An empirical analysis of the factors influencing the financial performance of an Apex Cooperative Bank : A Case Study

Dr. Debdas Rakshit
Reader, Dept. of Commerce
The University of Burdwan

Dr. Sougata Chakrabarti
Asst. General Manager
The West Bengal State Cooperative Bank Ltd.
Kolkata

Introduction

Cooperative Banks in India have experienced major transformation since independence. Since the primary role of the cooperative banking system was to channel funds to the rural sector, efficiency and profi-tability were not among top priorities. When economic and financial sector reforms were initiated in 1991 for interna-tional economic integration and globalization of financial market, the extension of reforms to cooperative banking institu-tion could be treated as enabling the cooperative banks to function on sound lines at par with other banks.

The impact of the reform measures is reflected in an improvement in profitability, financial health, soundness and overall efficiency of the banking sector. Ever since the cooperative movement was launched in the country it was realized that there should be a strong bank at the state level to coordinate the activities of the Primary Agricultural Credit Societies (PACSs) and Central Cooperative Banks (CCBs)/ District Central Cooperative Banks. (DCCBs) in the state. Such an apex bank is to work as a final link in the chain between the PACs and CCBs/DCCBs on the one hand and the money market on the other hand.

The State Cooperative Banks were organised in India initially on the recommendations of the Maclagan Committee of 1915, but they gained prominence only after independence, primarily on the basis of the recommendations of all India Rural Credit Survey Committee. The apex bank in the cooperative structure ensures coordination of activities of the PACs and the CCBs/DCCBs in the state. The apex cooperative institution not only attracts deposits from the richer urban centers but also serve as a channel between the cooperative movement and the money market.

In West Bengal the apex cooperative institution is the combination of both two and three tier structures. The West Bengal State Cooperative Bank (WBSCB)— a scheduled Apex Cooperative Bank of the State of West Bengal—came into existence in 1918. Originating as a Cooperative Bank basically for lending to agricultural sector, it encompasses now in its periphery almost all the activities and functions of a commercial Bank like deposit mobilisation, issuing all types of loans and advances, providing ancillary services like locker renting, fund transfer, domestic treasury operation etc., and as the leader of the cooperative movement rendering varie-gated service to its affiliated District Central Cooperative Banks(DCCBs)/Urban Coop Banks (UCBs), as well as doing the liaison work for integrating and developing the Cooperative Banking families including Land Development Banks and Primary Societies etc. Since independence the apex cooperative bank of West Bengal made remarkable progress in the various segments of state economy.

WBSCB is a federal cooperative and its objective is to serve the member societies e.g. DCCBs, CCBs and PACs at the same time. As per BR Act, 1949, WBSCB is a scheduled bank. Since its inception, WBSCB engaged itself in improving the efficiency of cooperative credit system in West Bengal. Over the years, WBSCB is viewed as the common man's bank. It has played a key role in rural financing in the state of West Bengal. A remarkable feature of its performance over the past few decades has been the expansion of its retail network in rural as well as urban areas. The growth of branch network has enabled WBSCB to expand the banking activities in the unbanked areas and mobilize rural savings. With so many constraints on the operation of cooperative bank it is natural that the financial performance of this apex institution like other cooperative banks of similar structure has been a matter of concern.

Objectives

The focus of this paper is to enquire factors that influence the performance of the apex Cooperative Bank in West Bengal. Issues concerning Cooperative Banks are an area that is less visited empirically in comparison of other banks. A model based approach has been pursued to identify the factors that are responsible for the performance of this apex Cooperative Bank. The outcome may help in focusing the attention for a pragmatic solution for other Cooperative Bank. A reasonable long period for analysis is considered for getting more dependent result.

The rest of the paper unfolds as :

A brief review of the relevant literature is furnished for identifying the factors that influence the performance of banks. The data sources along with identification of inputs and outputs have been reported in database and methodology portion. Subsequently an outline of the

methodology and its empirical variant that have been used is discussed. Next part consists of result of empirical analysis. Concluding observations are discussed in the final part.

Brief Review of Literature of factors that affect performance of bank

The West Bengal State Cooperative Bank Ltd., as an apex agricultural lending institution in the state of West Bengal, primarily focuses on rural economy but, at the same time, has a commercial orientation. Starting with the seminal contribution of Haslem (1968), the literature recognizes that internal set of factors have an influence in the performance of the bank. Internal factors are often bank specific and originate from balance sheet and profit and loss account of the concerned Bank. Size and capital are some of the typical internal determinants [Akhavein et al (1997), Short (1979), Goddar et al (2004)].

The liberalization of the finance sector in India has exposed Co-operative banks to a different economic environment that is characterized by increased competition and new regulatory requirements. Risk manage-ment is of crucial importance for a bank's financial health. Banks may prefer to increase liquid holding in order to reduce risk. Amandeep (1991,pp 43-45) in the paper Determinants of Banks' Profitability identified profitability of banks was determined and affected mainly by two factors—spread and burden. Molyneux and Thoraton (1992) found a negative and significant relationship between level of liquidity and profitability. Miller and Noulas (1997) has found that credit risk has a negative impact on profitability.

In contrary, opposite result was reported by Bourke (1989). Conflicting findings may be due to different elasticity of demand for loans in the samples used in the studies (Guru, Strauton and Balashanmugam, 2004). Financial institutions that are exposed to high risk loans have produced lower returns (Athanasoglou, Brissimis and Delis, 2005) due to accumulation of unpaid loans. Fund management, capital and liquidity ratios, credit deposit ratio, loan loss expenses are some of the internal determinants found in different works [Bell, Murphy (1969); Short (1979); Kwast and Rose(1982)].

Saveeta Bhatia and Satish Verma (1998, pp 433-445) made an attempt to determine empirically the factors influencing profitability of public sector banks in India by making use of the technique multiple regression analysis. Expense management is an important determinant of a bank's profitability. Efficient management of expenses improves bank's profitability. Bourke (1989), Molyneux and Thoraton (1992) found better quality management and profitability go hand in hand. Sultan Singh (2001), in his work, revealed that total income, interest earned, other income, spread, total expenses, interest expended, operating expenses and establishment expenses are comparatively more consistent of Indian commercial banks in the post reform period.

Cooperative Banks play an important role in meeting growing credit needs of rural India. The performance of these banks, however, has been much less than satisfactory. In order to revive and revitalize the Cooperative Banks, the Government of India constituted a task force (Vaidyanthan Committee, 2004) which recommended legal reform. The Committee also recommended creation of basic infrastructure for carrying out business including computerization.

One of the reason why Cooperative banks keep slipping back into the red is because of the riskiness of the underlying activity—particularly agriculture. If the issue of risk is not addressed adequately the Cooperative banks are left with clients that are not serviced by commercial banks, are intrinsically vulnerable and, therefore, the institutions will turn out to be vulnerable (Sriram, 2005).

To evaluate the performance of WBSCB, updated methods have been used in the study. Keeping in mind that inflation may affect the costs and revenues of WBSCB, the performance indicators are expressed in the ratios for avoiding the effect of inflation in the performance indicators' growth and stability. The performance of WBSCB have been evaluated by measuring the growth, stability, and mean of different related liquidity, loans and advances, expenses, net income and investment.

Data Base

The database has been collected from the published annual reports of WBSCB for the period 1972-73 to 2007-08. The study deals with the financial perfor-mance of WBSCB and to get deeper insight into the internal factors contributing to performance of cooperative banks. The period of analysis has covered both pre- and post- liberalization period, i.e from 1972-73 to 2007-08. The other sources of data are from :

i. CCB Conference Report of WBSCB
ii. RBI Bulletin/Notification/publications
iii. NABARD publications
iv. Publications of The Clearing Corporation of India Ltd.

Methodology
Enquiring the impact of past year's performance on present year

The multiple regression analysis is to be administered to analyze the impact of net profit margin. Net income as a percentage of total assets (**nipta**) is taken to be the indicator of financial performance of WBSCB. It measure how efficiently and profitably WBSCB is making use of its total assets.

The performance of WBSCB is depending on both internal and external factors. The internal factors are represented through the balance sheet information of the bank. Here we have considered only internal factors. WBSCB's source of income is primarily from lending and investment. Balance sheet management on part of WBSCB requires a judicious mix between lending and investment. Loans and advances as a

percentage of total assets (**lapts**) and investment in securities as proportion (**inspts**) of total assets are included as explanatory variable.

WBSCB is involved in the business of transforming short term deposits into long term credit, so it would be constantly faced with maturity mismatch. The bank holds liquid assets which can be easily converted to cash. However, liquid assets are often associated with lower rates of return. Hence high liquidity is expected to be associated with low return. The impact of liquidity (**lipta**) is taken as a factor which is represented through cash in hand as a proportion of total asset. Another factor is significant—efficiency of expense management. A total expense is the sum of interest expense and operating expenses. While rising operating cost to support increasing business activities is natural, increasing operating costs to support increasing relative to non-operating expenses is a matter of concern and reflects poor expense management. The impact of expense management on balance sheet health, the variable operating expenses as a percentage of total expenses (**oepta**) has been taken as an independent variable.

To find the impact of internal factors over the years the following regression model has been used :

nipta i = α * lipta$_i$ + β* inspts$_i$ + γ * lapts$_i$ i + δ * oepta$_i$ + ε_i ...... (1)

where $\alpha, \beta, \gamma,$ and δ are the parameters to be estimated.

Past year's performance has an impact in present year's performance and non-incorporation may blur the impact of other variables on net income on Total asset (nipta). Lagged value of nipta has been considered in the extended equation :

nipta$_i$ = α_0 nipta$_{i-1}$ + α_1* lipta$_i$ + α_2 * inspts$_i$ + α_3 lapts$_i$ + α_4 oepta$_i$ + ε_i ..... (2)

where $\alpha_0, \alpha_1, \alpha_2, \alpha_3$ and α_4 are the parameters to be estimated.

When lagged dependent variable is introduced as explanatory variable, chances of auto-correlation of error term and the lagged variable is there. The presence of auto-correlation does not cause a bias in estimation of model coefficients, but reduces the efficiency of the model. By applying Prais-Winsten statistical methods, auto-correlation effect is removed.

Sub periods' growth

The difference between the estimated growth rate over the entire period and the estimated growth rates over the two sub-periods has been observed. In order to address this problem, computation of kinked-exponential growth rates has been done. Here the trend lines of the two sub-periods are forced to meet at the midpoint that divides the sub-periods. The rationale for beginning with 1972-73 and 1990-91 in the two sub-periods is because both are considered as normal years and have been identified as base years. This choice was basically done to enable a comparison between pre-reform period and post-reform period.

The period since 1990-91 broadly refers to the post-reform period and it might be appropriate to examine happenings after the reforms permitting some lag effects. It has to be enquired whether the growth rates of the two sub-periods have differed significantly (statistically) or not. For the period t = 1 , . . . to n is broken at point k. The kinked point shifted to origin i.e. 1991 for normalizing t denotes the time of the whole period.

Discontinuous growth rate estimates for the two resulting sub periods could be derived by estimating them separately or, equivalently, by fitting the single equation :

Single-Kink Model

$$Iny_t = \alpha_1 D_1 + \alpha_2 D_2 + (\beta_1 D_1 + \beta_2 D_2) t + u_t \quad (1)$$

where D_i is a dummy variable which takes the value 1 in the jth subperiod and 0 otherwise.

Discontinuity between the two trend lines can be eliminated via a linear restriction such that they intersect at the break point k :

$$\alpha_1 + \beta_1 k = \alpha_2 + \beta_2 k \quad (2)$$

Substituting for α_2 (and noting that $\alpha_1 D_1 + \alpha_1 D_2 = \alpha_1$), we get the restricted form :

$$In\ y_t = \alpha_1 + \beta_1 (D_1 t + D_2 k) + \beta_2 (D_2 t - D_2 k) + u_t \quad (3)$$

The OLS estimates of b$_1$ and b$_2$ from (3) give the exponential growth rates for the two sub-periods. There is a kink between the two trend lines whenever $b_1\ ^1 b_2$.

Major Findings

When lagged dependent variable is introduced as an explanatory variable in equation (2) the outcome of the estimated coefficients are shown :

nipta$_i$ = 0.837* nipta$_{i-1}$ − 0.0706* lipta$_i$ + 0.0458* inspts$_i$ − 0.0585*lapts$_i$ + 3.09*oepta$_i$ + 1.25

Last year's performance has positive impact in the present year performance. Investment contributed positively to nipta. Loans and advances have negative impact on the nipta. Liquidity has negative impact on the nipta. Operating expenses have significant positive impact on the financial performance of WBSCB.

Growth analysis of the entire period and two sub-periods : The estimated growth rate of the entire period and kinked exponential growth is reported :

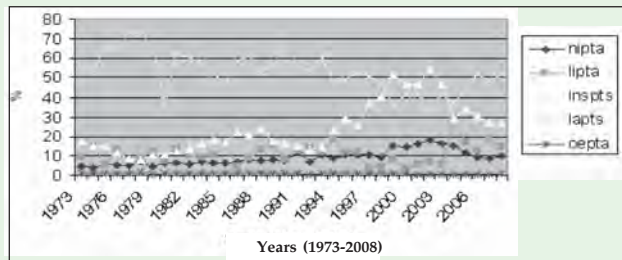| Parameter	Overall Growth	Kinked 1st sub-period growth	Kinked 2nd sub-period growth
Ratio of Net Income to Total Assets (%)	(−)3.22	(−)4.15	1.78
Ratio of Investment in Securities to Total Assets (%)	7.51	6.77	2.93
Ratio of Loan and Advances to Total Assets (%)	(−)4.24	(−)1.15	(−)1.37
Ratio of Operating Expenses to Total Expenses (%)	(−)6.66	(−)1.93	(−)3.67
Efficiency ratio	(−)3.32	(−)5.93	(−)3.26
Credit Deposit ratio (%)	(−)3.97	(−)1.76	(−)2.03

The estimated growth rate of nipta over the entire period is negative. It means that the bank is successful in asset creation but not in net income generation. But in the post-liberalization period the bank's performance in net income generation is marginally improved because this sub-period's growth is positive. The estimated growth rate of investment over the entire period is significantly positive. It means that the bank is successful in increasing investment portfolio as a proportion to total asset.

During the post-liberalization period the pace of

growth minimizes in comparison the to first sub-period. The growth of loan disbursement as a percentage of total assets is decreasing. The estimated growth rate of loan as a proportion of total assets over the entire period is negative. It means that the bank's loan portfolio's growth has no match with total asset growth. It is to be noticed that the during the post- liberalisation sub-period the negative growth is higher in comparison to pre-liberalisation sub-period.

The efficiency ratio is calculated by dividing overhead expenses by the sum of net interest income and non-interest or fee income. A decrease in efficiency ratio is viewed as positive. It is estimated that the efficiency ratio is decreasing over the years. In the pre-liberalisation years it is found that the decreasing trend was higher compared to post-liberalization years. The estimated growth rate of credit deposit ratio over the entire period is negative. It means that the bank is successful in deposit mobilization but not in net loan disbursement. In the post-liberalization period the bank's loan disburse-ment growth is lesser in comparison to pre-liberalization period as proportion to total asset.

The outcomes of the study disclose that pre-liberalization sub-period's growth is higher in comparison to post-liberalization sub-period. It is also noticed that the overall growth rate has no match with the sub-period's growth rate. It means growth rate of the parameters fluctuates in different sub-periods.

Years (1973-2008)

Conclusion

In this study, we have made an attempt to identify the impact of internals factors in an apex cooperative bank's net income. This paper argues that to identify the impact of internal factors in apex cooperative banking operation it is imperative to model a function performed by bank.

In presenting this argument, we have used regression model to measure the impact of internal factors. The analysis is based on regression model used on chronological data from 1972-1973 to 2007-2008. The study has brought out that the impact of some explanatory variables is significantly high; while some other variables are found with low impact on the net income as a percentage of total assets. The outcomes provide useful lesson about the impact of last year's performance on present year's performance.

Net income of the bank is influenced by several factors but the result of the extended equation has shown loan & advances are areas of concern of the apex cooperative bank. Loan and advances have a negative impact in the net income of the bank, but to a lower extent. The study divulges the importance of operating expenses, loans, investment and liquidity of the cooperative bank.

Nowadays, cooperative banks are having ample fund, but the required phenomenon is the effective utilization of funds available to the bank at a lower cost. If the cooperative banks are highly efficient in utilizing their fund at reasonable operating expenses, they can maximize their net income.

We can conclude from the above that control of operating expenses will improve net income of cooperative bank. One of the contributions of this paper to the empirical literature is that it demonstrates regression analysis could be successfully applied to cooperative banking systems. Despite certain concerns the analysis provides a plausible outcome. ❐