increased to 70.6 percent in 2019. As a result, Net NPA ratio decreased from 41.4 percent in 2009 to 29.4 percent in 2019. As a result, the Net NPA decreased at an annual rate of 1.2 percent during 2009 and 2019. Thus, the bank is in a comfortable position in terms of performing assets and the provisioning of its NPAs.

Table 5.4: Details of loan outstanding and NPAs of Vidyasagar DCC Bank from 2008 to 2019					
Year	Loan outstanding (Rs. lakh)	Assets		Provisioning for NPA	Net NPA
		Performing Assets	Non-Performing Assets		
2009	36982.40	89.9	10.1	58.6	41.4
2010	40034.75	91.3	8.7	38.3	61.7
2011	46623.38	93.1	6.9	68.0	32.0
2012	56884.00	94.3	5.7	66.7	33.3
2013	66817.84	94.4	5.6	57.2	42.8
2014	69220.35	94.6	5.4	66.0	34.0
2015	75983.60	94.6	5.4	61.3	38.7
2016	80600.49	94.7	5.3	65.1	34.9
2017	81767.30	94.5	5.5	67.2	32.8
2018	86182.92	94.9	5.1	73.2	26.8
2019	98872.19	95.3	4.7	70.6	29.4

Figure 4 presents the trend line of loans and advances, provisioning of NPA and Net NPA position of the bank from 2008-09 to 2018-19. It can be observed from Figure 2(A) that the pace of growth of loans and advances in farm activities is comparatively faster than that of the non-farm activities. Similarly, the trend line of the provision for NPA is rising and that of Net NPA is falling.

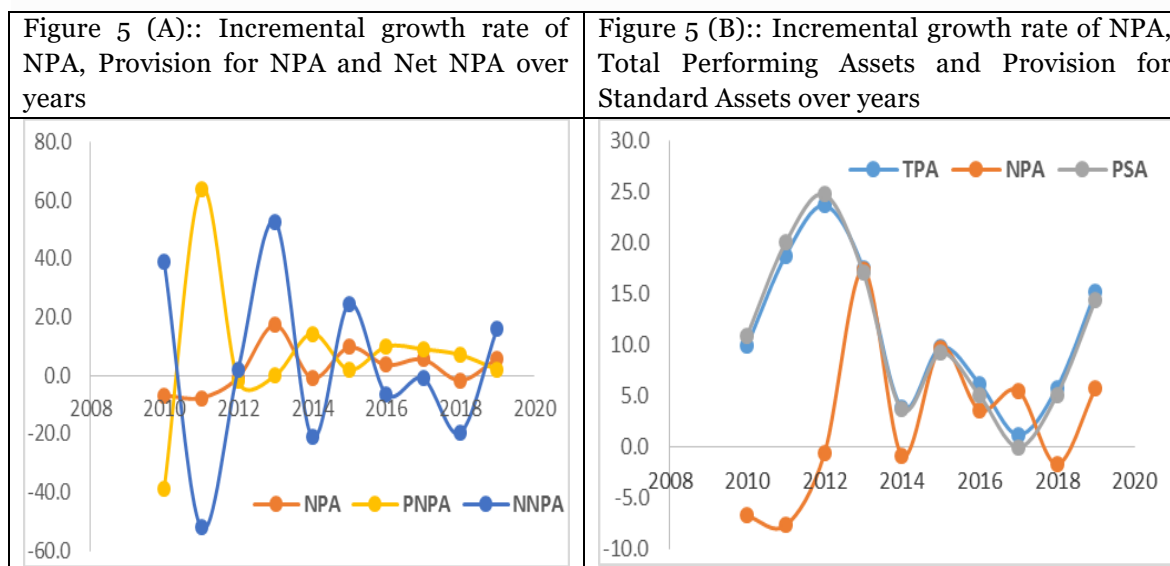


Performing Assets & Non-Performing Assets

Table 5.5 presents the details of incremental growth rate of performing and non-performing assets of the bank from 2010 to 2019. It can be observed from the table that y-o-y growth for performing assets of the bank remained unstable during the last 10 years. Similar observations were also obtained for non-performing assets. As a result, their provisions and also the net NPA were found unstable over the years. The incremental growth rate in NPA, which was (-) 6.7 percent in 2010 over 2009, increased to 5.8 percent in 2019 over 2018. As bad loan is always bad, Vidyasagar DCC Bank must tighten its grip over growing NPA.

Table 5.5:: Details of Incremental Performing & Non-Performing Assets of the bank over years as on 31 March of the year					
(In %)					
Year	Total		Provision		Net Non-Performing Assets
	Performing Assets	Non-Performing Assets	Standard Assets	Non-Performing Assets	
2010	9.9	-6.7	10.9	-39.0	39.1
2011	18.8	-7.7	20.1	64.1	-52.2
2012	23.6	-0.6	24.7	-1.9	2.1
2013	17.5	17.4	17.1	0.0	52.9
2014	3.9	-0.8	3.7	14.4	-21.1
2015	9.8	9.7	9.2	2.0	24.7
2016	6.2	3.6	5.1	9.9	-6.3
2017	1.2	5.6	0.0	9.1	-1.0
2018	5.8	-1.7	5.1	7.1	-19.7
2019	15.2	5.8	14.4	2.0	16.1

The unstable growth path of various parameters such as Non-Performing Assets, Provision for NPA, Net NPA is presented in Figure 5 (A). Similarly, the y-o-y growth trend of Non-Performing Assets, Performing Assets and Provision for Standard Assets are shown in Figure 5 (B).



The process to prevent/reduce risk consists of four steps such as identification, measurement, monitoring and control. Therefore, the bank may adopt appropriate steps to understand the nature of various risks faced by the bank and then find out the circumstances which led to such a situation. Then the bank may assess the degree of the risk faced by it. This can be done using various techniques ranging from simple to sophisticated models. The bank then establishes policies, standards and procedures for effective control mechanism to reduce the severity of the risk. The Risk

Cell/Department must monitor the situation against approved risk tolerance limits and report to Senior Management and the Board.

Classification of Assets

Table 5.6 presents the details of the classification of assets from 2013 to 2019. It can be observed from the table that loss assets of the bank decreased from 0.2 percent in 2013 to 0.1 percent in 2019. Similarly, the sub-standard assets and doubtful assets of the bank also decreased. During the period between 2013 and 2019, while standard assets increased at an annual rate of 6.3 percent, sub-standard and doubtful assets decreased at 1.1 percent and 5.1 percent respectively.

Table 5.6: Classification of Assets of Vidyasagar DCC Bank from 31 March 2013 to 31 March 2019 (In %)				
Year	Standard Assets	Sub-Std Assets	Doubtful Assets	Loss Assets
2013	63052.6	1.7	4.1	0.2
2014	65485.06	0.9	4.5	0.3
2015	71885.03	1.2	4.2	0.3
2016	76352.35	1.2	4.1	0.3
2017	77283.25	1.5	4.0	0.3
2018	81773.17	1.2	4.0	0.1
2019	94207.02	0.8	4.0	0.1

Income, Expenditure & Net Income

Table 5.7 presents the details of income, expenditure and net income of Vidyasagar DCC Bank for the last 11 years. During the last 11 years, income, expenditure and earnings after interest and tax increased at an annual rate of 9.5 percent, 9.5 percent and 10.0 percent respectively. Earnings after interest and tax (EAIT), which was 3.1 percent of total income in 2009, increased to 5.3 percent in 2019. Similarly, EAIT increased from 3.2 percent of total expenditure in 2009 to 5.8 percent in 2019. Thus, there has been a significant improvement in income for the bank during these 11 years.

Table 5.7: Details of income, expenditure and net income of Vidyasagar DCC Bank from 2009 to 2019 (Rs.lakh)				
Year	Total Income	Total Expenditure	Earnings Before Interest and Tax	Earnings After Interest and Tax
2009	7068.2	6751.8	316.5	218.7
2010	7837.67	7417.43	420.24	290.38
2011	8525.78	7625.6	900.18	622.76
2012	9826.72	8833.7	993.02	681.14
2013	10794.97	10021.18	773.79	519.95
2014	11822.47	10818.46	1004.01	339.5
2015	13322.26	12288.25	1034.01	694.27
2016	14377.02	13282.34	1094.68	705.61
2017	15090.33	14388.12	702.21	453.34
2018	15633.01	14681.48	951.53	622.25
2019	17350.06	15940.74	1409.32	916.88
CAGR-%	9.5	9.5	10.0	9.2
Source: Annual Report, Various Issues, Vidyasagar DCC Bank				

II. Viability & sustainability of Vidyasagar DCC Bank

Financial ratios are considered as the most effective tools in providing a bird's eye view of the performance of a bank. The ratios are popular methods in accounting system in studying the strengths and weaknesses of the bank. At the same time, they are generally used to measure viability and sustainability of the companies and banks. Therefore, relevant ratios under the given five sub-heads were considered for calculation, analysis and interpretation.

- a. Liquidity ratios
- b. Efficiency ratios
- c. Risk ratios
- d. Solvency ratios
- e. Profitability ratios
- f. Other ratios

a. Liquidity ratios

Liquidity or short-term solvency means ability of the bank to pay its short-term liabilities. Inability to pay-off short-term liabilities affects the credibility of the bank. Therefore, liquidity is an important parameter for banks. Banks have to take proper care in hedging liquidity risk while at the same time ensuring that a good percentage of funds are invested in higher return generating investment, so that banks can generate profit while at the same time provide liquidity to the depositors. Among the bank's assets, cash investments are the most liquid. The most common liquidity ratios are Cash to Deposit Ratio, Cash to Demand Deposit Ratio, Cash to Total assets Ratio, CD Ratio and Working Fund to Asset Ratio. The various ratios under liquidity of the bank are presented in Table 5.8.

Cash to Deposit Ratio and Cash to Demand Deposit Ratio

Cash Deposit ratio refers to the lending by a bank from the deposits it has mobilized. It indicates how much of a bank's core funds are being utilized for lending, the main banking activity. It can also be defined as the *Cash in hand* divided by *Total deposits*. The bank must maintain liquidity to operate and hold an amount of cash to service net withdrawals from customer activities such as drawing from their deposit (checking and savings) accounts. The cash deposit ratio maintained by Vidyasagar bank was in the range of 4.1–5.7 percent during the last 11 years, which is in a safe margin. Demand deposit of the bank consists of current account deposits and savings account deposits. While the customers withdraw their deposits from current account as and when required, they withdraw once or twice a week from their savings accounts. Therefore, the banks need to hold liquid cash to meet the demand of the customers. Vidyasagar bank maintains a comfortable position as liquid form to meet the demand of the customers. As on 31 March 2019, the *Cash to Demand Deposit Ratio* of the bank was 46.1 percent.

Cash ratio

Cash ratio is otherwise known as Cash to Asset ratio. In simple terms, the cash asset ratio is *Cash at Hand to Total Asset Ratio*. This ratio is used to measure the bank's liquidity or its ability to pay its short-term obligations. The cash asset ratio is similar to the current ratio. The current ratio, however, includes current assets other than cash and marketable securities, such as inventories. Including all current assets, not just those that are

immediately convertible into cash, makes the current ratio a less stringent measure than the cash asset ratio. The cash asset ratio is, therefore, a better measure of a company's liquidity. The cash to asset ratio of the bank was in a comfortable range of 3.2 – 4.4 percent during the last 11 years.

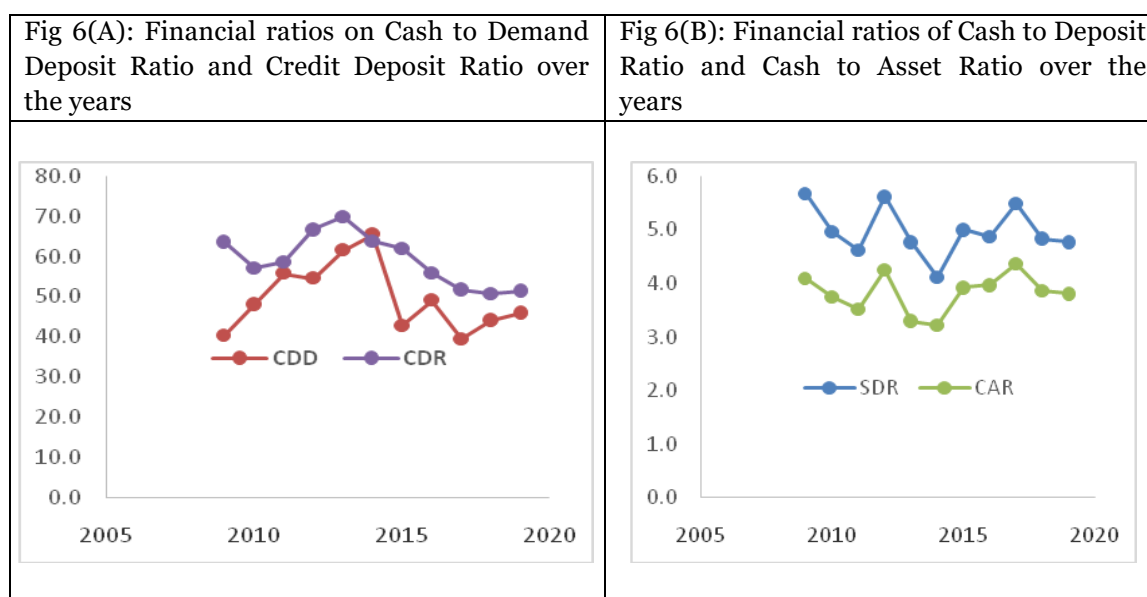
Table 5.8: Select financial ratios under liquidity of the bank as on 31 March of the year					
(In %)					
Year	Cash to Deposit Ratio	Cash to Demand Deposit Ratio	Cash to Total Asset Ratio	Credit to Deposit Ratio	Working Fund to Asset Ratio
2009	5.7	40.5	4.1	63.7	90.9
2010	5.0	48.2	3.7	57.1	92.3
2011	4.6	55.8	3.5	58.8	93.2
2012	5.6	54.6	4.2	66.8	92.2
2013	4.8	61.7	3.3	70.0	83.2
2014	4.1	65.5	3.2	64.0	93.8
2015	5.0	42.9	3.9	62.1	93.3
2016	4.9	49.2	4.0	55.9	95.3
2017	5.5	39.6	4.4	51.8	95.6
2018	4.8	44.3	3.9	50.8	95.1
2019	4.8	46.1	3.8	51.5	95.5

Credit to Deposit Ratio

CD ratio helps in assessing a bank's liquidity and indicates its financial health. If the ratio is too low, banks may not be earning as much as they could be. It is the ratio of how much a bank lends out of the deposits it has mobilised. In other words, CD Ratio indicates how much of a bank's core funds are being used for lending. A higher ratio indicates more reliance on deposits for lending and vice-versa. Although there is no ideal level for the ratio, but a very low ratio indicates that the bank is not making full use of its resources. Similarly, a very high ratio is considered alarming. The CD ratio of Vidyasagar bank was found to be above 50 percent during the last 11 years. In 2013, it was the maximum at 70 percent and, in 2018, it was the minimum at 51.5 percent.

Working fund to Asset ratio

The working capital over total assets ratio, sometimes referred to as the net working capital ratio, measures the net liquid assets of a bank as a percentage of its total assets. The ratio is an indicator of the short term liquidity and financial strength of the bank. It indicates the ability of the bank to finance short term obligations. The ratio compares the net liquid assets to the total assets of the bank. In other words, this ratio determines the short-term solvency of the bank. An increasing Working Capital to Total Assets ratio is usually a positive sign, showing the bank's liquidity is improving over time. A low or decreasing ratio indicates the company may have too many current liabilities, reducing the amount of working capital. The Working fund to Asset ratio, which was 90.9 percent in 2009, decreased to 95.5 percent in 2019. Figures 6 presents trend of select financial ratios on liquidity of the bank. It can be observed from the figures that the bank has maintained status quo in almost all the ratios in the year 2019 in comparison with the year 2009.



b. Solvency ratios

Solvency ratios are used to measure the ability of a bank to meet its long term debts. They quantify the size of a bank after payment of tax. While liquidity ratios assess the company's short-term ability to meet current obligations and turn assets into cash quickly, solvency ratios assess the company's long-term health evaluating long-term debt and the interest on that debt. Table 5.8 presents the details of different financial ratios under solvency of Vidyasagar DCC Bank from March end 2009 to March end 2019.

Loan to Asset ratio

Loan to Asset is the ratio of the total loans and advances outstanding as a percentage of total assets. This ratio indicates a bank's aggressiveness in lending which ultimately results in better profitability. When this ratio becomes high, liquidity becomes low and the bank takes more risk, which may lead to higher defaults. Vidyasagar bank is found to follow the middle path by restricting the loan to asset ratio in the range of 40–50 percentage range during the last 11 years.

Leverage Ratio

The banks are public entity. Therefore, they need to be well capitalized to tackle any crisis situation. Understanding the importance of capital, the Reserve Bank of India has been harping on banks for improving the leverage ratio. In the 2010, Basel III established a 3 percent minimum requirement for the leverage ratio. The leverage ratio measures a bank's core capital to its total assets. It is basically a ratio to measure a bank's financial health. The ratio uses Tier 1 capital to judge how leveraged a bank is in relation to its consolidated assets. Tier 1 assets are ones that can be easily liquidated if a bank needs capital in the event of a financial crisis. The higher the tier 1 leverage ratio, the higher the likelihood of the bank withstanding negative shocks to its balance sheet. It can be observed from Table 5.9 that the leverage ratio for Vidyasagar DCC Bank has remained above the 3 percent mark during the last 11 years. The ratio increased from 4.4 percent in 2009 to 5.3 percent in 2019.

Table 5.9: Select financial ratios under solvency of the bank as on 31 March of the year					
(In %)					
Year	Loan Asset Ratio	Leverage Ratio	Debt-Equity Ratio	Capital Gearing Ratio	Debt to Asset Ratio
2009	45.9	4.4	0.8	31.8	0.8
2010	43.0	4.0	0.8	50.7	0.8
2011	44.8	4.4	0.8	59.5	0.8
2012	50.5	6.8	0.7	55.5	0.8
2013	48.3	5.9	0.8	58.2	0.7
2014	50.0	6.5	0.9	31.8	0.8
2015	48.6	6.0	0.9	42.2	0.8
2016	45.5	5.7	1.0	35.8	0.9
2017	41.2	5.5	1.0	30.4	0.9
2018	40.6	4.1	0.9	22.6	0.9
2019	41.0	5.3	0.9	20.7	0.9

Debt to Equity ratio

The '*Debt to Equity ratio*' compares the bank's stake in the business with outside term liabilities. A rising debt-to-equity ratio implies higher interest expenses, and beyond a certain point, it may raise more debt. The Debt to Equity ratio may be defined as the ratio between total debt and own capital. In this ratio, debt represents both deposits and borrowings and own capital takes into account paid-up capital and other reserves. This ratio is considered a key financial metric because it indicates potential financial risk. On the overall, a debt to equity ratio of 1.5 or lower is considered desirable and a ratio higher than 2 is considered less favourable. The debt to equity ratio of the bank remained in the range 0.7 – 1.0, which is well within the safety bar. As on 31 March 2019, the Debt to Equity Ratio for the bank stood at 0.9.

Capital gearing ratio

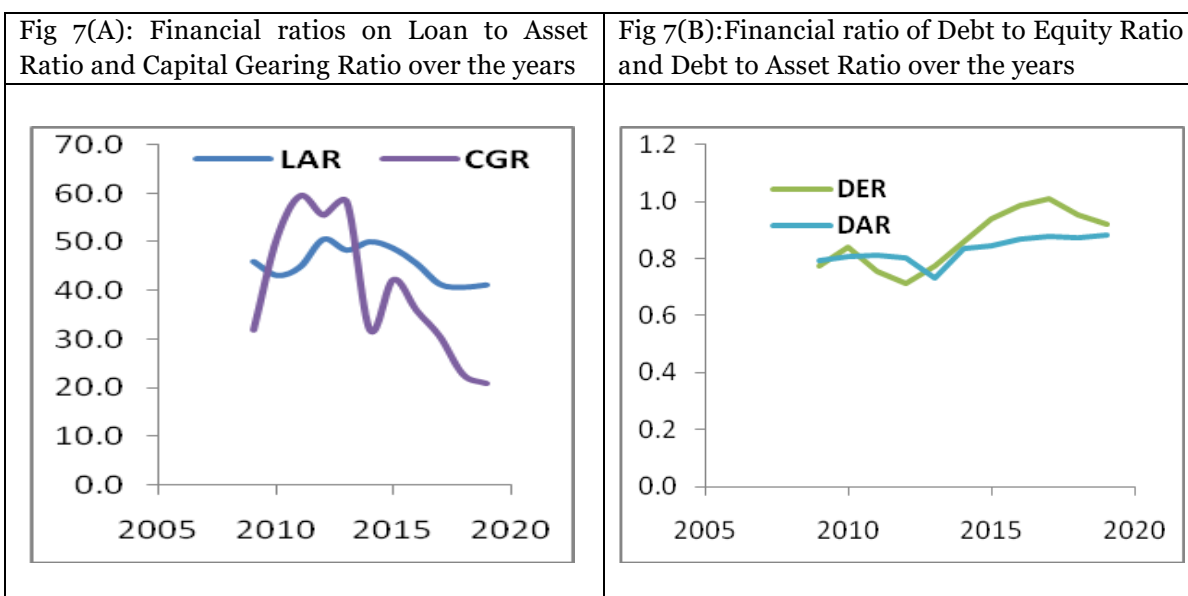
Capital gearing ratio is the amount of debt a bank has relative to its equity. It is a measure of financial risk. It is a useful tool to analyze the capital structure of a bank and is computed by dividing the shareholders' equity by fixed interest bearing liability. A high gearing ratio means the company or bank has a larger proportion of debt versus equity. Conversely, a low gearing ratio means the company has a small proportion of debt versus equity. The financial analysts generally consider a gearing ratio lower than 25 percent as low-risk, between 25 percent and 50 percent as optimal/normal and ratio higher than 50% as high risk for a company/bank. The capital gearing ratio of Vidyasagar bank, which was the maximum at 59.5 percent in 2011, came down significantly to 20.7 percent in 2019 and thus, the bank is now at low risk in terms of total debt.

Debt to Asset Ratio

Debt to Asset Ratio is a leverage measure. This ratio quantifies the percentage of a bank's assets that have been financed with debt. In other words, it explains how a bank has

grown and acquired its assets over time. This is an important measurement because it shows how leveraged the bank by looking at how much of the bank's resources are owned by the shareholders in the form of equity and creditors in the form of debt. In the case of Vidyasagar bank, the Debt to Asset Ratio remained in the range of 0.7 – 0.9 during the last 11 years, which is an ideal size for any bank. A higher ratio indicates a greater degree of leverage, and consequently, financial risk.

Figure 7 presents different financial ratios relating solvency of Vidyasagar DCC bank. It can be observed from Figure 5(A) that Loan to Asset Ratio, Capital Gearing Ratio and Debt to Asset Ratio have been falling and Leverage Ratio, Debt to Equity Ratio rising over years during the last 11 years. The Loan to Asset Ratio and Capital Gearing Ratio in Figure 5 (A) show declining trend and Debt to Equity Ratio and Debt to Asset Ratio show rising trend over time. The figures suggest that Vidyasagar bank has been gathering financial strength over the years.



c. Efficiency ratios

The efficiency ratio is used to analyze how well a bank uses its assets and liabilities internally. The efficiency ratios show the relative productivity of the bank. It provides a snapshot of financial efficiency of the bank. It calculates the income earned for the expenses required to achieve the said income over a given period of time. It is the result of the ratio between operating expenses and the gross income. Table 5.10 presents the select financial ratios under efficiency of the bank. It indicates the profits for every rupee spent. Some of the efficiency ratios are as under:

Cost of Fund and Efficiency ratios

The cost of fund for a bank is the rate at which the bank borrows money from the depositors and others. Over a period of last 11 years, the cost of borrowing for every Rs.100 came down from Rs.6.5 as on 31 March 2010 to Rs.5.8 as on 31 March 2019. The efficiency ratio is calculated by dividing the non-interest expenses with net income. The bank strives hard to lower efficiency ratio since a lower efficiency ratio indicates that the bank is earning more than it is spending. A general rule of thumb is that 50 percent is the

optimal efficiency ratio. Similarly, the overhead efficiency ratio came down from 23.6 percent as on 31 March 2009 to 10.8 percent as on 31 March 2019.

Table 5.10: Select financial ratios under efficiency of the bank as on 31 March of the year					
(In %)					
Year	Cost of fund	Efficiency ratio	Overhead efficiency ratio	Business per employee (Rs.Lakh)	Business per Branch (Rs.lakh)
2009	6.7	33.8	24.7	325.5	2569.1
2010	6.6	30.1	23.6	348.4	2975.7
2011	6.3	39.6	20.1	398.7	3404.7
2012	6.5	44.7	8.2	445.3	3839.3
2013	6.6	50.6	2.5	532.2	4162.3
2014	7.0	39.6	9.3	613.9	4549.2
2015	7.1	39.9	6.5	713.6	5086.5
2016	6.9	31.0	12.9	732.2	5763.8
2017	6.7	34.5	6.4	795.9	6142.6
2018	6.3	36.0	12.7	850.3	6562.8
2019	6.0	41.5	10.8	983.3	7462.6

Business ratio of the bank

During the last 11 years, the business of the bank in terms of deposits and advances increased at an annual rate of 12.1 percent and 9.5 percent respectively. Further, the business per employee and the business per branch of the bank increased at an annual rate of 12 percent and 10.4 percent respectively. Figure 8 presents the growth trend of select ratios under efficiency of the bank.

Fig 8(A): Financial ratios on Efficiency Ratio and Overhead Efficiency Ratio over the years

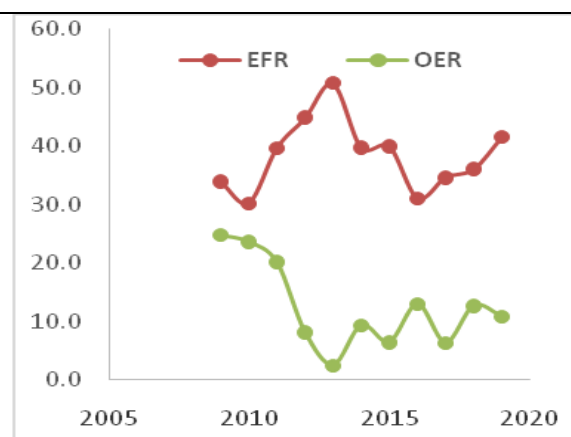
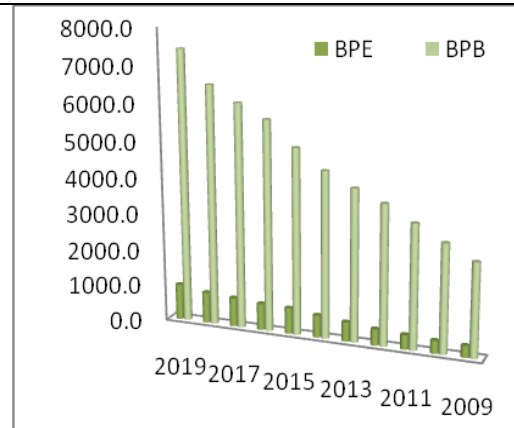


Fig 8(B): Business Per Employee and Business Per Branch of the bank over the years (Rs.Lakh)



d. Risk ratios

The banks are business houses. They accept deposits from public by offering a lower rate of interest and lend the same to customers at a higher rate of interest. Thus, they raise funds by lending money at a higher rate of interest than they borrow it. The difference

between these two is the income for the bank. For banks, profit is a reward for risk bearing. In general, the banks make money in three ways: net interest margin, interchange and fees. By investing and/or giving loans and advances of the depositors' money, the banks take huge risk. Banks are literally exposed to many types of risks. A successful banker is one that can mitigate these risks and create significant returns for the shareholders on a consistent basis. Increasing NPA level is found to be the biggest risk faced by the banks. Equity ratio, NPA to Assets ratio, NPA to Loans & Advances ratio and Capital to Risk Weighted Assets ratio are some of the important risk ratios faced by the banks. Table 5.11 presents the financial ratios under risks faced by the bank from 2009 to 2019.

Table 5.11: Select financial ratios under risks of the bank as on 31 March of the year					
Year	Equity to Asset	Gross NPA to Assets	Net NPA to Advances	Gross NPA to Advances	Capital to Risk Asset
2009	6.7	4.6	4.6	10.1	9.1
2010	6.3	3.8	6.1	8.7	8.9
2011	6.8	3.1	2.5	6.9	9.3
2012	7.4	2.8	2.0	5.6	12.8
2013	6.3	2.7	2.7	5.6	12.3
2014	6.9	2.7	2.0	5.4	12.9
2015	6.4	2.6	2.3	5.4	12.0
2016	6.1	2.4	2.0	5.3	12.5
2017	5.7	2.3	2.0	5.5	13.0
2018	5.7	2.1	1.5	5.1	10.9
2019	5.6	1.9	1.5	4.7	12.0

Equity ratio

The Equity-To-Asset ratio measures the amount of equity the bank has when compared to the total assets owned. To determine the ratio, net worth is divided by the total assets and is expressed as a percentage. The higher the equity-to-asset ratio, the less leveraged the bank is, meaning that a larger percentage of its assets are owned by the bank and its shareholders. Thus, the equity ratio is a general indicator of financial stability. Vidyasagar DCC bank has an equity ratio in the range between 5.6–7.4 percent. Over the year, a declining trend of the ratio is observed. That means, the bank is opening to outer world and is more leveraged.

NPA to Loans & Advances ratio

When a loan is not repaid by the stipulated time, or where the scheduled payments are in arrears, the principal and interest thereof becomes non-performing asset or bad loan. The banking industry in India is seriously affected by Non-Performing Assets. The NPAs are considered as an important parameter to judge the performance and financial health of banks. If a bank has high NPA ratio then its performance is considered weak. It creates a bad effect on the good will and equity value of the bank. The bad loan ratio is calculated by dividing total non-performing assets with total loans and advances outstanding. The Non-Performing Loan or the bad loan ratio is used to compare the quality of loan portfolios of the bank. It causes significant drag on a bank's performance.

A high bad loan ratio is considered as a risk for the bank. Due to effective appraisal, documentation, monitoring and management, the bad loan ratio of Vidyasagar Bank has been reducing over time. For instance, the Gross NPA to Loans & Advances of Vidyasagar DCC bank, which was 10.1 percent as on 31 March 2009 decreased to 4.7 percent on 31 March 2019. Similarly, Net NPA to Advances decreased from 4.6 percent to 1.5 percent. Further, the Gross NPA to Assets ratio, which was 4.6 percent as at end March 2009, decreased to 1.9 percent as at end March 2019. Declining NPA level is always considered as a good sign for the financial health, stability and growth for a bank.

Capital to Risk Weighted Asset Ratio

Capital to Risk weighted Assets Ratio (CRAR) is the ratio of a bank's capital to its risk. It is a measure of a bank's capital. It is also known as Capital Adequacy Ratio, the ratio of a bank's capital to its risk. The Capital to risk-weighted assets ratio is arrived at by dividing the capital of the bank with aggregated risk-weighted assets for credit risk, market risk, and operational risk. The higher the CRAR of a bank the better capitalized it is. The capital to risk-weighted assets ratio is calculated by adding a bank's tier 1 capital and tier 2 capitals and dividing the total by its total risk-weighted assets. Generally, CRAR is expressed in percentage form. As per the RBI stipulation, DCC Banks have to maintain a mandatory minimum CRAR of 9 percent with effect from March 31, 2017. Vidyasagar DCC bank has maintained a high CRAR rating of 12 percent as on 31 March 2019.

It can be observed from Figure 9 that the trend lines of both Gross NPA to Assets ratio and Net NPA to Advances ratio have been declining. Similarly, Equity to Asset Ratio and Gross NPA to Advances are declining. But the Capital to Risk Assets over the year shows a rising trend. Thus, all these ratios demonstrate financial soundness of the bank.

Fig 9(A): Financial ratios of Gross NPA to Advances and Net NPA to Advances over the years

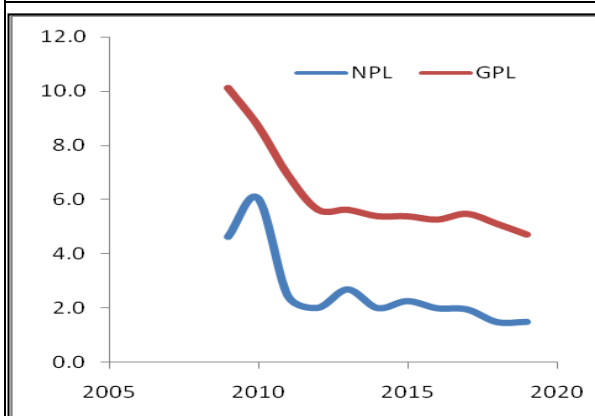
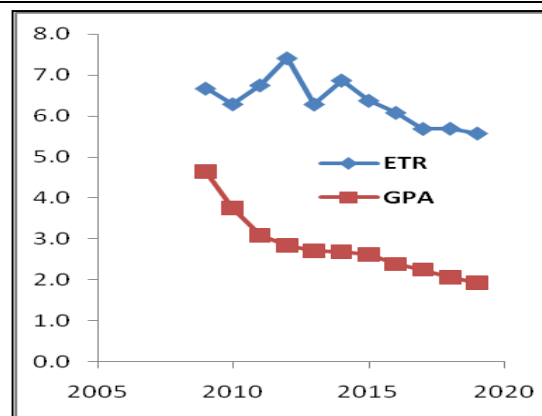


Fig 9(B): Financial ratios of Equity to Assets and Gross NPA to Asset over the years



e. Profitability ratios

Profitability ratios are used to assess a business's ability to generate earnings relative to its revenue, operating costs, balance sheet assets, and shareholders' equity over time, using data from a specific point in time. Table 5.12 presents the some key financial ratios under profitability of Vidyasagar DCC Bank from 2010 to 2019.

Net Interest Margin Ratio (NIM)

The Net interest income is the difference between the interest earned on interest-earning assets and the interest paid on interest-bearing liabilities. When net interest income is divided by average earning assets, it gives net interest margin. The net interest margin is generally expressed in percentage form. When the net interest margin is positive, it indicates that the bank has invested the fund efficiently and when the NIM is negative, then the bank has not invested the fund efficiently. Over the years, the net interest margin of the bank has declined from 3.2 percent in 2009 to 2.1 percent in 2019. Due to increasing competition and imposition of various restrictions, NIM of the bank has been declining. But for improving the financial health of the bank, NIM, which is an important indicator of profitability, the bank must take suitable steps.

Table 5.12: Select financial ratios under profitability of the bank as on 31 March of the year					
(In %)					
Year	Net Interest Margin	Return on Capital Employed	Return on Assets	Return on Net Worth	Return on Equity
2009	3.2	7.4	0.4	5.4	24.4
2010	3.2	9.3	0.5	6.6	31.6
2011	3.0	16.3	0.9	12.2	65.6
2012	3.6	11.2	0.9	11.2	69.5
2013	3.5	8.2	0.6	5.5	50.5
2014	2.6	10.0	0.7	10.5	61.0
2015	2.6	10.0	0.7	10.3	57.4
2016	2.1	9.9	0.6	10.0	54.5
2017	1.9	6.0	0.4	6.1	31.5
2018	1.9	9.6	0.4	7.6	36.7
2019	2.1	10.3	0.6	10.2	47.7

Return on Capital Employed Ratio (RCR)

Return on capital employed (RCR) is a financial ratio that measures a company's profitability and the efficiency with which the company's capital is used. It is a measure which identifies the effectiveness in which the bank uses its capital and implies the long term profitability and is calculated by dividing earnings before interest and tax (EBIT) to capital employed. For example, a RCR of 10.3 percent in 2019 means that for every rupee invested in capital, Vidyasagar DCC Bank generated 10.3 percent in operating income.

Return on Assets

Return on Assets (ROA) measures the asset intensity of a company or bank. The ROA is a financial ratio that helps in analyzing the profitability of a company. It measures the amount of profit a company generates as a percentage relative to its total assets. In other words, it measures how efficiently a company can manage its assets to produce profits. It can be observed from the table that the ROA of Vidyasagar DCC Bank improved from 0.4 percent in 2009 to 0.6 percent in 2019.

Return on Net worth

Return on Net worth (RWR) is a measure of the profitability of a company expressed in percentage. It is calculated by dividing the net income of the company by shareholders' equity. The ratio is useful as a measure of how well a company is utilizing the shareholder investment to create returns for them. The net worth is the amount of assets a business holds less all outstanding obligations. It can be calculated by subtracting total assets from total liabilities. The net worth of a business is also known as its book value or as its owners' equity. The RWR of Vidyasagar bank increased from 5.4 percent in 2009 to 10.2 percent in 2019, which suggests that for every rupee of equity in 'books', the bank generated 10.2 percent return in 2019 as against 5.4 percent return in 2009.

Return on Equity

Return on equity (ROE) expresses the percentage of net income relative to shareholders' equity. A favorably high ROE ratio is often cited as a reason to purchase a company's share. Companies with a high return on equity are usually more capable of generating cash internally and therefore less dependent on debt financing. The ROE of Vidyasagar bank improved from 24.4 percent in 2009 to 47.7 percent in 2019, which is a good sign of improving financial soundness of the bank.

Figure 10 presents different financial ratios under profitability of the bank. It can be seen from the figures that the value of all the financial ratios have fallen, but remained positive. In spite of increasing competition, introduction of stringent rules and regulations and increasing NPAs, the performance of Vidyasagar bank has remained strong and vibrant.

Fig 10(A): Financial ratios of Return on Capital Employed and Return on Net Worth over the years

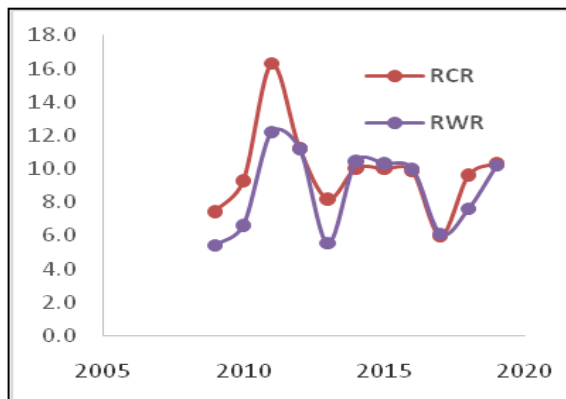
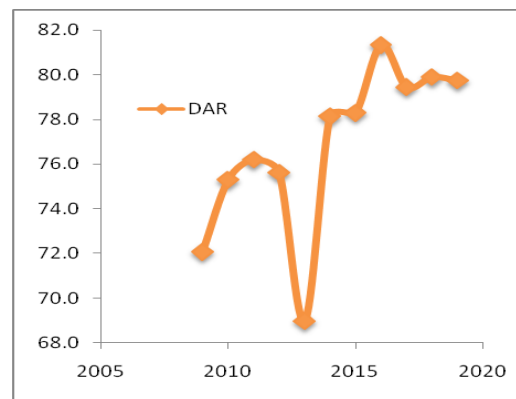


Fig 10(B): Deposit Asset Ratio over the years



f. Other ratios

Fixed Asset-Net worth Ratio (FNR)

Fixed-assets-to-net-worth ratio shows the portion of bank's total assets that is tied up with fixed assets. In other words, it shows the extent to which the funds are frozen in the form of fixed assets. Therefore, this portion of the total assets cannot be used as working capital. A low ratio is indicative of greater solvency because the lower the ratio becomes, the more funds are available to meet current obligations. When the ratio becomes high,

solvency of the bank becomes low. A ratio 0.75 or higher is usually undesirable because it indicates that the firm is vulnerable to solvency problems. High ratios can be interpreted as liquidity problems, because it means the company does not have immediate access to cash. Over a period of 11 years from 2009 to 2019, the FNR for Vidyasagar DCC Bank increased from 3.0 percent to 4.9 percent, which is in a tolerable limit. Table 5.13 presents details of select financial ratios under other ratios of the bank from 2009 to 2019.

Deposit Asset Ratio (DAR)

Generally, deposits carry lower cost compared to other sources of funds such as borrowing for the banks. Higher deposit asset ratio means lower costs of total funds to loan and also more stable the total fund. Deposits to Assets is a ratio that tells the extent of the bank's assets funded from stable source. In the case of Vidyasagar DCC Bank, the deposit asset ratio increased from 72.1 percent in 2009 to 79.7 percent in 2019, which is an ideal ratio for the bank.

Table 5.13: Select financial ratios under other ratios of the bank as on 31 March of the year						
(In %)						
Year	Fixed Asset to Net worth ratio	Deposit Asset Ratio	Liquid Asset Ratio	NIM to Asset Ratio	NPA Prov to Asset Ratio	Non-Interest Income to Total Income Ratio
2009	3.0	72.1	4.1	1.9	2.7	0.4
2010	9.3	75.3	3.7	1.8	1.4	0.3
2011	8.4	76.2	3.5	1.8	2.1	0.4
2012	7.0	75.6	4.2	1.9	1.9	0.2
2013	4.5	69.0	3.3	2.4	1.6	0.1
2014	5.8	78.1	3.2	2.5	1.8	0.2
2015	5.6	78.3	3.9	2.9	1.6	0.1
2016	5.0	81.3	4.0	3.3	1.6	0.2
2017	4.8	79.5	4.4	2.7	1.5	0.1
2018	4.7	79.9	3.9	2.8	1.5	0.2
2019	4.9	79.7	3.8	2.8	1.4	0.2

Liquid asset to Total Asset Ratio (LQR)

Liquidity ratio for a business is its ability to pay off its debt obligations. A good liquidity ratio is anything greater than 1. It indicates that the bank is in good financial health and is less likely to face financial hardships. The higher ratio, the higher is the safety margin that the business possesses to meet its current liabilities. Liquid assets include cash in hand, balance with the RBI, balance with other banks (both in India and abroad) and money at call and short notice. The proportion of liquid assets to total assets indicates the overall liquidity position of the bank. Although the liquid asset ratio declined from 4.1 percent in 2009 to 3.8 percent in 2019, this ratio at 3.8 percent in 2019 is an ideal size.

NIM to Asset Ratio (NAR)

Net interest margin (NIM) measures a bank's profit from its investments with respect to its total investing assets. The financial institutions such as banks and creditors often refer to this ratio

when examining their investment decisions and monitoring their operations' profitability. It is a useful profitability metric for understanding the financial health of the bank. The NIM to Asset ratio of the bank has increased from 1.9 percent in 2009 to 2.8 percent in 2019. This is a positive sign indicating better margin for the bank.

Provision of NPA to Asset Ratio (PNA)

The Gross NPA to the total assets of the bank has declined drastically from 4.6 percent in 2009 to 1.9 percent in 2019. Similarly, NPA provision to total asset of the bank has declined from 2.7 percent in 2009 to 1.4 percent in 2019. As a result, in terms of non-performing assets, the bank is in a comfortable position.

Non-Interest Income to Total Income Ratio (NIR)

There are two sources of income for the banks. One source is lending, i.e., business lending and household lending and the other is fee-based income. Of late, many banks have been diversifying increasingly into fee-earning activities. In other words, any income that banks earn from activities other than their core business, i.e., taking deposits and making loans or from their investments, is classified as noninterest income. This type of income is often referred to as "fee income" since fees constitute the majority of non-interest income. In particular, non-interest income could lead a bank to be less risky if it leads to greater diversification.

In addition, noninterest income is typically described as more steady or stable than interest income. The non-interest income of the bank includes items such as overdraft fees, ATM charges and service charges. In general, the non-interest income to total income for the bank constitutes an insignificant proportion of the total income, but it is an important source of revenue for the bank. In case of Vidyasagar DCC Bank, the non-interest income to total income ratio has come down from 0.4 percent in 2009 to 0.2 percent in 2019. However, it is suggested that the bank must take steps to improve the fee-based income.

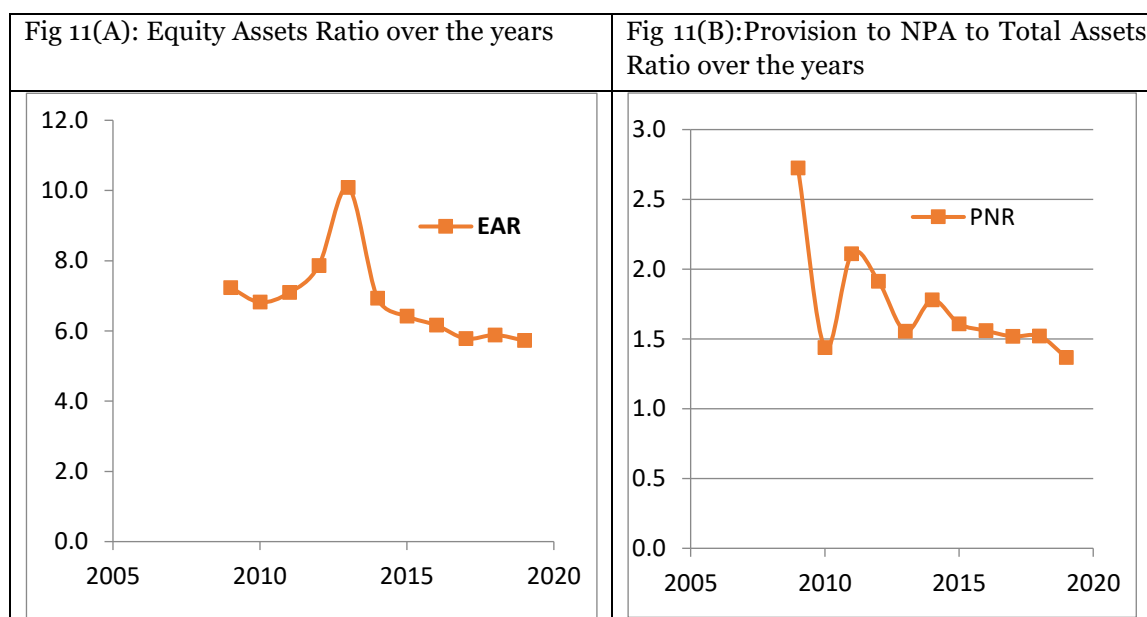


Figure 11 presents the growth trend of Equity Assets Ratio and NPA Provision to Total Assets Ratio of the bank. The table clearly depicts a rising Equity Asset Ratio from 2009 to 2015 and, thereafter, it declined. During 2009 and 2015, the annual growth rate of total assets of the bank at 11.6 percent was more than that at 5.6 percent for shareholders' equity. But during 2016 and 2019, the annual growth rate of equity was 14 percent when it was 10.4 percent for the assets of the bank. Figure 9(B) shows that due to reducing NPA position, NPA provision to Assets of the bank shows a declining trend.

III. Determinants of financial viability and sustainability of the bank

Taking two ratios under profitability as the proxy for viability of the bank, two regression equations were fitted. While in Model 1, Return on Equity (ROE) was taken as the dependent variable, in Model 2, Return on Assets (ROA) was considered as the dependent variable. Both the equations were fitted using R software.

Model 1:: ROE as the dependent variable.

The Return on Equity is a measure of the profitability of a business in relation to the equity. Essentially ROE measures the rate of return that the owners of a company or bank receive on their shareholdings. As ROE is a good indicator of profitability, a regression model was fitted with ROE as dependent variable and a set of ratios from liquidity, solvency, efficiency and risk. But due to the issue of multi-collinearity, many variables were dropped from the model and finally, Credit Deposit Ratio (CDR), Loan to Assets Ratio (LAR) and Cost of Fund (COF) were found suitable to use as independent variables in the model.

Table 5.14: Summary findings of the regression analysis (ROE – the dependent variable)			
Variables	Coefficient values	t-Value	p-Value
Intercept	14.960		
CDR	(-) 3.030	(-) 3.198	0.015
LAR	9.118	4.786	0.002
COF	(-) 30.406	(-) 3.033	0.019
R ²	0.806		
Adjusted R ²	0.722		
VIF	5.148		
F-Value	9.678		0.007
Model Equation::			
$ROE = 14.960 - 3.030 CDR^{**} + 9.118 LAR^{*} - 30.406 COF^{**}$			
Where, * Significant at 1% level and ** Significant at 5% level			

The findings of the regression model are presented in Table 5.14. It can be observed from the table that while LAR is positively associated with ROE, COF and CDR are negatively associated. The Variance Inflation Factor (VIF), a measure of multi-collinearity at 5.148, is found to be in the tolerance limit. Collectively these three variables explain 80.6 per cent of the variation in ROE. The F-statistic at 9.678 is found significant at 1 per cent

level, which suggests a strong association between the dependent variable and the independent variables. When LAR increases by 1 unit, ROE increases by 9.118 units. But when COF decreases by 1 unit, ROE increases by 30.406 units. Similarly, when CDR reduces by 1 unit, ROE increases by 3.03 units. The model thus suggests that the bank must reduce cost of fund and increase the loan to asset ratio to reap the maximum increase in the return on equity. Therefore, the bank may explore various options to avail refinance from NABARD at a cheap rate, which will be helpful in reducing the cost of fund for the bank.

Model 2: ROA as dependent variable

ROE which measures the income earned on each unit of the shareholders capital has some shortcomings. It does not always portray the actual picture of the financial soundness of the bank as it can be influenced by financial leverage. Further, it is affected by policy and regulation of the bank. Therefore, many experts maintain that ROA is the best measure of profitability as it is not distorted by equity multipliers. Therefore, adopting ROA as the dependent variable, regression equation was fitted. All the ratios under liquidity, solvency, efficiency and risk were tried, but due to multi-collinearity problem, most of the ratios were dropped and finally, Credit Deposit Ratio (CDR), Loan to Asset Ratio (LAR) and Cost of Fund (COF) were found suitable for use as independent variables in the model.

Table 5.15: Summary findings of the regression analysis (ROA – the dependent variable)			
Variables	Coefficient values	t-Value	p-Value
Intercept	0.555		
CDR	(-) 0.028	(-) 2.182	0.065
LAR	0.097	3.788	0.007
COF	(-) 0.408	(-) 3.034	0.019
R ²	0.756		
Adjusted R ²	0.651		
VIF	4.097		
F-Value	7.225		0.02
Model Equation::			
$ROE = 0.555 - 0.028 CDR^{***} + 0.110 LAR^* - 0.450 COF^{**}$			
Where, *, ** and *** stands for significant at 1% level, 5% level and 10% level respectively			

The findings of the regression model are presented in Table 5.15. It can be observed from the table that all the three variables have significant influence on ROE. While CDR and COF are negatively associated with ROA, LAR is positively associated. The Variance Inflation Factor (VIF) at 4.097 is found to be in the tolerance limit. Collectively these four ratios explain 75.6 per cent of the variation in ROE, the dependent variable. The F-statistic at 7.225 is found significant at 5 per cent level, which suggests that there exists a strong association between the dependent variables and the independent variable. The model is thus a good fit. When COF decreased by 100 units, ROA increases by 40.8 units.

But when CDR decreases by 100 units, ROA increases by 2.8 units. However, when the LAR increases by 100 units, ROA increases by 9.7 units. Thus, on ROA, the influence of COF is the maximum followed by the influence of LAR and CDR. It is evident from the analysis that LAR is significant at 1 percent level and COF is significant at 5 percent level, therefore, the bank may take steps to reduce COF and increase LAR to gain the maximum benefit.

IV. Areas of Concern and Suggestions for Improvement

Areas of Concern

Based on the study, some areas of concern are as under:

1. Capital is the lifeline of financial soundness of a bank. In the absence of desired level of liquidity, capital is utilized to repay the debts from depositors and other claimants. Therefore, the DCC banks must address the issue for increasing the capital of the bank.
2. The Net Interest Margin of the bank has been decreasing. As NIM is an essential factor for improving income and profit of the bank, the bank may initiate action to reverse the trend.
3. The non-interest expenditure of the bank outweighs its non-interest income. The management must take corrective action for increasing non-interest income and reducing non-interest expenditure.
4. During the last 11 years, the deposit of the bank increased at an annual rate of 12.4 percent, but loans and advances of the bank increased at 10 percent. As a result, the CD ratio of the bank declined on y-o-y basis. Therefore, the bank must explore avenues for investment, which will improve its CD ratio.
5. Banks in general prefer long-term lending over short term lending as the former offers relatively more return. But the share of long term loans in the total lending of the bank has been declining over time. The bank may adopt suitable measure for increasing term lending.
6. Loan to Asset Ratio is an important ratio influencing profitability of the bank. The regression model also depicted that LAR positively impacts both Return on Assets (ROA) and Return on Equity (ROE). But a declining trend of LAR is observed for Vidyasagar DCC Bank. Therefore, the bank may take steps to improve the situation.
7. While the total expenditure of the bank increased at an annual rate of 9.47 percent from 2009 to 2019, total income increased at 9.45 percent. The management of the bank must take curative action to increase income over expenditure.

Suggestions for Improvement

Over the last 11 years, the Vidyasagar DCC Bank has made remarkable progress in reducing NPA and improving assets, business and income. As a result, the bank today stands tall in terms of financial viability and sustainability. But there are some areas that need constant monitoring and follow-up for ever-greening the achievements of the bank. The management of the bank may examine the possibility of implementing the following suggestions for improving the financial health of the bank:

1. Capital is very important for the financial soundness of the bank, so the bank may increase the share capital by increasing the number of shareholders in the bank and also increasing per capita share contribution.

2. The bank may explore new areas for financing. Business diversification in favour of long-term investment may be explored by the bank. This will result in increasing net interest margin, loan asset ratio, CD ratio, return on asset, return on equity and profit.
3. The bank may take steps to reduce non-interest expenditure.
4. Of late, use of technology in agriculture has been increasing. The Government of India and the State Governments have been supporting formation and nurturing of Self Help Groups, Joint Liability Groups and Farmer Producer Organisations/Companies. The experience of the banks in financing SHGs and JLGs is encouraging. The Vidyasagar DCC Bank has also financed a large number of SHGs. Recovery performance of most of the SHGs is also good. Therefore, the bank may explore the possibility of financing such groups in a big way, which will enhance CD ratio of the bank.
5. The bank may explore the possibilities for increasing fee-based income. For the same, the bank may tie up with trading units, commercial banks and other such agencies.
6. The bank must explore means to cut cost and enhance income so as to improve its financial position.

Way forward...

Rural credit cooperative structure in India is one of the largest financial systems in the world. It plays an important role in financing farmers and others in rural areas. But rising expenditure, declining net interest margin and CD ratio and low capital base are some of the concerns faced by the cooperative banks. As a result, the share of the cooperative banks in the Ground Level Credit (GLC) flow has been declining over the year. As more than half of the rural people depend on the cooperatives for their credit needs, the scope for improving their governance, operational flexibility and financial health must be explored.

The analysis of Vidyasagar DCC Bank shows that the cooperative banks must take steps to improve the situation by financing low-risk and high-return activities. Of late, financing SHGs has become a sign of promise in terms of loan off-take and recovery. It is expected that demand for long-term loan by the Farmer Producer Organisations/Companies for custom hire centers, post-harvest management, processing and marketing will be the potential source of financing by the cooperative banks. However, the management of the bank must adopt various cost-cutting and income-increasing measures to improve the viability of the bank. Pro-active participation, good governance, professionalism and close link with the clientele would go a long way to improve the financial health of the cooperative banks.

Chapter VI

Summary and Conclusions

Rural cooperatives play a vital role in providing financial services to farmers and others in rural areas. Despite various regulatory measures put in place, weak financial condition, lack of professionalism, weak corporate governance and unwillingness in adopting technology are some of the concerns that continue to plague the sector. As a result, their importance in purveying financial services to rural clientele has been declining. In short-term cooperative credit structure, District Central Cooperative (DCC) Bank acts as the link between State Cooperative Bank and Primary Agricultural Cooperative Societies (PACS). Therefore, the present work intends to study the financial viability and sustainability of the cooperative banks in general and Vidyasagar DCC Bank in West Bengal in particular.

Methodology

- The study was based on secondary data. Required information was collected from the bank for the last 11 years.
- Methods such as Trend line, Compound Annual Growth Rates (CAGRs), financial ratios, Correlation and Regression were applied to understand the viability and sustainability of the bank.

Growth of the cooperative banks under ST structure

- The share of share capital in owned fund of StCBs and DCCBs, which were 13.7 percent and 25.4 percent in 2008-09, increased to 28.4 percent and 31.1 percent respectively in 2017-18.
- During the same period, the share of share capital of the PACS decreased from 59.4 percent to 45.7 percent. The NPA to Loan outstanding of StCBs decreased from 11.2 percent in 2008-09 to 4.72 percent in 2017-18 and that of the DCC banks decreased from 17.89 percent to 11.2 percent.

DCC Banks in West Bengal vis-à-vis All India

- In terms of the size of rural population, West Bengal is one of the leading States in India after Uttar Pradesh and Bihar.
- In West Bengal, there are 17 DCC Banks spread across 30 districts. As on 31 March 2018, the average membership in DCC Banks in West Bengal was 2,510 as against 8,222 members at All India level.

Growth & Status of DCC Banks in West Bengal

- During the last five years, while the share capital, net worth and investments of all the 17 DCC Banks in West Bengal increased by more than 10 percent per year, the annual growth rate in loans and advances at 6.8 percent was lower than the growth rate in deposits at 8.5 percent.
- Profit of the DCC Banks decreased from Rs.61.13 crore in 2015 to Rs.6.38 crore in 2019 at an annual rate of 31.2 percent, but the NPA position of the DCC Banks has improved. CRAR of these banks increased from 7.5 percent in 2015 to 11.9 percent in 2019, but the CD Ratio of these banks has been constantly decreasing.

Growth & Performances of Vidyasagar DCC Bank

Resource mobilization

- During the last 11 years, deposits of banks constituted more than 85 percent of total resources and the balance 15 percent of the resources were occupied by share capital, reserves and surplus.
- Year-on-Year growth rates of owned fund, deposits and borrowings of the bank were 8.9 percent, 20.6 percent and 7.4 percent respectively in 2010 over 2009 and these rates in 2019 over 2018 were 11.1 percent, 13.2 percent and 20.7 percent respectively.

Performing & Non-Performing Assets

- In terms of performing assets and the provisioning of NPAs, the bank is in a comfortable position. The Gross NPA to loans and Advances, which was 10.1 percent in 2009, decreased to 4.7 percent in 2019. Similarly, the Net NPA to loans and advances decreased from 4.6 percent in 2009 to 1.5 percent in 2019.
- The sub-standard assets, doubtful assets and loss assets of the bank decreased from 1.7 percent, 4.1 percent and 0.2 percent in 2013 to 0.8 percent, 4.0 percent and 0.1 percent in 2019 respectively.

Income, Expenditure & Net Income

- During the period between 2009 and 2019, income, expenditure and earnings after interest and tax increased at an annual rate of 9.2 percent, 9.4 percent and 6.2 percent respectively.

Viability & Sustainability of Vidyasagar DCC Bank

Liquidity ratios

- Out of the five select ratios under financial liquidity of the bank, increasing growth trend was observed in Cash to Demand Deposit Ratio, Cash to Assets Ratio and Working Fund to Asset Ratio.
- Although the growth trend for Cash to Deposit Ratio declined from 5.7 percent in 2009 to 4.8 percent in 2019, it is in tolerable limit. But it is a matter of concern for CD ratio. The CD ratio declined from 63.7 percent in 2009 to 51.5 percent in 2019.

Solvency ratios

- Increasing Loan to Asset ratio brings in improved profitability for a bank. But in case of Vidyasagar DCC Bank, the LAR came down from 45.9 percent in 2009 to 41 percent in 2019.

Efficiency ratios

- Cost of Fund and Overhead Efficiency Ratio for the bank decreased from 6.7 percent and 24.7 percent in 2009 to 6.0 percent and 10.8 percent in 2019. Further, Efficiency Ratio for the bank improved from 33.8 percent in 2009 to 41.5 percent in 2019. Further, over the years, Business per Employee increased.

Risk ratios

- Vidyasagar DCC bank has shown signs of improvement in different financial ratios under risk. The Gross NPA to Advances, Net NPA to Advances and Gross NPA to Assets of the bank have been declining over the years.

- Capital to Risk weighted Assets Ratio increased from 9.1 percent in 2009 to 12.0 percent in 2019.

Profitability ratios

- Four out of five select ratios under profitability such as Return on Capital Employed, Return on Assets, Return on Net Worth and Return on Equity were found rising over the years from 2009 to 2019. However, Net Interest Margin Ratio for the bank declined from 3.2 percent in 2009 to 2.1 percent in 2019.

Determinants of viability and sustainability of the bank

- Various ratios under liquidity, solvency, efficiency, risk and profit were considered for identifying the determinants of viability and solvency of Vidyasagar DCC Bank.
- Two regression models were fitted. In model 1, it was found out that CD Ratio, Loan Asset Ratio and Cost of Fund influence Return on Assets significantly. Similarly, in model 2, CD Ratio, Loan Asset Ratio and Efficiency Ratio were found to influence Return on Equity significantly.

Areas of Concern

1. Capital is very important for the financial soundness of the bank. In the absence of desired level of liquidity, capital is utilized to repay the debts from depositors and other claimants. Therefore, the DCC banks may address the issue for increasing the capital of the bank.
2. The Net Interest Margin of the bank has been decreasing. As NIM is an essential factor for improving income and profit of the bank, the bank may initiate action to reverse the trend.
3. It is a matter of concern that non-interest expenditure outweigh non-interest income of the bank. The management must take corrective action for reversing the trend.
4. Over the years, the CD ratio of the bank has been declining. The bank must explore new areas for financing.
5. Term lending is preferred over short term loan as the former offers relatively more return. But the share of long term loans in the total lending of the bank has been declining over time. The bank may adopt suitable measure for financing long term projects and increase the proportion of long term loan in the total loan portfolio.
6. The regression model shows that Loan to Asset Ratio (LAR) improves the profit of the bank by influencing Return on Assets (ROA) and Return on Equity (ROE). But it has been decreasing over the years. Therefore, the bank may take steps to improve the situation.
7. The growth rate of expenditure of the bank at 9.47 percent per year was found little more than that of income at 9.45 percent per year. Therefore, the bank may take curative actions to reduce expenditure and increase income of the bank.

Suggestions for Improvement

1. As capital is very important for the financial soundness of the bank, the bank may increase the share capital by increasing the membership and per capita share capital.
2. The bank may explore long-term and new activities for financing, which will be useful in increasing net interest margin, loan asset ratio, CD ratio, return on asset, return on

equity and profit. Further, the bank may take steps to reduce the non-interest expenditure.

3. Of late, use of technology has been increasing in agriculture. The number of Farmer Producer Organisations/Companies has also been increasing. The bank may explore the possibilities in financing FPOs in infrastructure creation, which will enhance loan portfolio of the bank and also increase farmers' employment and income.
4. The bank may explore the possibilities for increasing fee-based income. For the same, the bank may tie up with other agencies such as Commercial Banks, Trading & Commercial Units and other such agencies.
5. The bank must explore means to cut cost and enhance income so as to improve its financial position.
6. Annual growth rate of expenditure of the bank at 9.47 percent was little more than the income at 9.45 percent. Therefore, the bank must take curative actions to reduce expenditure and increase income of the bank.



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NABARD Regional Office
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Ph.: 040-23241155

Corporate Office
Ground Floor, D Wing, NABARD HO
C-24, G Block, Bandra-Kurla Complex
Mumbai - 400051, Maharashtra
Ph. : 022-26539486

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