FINANCIAL MANAGEMENT PERFORMANCE OF PARISH-BASED CREDIT UNION COOPERATIVES IN BANGLADESH

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In Partial Fulfillment of the Requirements for the Degree of Master of Science in Commerce Major in Accounting

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Abstract

This study is the first research to compare Bangladesh Parish-based credit unions (PBCUs) financial ratios with the World Council of Credit Union, Inc. (WOCCU) standard. It is the primary aim of this study to examine the financial management performance of Bangladesh Parish-based credit unions, using PEARLS method. The specific objectives are as follows: (1) to determine the descriptive statistics of the PEARLS criteria of Parish based Credit unions, (2) to compare financial and management performance among parish-based credit unions using PEARLS criteria and to test whether there are significant financial differences among them, (3) to evaluate and examine the financial indicators of PEARLS of Parish-based Credit unions and compare with the WOCCU financial standard, and (4) to show the trend analysis of the PEARLS indicators.

Primarily, this study attempts to help the Management or Executive Board of the PBCUs to be more aware of the present financial performance of their respective firms and utilize financial measurement as a major component in decision-making. Further, it endeavors to bring more awareness among stakeholders and members about their financial dealing with PBCUs. Particularly, they will be informed about the growth rating, financial performance and management capability, among others which will enable them to take appropriate improvement decisions.

The key methodological tool used by the study is the PEARLS (P=Protection, E=Effective financial structure, A=Asset quality, R=Rates of return and costs, and L=Liquidity and S=Signs of growth) financial monitoring system, which has been designed and developed in Latin America by the World Council of Credit Unions, Inc. since 1990. The financial management performance of each of the 15 PBCUs was examined over the time period 2000 to 2006 or a total of 105 observations. Audited financial statements have been used, namely, Balance Sheet, Profit and Loss Statements and Receipt and Disbursement Statement. The One-Way Analysis of Variance (ANOVA) was utilized to test whether there are significant differences on PEARLS criteria of the sample PBCUs. Descriptive statistics and growth trends were also computed to aid the accurate interpretation of the results.

Results show that some of the PBCUs ratios maintained the WOCCU standard financial indicators and others need more attention to reach the international standard. Further, ANOVA results show, that P, E, A, L ratios with F values of 1040.50, 4.018, 8.342 and 69.923, respectively show significant differences with p-values significant at 0.05 probability level. On the other hand, the PBCUs R and S ratios denote no significant differences across the time periods with F values of 1.350 and 0.848, respectively, which are above the 0.05 significance level.

The study yielded mixed results of financial performance of PBCUs: 11 negative indicators which could not maintain WOCCU standard and 18 positive indicators which maintained WOCCU standard. PBCUs encounter positive implications of the results for assets structure and loan portfolio. It has negative results on delinquency, assets protection, non-earning assets, financing of non-earning assets and liabilities and capital structure. They have mixed results on profitability, growth, and liquidity reserves. The PEARLS method is a more useful measurement tool for Bangladesh PBCUs to maintain the WOCCU standard of international financial management.

Key words: Financial Management performance, Assets Protection, Effective financial structure, Asset quality, Rates of return Liquidity growth.

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ACRONYMS

ACCU	The Asian Council of Credit Unions.
ANOVA	Analysis of Variance
CCCU Ltd Dhaka	The Christian Co-operative Credit Union Limited, Dhaka.
CCULB	The Cooperative Credit Union League of Bangladesh
CSC	The Congregation of Santa Cruz
CU	Credit Union
CUs	Credit Unions
Fr	Father (Title for catholic Priests)
PBCUs	Parish-based Credit Unions
PEARLS	P= Protections, E=Effective financial structure, A=Assets quality, R=Rates of return and cost, L=Liquidity, S=Signs of growth
RDS	Receipt and Disbursement Statement
St	Saint
TK	Taka
USAID	U. S. Agency for International Development
USD	U. S. Dollar ($)
WOCCU	The World Council of Credit Unions, Inc.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Credit Unions (CUs) are co-operative financial institutions. The idea of the consumer cooperative system was set up in 1844 by weavers and laborers of Rochdale, England (Rozario, Alexander, 2005). Friedrich W. Raiffeissen established the cooperative credit institutions in 1852 in Germany as charitable organizations which aim to help the poor and the needy. As they became more self-help oriented, the credit societies grew rapidly throughout Europe to give rise to the credit union movement, as it is known today throughout the world (Ouattara, 1998).

The World Council of Credit Unions Inc. (WOCCU) is the worldwide organization of CU s and similar cooperative financial institutions. Members of WOCCU include seven regional and national credit union confederations serving Africa, Asia, Australia, Canada, the Caribbean, Latin America, and the United States. There are four freestanding leagues representing Fiji, Great Britain, Ireland, and New Zealand. According to a credit union study, credit unions first revealed legally registered entities in

Western Europe at the end of the 19th century (Branch, 1999). In 1900, Alphones Desjardins founded a credit union at Levis in Quebec, Canada. Desjardins later established credit unions in the United States with the help of Edward A Filene and Roy Frederick Bergengren (Rozario, Alexander, 2005). Credit unions have developed in rural and urban areas in Africa, Asia, Caribbean, Eastern Europe, and Latin America during the latter half of the twentieth century. Gradually, many counties all over of the world have accepted the credit union movement as it proved to be an effective method to vastly alleviate poverty.

There are 43,147 registered credit unions in 91 countries with 13,62,99,000 members all over the world. The total wealth of these credit unions stand at US$ 825.17 billion and the accumulated deposit is US$707.82 billion. The amount of protected and other fund is US$ 82.94 billion and the amount of invested loans to the credit union members is US$ 531.77 billion. People of new counties are getting involved with the credit union every year, aiming to achieve economic and social development (Rozario, 2005).

The Bangladesh cooperative movement has been basically a child of distress, although it has celebrated the centenary of cooperatives in the country in 2005. According to a historical study on the credit unions mentioned, the Cooperative Credit Societies Act was passed in 1904 in the region. The Cooperative Societies Act of 1912 recognized the formation of non-credit societies and the central cooperative organization.

The region's patronage of the cooperative movement continues even after 1947, the year in which India attained freedom (Ramesha, 2005). Even though the region has passed through one hundred years of cooperative movement, most of the people still could not get the real idea of the cooperative. For this reason, the movement is unable to contribute to the regional socio-economical development.

The historical studies of the credit union movement in Bangladesh mentioned that the Credit Union concept, ideas and movement emerged and flourished in Bangladesh with the Christian Catholic missionaries and communities (Costa, 2005 and Rozario, 2005). The present research study has gathered the unpublished historical information of the parish based credit unions or the credit unions in the locality. According to Bangladesh credit unions study (Ibid.), the credit union concept started in this land by Canadian Holy Cross missionaries in southern and eastern Province (Barisal, Chittagong and Noakhali region). It was not too successful and was unable to become a movement.

The economic condition of the Christians of the region was extremely bad in the 1950s and 1960s. The poor Christians had to borrow money at very high interest from the usurious moneylenders and feudal lords for their livelihood. At that time, the Christians were not able to carry the burden of these loans. Their lives became miserable and painful and this affected their spiritual life.

Observing this, the Archbishop Lawrence L Grenar, csc became very anxious. It made him start thinking about how the socio-economic condition of these poor Christians could be improved. He also realized that united effort might be a way. In November of 1953, Grenar sent Father Charles J Young, csc to the Coady Institute of St Francis Xavier University in Canada for training on cooperatives. He later became the founder and father of the credit union movement in Bangladesh. Father Young was sent to Canada as no Bengali Christian was found for the training.

Moreover, the Christian population was also very small. In addition to his academic training, Father Young visited deferent credit union organizations, had detailed discussion with the union leaders, and intensively observed their activities. After training, he returned to Dhaka with comprehensive experience and knowledge on credit unions. On his return, Father Young started thinking about establishing credit union organizations for the poor Christians (Ibid.).

At that time, the people of the region were not familiar with the concept of credit union. Under this circumstance, it was very difficult to unite and inspire the people towards credit union. Credit unions have been by that time, quite successful in Kolkata under the leadership of Mr. Clifford Noronao (Rozario, 2005). After his return, Father Young took initiatives to inspire the priests in Dhaka about adult education and credit union. He arranged a series of meetings and seminars to this aim. At this time, Christians in Dhaka and its adjacent areas did not have the tendency to save. Most of the people did

not have either have any savings or any accounts in banks. Father Young continued with his initiative to change the socio-economic condition of the Christians of the region and finally succeeded to educate them about the worth of the credit union.

The preparation to establish a small savings and credit union for the welfare of the poor Christians of Dhaka and its neighboring areas around started. A special meeting of 49 Christians was held on July 3, 1955, in the hall room of the Laxmibazar church in old Dhaka. It was the first ever official meeting of the credit union movement in the country. The credit union movement received its name as The Christian Co-operative Credit Union (Ibid.).

In order to spread the concept of credit unions, irrespective of race, religion, and caste across the whole country, the Christian Cooperative credit Union Ltd Dhaka (CCCU) took initiative and founded the Cooperative Credit Union League of Bangladesh (CCULB) with 11 credit unions in Dhaka on June 3, 1979. As of June 30, 2005, there are 410 registered credit unions in 35 districts and 138 sub-districts in Bangladesh with 127, 000 members which belong to CCULB membership (Costa, 2005).

Table: 1.1 CCULB Affiliated CU Movement
Financial Management Performance, June 30, 2006
(Figures in Bangladesh Currency, 1 US$ = 68 TK)

Areas	Total CUs	Member Female	Member Male	Total Members	Share Capital	Savings Deposit	Reserves Fund	Other Fund	Total	Loans Outstanding
Dhaka	72	20795	20818	41613	310,746,065	586,512,512	22,796,812	107,625,462	1,027,680,851	686,073,156
Bhawal	37	13081	13342	26423	102,908,436	277,640,856	8,386,111	35,111,613	424,047,016	282,718,581
Mymensignh	40	1695	4080	5775	12,472,517	7,906,036	478,387	7,372,345	28,229,285	19,223,139
Tagail	17	767	2020	2787	5,930,935	6,193,657	362,742	4,094,403	16,581,737	11,076,240
Netrokuna	24	896	2410	3306	6,278,866	4,197,465	408,932	5,272,050	16,157,313	12,804,029
Dinajpur	32	3020	2963	5983	14,339,607	12,974,227	1,618,310	5,126,393	34,058,537	24,442,340
Rongpur	11	441	970	1411	2,449,316	1,535,800	344,077	1,993,855	6,323,048	5,301,359
Borendro	21	4897	5983	10880	53,723,252	33,739,799	4,032,171	8,138,199	99,633,421	89,740,463
meherpur	31	3173	1629	4802	3,296,234	1,582,160	191,241	1,411,733	6,481,368	4,493,638
Barisal	38	2529	4123	6652	11,689,813	10,175,899	1,359,197	7,062,553	30,287,462	23,867,889
Southern	60	4518	6968	11486	10,972,069	32,237,717	1,682,747	8,536,677	53,429,210	41,332,114
Khulna	13	1373	1322	2695	9,475,804	3,258,352	267,290	2,195,462	15,196,908	12,109,114
Chitogong	19	4797	4771	9568	19,757,580	28,422,705	1,432,990	3,795,049	53,408,324	32,612,255
Cox'sbazar	25	1433	3666	5099	7,343,772	19,176,456	808,208	3,686,631	31,015,067	20,243,734
Bandarbon	9	606	1218	1824	2,309,624	4,013,427	254,181	819,287	7,396,519	4,125,199
Moulovibazar	5	356	374	730	1,013,157	800,395	94,687	538,323	2,446,562	1,486,812
Total	**410**	**64377**	**76657**	**141034**	**574,707,047**	**1,030,367,463**	**44,518,083**	**202,780,035**	**1,852,372,628**	**1,271,650,062**

Source: The Co-operative Credit Union League of Bangladesh Ltd. (CCULB)
CCULB Bhaban, School Road, Khilbarir Tek, Gulshan, Dhaka - 1212, Bangladesh.

Credit unions have a common bond that links their members: savers and borrowers. In open-bond or community-based CUs, members are from the same community, village, area of residence or religious affiliation (place of worship). In occupational or closed-bond CUs, members belong to the same profession, are engaged in the same occupation, or work in the same company. Most CUs in developed countries are closed-bond organizations, while most CUs in developing countries are open-bond organizations (Outtara, 1999). It is important to note that for Raffeisen, working with in small rural communities, the common bond was primarily not a social, but rather, an economic reality. It was a low cost, low risk way of delivering specific services to an identified segment

of the financial market (Jones, 2001). In Bangladesh, credit unions first started open-bond entities in religious affiliation community-based then it flourished closed-bond in employee-based. Memberships in the PBCUs are open to all parish-based members. Individual share capital in PBCUs cannot be traded or sold to others outside of the organization. Members get restitution of their shares upon resignation from the CU. PBCUs provide loans to theirs members only and there are no group loans. Every firm has flexible lending policy but PBCUs follow uniformity for major policies.

Credit unions offer deposit savings first, a self-sustainable approach to microfinance that has already successfully met the needs of millions of low-income members around the world as in Bangladesh. It encourages members to save regularly. Credit unions borrowers use credit to establish and expand enterprises as primary or secondary economic activity and earn and save continuously until at a moment they have enough savings that can meet their demand and be discouraged to borrow more. As their assets and income increase, they save more and borrow less. As they shift to larger loans or reduce their borrowing, members stop investing in shares and shift investment to deposit savings. Members become net savers, investing savings in withdrawable deposit services offering market rates of return.

According to WOCCU survey, there are four primary strengths of credit unions for microfinance delivery: a) savings mobilization, b) services for lifetime asset growth, c) mixed outreach, and d) full service array of loan product (Branch and Evans, 1999).

Besides these strengths and opportunities, credit unions face many challenges. WOCCU cited four most serious challenges: a) credit union governance, b) loan delinquency, c) business orientation and innovation, and d) lack of external supervision or authorizing legislation (Ibid.).

Currently, the organizational management of these PBCUs has faced a dilemma of measuring credit unions, using a more reliable and accurate performance tool. Some PBCUs have continuous operations, some PBCUs have closed their service, some have difficulties surviving. It seems that members of some firms are satisfied with financial services, and members of some firms have dissatisfaction and complain. As to date, there is no study on Bangladesh parish-based credit unions that compare their own financial management performance, scale and scope with world standard (other CUs in the other countries) or WOCCU standard.

In Bangladesh credit unions history, Christian community took the initiative and founded CCULB to spread credit union movement all over the country. Almost every parish has credit union or is planning or processing to establish credit union. At present, CCULB registered credit unions do not use PEARLS or any world standard components for analysis of their financial performance. PEARLS model is the accepted method of evaluating the performance of credit unions worldwide. Though parish-based credit unions have already existed for 50 years, there are no notable financial indicators used to measure performance (Souvenir, 2005).

The more reliable measurement of CUs' performance is very significant to ensure member-communities their rights as financial shareholders to their valuable assets and would entail transparency in their transactions. This study is the first attempt to compare Parish based credit unions' financial ratios with international standards. The present study is a milestone study for the credit union movement of Bangladesh because it is the first time that its financial performance are measured and compared with international standards, using an internationally accepted reliable performance method (PEARLS). The study, therefore, attempts to apply PEARLS model to financial management of Bangladesh credit unions and suggests the viability of this model for their improved financial management.

1.2 Objectives of the Study

This study aims to examine the financial management performance of Parish based Credit unions in Bangladesh, using the PEARLS criteria. The specific objectives are as follows:

1. To determine the descriptive statistics of the PEARLS criteria of Parish based Credit unions,

2. To compare financial management performance among parish-based credit unions

using PEARLS criteria and to test whether there are significant financial differences among them,

3. To evaluate and examine the financial indicators of PEARLS of Parish-based Credit Unions and compare with the WOCCU financial standard in order to suggest the viability of the model, and

4. To show the trend analysis of the PEARLS indicators in order to determine the future direction of each financial indicator.

1.3 Significance of the Study

The Parish-based credit unions has celebrated 50 years jubilee of their foundation but still, the management are not aware about international standard for financial performance. This study is the first to compare Parish based credit unions' financial ratios with international standards. This study seeks to help primarily the Management or Executive board of the CUs to become more aware of the financial performance of the organization. Insights and concerns from this study help the management and office staff to realize the present status of CUs. They can follow the financial measurement components in decision making.

This study is the first attempt to measure financial performance of PBCUs in a long run (7 years). The study uses 15 samples or a total of 105 observations. Therefore, empirical results of this study offer a more robust and reliable significant contribution to the financial performance literature and credit unions.

This study will bring more awareness among stakeholders and members about their financial dealing with credit unions. They will realize the growth rating, financial performance and management capability, and can take improvement decision. This study is the first to compare PBCUs' financial ratios with international standards. Thus, the stakeholders can understand the standard of credit unions. They will acknowledge if there is any benefit receiving or distributing discrimination between members and officials.

The study bears mixed results of financial performance both negative and positive; therefore, it is a significant contribution to knowledge and an addition to CU's organizations. So the community will get overall knowledge and idea about credit union movements and they can contribute their potentialities according to their management ability. They can select their supervisory leadership and financial management monitoring team according to the need of credit union movement.

It has been mentioned that the credit union movement was started by Catholic missionary who belonged to Holy Cross Religious Community. The present researcher belongs to the same religious community. It is one milestone study for the credit union

movement in Bangladesh to examine and evaluate the accounting management and financial performance. [The founder and the present researcher are both involved in the credit union movement.] The study will be very useful for the future credit union movement in Bangladesh.

1.4 Theoretical Framework

This study anchors its empirical analysis on two significant business theories on financial intermediaries and financial management.

1.4.1 Financial Intermediaries

Banks and thrifts are just two of several types of firms that offer financial services to the public (Bruce, 2005). “Banks and thrifts remain the only institutions that offer checkable deposits that have no restrictions on either the number or size of checks. Their shares of total financial assets (value of the things owned) are declining” (Ibid., 2005, P245). In1980, banks and thrifts together held almost 60% of financial assets in the United States. Eleven thousand eight hundred (11,800) thrift institutions, 10,300 of which are credit unions, are regulated by agencies separate and apart from the Board of Governors and the Federal Reserve Banks. Like banks, thrifts are required to keep a certain percentage of their checkable deposits as “reserve”.

Credit unions differ from other intermediaries because they are non-profit organizations whose members share a common bond of association. In community-based credit unions- all members share the common bond of living in the particular geographical area. In industry-based credit unions, all members share a common bond involving the workplace. In parish-based credit unions, the members share a religious affiliation. Credit unions are a relatively pure form of a cooperative where the members supply the capital and consume the output. As cooperatives, credit unions cannot normally be said to have the goal of maximizing shareholders' wealth but rather, its goal is to maximize the benefits provided to its members (Brown, 1995)

1.4.1.1 Major Services of CUs as Financial Intermediaries: Deposits and Loans

Credit unions are all thrift and financial institutions that historically offered just savings accounts, not checking accounts (Boyes, 2006). In many developing countries, a sizable part of the population has no access to formal financial institutions like banks, and they have informal financial market to develop. Such markets may take different forms. They may take the form of an individual making small loans to local resident, sometimes groups of individuals form a self-help group where they pool their resources to provide loans to each other. A common form of informal financial arrangement is Rotating Savings and Credit Associations (ROSCAS). These tend to go by different names in different countries, like Tandas in Mexico, Susu in Ghana, Hui in China, or chits in India. They are like savings clubs where members contribute money every week or month into a

common fund, and then each month, one member of the group receives the full amount contributed by everyone. This usually operates for a cycle of as many months as there are members in the group and continues for the next term. These kinds of informal financial markets play an important role in developing countries.

According to Echanis (1998) the major services provided by banks or financial intermediaries to the public include: a) acceptance of deposit, b) lending of funds, c) trust services, and d) financial services related to international trade. In the process of providing these services, financial intermediaries earn interest income and or fees.

Credit unions are financial intermediaries, middle-men between savers and borrowers (Ibid.). They accept deposits from individuals and firms, and then use those deposits to make loans to individuals and firms. Depositors and borrowers have very different interests. Depositors chose short-term deposits; they do not want to tie their money up for a long time. On the other hand, borrowers want more time for repayment. As financial intermediary institution, CUs usually package short-term deposits into longer-term loans. To function as intermediaries, CUs should serve the interests of both depositors and borrowers.

Credit unions study by Branch (1999), made clear discussion that credit unions are ‘mixed outreach’ financial institutions which help urban area vendors, merchants, self-employed, individuals small manufacturers, teachers, construction workers, house-

wives, private and public employees, bankers, leather workers and shoe makers. In rural areas they help grain farmers, citrus fruits growers, agricultural laborers, traders and cattle producers (Branch, 1999). CUs are willing to serve as financial intermediaries because they hope to earn a profit from this activity. They pay a lower interest rate on deposits than they charge on loans; the difference is a source of profit for them.

A prominent Poland CU promoter, Mr. Grzegorz Bierecki developed/introduced the CU concept that to become members of a credit union, they must have a "common bond" among them. That means community-based credit union. It can be only among 'Catholic Christians' or among 'Non-Christians' community. This concept started the community-based movement (Evans, 1999). Later it became the credit union act for Poland credit union movement.

The traditional credit union model relied upon international donors for external capital as a source of loan funds for its members. The model was based on a theory that the rural poor community lacked the resources necessary to save and assist development potential. The traditional model discouraged saving and encouraged borrowings. Members who deposited shares in their credit unions often could not withdraw the shares until they have terminated their membership, and they received no yield on their shares. The amount of a loan would be dependent on the number of shares.

The new credit union model has helped credit unions become more competitive, financially independent, and secure. The cornerstone of the new model has been the gradual reduction of the traditional reliance on member shares for capital and member deposit. Members receive a competitive rate of return on their deposits and enjoy unprecedented ease of withdrawals. So deposit savings grow rapidly, and the credit unions move from their traditional position of a shortage of loanable funds, to one of excess liquidity. The image of credit unions changed significantly. New people became interested to become member because they will receive a competitive rate of return on their savings. Credit unions membership is no longer dominated by borrowers who demand and expect to receive preferential treatment. Since the new model credit unions have money to lend, they were able to finance larger loans. Credit unions can pay market rates of interest on deposit, and can raise interest rates on loans to cover the costs of the savings mobilization programs. Credit unions also pay dividends on share capital, much like the interest pay on savings deposits. The new model credit union model created a shift from share savings to deposit savings, shift to market rates on loans, shift to capitalization of earnings, shift to repayment-based credit analysis, shift to market-based, results-oriented business planning and a shift to improved financial information reporting control an evaluation (Branch, 1999),

1.4.1.2 Financial Intermediaries and Money Supply

All financial intermediaries create money by lending; they take deposits, and then lend a portion of those deposits in order to earn income (Boyes, 2006). The portion of

the deposits that banks keep on hand is a reserve to meet the demand for withdrawals. In a fractional reserve banking system, banks keep less than 100 percent of their deposits on reserve. If all banks hold 10 percent of their deposits as a reserve, for example, then 90 percent of their deposits are available for loans. Where they loan these deposits, money is created. In summary, financial intermediaries create money as follows:

- They can make loans up to the amount of their excess reserves, their total reserves minus their required reserves.
- The deposits expansion multiplier is the reciprocal of the reserves requirement.
- A single institution expands the money supply by lending its excess reserves.

This system can increase the money supply by the deposit expansion multiplier times the excess reserves in system.

1.4.2 Financial Management

The theory of the financial statements and financial reporting issues and financial ratios is discussed in this section.

1.4.2.1 Financial Statements and Financial Reporting Issues

The financial statements of an organization are the end product or main output of the financial process; these are a structured representation of the financial position and financial performance of an organization (Valix, 2005). The components of the basic

financial statement include the following: The Balance sheet, The Profit and Loss Statement (the Income statement), Statement of changes in equity or statement of recognized gains and losses, The Receipt and Disbursement Statement (the statement of Cash Flows), and notes comprising a summary accounting policies and explanatory notes. The objectives of general purpose financial statements is to provide information about the financial position, performance, and cash flows of an enterprise that is useful to a wide range of users in making economic decisions. The financial statements also show the results of the management's stewardship of the resources entrusted to it. To fulfill these objectives, financial statements provide information about an entity's assets, liabilities, equity, income and expenses including gains and losses, and cash flows.

The Balance Sheet for the credit unions is a formal statement of showing the financial position of a particular date. The balance sheet presents the three elements of financial position, assets, liabilities and equity. According to WOCCU, the presentation of the credit unions' financial statements is a little different (see Appendix B).

The Profit and Loss Statement (the income statement) for a period presents the income, expenses, gains, loses and net income or loss. According to WOCCU, the income statement is divided into four sections (see Appendix B) - the Gross Income section (income from loan, financial investment and other investment), the Gross Margin section (deduction of all financial cost from gross income), the Expenses section (the

operating expenses and other expenses), and the section showing the Net Income or Loss (deduction of all expenses from gross margin).

The Receipt and Disbursement Statement (RDS - the statement of cash flow) fills an important gap in financial reporting left by the balance sheet and the income statement. The RDS identifies the flow of the cash resulting from operating and financing activities of the company. It identifies the sources and use of cash during the period covered b the income statement.

The management, members, researchers and others analyze the balance sheet, the income statement and the statement of cash flow to evaluate liquidity, solvency, financial structure, and capacity for adaptation of credit unions.

1.4.2.2 Financial Ratio Analysis

In traditionally management studies, ratios are classified according to the following performance aspects measured: profitability, liquidity, leverage, and efficiency (Aragon, 1998). These ratios can be computed directly using financial statement information. Valuation ratios are added with the traditional classification of ratios, which incorporate more current assessments by the market of the company's "worth". Simple balance sheet and income statement items are use to compute ratios to analyze financial statements of the financial institutions. A listing of the more commonly used ratios and measures in financial analysis is shown below:

Ratios that measure the Profitability are the following: Operating Income/Sales, Operating Income/Average Total Assets, Net Income /Sales, Net Income/Average Stockholders' Equity and Earning per share

Ratios that measure the Operating Efficiency are the following: Cost of Goods Sold/Average Inventories, Average Collection Period, Sales/Average Fixed Assets, Sales/Average Total assets, Gross Profit/Sales, Marketing and Administrative Expenses/Sales

Ratios that measure the Financial Leverage are the following: Earnings before Interest and Taxes/Interest Expenses, Total Liabilities/Total Equity

Solvency ratios are: Current Assets/Current Liabilities, (Current Assets-Inventories-Prepayments)/Current Liabilities

Ratios that measure the Valuation are the following: Price/Earnings, Net Asset Value, Market Value of Equity/Book value of Equity, divided per Share/Market Price per Share, Market capitalization

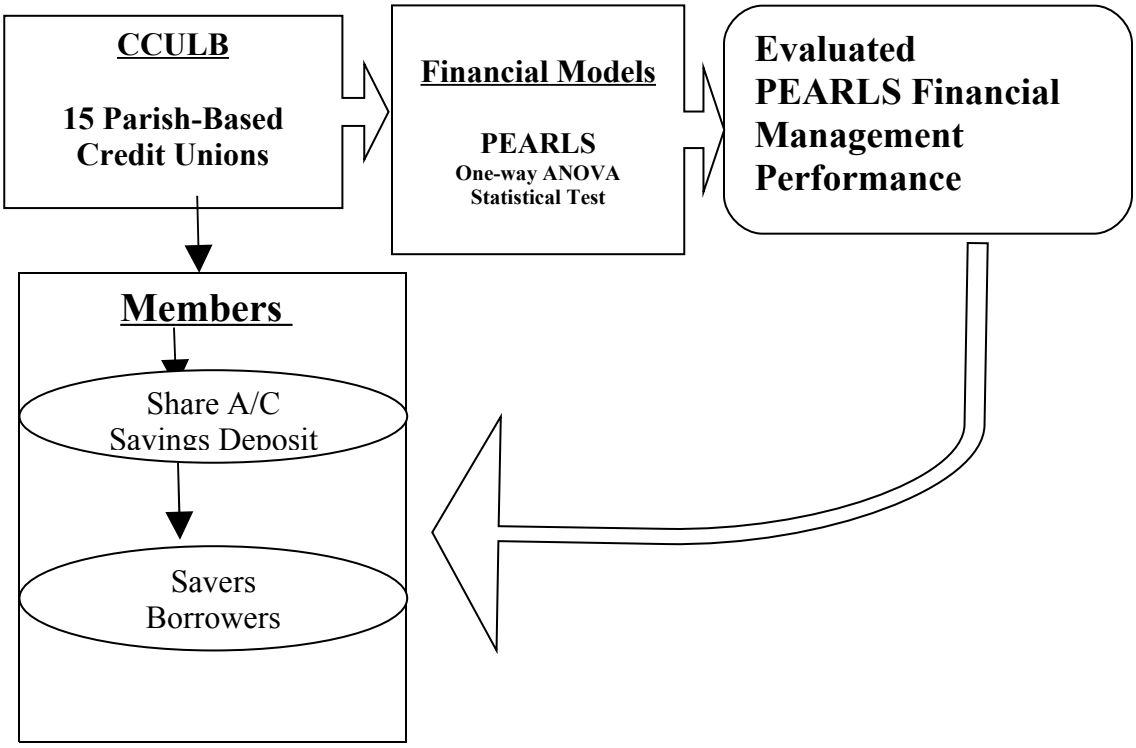
According to WOCCU, PEARLS is the financial performance monitoring system to analyze financial statement of credit unions. In total, there are 44 quantitative financial indicators that facilitate an integral analysis of the financial condition of credit unions. The ratios are classified into six sections – Protection of assets measurement ratios, Effective financial structure ratios, Asset quality ratios, Rates of return and costs ratios, Liquidity measurement ratios and Signs of growth ratios (see Chapter 3).

1.5 Conceptual Framework

In order to spread the concept of credit union, the Christian Cooperative Credit Union (CCCU) Ltd Dhaka took initiative and founded CCULB (The Cooperative Credit Union League of Bangladesh) on June 3, 1979. The CCULB is the central or national credit unions and registered with the Ministry of Social Welfare and Department of Co-operatives, Ministry of Local Government, Rural Development and Co-operatives of the Government of the Peoples' Republic of Bangladesh with registration nos. DSW-01761/86 & CS-3/86 respectively. The CCULB is a member Asian Regional Co-operative Credit union organization the Association of Asian Conference of Credit Unions (ACCU) since 1981 and acts as an active partner in development of Asian Credit Union movement. Through ACCU, CCULB is a member of World Council of Credit Unions (WOCCU). The CCULB is the supervisory credit union monitoring all the local credit unions in Bangladesh. Every credit union through registration receives the CCULB membership and every credit union uses one vote to be involved in the CCULB administration. The CCULB is a democratic and volunteer credit union monitoring institution in Bangladesh. There are 410 registered credit unions in 35 districts and 138 sub-districts in Bangladesh with 127, 000 members under CCULB as of June 30, 2005. Among them, more than 60 credit unions are parish-based or church oriented with most of their offices located inside the parish compound. Every credit union has to go through a process to get the CCULB membership.

Figure 1.1 explains the whole conceptual process of the present study. The study includes 15 CCULB registered credit unions member, with one vote right. The list of credit unions is mentioned in Chapter 3 (see Chapter 3, Section 3.2).

Figure 1.1 Conceptual Model



Theoretically, the credit unions are types of financial intermediaries, with the general functions of channeling funds from savers to borrowers. This concept will be applied also to PBCUs in Bangladesh. The financial performance of credit unions in the sample is measured by financial model of PEARLS. This model is further discussed in detail in Chapter 3 (See Chapter 3, Section 3.3). The end result of this study is the evaluated financial management performance of PBCUs, using the international standard financial criteria.

The 15 PBCUs membership procedures, product natures, management policies, accounting systems, monitoring by-laws are the same. The present study involves only CCULB registered parish-based credit unions to examine and evaluate financial management performance through PEARLS financial components. The evaluated PEARLS financial management performance results will be used to the entire firms, and as well as in the industry for the greater welfare of the members.

1.6 Scope and Limitations of the Study

This study identified the financial performance of credit unions and compare the performance among parish based CUs. The study covers 7 years (from 2000 to 2006) of financial statements of the 15 PBCUs. The members of PBCUs are from same culture, same religious sect, almost similar economic background but different occupations.

The study used financial measurement components of WOCCU, specifically PEARLS components, but did not cover other financial methods (such as CAMELS, balance scorecard, etc) nor other mathematical programming method. It used limited major component determining financial performance variables as those used by the WOCCU in order to have a common areas of comparison with the current international standards.

In this study, the accounting standards for preparing the statements are well advanced and audited by a reputable body. Moreover, the accounting and financial variables are measured over specific periods and to avoid any bias resulting from smoothing of outcomes by management. The study is limited to the use of audited accounting reports to minimize any possible accounting errors.

All of the financial statements are from secondary sources and recorded in local language in Bengali. The study used their translation format. The study only examines, identifies and compares the financial performance and does not verify the causes and effects of financial performance that may entail other parametric methods. These are the present limitations of the study that can be addressed by other separate studies in the future.

1.7 Null Hypotheses

The following tested null hypotheses are based on financial performance indicators of PEARLS.

H1: There are no significant differences on Protection of Assets among the CUs.

H2: There are no significant differences on Effective Financial Structure among the CUs.

H3: There are no significant differences on Assets Quality among the CUs.

H4: There are no significant differences on Rates of Return and Costs among the CUs.

H5: There are no significant differences on Liquidity Management among the CUs.

H6: There are no significant differences on Signs of Growth of Assets among the CUs.

The study shows substantial evidence for either rejection or acceptance of the above stated hypotheses that are discussed in Chapter 4.

1.8 Definition of Terms

For better understanding of the study, the following terms are defined:

CCULB: CCULB means the Cooperative Credit Union League of Bangladesh. The CCULB is a National Federation registered with the Ministry of Social Welfare and Department of Co-operatives, Ministry of Local Government, Rural Development and Co-operatives of the Government of the Peoples' Republic of Bangladesh vide registration nos. DSW-01761/86 & CS-3/86 respectively. The CCULB is a member of Bangladesh Co-operative National Forum "Jatio Samabaya Union" and Asian Regional Co-operative Credit union organization the Association of Asian Conference of Credit Unions (ACCU) since 1981 and acts as a active partner in development of Asian Credit Union movement. Through ACCU, CCULB is a member of World Council of Credit Unions (WOCCU). The CCULB is the central or national credit unions and accepted by government in Bangladesh. The CCULB is the supervisory credit union monitoring all the local credit unions in Bangladesh. Every credit union through registration receives the CCULB membership and every credit union use one vote to be involved in the CCULB

administration. The CCULB is a democratic and volunteer credit union monitoring institution in Bangladesh. There are 410 registered credit unions in 35 districts and 138 sub-districts in Bangladesh with 127, 000 members under CCULB as of June 30, 2005.

Closed-bond or occupational CU: In occupational or closed-bond CUs, members belong to the same profession, are engaged in the same occupation, or work in the same company.

Community-based or open-bond CUs: Credit unions have a common bond that links their members: savers and borrowers. In open-bond or community-based CUs, members are from the same community, village, area of residence or religious affiliation (place of worship).

Community Finance: the development and operation of microfinance institutions that are owned and controlled at the community level.

Credit Union: a co-operatively owned and controlled financial institution. If its owners (users) are poor, it practices microfinance.

Credit Union Network: a trade association for credit unions, owned and funded by credit union stability reserves and by earnings from operation.

Financial Measures: refers to the accounting based performance measures used to evaluate a firm's performance.

Firm level: per firm.

Industry level: consolidated.

Microfinance: a small-scale financial services for both credit and deposits – that are provided to people who farm or fish or herd; operate small or microenterprises where goods are produce, recycled, repaired or traded; provide services for wages or commissions; gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; in developing countries, in both rural and urban areas (Branch, 1999, p1).

Oral Communities: the communities in the rural area where people are not educated and where witnesses are more credible than texts. Most of their rules and laws are oral.

Parish-Based Credit Union: a type of credit union where the members belong to same parochial territory to practice their Catholic faith.

Taka: the name of Bangladeshi local currency, abbreviation is TK. US$ 1 = TK 68 (December 2007).

WOCCU: The World Council of Credit Unions (WOCCU) is the international organization for savings and credit unions and similar financial institutions. WOCCU serves members through representation, liaison, technical and developmental services, and information services.

CHAPTER 2

LITERATURE REVIEW

In the last decade, many studies were conducted regarding the performance of Credit Unions (see Appendix A). The related literature and studies reviewed in this chapter is divided into four parts. The first part presents operational performance studies of credit unions, the second part discusses financial performance studies of credit unions, the third part cites some efficiency studies of credit unions, and the fourth part reviews the performance studies on Bangladesh credit unions.

2.1 Operational Performance Studies of Credit Unions

A study about credit unions by Evans and Richardson (1999) mentioned that credit unions offer a variety of products and services including short-term instant loans, medium term credits, term housing loans, share deposits, withdrawable voluntary savings deposits, systematic savings programs, fixed term deposits, automated teller machines, electronic payment of monthly bills, credit cards, and life insurance. Credit union interest rates are more attractive than those of commercial and state banks. Credit unions pay several percentage points higher on savings deposits and charge one or two points less on credit. The study added that the commercially-oriented products and services have

created sufficient revenues to cover the operative expense and attain financial sustainability.

According to Father Bernard Zielinski, priest and founder of St. Anthony's Parish Credit Union, they opened the first Polish credit union on June 12, 1996. At first, the credit union was housed in tiny quarters. They anticipated that the location would be adequate because they did not expect to have more than 200 members. There was a burst, rather an explosion of membership in the credit union. From the initial membership of about 100 people in the first month, their membership increased to 200 in the next three months. When the parishioners learned that the interest rate charged on loans was less than the rate of other financial institutions, they started joining quickly. Soon they became the first parish credit union with 1,000 members, as of June, 1998, they have 2,600 members (Ibid., 1999).

In March 1998, the WOCCU project funded a survey conducted by NACSCU of Poland among 605 credit union members. The survey cited that 23% of respondents declared that they have enough money to buy themselves and their family members food and clothing, but are barely able to pay the monthly bills. Another 34% stated that their income is enough to buy themselves and their families' food and clothes and to pay the monthly bills, but they do not have extra money to buy anything more. They have obviously benefited from the program (Ibid.). The study of Credit Unions Association (CUA) in Ghana used PEARLS analysis system. An assessment of CUA's operational

self-sufficiency shows that their incomes have been able to cover its operational costs. CUA therefore has been able to achieve self-sufficiency and financial independence (Ofei, 2001).

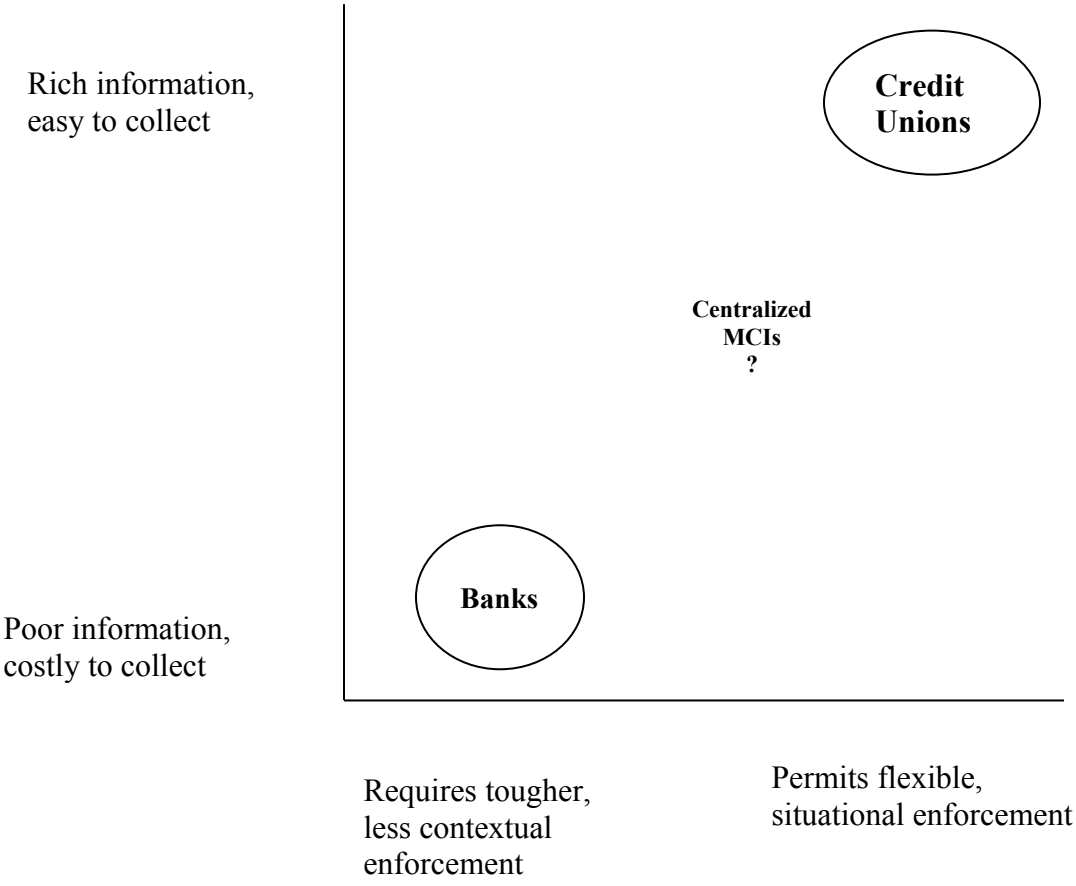
The study of Latin America credit union indicated a number of important guidelines for the successful operation of credit unions in developing countries. It cited the importance of higher interest rates, reduced delinquency, and increased profitability. Interest rate ceilings should be avoided in order to prevent damaging credit union financial health. Also to be avoided are subsidized, targeted credit programs that undermine the adoption by credit unions of higher, market-based deposit, and loan rates. Some of the potential benefits of credit union supervision are also indicated in the study. It suggested that stricter loan collection standards and a more business like management of the CU could significantly improve delinquency rates and profitability (Westley and Shaffer, 1997).

Another worldwide credit unions operational performance study asserted that as the credit unions should have National associations so credit unions can borrow from the central finance facility at a low interest rate (Branch and Evans, 1999). If the credit unions have excess liquidity, then they can invest the funds in that same facility. It is the most important element of the national association because members can feel comfortable that the credit union is a reliable institution (Ibid.)

In a recent global study of microfinance services mentioned that on an aggregate basis, savings accounts outnumber loan accounts four to one. This is a worldwide pattern that does no vary much from region to region. It is not clear why four savers should be unable to finance a loan to one borrower in almost any community even a very poor one (Christen, 2004). An extensive study of Sri Lanka by Hulme and Mosley (1996) mentioned that it demonstrates the capability of cooperative groups to accumulate savings and make loans to rural people, and to achieve high repayment rates. These cooperatives groups are locally managed with technical support from their national movement. The study also warned that the higher level networks could be severely damaged by the delivery of subsidized loans from donors.

Another studies of Canadian credit unions done by Matthews (2006) said that credit union development is normally situated strategically within the broader framework of community development. Now, there are 900 communities in Canada where a credit union offers the only access to financial services whereas Canadian bank closed hundreds of branches throughout rural Canada and many of these branches have now become credit unions offices. A German credit unions study by Guinnane (2001) analyzed the above factor. Figure 2.1 summarizes the analysis of results that the German rural credit unions serve villages that no other financial service provider could. Specifically, they were able to: significantly lower enforcement costs, offer more flexible financial services, and serve entire populations including many people more distant providers could not reach.

Figure 2.1: The Trade-off Between Enforcement and Outreach



Source: Adapted from Guinnane, Information Machines

For example, banks lending to the villages kept loan terms very short to avoid collection problems. Because the village credit union had much better information and could readily distinguish between a borrower who could not repay and one who just did not want to, it was in a better position to fully meet the needs of its members. So credit unions can easily know the character of the member and deal with comfort and make

their rules and requirement flexible to reach the members easily. For this reason, credit unions are more flexible to the members than banks.

The evidence suggests that poor villages are oral communities which are blamed for other people's failures. Most of the German farmers who successfully participated in the Raiffeisen credit unions of the 1850s were recently freed serfs and absence of writing need not prohibit operational complexity (Matthews, 2006). The written words viewed respect but also some scepticism in oral communities. Walter Ong a linguist told that "witnesses were prima facie more credible than texts because they could be challenged and made to defend their statements, whereas texts could not" (Ong, 2002, p95)

2.2 Financial Performance Studies of Credit Unions

One of the nationwide Polish Credit union studies (Evans & Richardson, 1999) including 36 largest CUs using WOCCU financial performance monitoring tool PEARLS mentioned that the growth rate of total assets has been 63% in 1997 and 48% in 1998 while the growth rate for institutional capital has been only 18% and 48%, respectively. The allowances for loan losses against delinquent loan was 100% for more than 12 months and 38% of all loans delinquent for 1-12 months in 1998. The study showed a healthy deposit of member savings 89.57% in 1998, growth of membership 25.07% and liquid assets 26.19% in 1998. The return on average assets was 5.86% in 1997 and 3.04% in 1998. Inflation rate for the year 1998 was 8.9%. The study also discovered the negative financial indicator of net loan 69.64%, institutional capitals 1.2%, non-earning

assets 12.6%, and operating expenses 6.28% in 1998, which are significantly lower than WOCCU financial standard. The consolidated delinquency rate for all 36 CUs was only 0.48% in 1997 and 0.78% in 1998. There are several seasons for low delinquency rates-employee-based CUs, a) payroll deductions have greatly facilitated the collection of periodic loan payment, b) the strong religious tries of most people to the Catholic church so it is considered a sin not to repay a loan. The people who do not repay are labeled as thieves, and this label carries a very strong social stigma in the community.

Another study of credit unions in the Philippines mentioned that credit unions through the project named Savings and Credit with Education (SCWE) (with the help of WOCCU, Freedom From Hunger and sponsored by USAD) provides microfinance services to very poor urban and rural women. On the average, 27 members form each group, as of March 1999, 107 groups were formed with 2,853 members and had a 100% repayment. Their loan sizes range from Peso5, 000 to P6000 or $200 to $240. The average loan size per borrower is $42. From July 1998 to March 1999, the borrower groups had $116,972 in outstanding loans and had amassed $15,394 in total savings. SCWE reached a financial sustainability ratio of 16% (Branch and Evans, 1999). The results of PEARLS components of the same study (includes 12 CUs) are: Net income 2.04%, External Credit 5.64%, Operational Expenses 8.39%, Institutional capital 7.45%, Delinquency 56%, Loan loss provisions 13.6% for more than 12 months and -55.36% for less than 12 months, effective interest rates for savings 9.21% and Loans 27.42% where inflation rate is 10%. The results showed that there is no significant improvement

comparing WOCCU Standard PEARLS components in terms of delinquency, provisions for loan losses, external credit, institutional capital.

The results of PEARLS components of Bolivia CUs study (Branch and Evans, 1999) (includes 20 CUs, in 1999) are: Net income 1.51%, External Credit 8.24%, Operational Expenses 8.15%, Institutional capital 3.97%, Delinquency 5.20%, Loan loss provisions 100% for more than 12 months and 76.40% for less than 12 months, effective interest rates for savings 10% and Loans 18-24% where inflation rate is 4.39%. The results showed that there is no significant improvement comparing WOCCU Standard PEARLS components in terms of delinquency, external credit, and institutional capital.

The results of PEARLS components of Ecuador CUs study (Branch and Evans, 1999) (includes 19 CUs, in 1999) are: Net income 6.86%, External Credit 1.83%, Operational Expenses 12.68%, Institutional capital 12.62%, Delinquency 15.45%, Loan loss, provisions 100% for more than 9 months and 22.11% for less than 9 months, effective interest rates for savings 22.38% and Loans 42.07% where inflation rate is 43%. The results showed that there is no significant improvement comparing WOCCU Standard PEARLS components in terms of delinquency, provisions for loan losses for less than 9 months, and external credit.

The results of PEARLS components of El Salvador CUs study (Branch and Evans, 1999) (includes 13 CUs, 1999) are: Net income 3.72%, External Credit 2.20%,

Operational Expenses 7.69%, Institutional capital 6.48%, Delinquency 16.41%, Loan loss provisions 100% for more than 12 months and 25.30% for less than 12 months, where inflation rate is 4.39%. The results showed that there is no significant improvement comparing WOCCU Standard PEARLS components in terms of delinquency, provisions for loan losses for less than 12 months, and institutional capital.

The results of PEARLS components of Kenya CUs study (Branch and Evans, 1999) (includes 10 CUs, in 1998) are: Net income 0.28%, External Credit 0.44%, Operational Expenses 4.26%, Institutional capital 3.54%, Delinquency 0.45%, Loan loss provisions 0% for more than 12 months and 0% for less than 12 months, effective interest rates for Loans 15.30% where inflation rate is 10.60%. The results showed that there is significant improvement comparing WOCCU Standard PEARLS components in terms of delinquency, institutional capital and no significant improvement in terms of provisions for loan losses, net income.

The results of PEARLS components of Poland CUs study (Branch and Evans, 1999) (includes 36 CUs, in 1998) are: Net income 3.04%, External Credit 4.86%, Operational Expenses 6.28%, Institutional capital 1.2%, Delinquency 0.78%, Loan loss provisions 0% for more than 12 months and 0% for less than 12 months, effective interest rates for savings 3-4% and Loans 1-2% where inflation rate is 8.9%. The results showed that there is no significant improvement comparing WOCCU Standard PEARLS components in terms of provisions for loan losses, and institutional capital.

A study of six project Nicaragua CUs (Mahon, 1999) indicated that these CUs, serving 2,833 members, were actively engaging in micro enterprise development and were reaching proportionately more women borrowers. More than 56% of micro enterprise loans were made to women, compared to 48% of all credit union loans.

Another study of Ghana CUA used the PEARLS analysis and the study gives some noticeable developments in that organization. These could be summed up as follows: savings and deposit are not enough, this financial structure indicates a low ration of share to total assets, earnings generated by CUA are quite low, whole administrative costs are high, there has been a decreasing trend in asset growth, there has been a considerable shift form deposits to shares and this is in spite of the high mobilization of savings and deposits. In general, the analysis shows considerable fluctuations and inconsistencies in its financial performance indicators. It indicates that the financial performance of CUAI is not up to targets set by WOCCU. These suggest that CUA is not financially healthy (Ofei, 2001).

2.3 Efficiency Studies of Credit Unions

One credit unions study of Canada used DEA model. Empirical results discussed that provides results comparable to the equity / asset ratio when a slack adjusted efficiency score is used to measure efficiency, particularly for credit unions with larger asset sizes. DEA also provides indications of where opportunities lie for improvements of weak units by providing specific information relevant to managers (Pille, 1998).

Another study of the growth of the United States credit unions used univariate analysis to test three hypotheses deriving from the Law of Proportionate Effect (LPE) and empirical result says that large credit unions grew faster than small credit unions during 1990s (Goddard, 1999). There is evidence of negative persistence between growth rates. Growth is more variable among small than among larger credit unions. The positive size-growth relationship appears to have been slightly stronger for the assets than for the membership size measure; for this reason, the advantages of larger credit unions derived more from being able to increase business with existing members than from being able to attract new members (Ibid.).

In the Philippines, credit unions studies mentioned (Branch, 1999) that 107 groups were formed with 2,853 members from very poor urban and rural women. At this time 1,700 educational group meetings took place a the majority of the sessions or 685 sessions focused on health and nutrition, and group management education in 548

sessions focused group management education, and more than 300 discussed business skills. The percentage of female credit union members in the Philippine has grown from 41.5% in December 1997 to 64.3% in March 1999.

One of the Polish Credit union research used PEARLS measurement components. The research discussed that successful macro-economic reforms create a favorable financial environment in which the credit unions could flourish (Evans, 1999). The study stated that after communism, the Solidarity trade union was highly supportive of credit union development. The Solidarity trade union openly encourages people to create new credit union or join existing one. It was great boost to the development efforts for credit unions. The study also mentioned that credit union success also depend on strong credit union leaders and competent employees (Ibid.).

Canadian Co-operative Association's CU development approach focuses primarily on- stimulating a social and economic movement that prioritizes community development based on cooperative values, education, savings mobilization and community-based self-reliance, the cultivation of a co-operative financial system as distinct from any one individual unit within it and the democrative networking of credit unions to achieve economics of scale, to deliver complex services, and to project a national voice (Matthews, 2006).

Another credit unions efficiency study mentioned that “The potential leaders of innovative finance schemes are not simply born but developed and take inspiration (sometimes lessons) from other leaders. The achievements (of leaders) increase the likelihood of similarly dynamic character emerging and developing new approaches and organizations for financial services.” (Hulme, 1996, p240.)

The study of American Credit union was conducted by Emmons who used the theoretical model and semi parametric empirical mode to examine credit unions. The results suggest that credit unions with multiple common bonds have higher participation rates than credit unions that are otherwise similar but whose membership shares a single common bond.

The study says that “79 percent of all Americans who were eligible to join a credit union had done so. Given the prominent role of occupational credit unions, a majority of members is in the prime working ages of 25-44. Perhaps surprisingly given the origins of credit unions, current members are over represented in upper-middle income strata, defined as household incomes between $30,000 and $80,000 in 1987. Overall, it appears that credit unions and commercial banks are more direct competitors today than they were in the early part of this century” (Emmons, 1998, pp5-6). The same studies cited from another sources claimed that “the ability of credit unions to come through the depression without failures, when banks have failed so notably, is a tribute to the worth

of cooperative credit and indicates clearly the great potential values of rapid national credit union extension" (U.S. Supreme Court, 1998, pp. 17-18).

2.4 Performance Studies of Bangladesh Credit Unions

As to date, there is no empirical study conducted on credit unions' financial performance in Bangladesh. But, the annual reports and evaluation papers give a general background about performance, effectiveness and role of credit unions in Bangladesh.

In the inaugural meeting of first Credit Union on July 3, 1955, in the hall room of the Laxmibazar Parish in old Dhaka among 49 Christian leaders, as a special guest Mr. Clifford Noronha, President of Christian credit union, Kolkata, presented an emotional speech where he said that "one day this union will become a bright and exemplary institution for the whole Christian community of the region" (Rozario, 2005). One of the studies on The Christian Co-operative Credit Union Ltd., Dhaka (CCCU Ltd. Dhaka) mentioned "his prediction has really turned true today, after 50 years of foundation of the CCCU Ltd., Dhaka has become the largest cooperative credit union in independent Bangladesh. Needless to say, not only in Bangladesh, this union is now considered the largest on the basis of membership." (Ibid., 2005, p46). This truth can be seen in the following table.

Table 2.1 Over all Performance of the CCCU Ltd. Dhaka (1955-2005)
(Figures in Bangladesh Currency, 1 US$ = 68 Taka)

Description		1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005
Savings Account	Total Members							112	7999	9045	20312	24750
	% Growth								7042%	13%	125%	22%
Savings Deposit	Total Members							363200	7645025	40261000	92279200	186939000
	% Growth								2005%	44%	49%	49%
Members	Total Members	112	268	887	1335	1995	3091	4046	4927	8994	13228	17275
	% Growth		136%	236%	51%	49%	55%	31%	22%	83%	47%	31%
Shares Capital	Total Amount	10019	51868	214935	642329	1242040	2843600	7110700	18624000	52190000	110745000	177528128
	% Growth		418%	314%	199%	93%	129%	150%	162%	180%	112%	60%
Outstanding Loans	Total Amount	6100	36300	155300	605500	1118500	2536400	8251600	24598500	87210300	165169000	343152000
	% Growth		495%	328%	290%	85%	127%	225%	198%	255%	89%	108%
Loan Protection	Total Amount											2637220
	% Growth											0%
Share Protection	Total Amount							4500	207880	738760	1840955	2878120
	% Growth								362%	255%	149%	56%
Higher Education Loan	Total Amount								76450	570225	1148030	5335600
	% Growth									646%	101%	365%
Total Assets	Total Amount	10540	47590	289900	771100	1461600	3562900	10063100	28272600	24251600	262901400	538565600
	% Growth		352%	509%	166%	90%	144%	182%	181%	339%	112%	105%

(Source: Souvenir, 2005, p101)

According to the report of its 50th year celebration in 2005, during the second decade in 1975, the number of its members was 1,995. In 1985, membership was 4,046, in 1995, it was 8,994 and on September 30, 2005, on its fifth decade that marked the union's golden Jubilee, the number has reached 17,275. The member increase rate doubled in each decade. The CCU Ltd Dhaka is the first and mother credit union of the credit union movement in Bangladesh.

One of the credit union report (Souvenir, 2005) said that the union continued to be run by the capable leadership under Father Young's insightful plan and invaluable guidance. The union which came into being out of mere voluntary efforts, now started to take the shape of an effective financial organization. The poverty stricken Christian community could also realize the necessity of such a credit union. The activities of the CCCU Ltd Dhaka are no more limited within small savings and credit schemes among the needy members.

In 1962 to 1967, the credit union movement began to spread. During this period, credit unionist Fr. Young has founded at least one unit of credit union in every parish around Dhaka city. This time was a busy time for Fr. Young. He had to motivate the people and leaders to cooperate with him and support the movement.

Table 2.2 Share Accounts Performance of CCCU Ltd. Dhaka (1955- 2005)
(Figures in Bangladesh Currency, 1 US$ = 68 Taka)

Decade-Wise	**Received** (Taka)	**Paid** (Taka)
1955-1965	3,45,170	69,099
1965-1975	17,39,702	6,46,426
1975-1985	72,35,457	9,32,506
1985-1995	5,78,38,988	47,45,648
1995-2005	13,96,33,013	2,28,70,523
Total	**20,67,92,330**	**282,64,202**

(Source: Souvenir, 2005, p48)

Table 2.3 Savings Accounts Performance of CCCU Ltd. Dhaka (1984- 2005)
(Figures in Bangladesh Currency, 1 US$ = 68 Taka)

Decade-Wise	**Deposit** (Taka)	**Withdrawn** (Taka)
1984-1986	15,90,273	5,00,723
1986-1996	16,76,20,623	11,95,22,562
1996-2005	159,36,15,222	145,58,63,761
Total	**176,28,26,118**	**157,58,87,046**

(Source: Souvenir, 2005, p48)

In order to spread the concept of Credit union, irrespective of race, religion, and caste across the whole country, the Christian Cooperative Credit Union Ltd Dhaka took the initiative and founded the Cooperative Credit Union League of Bangladesh (CCULB) with 11 credit unions in Dhaka and around Dhaka using the money of its own education fund.

Table 2.4 Credit Union Movement Performance in Bangladesh for the Last Seven Years
(Figures in Bangladesh Currency, 1 US$ = 68 Taka)

Description	2000	2004	2005	2006
Total active or Affiliated CUs	391	410	407	454
Total CUs in Village		340	336	336
Total CUs in Town		70	71	74
Total CUs in Parish				57
Total Associated CUs				44
Total Members	96,919	126,008	134,050	157,047
Members: Male	55,859	69,371	73,511	87,967
Members: Female	41,060	56,637	60,539	69,080
Total Shares	275,734,948	454,159,465	508,256,060	605,781,243
Total Savings	274,878,917	680,927,810	842,626,008	1,068,776,002
Total Outstanding Loans		855,043,102	1,034,127,810	1,420,063,246
Total Reserve Funds	89,923,821	179,579,980	197,026,519	362,267,214
Total Assets	**640,537,686**	**1,314,667,255**	**1,547,908,587**	**2,036,824,459**

Source: The Co-operative Credit Union League of Bangladesh Ltd., (CCULB)
CCULB Bhaban, School Road, Khilbarir Tek, Gulshan, Dhaka - 1212, Bangladesh.

2.5 Synthesis of the Studies

According to reviewed literature, Credit Unions are member-owned democratic financial institutions emphasizing self-help and voluntarism and with social objectives

concerning educational and development concerns specially for weaker, disadvantaged population of society. The main measures used by most of the previous studies were accounting and financial measures, which form as a benchmark measurement for this present research. The common accounting and financial variables such as profitability, operating efficiency, capital expenditure are also used in this study. However, this present study used PEARLS indicators and applied it to Bangladesh Parish-based CUs for the first time and compared to the current international standard in a long run analysis.

Another notable difference of this study from previous studies is that, many traditional credit union movements around the world are weak in the area of financial sustainability and depend upon subsidies for their continued survival. On the other hand, the Bangladesh parish-based credit union started from and through the need of the members and still survived without financial subsidies from outside sources.

Empirical findings about the impact of credit unions in this study may yield both mixed results either supporting or contrasting with the findings of the previous studies, which can be further investigated. The next chapter presents the operational design for this study to prove the theoretical and empirical predictions as objectives of this study.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter explains the whole research methodology of the study. The chapter presents the clear overview about the research design, data gathering procedures, the research models and variables, the rating systems, and the statistical tests used for data analysis and interpretation. There is also a discussion on the monitoring and supervisory management indicators of the study.

3.1 Research Design

This study used the quantitative method of research. Quantitative method deals with numbers and anything that is measurable. They are therefore to be distinguished from qualitative method. Counting and measuring are common forms of quantitative

methods. The result of the research is a number, or a series of numbers. These are often presented in tables, graphs or other forms of statistics (McClave, 2005, 2004).

The study compares financial performance standard according to worldwide WOCCU‘s financial standard measurement components PEARLS system. The study used PEARLS components to evaluate the financial performance of CUs. The financial performance of CUs is examined over the time period 2000 to 2006. The study used 15 parish based credit unions.

3.2 Data and Sample

The data sample consists of 15 selected Parish-based Credit Unions as follows:

Table3.1 Name of the Research Field 15 CUs

No	Registered Name of CUs	Short Name	Founder and Est. Date
1	The Christian Co-Operative Credit Union Ltd. Dhaka.	Dhaka	Fr. Charles Young, csc in 1955
2	Nagori Christian Samabaya Rindan Samity Ltd.	Nagori	Knight Vincent Rodriguez in 1962
3	Toomilia Co-Operative Credit Union Ltd.	Toomilia	Fr. Charles Young, csc in 1964
4	Rangamatia Christian Samabaya Rindan Samity Ltd.	Rangamatia	Agnes D’Costa & others in 1963
5	Dhorenda Christian Samabaya Sanchaya & Rindan Samity Ltd.	Dhorenda	Fr. Leo Sullivan, csc in 1967
6	Golla Christian Samabaya Rindan Samity Ltd.	Golla	Fr. Charles Young, csc in 1966
7	Tuital Christian Samabaya Rindan Samity Ltd.	Tuital	Fr. Charles Young, csc in 1967
8	Hashnabad Christian Samabaya Sanchaya &Rindan Samity Ltd.	Hashnabad	Mr. Denish I Gomes in 1967
9	Jonail Christian Agricultural Co-Operative Credit Union Ltd.	Jonail	Fr. Canton Pime, in 1965
10	Ranikhong Adibashi Samabaya Rindan Samity Ltd.	Ranikhong	Mr. Sudir Mankin in 1966
11	Sulepur Christian Samabaya Sanchaya & Rindan Samity Ltd.	Solepur	N/A in 1966
12	Mothurapur Christian Sanchaya & Rindan Samity Ltd.	Mothurapur	Fr. Peter Gomes in 1963
13	Bonpara Christian Samabaya Rindan Samity Ltd.	Bonpara	N/A in 1964
14	Mothbari Christian Samabaya Rindan Samity Ltd.	Mothbari	Mr. Augustine Serrao in 1962
15	Bakshanagar Christian Samabaya Rindan Samity Ltd.	Bakshanagar	N/A

Source: The Co-operative Credit Union League of Bangladesh Ltd., (CCULB)
CCULB Bhaban, School Road, Khilbarir Tek, Gulshan, Dhaka - 1212, Bangladesh

The financial performance of CUs is examined over the time period 2000 to 2006 or 7 years for each credit union or a total of 105 observations. The study used the financial statements: the Balance Sheet, The Profit and Loss Statements, and The Receipt and Disbursement Statement of twenty PBCUs.

Table3.2 Financial & Other Information of Research Field of 15 CUs, June 30, 2006

(Figures in Bangladesh Currency, 1US$ = 68 Taka)

No	Name of CUs	Total Members	Total Share	Total Savings	Loans to Members	Total Capital	Net Income
1	Dhaka	Share & Savings17275 (2005)	194,819,410	202,214,992	410,499296	607,995,509	1,943,253
2	Nagori	Share & Savings 4346	29,740,883	44,299,259	56,945,536	131,515,683	1,274,417
3	Toomilia	Share: 4585 Savings 5860 (2004)	33,988,569	29,169,255	84,445,290	105,109,318	996,909
4	Rangamatia	Share: 2062 Savings 3312	10,594,167	15,383,803	24,463,199	36,822,357	394,120
5	Dhorenda	Share: 2254 Savings: 4009	21,787,088	18,230,996	54,227,235	59,565,091	1,405,981
6	Golla	Share: 1518 Savings:1914	6,724,850	10,011,147	13,816,575	21,600,131	691,123
7	Tuital	Share: 698 Savings: 603	1,775,127	4,100,127	11,079,918	18,425,606	434,516
8	Hashnabad	Share: 1103 Savings: 1535	5,924,599	5,989,027	10,864,394	23,369,994	435,355
9	Jonail	Share: & Savings: 2225	14,434,937	5,009,746	31,735,550	24,100,287	480,828
10	Ranikhong	Share & Savings: 736	1,587,171	948,331	2,971,273	3,580,297	64,026
11	Sulepur	Share & Savings: 1124	7,352,312	15,802,569	17,375,450	64,623,164	1,171,368
12	Mothurapur	Share: 1086 Savings: 1075	4,196,780	3,711,990	7,837,329	9,043,145	246,557
13	Bonpara	Share: 2147 Savings: 4047	21,940,703	10,309,959	41,685,211	43,383,342	1,086,556
14	Mothbari	Share & Savings: 1606	15,049,856	14,895,772	40,661,717	49,572,570	570,276
15	Bakshanagar	Share & Savings: NA	1,912,717	193,130	1,718,900	2,583,794	143,623

Source: The Co-operative Credit Union League of Bangladesh Ltd., (CCULB)
CCULB Bhaban, School Road, Khilbarir Tek, Gulshan, Dhaka - 1212, Bangladesh

The present study selected above mentioned 15 PBCUs because the study maintained communal character in terms of establishment and existence date, continuous financial strength and needs of members, educational back ground of the members, financial records and data gathering system of the firms. The 15 PBCUs membership procedures, product natures, management policies, accounting systems, monitoring by-laws are the same. The study also used 7-year (2000 to 20006) time period to conduct the research work with updated duration because the industry has become more aware during this time period about financial records and performance. The audited financial statements of Credit unions started in July 1 of the previous year and ended in June 30 of the following year. The study mentioned ending dates (years) of financial statements. Only audited financial repots are used in this study.

3.3 Research Models and Variables

This section discusses the accounting model of PEARLS financial ratios and their corresponding variables description.

3.3.1 PEARLS Financial Ratios

Many different financial ratios and rules of thumb have been promoted for financial institutions worldwide, but few have been consolidated into an evaluation program that is capable of measuring both the individual components and the system as a whole. Since 1990, the World Council of Credit Unions, Inc. has been using a set of financial ratios known as PEARLS.

These ratios provide credit unions, project staff, national federations and regulators with essential tools for monitoring, planning, standardizing, ranking, and facilitating supervisory control in credit unions. It was first designed as a management tool, and later became an effective supervisory mechanism. The key methodological tool used within the study is the PEARLS financial monitoring system. This system was originally developed in Latin America by WOCCU as a means to evaluate the performance of credit unions (Jones, 2002). PEARLS is a unique financial management tool capable of measuring key areas of credit union operations, both in terms of financial structure and growth. It assists credit unions to identity problems and finds solutions for institutional deficiencies. It is linked methodologically to business planning and helps credit unions to plan and set goals for the future.

Each letter of the PEARLS looks at different, but critical aspect of the credit unions operations: **P**=Protection, **E**=Effective financial structure, **A**=Asset quality,

R=Rates of return and costs, and **L**=Liquidity and **S**=Signs of growth. PEARLS monitoring system, goals, ratios and equations are as follows:

P = PROTECTION OF ASSETS

Protection is measured by comparing the adequacy of the provisions for loan losses against the amount of delinquent loans. A credit union has adequate protection if it has sufficient provisions to cover 100% of all delinquent loans for more than 12 months and at least 35% of loans delinquent between 1 and 12 months.

The indicators in this section measure the adequacy of the provisions for loan losses.

Table 3.3 Protection of Assets Measurement Ratios

P	Description	Goals
P1	Allowance for Loan Losses / allowances Required for Loans delinquent > 12 months	100%
P2	Net allowance for Loan Losses / Allowances Required for Loans Delinquent less than 12 months	35%
P3	Total Charge-off of Delinquent Loans > 12 months	100%
P4	Annual Loan Charge-of	Minimal
P5	Accumulated Loan Recoveries / Accumulated Loan Charge-offs	100%
P6	Solvency	> = 100%

E = EFFECTIVE FINANCIAL STRUCTURE

Financial structure of the credit union is the single most important factor in determining growth potential, earnings capacity, and overall financial strength. Credit

unions are encouraged to maximize earning assets as the means to achieve sufficient earnings.

The indicators in this section measure the composition of the most important accounts on the Balance Sheet. An effective financial structure is necessary to achieve safety, soundness, and profitability while at the same time, positioning the credit union for aggressive real growth.

Table 3.4 Effective Financial Structure Measurement Ratios

E	Description	Goals
E1	Net Loans / Total Assets	70-80%
E2	Liquid Investments / Total Assets	Max 20%
E3	Financial Investments / Total Assets	Max 10%
E4	Non-Financial Investments / Total Assets	0%
E5	Savings Deposits / Total Assets	70-80%
E6	External Credit / Total Assets	Max 5%
E7	Member Share / Total Assets	10-20%
E8	Institutional Capital / Total Assets	Min 10%
E9	Net Institutional Capital / Total Assets	Same as E8

A = Asset Quality

A non-earning asset is one that does not generate income. An excess of non-earning assets negatively affects credit union income. PEARLS indicators are used to identify the impact of non-earning assets by analyzing delinquency ratios, percentages of non-earning assets, and the financing of non-earning assets.

The indicators in this section measure the percentage of non-earning assets that negatively impact profitability and solvency. They are: loan delinquency, non-earning assets and the financing of non-earning assets.

Table 3.5 Assets Quality Measurement Ratios

A	Description	Goals
A1	Total Loan Delinquency / Gross Loan Portfolio	< = 5%
A2	Non-Earning Assets / Total Assets	< = 5%
A3	Net Institutional & Transitory Capital + Non interest-Bearing Liabilities / Non-earning Assets	>200%

R = RATES OF RETURN & COSTS

By segregating all of the essential components of net earnings, the PEARLS system helps management calculate investment yields and evaluate financial costs and operating expenses. PEARLS calculates yields on the basis of average outstanding investments, unlike other systems that calculate yields on the basis of average assets.

Yield is computed in four main areas: loan portfolio, liquid investments, financial investments, and other non-financial investments. Operating costs are also important and broken down into three main areas: financial intermediation costs, administrative costs, and unrecoverable loan costs. These indicators measure the average income yield for each of the most productive assets of the Balance Sheet.

Table 3.6 Rates of Return & Costs Measurement Ratios

R	Description	Goals
R1	Net Loan Income / Average Net Loan Portfolio	Entrepreneurial Rate
R2	Total Liquid Investment Income / Average Liquid Investments	Market Rates
R3	Total Financial Investment Income / Average Financial Investments	Market Rates
R4	Total Non-Financial Investment Income / Average Non-financial Investments	Greater than R1
R5	Total Interest Cost on Savings Deposit / Average Savings Deposits	Market Rates > Inflation
R6	Total Interest Cost on External Credit / Average External Credit	Market Rates
R7	Total Interest (Dividend) Cost on shares / Average Member shares	Market Rates > = R5
R8	Total Gross Income Margin / Average Total Assets	Variable – Linked to R9, R11, R12
R9	Total Operating Expense / Average Total Assets	5%
R10	Total Loan Loss Provision Expense / Average Total Assets	Dependent on Delinquent Loans
R11	Non-Recurring Income or Expense / Average Total Assets	Minimal
R12	Net Income / Average Total Assets	Linked to E9

L = LIQUIDITY

Liquidity is traditionally viewed in terms of cash available to lend - a variable exclusively controlled by the credit union. With the introduction of withdrawable savings deposits, the concept of liquidity radically changes. Richardson explained, "Liquidity now refers to cash needed for withdrawals - a variable the credit union can no longer control. The maintenance of adequate liquidity reserves is essential to sound financial

management of the new credit union model." PEARLS analyzes liquidity from three perspectives: total net liquidity reserves, obligatory liquidity reserves, and idle liquid funds. The liquidity indicators show whether the credit union is effectively managing its cash so that it can meet deposit withdrawal requests and liquidity reserve requirements. In addition, idle cash is also measured to insure that this non-earning asset does not unduly affect profitability.

Table 3.7 Liquidity Measurement Ratios

L	Description	Goals
L1	S.T Investments + Liquid Assets – S. T. Payables / Savings Deposit	Min 15%
L2	Liquidity Reserves / Savings Deposits	10%
L3	Non earning Liquid Assets / Total Assets	< 1%

S = SIGNS OF GROWTH

The advantage of the PEARLS system is that it links growth to profitability, as well as to other key areas by evaluating the strength of the system as a whole. Growth is measured in seven key areas: total assets, loans, savings deposits, external credit, shares, institutional capital, and membership.

Table 3.8 Signs of Growth Measurement Ratios

S	Description	Goals
S1	Growth in Loans to Members	Dependent on E1
S2	Growth in Liquid Investments	Dependent on E2
S3	Growth in financial Investments	Dependent on E3
S4	Growth in Non-Financial Investment	Dependent on E4
S5	Growth in Savings Deposits	Dependent on E5
S6	Growth in External Credit	Dependent on E6
S7	Growth in Share Capital	Dependent on E7
S8	Growth Institutional Capital	Dependent on E8
S9	Growth in Net Institutional Capital	Dependent on E9
S10	Growth in Membership	> 12%
S11	Growth in Total Assets	> Inflation

3.4 Statistical Tests

3.4.1 Descriptive Statistics

This includes the mean, median, standard deviation, minimum and maximum. These are used for all financial variables in the PEARLS method.

3.4.2 One-way Analysis of Variance Statistical Test

This is used to test whether there are significant differences for each financial variable among parish based CUs. The study used the One-way Analysis of Variance (ANOVA) statistical technique to test the null hypothesis. The ANOVA is designed to test the equality of more than two quantitative population means. This technique requires taking an independent random sample from each population of interest and analyzing the variance in the respective samples used. The ANOVA test assumes that the sampled populations are normally distributed and have equal variance.

The most common application of ANOVA is the completely randomized design or one-way ANOVA, which is a process where sample observations are randomly selected assigned to the various treatments. There are two methods of selecting treatments- by fixed-effects Model and by Random-effects Model. One-way ANOVA is based on the comparison of the amount of variation in each of the treatments. There are three types of variation that can be compared in the ANOVA tests: Between-sample Variation, Within-sample Variation, and Total Variation.

Formulated by Sir Ronald A. Fisher (1890-1962) in 1924, the F-ratio, which is the ratio of the variation between samples (treatment variation) and variation within samples (error variation), is a statistic used in ANOVA. F= Treatment Variation / error variation. The basic steps in conducting ANOVA tests follow the same steps in hypothesis testing.

1. State the null and alternative hypothesis

2. Solve the ANOVA equation using the appropriate formula.

One-way ANOVA Equation: TSS = TrSS + ESS

$$TSS = \sum_{i=1}^{r} \sum_{j=1}^{c} \left(X_{ii} - \overline{\overline{X}} \right)^2$$

$$TrSS = r \sum_{j=1}^{c} \left(\overline{X}_i - \overline{\overline{X}} \right)^2$$

$$ESS = TSS - TrSS$$

Where:

TSS - Total Sum of Squares

TrSS - Treatment Sum of Squares

ESS - Error Sum of Squares

c – Number of treatments or samples (no of columns)

r –size of each sample (no of rows)

$X_{ij-\text{the}}$ j th observation of the I th sample

$X_{j=\text{the}}$ column means

3. Construct the ANOVA Table.

4. Determine the critical value using the F tables

Table 3.9 One-way ANOVA Balanced Table

Source of Variation	Sum of Squares	Degree of Freedom	Mean of Sum of Squares	F-ratio
Treatment	Trss	C-1		
Error	ESS	C(R-1)		
Total	TSS	Rc-1		

(Source: Mason, 1999, p395)

5. Make a decision. The H0 is rejected at a if the computed value of F is greater than or equal to its tabular value, otherwise, accept the H0.

6. Make a conclusion.

3.5 Data Sources

The primary empirical data sources for this study were the audited annual financial statements of 15 credit unions from 2000 to 2006. The audited financial statements of Credit unions started in July 1 of the previous year and ended in June 30 of the following year. Only audited financial reports are used in this study.

The researcher completed data sets for the entire test period (2000 – 2006) with the assistance of CCULB, Bangladesh. Other supporting information as regards statistical information were gathered directly from every unit of credit unions and from their published printed annual reports.

Other secondary sources were acquired from other published materials such as journals, books, and other related printed materials. These materials are available in the libraries of the University of Sto. Tomas, Manila, Philippines; De LaSalle University, Taft Manila, Philippines; the Library of Ateneo University, Quezon City Manila, Philippines.

The researcher gathered data and updated data from the Library of Press Institute of Bangladesh, Dhaka, Bangladesh; Bureau of the Statistics, Bangladesh, the archives of CCULB, Dhaka, Bangladesh, and other Internet sources.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter focuses on the impact of PEARLS monitoring system on financial management performance of PBCUs in Bangladesh both at the firm and industry levels. There are six major categories of measurement employed in this study: Protection of Assets, Effective Financial Structure, Asset Quality, Rates of Return & Costs (profitability), Liquidity, and Signs of Growth. Results and discussions of these categories of measures and statistical results are presented below. The results are divided into two major components. The first part discusses the statistical results to address objectives 1 and 2. The second part analyzes all the PEARLS components and compares each component to the WOCCU standard. This last part addresses objectives 3 and 4.

PART 1: STATISTICAL TESTS RESULTS

This part discusses the statistical results (both descriptive statistics and ANOVA statistical test results) to address objectives 1 and 2.

4.1.1 Descriptive Statistics Results

This section explains the first objective of the present study - the descriptive statistics of PEARLS criteria of PBCUs. Table 4.1 shows all descriptive statistics for all PEARLS components of the 15 parish-based credit unions. The descriptive statistics shows that the mean for P, E, A, R, L, and S ratios are 39.25, 32.07, 85.74, 6.57, 34.42, and 41.71 percent, respectively.

Table 4.1 Descriptive Statistics of PEARLS
(Values are in Percentage)

Financial Ratio	Mean	Standard Deviation	Minimum	Maximum
Protection of Assets	39.25	52.68	0.23	203.56
Effective Financial Structure	32.07	1.04	27.17	35.94
Assets Quality Measurement	85.74	64.92	10.46	395.69
Rates of Returns and Costs	6.57	1.51	4.45	12.93
Liquidity Measurement	34.42	82.95	3.04	463.89
Signs of Growth Measurement	41.71	121.56	(11.49)	1,189.14

Table 4.1 also indicates that A (Assets quality) ratios have the highest mean of 85.74 percent and R (Rate of Returns and Costs) ratios have the lowest mean 6.57 percent.

4.1.2 ANOVA Results

This section explains the second objective of the present study – financial management performance among PBCUs using PEARLS criteria and to test whether there are any significant financial differences among them. The study has several Null Hypotheses tested: there is no significant difference on the credit unions' financial ratios when grouped into: a. Protection of Assets b. Effective Financial Structure, c. Assets Quality Measurement, d. Rates of Returns and Costs, e. Liquidity Measurement, and f. Signs of Growth Measurement. The study used ANOVA Statistic to test the 6 null hypotheses.

Based on the one way Analysis of Variance (ANOVA) test, Table 4.2 shows the mixed results based on the null hypotheses.

Table 4.2 Summary of ANOVA Results
(Values are in Percentage)

Financial Ratio	Mean Square		F-Stat	P-Value
	Between Groups	Within Groups		
Protection of Assets	20,492.19	19.70	1040.50*	0.000
Effective Financial Structure	3.06	0.76	4.018*	0.000
Assets Quality Measurement	17,679.74	2,119.41	8.342*	0.000
Rates of Returns and Costs	2.95	2.19	1.350	0.195
Liquidity Measurement	46,805.76	669.39	69.923*	0.000
Signs of Growth Measurement	12,798.45	15,085.86	0.848	0.616

***Significant at 0.05 Probability Level**

Table 4.2 ANOVA results show that P, E, A, L ratios with F values of 1040.50, 4.018, 8.342, and 69.923, respectively, show significant differences with p-values significant at 0.05 probability level. Based on the one-way ANOVA test, the study rejects the null hypotheses (1, 2, 3 and 5). Hence, the study concludes that there are significant differences in the performance of the 15 PBCUs in terms of Protection of Assets, Effective Financial Structure, Asset Quality and Liquidity Measurement. This implies that PBCUs have different financial performance in four major components of PEARLS while others have positive performance and the rest shows poor performance. This can be further explained in the next section.

On the other hand, the PBCUs R and S ratios denote no significant differences across the time periods with F values of 1.350 and 0.848, respectively, which are above the 0.05 significance level. In the same manner, based on the one-way ANOVA test results, the sample data did not provide sufficient evidence to reject null hypotheses 4 & 6 that there are no significant differences on the credit union's financial ratios in terms of

rates of Return & Costs (profitability) and Signs of Growth Measurement. Hence, the study accepts the null hypothesis and concludes that there are no significant differences in the performance of the 15 PBCUs in term of rates of Return and Costs (profitability) and Signs of Growth Measurement. There are three major implications for these new results. **Firstly**, PBCUs followed the same rules and regulations in terms of financial services and member benefits and members feel comfortable to deal with CUs than with banks; so therefore, the performance is almost the same. **Secondly**, as open bond parish-based CUs, 100% members in PBCUs are Christians (where 0.03% are Christian over total population and the total population growth rate is 1.47% in 1991 to 2005 in Bangladesh), so overall growth rate has no significant difference. **Thirdly,** PBCUs still follow voluntarism spirit rather than professionalism, so therefore their signs of growth and profitability are quite similar.

PART 2: THE RESULTS OF PEARLS FINANCIAL INDICATORS

This part analyzes all the PEARLS components and compares each component with the WOCCU standard. This last part addresses objective 3- evaluates and examines the financial indicators of PEARLS of PBCUs and compares them with the WOCCU financial standard in order to suggest the viability of the model, and objective 4- shows the trend analysis of the PEARLS indicators in order to determine the future direction of each financial indicator. The results, data, graphs and other statistical forms of six major

financial measurement indicators of this study (Protection of Assets, Effective Financial Structure, Asset Quality, Rates of Return & Costs (profitability), Liquidity, and Signs of Growth) are presented and discussed in this section.

4.2.1. Protection of Assets

Adequate protection of assets is a basic tenet of the new credit union model. Protection against loan losses is deemed adequate if a credit union has sufficient provisions to cover 100% of all loans delinquent for more than 12 months, and 35% of all loans delinquent for 1 to 12 months. The indicators in this section measure the adequacy of the provisions for loan losses.

The Provisions for Loan Losses

P1 ratio (Allowance for loan losses/Allowances required for loans delinquent>12) measures the adequacy of the allowances for loan losses when compared to the allowances required for covering all loans delinquent for over 12 months.

P2 ratio (Net allowance for loan losses/Allowances required for loans delinquent less than 12 months) measures the adequacy of the allowances for loan losses after deducting the allowances used to cover loans which are more than 12 months delinquent.

Table 4:3 PBCUs Allowance for Loan Losses Indicators (%): Compared with WOCCU Standard
(Consolidated CU Wise P Ratios for 7 years)

CUs	P1	P2
WOCCU Standard	**100%**	**35%**
Nagori	8.33	26.33
Rangamatia	13.48	9.40
Dhorenda	54.10	11.70
Mothbari	0.40	0.28
Ranikhong	22.93	5.21
Bonpara	50.65	4.83
Jonail	4.59	3.82
Mothurapur	2.96	22.37
Hashnabad	245.66	141.00
Golla	100.00	22.67
Solepur	7.55	77.84
Tuital	207.00	57.16
Bakshanagar	37.49	22.33
Dhaka	2.43	2.72
Toomilia	5.57	3.05
Average	**50.88**	**27.38**

Table 4:4 PBCUs Allowance for Loan Losses Indicators (%): Compared with WOCCU Standard
(Consolidated Year Wise P Ratios for 15 CUs)

	WOCCU Standard	2000	2001	2002	2003	2004	2005	2006	Average
P1	100%	24.86	25.90	42.95	53.51	61.78	69.94	76.96	**50.88**
P2	35%	22.96	25.98	24.76	27.88	29.45	29.57	30.97	**27.38**

Comparing PBCUs with WOCCU monitoring standard, Table 4.3 indicates that three of the fifteen CUs: Hashnabad 245.66%, Tuital 207.00%, and Golla 100.00% have the adequate allowance for loan losses of more than 12 months (P1) and three of fifteen CUs: Hashnabad 141.00%, Solepur 77.84% and Tuital 57.16%, have the adequate of allowance for loan losses between 1 to 12 months (P2). The results of these above mentioned CUs is similar to the study of Bolivia and Poland (Branch and Evans, 1999) that there is significant improvement in terms of protection of assets.

On the other hand, Nagori 8.33%, Solepur 7.55%, Toomilia 5.57%, Jonail 4.59%, Mothurapur 2.96%, Dhaka 2.43% and Mothbari 0.41%, have lower ratios than PEARLS systems in terms of allowances for loan losses of more than 12 months (P1) and Rangamatia 9.40%, Ranikhong 5.21%, Bonpara 4.83%, Jonail 3.82%, Toomilia 3.05%, Dhaka 2.72% and Mothbari 0.28%, also have lesser ratios than WOCCU standard in terms of allowance for loan losses of less than 12 months (P2). The results of these above mentioned CUs is similar to the study of Kenya and the Philippines (Branch and Evans, 1999) that there is no significant improvement in terms of protection of assets.

Tables 4.5 and 4.7 indicate that Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, Mothurapur and Toomilia CUs have higher loan delinquency and higher loan to member ratio. Also the above mentioned CUs pay good dividend and interest. But their financial

performance is in danger in the future. They have the possibility to adjust through professional and corporate governance.

Table 4.4 indicates that at the industry level, PBCUs in Bangladesh do not reach WOCCU standard of 100% (average PBCUs ratio is 50.88%) of all loan losses delinquent for more than 12 months (P1) and 35% (average PBCUs ratio is 27.38%) of all loans delinquent for 1-12 months (P2).

Figure 4.1 indicates that only three CUs (Hashnabad, Golla and Tuital) reached the WOCCU goals of 100% for P1 and three CUs (Hashnabad, Solepur and Tuital) reached the WOCCU goals of 35% for P2 ratio. The PBCUs in Bangladesh still stands on old CU model – protect their assets through the capital assets reserves. WOCCU standard PEARLS system rejects this model and applies the new idea to protect members' precious valuable assets (Richardson, 2002). The results of the present study is similar to the studies of Kenya, Ecuador, El Salvador, the Philippines (Brach and Evans, 1999), and Ghana CUs (Ofei, 2001) that there is no significant improvement in terms of protection of assets. This result contrasts with the study of Bolivia (Brach and Evans, 1999) Poland (Evans, 1999) that there is significant improvement in terms of protection of assets in Poland and Bolivia CU.

Figure 4.1 Allowance for Loan Losses (CU wise): Compared Among PBCUs & with WOCCU Standard

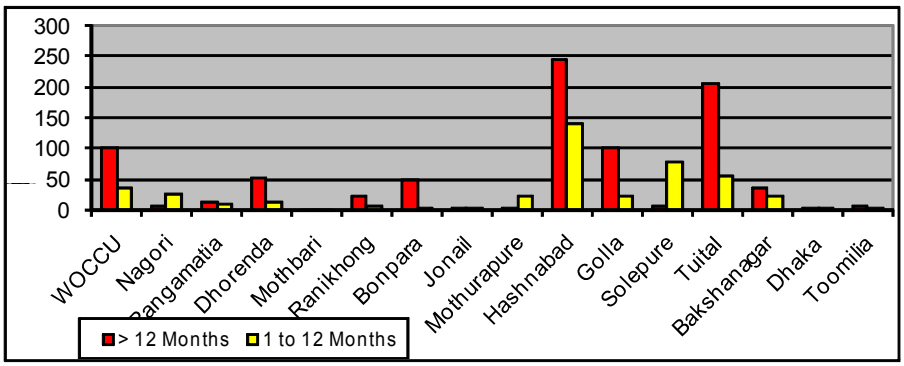
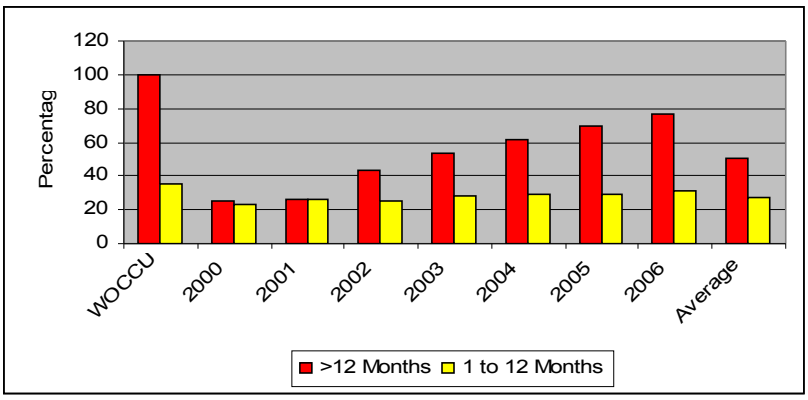


Figure 4.2 Allowance for Loan Losses (Year wise): Compared Among PBCUs & with WOCCU Standard



The results of the provisions for loan losses indicate that PBCUs have unhealthy financial management performances in dealing with unproductive loan losses assets. Table 4.2 indicates that allowances for loan losses of more than 12 months is improving from 24.86% in year 2000 to 76.98% in year 2006. On the other hand, allowances for loan losses of less than 12 months was also improving from 22.96% in year 2000 to 30.97% in year 2006. The results of the study indicate the hesitancy to provide allowances for loan losses for year 2000 to 2001. However, the provisions or loan losses

were gradually improving from year 2002 up to 2006. The study indicates that most of the PBCUs did not take serious action for loan losses. That unwillingness leads them to widespread abuse of principles of safety and soundness for the last 50 years.

The study period indicates that the provisions for loan losses could not maintain WOCCU standards, but it is improving. Inadequate loan loss protection produces two undesirable results: inflated asset values and fictitious earning or reported net income is overstated and member savings are not adequately protected. The PBCUs in Bangladeshcould not promote the new CU model regarding their valuable assets protection against loan losses for the last 50 years. There is evidence in the financial statement and ratio analysis of PBCUs that provision for loan losses fund suffers for lack of external monitoring and strict financial discipline. There might have been several reasons. One of the major reasons the study unveiled is the erroneous idea and limited knowledge about protection of assets, and management view their shares capital reserves as the primary source of protection against loan losses.

4.2.2 Effective Financial Structure

The financial structure of the CU is the single most important factor in defining growth potential, earnings capacity, and overall financial strength (Richardson, 2002). The E ratios measure assets (**E1** = Net Loans/Total assets, **E2** = Liquid Investments/Total Assets, **E3** = Financial Investments / Total Assets), liabilities (**E5** = Savings Deposits /

Total Assets), and capital (**E7** = Member Share Capital / Total Assets, **E8** = Institutional Capital / Total Assets). This recommend an ideal structure for CUs.

Table 4:5 PBCUs Financial Structure Indicators (%): Compared with WOCCU Standard
(Consolidated CU Wise E Ratios for 7 years)

CUs	E1	E2	E3	E5	E7	E8
WOCCU Standard	**70-80%**	**Max 20%**	**Max 10%**	**70-80%**	**10-20%**	**Min 10%**
Nagori	61.36	14.71	31.09	76.51	27.86	6.91
Rangamatia	74.39	10.16	10.97	55.89	36.89	3.86
Dhorenda	82.25	8.15	5.40	49.57	39.43	9.94
Mothbari	69.67	8.52	17.13	57.22	33.35	5.53
Ranikhong	83.32	4.33	4.10	28.69	46.09	7.97
Bonpara	90.73	5.30	2.72	35.37	53.30	10.37
Jonail	91.65	4.46	2.47	23.07	54.66	13.10
Mothurapur	82.21	14.65	1.06	40.07	48.46	8.31
Hashnabad	58.18	10.30	30.50	43.71	45.58	10.50
Golla	73.21	8.50	12.50	39.35	48.93	7.95
Solepur	41.68	16.55	35.37	77.93	10.67	3.81
Tuital	80.84	7.50	10.75	37.38	45.50	12.44
Bakshanagar	74.46	23.90	0.51	9.69	79.07	13.64
Dhaka	62.63	8.68	24.60	52.15	37.29	5.92
Toomilia	75.52	5.39	15.15	50.78	35.40	7.88
Average	**75.57**	**10.07**	**13.62**	**45.56**	**44.83**	**8.54**

Table 4:6 PBCUs Financial Structure Indicators (%): Compared with WOCCU Standard
(Consolidated Year Wise E Ratios for 15 CUs)

	WOCCU Standard	2000	2001	2002	2003	2004	2005	2006	Average
E1	70-80%	77.33	76.49	74.10	73.02	70.42	69.40	69.98	**75.57**
E2	Max 20%	11.71	10.53	9.62	8.88	10.30	10.76	7.93	**10.07**
E3	Max 10%	8.35	9.20	12.23	14.36	15.28	16.31	17.84	**13.62**
E5	70-80%	36.65	38.98	42.22	45.02	46.63	49.03	51.58	**45.56**
E7	10-20%	47.36	47.38	45.12	43.47	41.65	38.46	34.51	**44.83**
E8	Min 10%	9.74	9.30	9.21	8.74	7.40	7.66	7.36	**8.54**

Assets

According to the WOCCU standard, 95% productive assets are composed of loans (70-80%), liquid investments (10-20%), and 5% unproductive assets which are composed primarily of fixed assets -land, buildings, equipment etc. (Richardson, 2002). CUs are encouraged to maximize productive assets as the means to achieve sufficient earnings. Excess liquidity is discouraged because the margins on liquid investment are significantly lower than those earned on the loan portfolio.

Figure 4.3 Assets Structure (CU wise): Compared among PBCUs & with WOCCU Standard

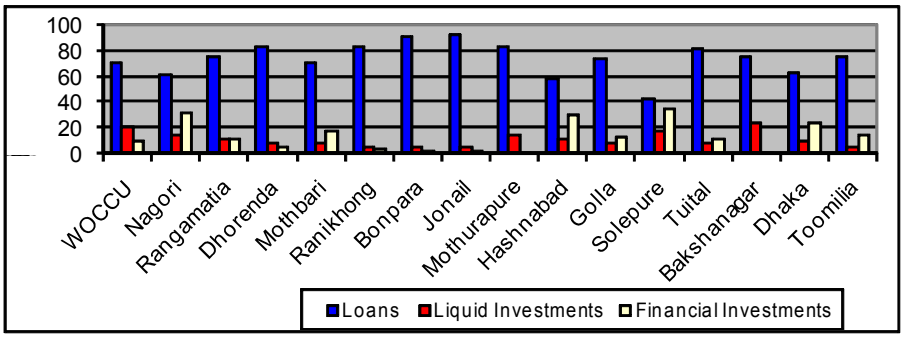


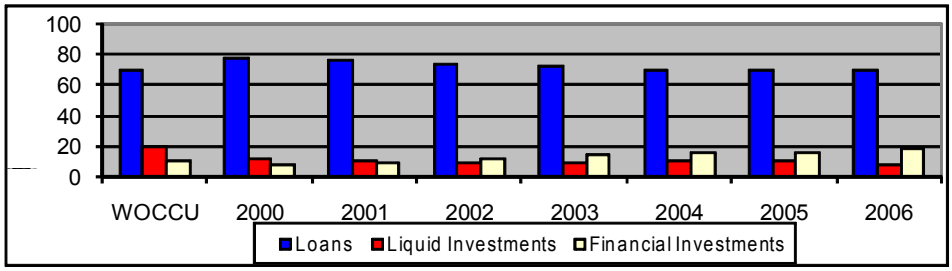
Table 4.5 indicates that ten of the fifteen CUs- Tuital 80.84%, Toomilia 75.52%, Rangamatia 74.39%, Bakshanagar 74.46% and Golla 73.21%, were able to maintain the WOCCU standard of which five CUs: Jonail 91.65%, Bonpara 90.73%, Ranikhong 83.32%, Dhorenda 82.25% and Mothurapur 82.21% maintained excellent performance in terms of Loan portfolio (E1). (But Table 4.3 and 4.7 indicate that Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, Mothurapur and Toomilia CUs have higher loan delinquency and lesser provisions for loan losses ratio. Overall, their financial performance is in danger in the future. They have the possibility to adjust through professional and corporate governance).

All fifteen CUs maintained maximum WOCCU standard indicator of 20% liquid investment (E2) only 1 CU, 23.90%, exceeded the standard. Financial investments (E3 Ratios) results indicate that six CUs: Rangamatia 5.40%, Ranikhong 4.10%, Bonpara 2.72%, Jonail 2.47%, Mothurapur 1.06% and Bankshanagar 0.51% maintained WOCCU

standard. The results of above CUs are similar to the study of Poland CUs (Evans and Richardson, 1990) that there are mixed results in term of productive assets.

Table 4.5 also indicates that five of fifteen CUs, namely: Mothbari 69.67%, Dhaka 62.63%, Nagori 61.36%, Hashnabad 58.18% and Solepur 41.68% could not maintain the WOCCU standard on loan portfolio (E1). The result of 9 CUs in terms of financial investments is higher than WOCCU standard, 35.37% to 10.75%, they could not maintain WOCCU standard (E3).

Figure 4.4 Assets Structure (Year Wise): Compared among PBCUs & with WOCCU Standard



As shown on the seven-year trend in Table 4.6 and Figure 4.4 indicate that PBCUs were able to maintain the WOCCU standard in 2000 to 2004 (77.33%, 76.49%, 74.02% and 70.42%, respectively) and could not maintain the WOCCU standard for 2005 & 2006 (69.40% & 69.98%) in terms of Loans portfolio (E1). The loans portfolio ratio in seven year period was steadily declining. PBCUs were able to maintain liquid investments (E2) ratio (11.71% to 7.93%) for the last 7 years. On the other hand, PBCUs could not maintain financial investments indicator (E3) ratio in 2002 to 2006 (12.23%, 14.36%, 15.28%, 16.31% and 17.84%, respectively). Only in 2000 to 2001, were they

able to maintain the standard at 8.35% & 9.20% respectively (see Table 4.6 & Figure 4.4).

Figure 4.5 Assets Trend: Compared among PBCUs & with WOCCU Standard

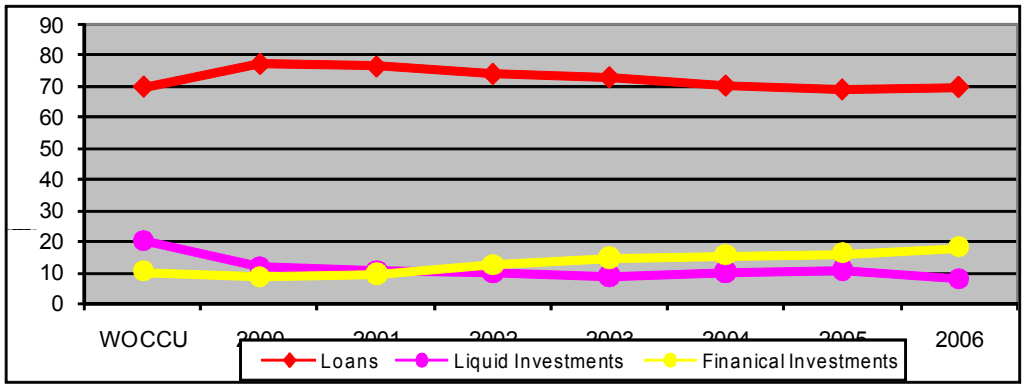
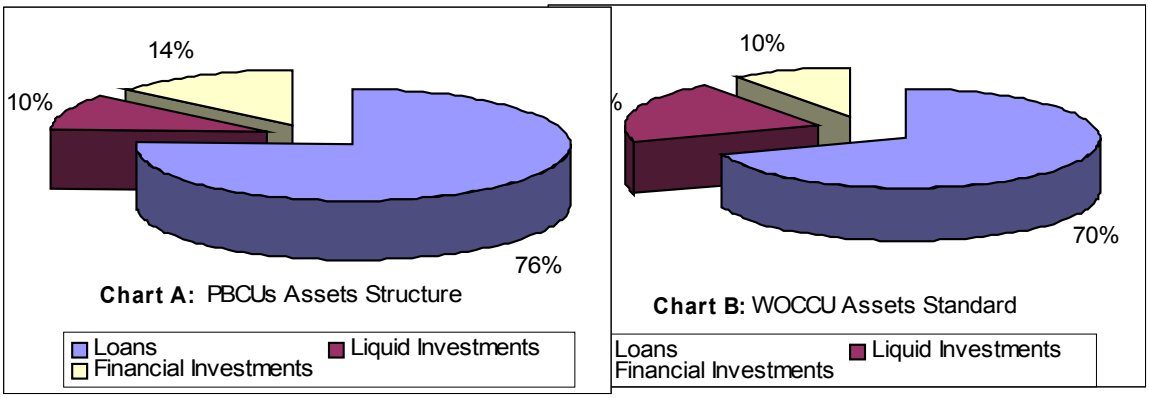


Figure 4.6 PBCUs Average Assets: Compared with WOCCU Standard



According to the WOCCU, assets are composed of loan portfolio 70-80%, liquid investments maximum of 20% and financial investment maximum of 10%. Figure 4.6 indicates that the average results of productive assets of PBCUs are a loan portfolio of 76%, which maintained the WOCCU standard, liquid investment of 10%, which is lesser

than the WOCCU standard, and financial investment of 14%, which exceeds the WOCCU standard. The result of this study is similar to the study of Evans and Richardson (1999) and Mohan (1999) that there is a significant improvement in terms of the volume of productive assets on average. However, Tables 4.5, 4.6 and Figure 4.5 indicate that PBCUs could not maintain the WOCCU standard individually within a seven-year period in terms of assets.

There are several reasons to maintain productive assets in most of PBCUs in Bangladesh. **Firstly**, the members feel comfortable to accept loans from CUs (Rangamatia, Dhorenda, Ranikhong, Bonpara, Jonail, Mothurapur, Golla, Tuital, Bakshanagar, and Toomilia) for their livelihood than any other local bank because requirement is easy, and the location is accessibly secured. The present study accepts the analysis and diagram (see Figure 2.1) of Guinnane of German CUs movement (2001). **Secondly**, the members come from the middle class stratum as overseas workers or minimum wage earners. So they depend on credit unions (Bakshanagar, Rangamatia, Dhorenda, and Toomilia) for financial assistance. **Thirdly**, there is no other choice to borrow money from than CUs (Ranikhong, Jonail, Bonpara, and Mothurapur). CUs can lend the assets in a profitable way. Finally, PBCUs invest the idle money in real estate, which is also very profitable and secured as a financial investment.

There are several reasons for inadequate assets in some of PBCUs in Bangladesh. **Firstly**, people of Hashnabad and Solepur have enough cash in hand; per head earning is

sufficient as earning members are overseas workers. **Secondly**, members (Dhaka, Nagori, and Mothbari) are interested in commercial loans than in consumer loans, if they do not get them they look for another source to fulfill their demand. E5 ratio indicates the two CUs (Nagori and Solepur) members are interested in savings rather than in getting loans. It is a positive growth indicator. The results of the present study show that there are mixed results (negative and positive) in terms of productive assets in PBCUs in Bangladesh. The result of the present study is similar to the CUs studies cited in Chapter 2.

Liabilities and Capital

A healthy percentage (70-80%) of member savings deposit indicates that the credit union has developed effective marketing programs and is well on its way to achieving financial independence. It also indicates that members are no longer saving in order to borrow money, but are instead saving because of the competitive rates offered (Richardson, 2002).

The composition of total capital in CUs is 10-20% member share capital and 10% institutional capital (undivided reserves). Under the new capitalization systems, member shares are de-emphasized and replaced with institutional capital (Richardson, 2002). This has three purposes: to finance non-earning assets, improve earnings, and absorb losses.

Figure 4.7 Liabilities & Capitals (CU Wise): Compared among PBCUs & with WOCCU Standard

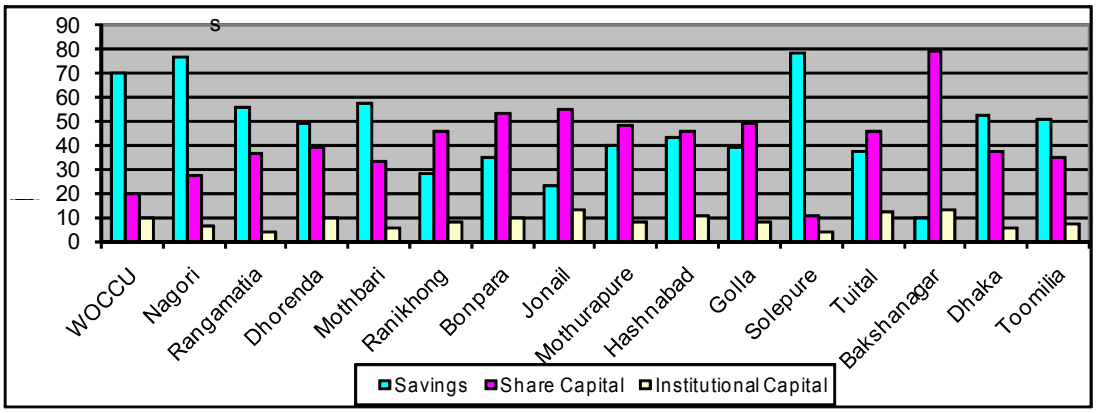
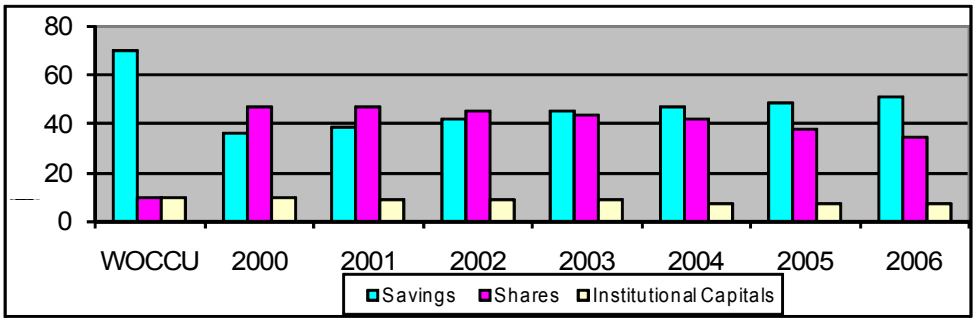


Table 4.5 and Figure 4.7 indicate that only two CUs- Nagori 76.51% and Solepur 77.93%- maintained the WOCCU standard regarding savings deposit ratio (E5). The results indicate that one CU, Solepur has10.67% which maintained the WOCCU standard in terms of share capital, and seven CUs maintained the WOCCU standard of 10.37% to 13.64% of institutional capital (E8). The results are similar to the study of Bolivia and Ecuador (Branch, 1999) and Poland (Evans, 1999) CUs. There is a significant improvement in term of savings deposit and capitals.

On the other hand, the savings deposit ratio (E5) of thirteen CUs ratios is lesser: from 55.89% to 9.69%. Share capital (E7) ratio is higher in fourteen CUs (79.07% to 27.86%) and institutional capital (E8) is lesser in eight CUs (3.86% to 9.94%) than the WOCCU standard (Table 4.5 and Figure 4.7). The results are similar to the results of Kenya and the Philippines CUs study (Branch, 1999). There is no significant

improvement in terms of member savings and capitals. They focus on borrowings not savings.

Figure 4.8 Liabilities & Capitals (Year Wise): Compared among PBCUs & with WOCCU Standard



Liabilities indicators (Table 4.5 and Figure 4.7) show that PBCUs in Bangladesh could not maintain the WOCCU standard on savings deposit (E5) for the last 7 years (2000 to 2006). In terms of capital structure, PBCUs could not meet the WOCCU standard member share capital ratio (E7) for the last 7 years. The ratio is very high. Institutional capital ratio (E8) is lesser (7.36% to 9.74%) than the WOCCU standard (Table 4.5 & Figure 4.8).

Figure 4.9 Liabilities & Capitals Trend: Compared among PBCUs & with WOCCU Standard

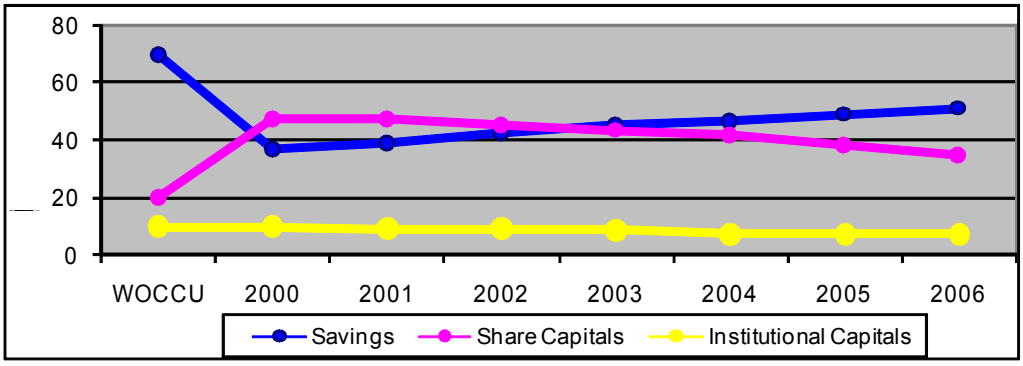
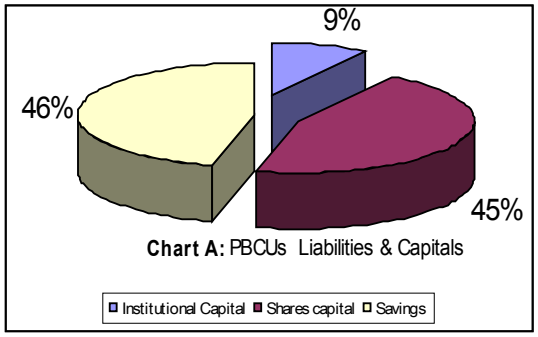
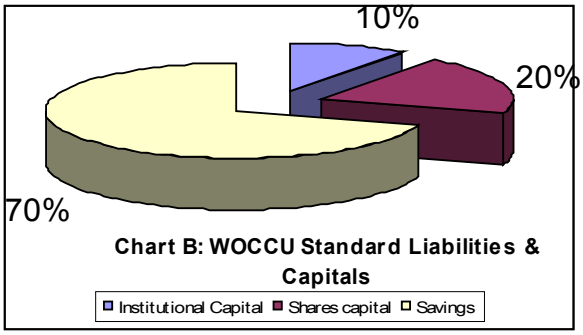


Figure 4.10 PBCUs Average Liabilities & Capitals Quality





WOCCU standard member savings deposit ranged from 70 to 80%, member share capital from 10 to 20% and institutional capital minimum is 10%. Figure 4.9 & 4.10 indicate that PBCUs are unable to maintain the WOCCU standard capital structure for the last 7 years (2000 to 2006). The results are very weak. Savings of 46%, share of 45%, and institutional capital of 9% are risky for the future. The results of liabilities and capitals show that there is no significant improvement in capital structure in PBCUs in Bangladesh. These results contrast with the results of Evans (1999) and Richardson

(2001). The new results indicate some important factors. **First**, PBCUs could not develop effective marketing program on member savings deposit to achieve financial independence. **Second**, members are saving in order to borrow money, and not for merely saving money. These are in contrast to the new model of credit union movement applied by the WOCCU (Richardson, 2002). **Third**, under the new capitalization system of the WOCCU, member shares are de-emphasized and replaced with institutional capital. If sufficient institutional capital is unavailable, the CUs are forced to use more expensive deposit savings or member shares to finance the difference (i.e. land, buildings, equipment used for CUs). **Fourth,** institutional capital also has a powerful effect on the credit union's capacity to generate net income. For PBCUs with a weak institutional capital base, the process is much slower and sometimes unprofitable.

4.2.3 Assets Quality Measurement

A non-productive or non-earning asset does not generate income. An excess of non-earning assets affects credit union earnings in a negative way. A1 ratio (**A1**=Total Delinquency/Gross Loan Portfolio) measures loan delinquency, A2 ratio (**A2** = Non-Earning Assets / Total Assets) indicates Non-Earning Assets, and A3 ratio (**A3** = Net Institutional & Transitory Capital +Non- Interest-Bearing Liabilities / Non-Earning Assets)

measures financing of non-earning assets.

Table 4.7 PBCUs Assets Quality Indicators (%): Compared with WOCCU Standard
(Consolidated CU Wise A Ratios for 7 years)

CUs	A1	A2	A3
WOCCU Standard	**<=5%**	**<=5%**	**>200%**
Nagori	9.24	14.65	56.80
Rangamatia	3.67	13.89	53.36
Dhorenda	10.38	3.95	329.56
Mothbari	93.23	12.58	111.43
Ranikhong	28.40	11.97	90.43
Bonpara	17.41	6.30	203.65
Jonail	32.79	5.48	385.31
Mothurapur	19.76	15.30	80.24
Hashnabad	1.37	10.86	167.22
Golla	2.62	13.84	88.98
Solepur	18.82	23.22	62.65
Tuital	2.62	7.60	274.99
Bakshanagar	4.29	25.07	95.66
Dhaka	11.94	5.57	201.52
Toomilia	9.58	6.98	203.54
Average	**18.16**	**11.81**	**160.36**

Table 4.8 PBCUs Assets Quality Indicators (%): Compared with WOCCU Standard
(Consolidated Year Wise A Ratios for 15 CUs)

WOCCU Standard		2000	2001	2002	2003	2004	2005	2006	Average
A1	<= 5%	22.31	21.67	19.97	16.98	17.54	15.67	13.00	**18.16**
A2	< = 5%	13.36	12.48	11.50	10.50	12.16	12.26	9.42	**11.81**
A3	> 200%	127.53	159.20	146.50	158.19	164.94	159.91	198.85	**160.36**

Loans Delinquency

Table 4.7 indicates that only five CUs: Bakshanagar 4.29%, Rangamatia 3.67%, Golla 2.62% Tuital 2.62% and Hashnabad 1.37% maintained the WOCCU standard in Delinquency ratio (A1). The result is similar to the results of the credit union study of Kenya (Branch, 1999) and Poland (Evans, 1999 & Branch, 1999). Table 4.7 also indicates that higher loan delinquency ratio among PBCUs is 93.23% for Mothbari; 32.79.79% for Jonail, 28.40% for Ranikhong, the rest of other PBCUs loan delinquency ratio ranged from 19.76% to 9.24%. But Tables 4.3and 4.5 indicate that Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, Mothurapur and Toomilia CUs have lesser provisions for loan losses and higher loan to member ratio. Over all, their financial performance is in danger in the future. They have the possibility to adjust through professional and corporate governance. This is very not healthy for PBCUs. Table 4.8 indicates that as a whole, PBCUs could not maintain the WOCCU standard. They have a higher ratio of 13.00% to 22.31%. On the other hand, the seven year trend line (Figure 4.14) indicates that loan delinquency ratio decreased from 2000 to 2006. This result is similar to the results of the credit union study of Bolivia, Ecuador, El Salvador and the Philippines (Branch, 1999) and contrasts with the results of Evans (1999) and Richardson (2001). Of all the PEARLS ratios, the delinquency ratio is the most important measurement of institutional weakness. If delinquency is high, it usually affects all other key areas of credit union operations. High delinquency has been particularly rampant when funds for lending have been channeled through the credit unions from external sources.

There might have several seasons for high loan delinquency ratios. **Firstly**, CUs (Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, Mothurapur, and Solepur) use the old CU model idea that CUs are lending institutions, when the members fail to pay their loan obligation, they just keep their distance and disconnect themselves from CUs. There is no external monitoring system or peer group pressure. **Secondly**, CUs (Dhaka, Toomilia, and Nagori) have big membership but they are following the old strategy and policy for loan approval, this lack of specific loan approval policy (like credit and behavior scoring system) increase their loan delinquency ratio. **Thirdly**, credit unions do not follow stricter collection system, they have lost foundational "common bond" spirit and have decreasing Christian values (community buildup, concern for each other, social responsibility, and flexibility of peer group pressured). Common bond spirit and Christian values help Polish CUs to have very low delinquency ratio (Evans, 1999).

Figure 4.11 Loan Delinquency and Non-Earning Assets (CU wise): Compared among PBCUs & with WOCCU Standard

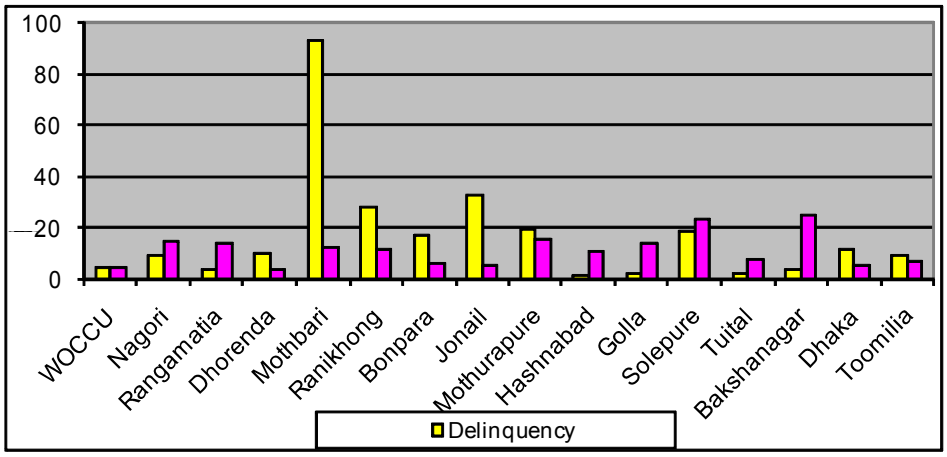


Figure 4.12 Financing of NEA (CU wise): Compared among PBCUs & with WOCCU Standard

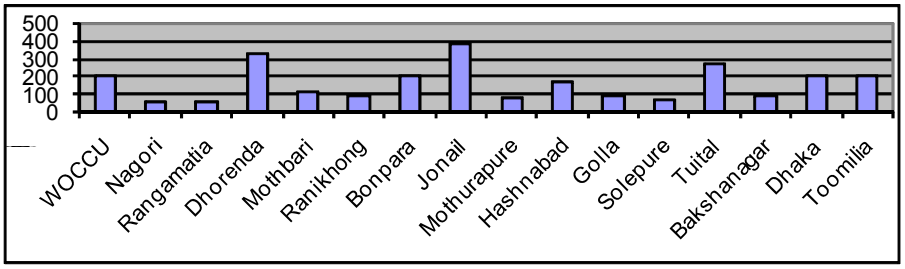


Figure 4.13 Assets Quality (Year Wise): Compared among PBCUs & with WOCCU Standard

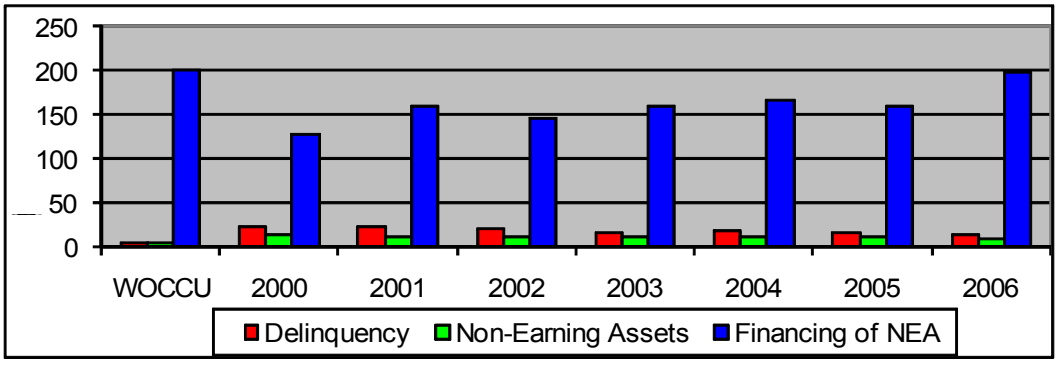
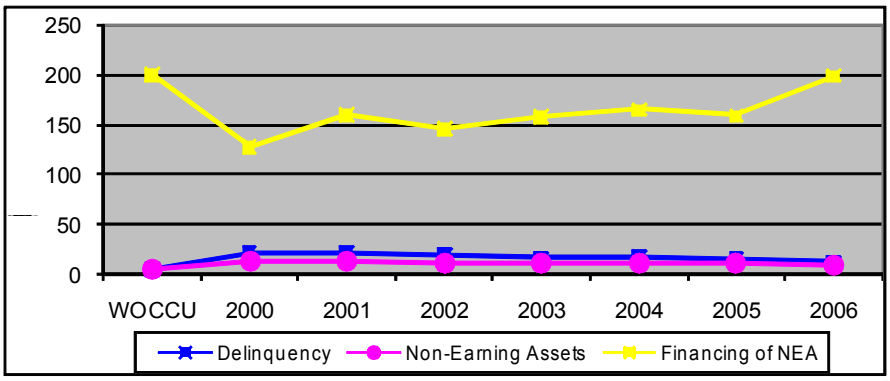


Figure 4.14 Assets Quality Trend Lines:
Compared among PBCUs & with WOCCU Standard



Non-Earning Assets and Financing of Non-Earning Assets

Table 4.7 indicates that only Dhorenda CU (3.95%) maintained non-earning assets ratio, the other fourteen CUs have non-earning ratio (A2) of 5.48 to 25.07, which is higher than the WOCCU standard. Six CUs are able to maintain the ratio (A3) of financing of Non-earning assets: Dhorenda 329.56%, Bonpara 203.65%, Jonail 385.31%, Dhaka 201.52% and Toomilia 203.54%. The other nine CUs could not maintain it at the very low ratio of 53.36 to 95.66. Table 4.8 indicates that in last six years, PBCUs have a negative impression of non-earning assets (A2) and financing of non-earning assets (A3). PBCUs could not maintain the WOCCU standard. Non-earning assets ratio is higher at 9.42% to 13.36%, and financing of non-earning assets ratio is lower at 127.53% to 198.91% than the WOCCU standard. The results are similar to the study of Evans (1999) and Branch (1999). There is no significant improvement on non-earning assets and on financing them. The higher ratio of non-earning assets generates poor earning and weak institutional capital, inability to update equipments and management systems and services, inability to enter new marketing program to increase growth of the CUs, and use

of share capital to improve physical image or equipment or fixed assets. There are several reasons for this negative result of non-earning assets in PBCUs. They are weak financial investment policy, idle money in the hands of management personnel, and inaccessibility of local commercial banks. But in Figure 4.14, trend lines indicate that from 2000 to 2006, PBCUs have been promoting these ratios. That is a positive sign for PBCUs.

4.2.4 Rates of Return & Costs (Profitability)

R ratios give three kinds of information, **first**, yield information (**R1**= Net Loan Income/ Average Net Loan Portfolio,

R2 = Total Liquid Investment Income / Average Liquid Investments, and

R3 = Total Financial Investment Income/Average Financial Investments), **second**, operational costs information (**R5** = Total Interest Cost on Savings Deposit/ Average Savings Deposits,

R7 = Total Interest (dividend) Cost on Shares / Average Member Shares, **R9** = Total Operating Expense / Average Total assets), and **third**, profitability (**R8** = Total Gross income Margin / Average Total Assets, and

R12 = Net Income/Average Total Assets).

Table 4.9 Rates of Return & Costs Indicators (%): Compared among PBCUs
(Consolidated CU Wise R Ratios for 7 years)

CUs	R1	R2	R3	R5	R7	R8	R9	R12
Nagori	11.30	6.75	13.53	5.57	8.46	4.25	2.09	2.16
Rangamatia	12.43	1.09	8.21	6.29	7.00	5.02	3.68	1.34
Dhorenda	12.63	3.01	6.01	7.42	8.64	7.31	2.77	4.54
Mothbari	12.34	1.95	16.71	6.50	8.62	4.60	2.22	2.38
Ranikhong	12.94	0.38	13.06	6.62	5.57	11.82	8.76	3.06
Bonpara	12.62	3.13	14.16	8.00	7.16	6.37	1.26	5.11
Jonail	12.22	1.95	6.85	7.50	8.16	5.72	1.79	3.93
Mothurapur	11.10	1.20	20.39	4.40	7.25	6.14	2.57	3.57
Hashnabad	11.71	4.45	6.90	6.48	8.25	6.80	1.63	5.17
Golla	11.88	10.40	5.75	7.16	6.50	7.88	2.00	5.88
Solepur	16.90	1.44	10.62	7.76	8.04	2.80	1.80	1.00
Tuital	12.48	0.82	7.74	8.00	7.06	7.37	2.02	5.35
Bakshanagar	11.58	1.24	7.04	6.00	6.50	8.74	0.97	7.77
Dhaka	11.60	0.39	12.92	9.24	7..70	4.84	2.77	2.07
Toomilia	12.67	1.25	13.94	8.80	7.95	3.78	2.57	1.71
Average	**12.43**	**2.63**	**10.92**	**7.05**	**7.52**	**6.22**	**2.96**	**3.26**

Table 4.10 Rates of Return & Costs Indicators (%): Compared among PBCUs
(Consolidated Year Wise R Ratios for 15 CUs)

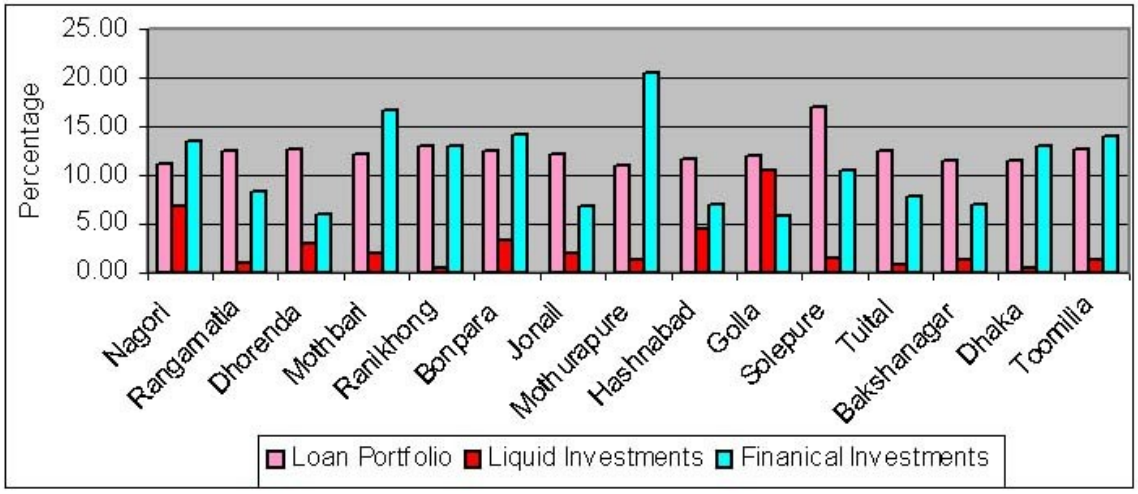
	2000	2001	2002	2003	2004	2005	2006	Average
R1	12.43	11.80	12.65	12.39	12.29	13.02	11.74	**12.43**
R2	2.23	2.31	4.67	1.88	1.47	2.19	3.29	**2.63**
R3	10.23	13.45	11.85	12.06	11.43	8.37	8.29	**10.92**
R5	5.50	6.09	6.61	6.95	7.35	8.03	8.84	**7.05**
R7	7.36	7.38	7.45	7.65	7.45	7.55	7.83	**7.52**
R8	6.89	7.67	7.10	6.22	5.48	4.85	4.82	**6.22**
R9	2.25	3.24	2.42	2.26	2.60	2.50	2.51	**2.96**
R12	4.64	4.43	4.68	3.96	2.88	2..35	2.31	**3.26**

Investment Yield Information

Table 4.9 indicates that PBCUs have almost the same loan income (R1) 12.94% to 11.10% while only Solepur CU has 16.90%. The comparative results of loan income (Table 4.9) and loan delinquency (Table 4.7) show that Rangamatia, Hashnabad, Golla, Tuital, Bakshanagar CUs have 12.48% to 11.77% loan income and their loan delinquency ratio is positive, which is lower than the WOCCU standard. On the other hand, Mothbari, Ranikhong, Jonail, Solepur CUs loan income is 16.16.90% to 12.22%, which is higher than other CUs but their loan delinquency ratio is very high at 93.23%, 28.40%, 32.79%, 18.82%, respectively, which is higher than the WOCCU standard. The result indicates that this unusual operation will push Mothbari, Ranikhong, Jonail and Solepur CUs into institutional weakness and operational crisis in the future. The results indicate urgent attention in terms of loan delinquency management.

Five of fifteen CUs earn a little higher than others from liquid investments (R2) : Golla 10.40%, Nagori 6.75%, Dhorenda 3.01% and Bonpara 3.13%. The remaining ten CUs earn very little from liquid investments of 0.39% to 1.95%.

Figure 4.15 CU Wise Investment Yields Information
:
Compared Among PBCUs



Eight CUs earned much better income from financial investments: (R3) Nagori 13.53%, Mothbari 16.71%, Ranikhong 13.06%, Bonpara 14.16%, Mothurapur 20.39% Solepur 10.62%, Dhaka 12.92% and Toomilia 13.94%. The others six CUs have lower income from financial investments: Rangamatia 8.21%, Dhorenda 6.01%, Jonail 6.85%, Hashnabad 6.90%, Golla 5.75%, Tuital 7.74% and Bakshanagar 7.04%.

Figure 4.16 Year Wise Investment Yields Information: Compared by Year

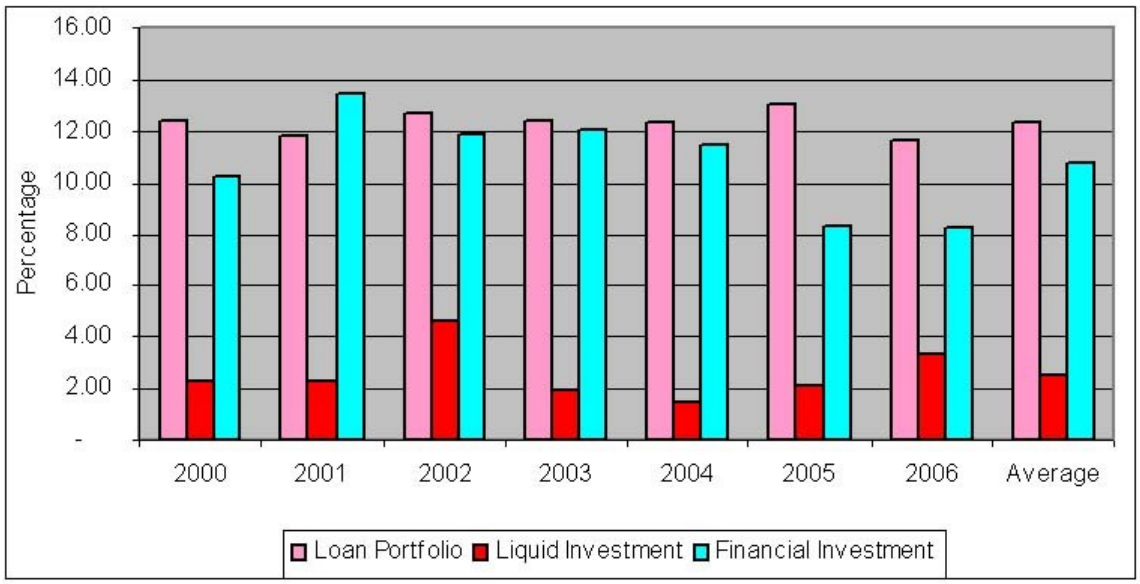


Table 4.10 indicates that yield information ratios are almost similar for the last six year. They are for loan income 11.74% to 13.02%, for liquid investments 1.47% to 4.67%, and financial investments 8.29% to 13.45%. Figure 4.16 indicates that five CUs loan income ratio reached the 12% bar line and one is below the 12% bar line. This figure indicates also that average loan income bar line reached 12%. Moreover, the Figure also indicates that average liquid investment bar reached 2%, and 6 CUs reached this line and one is below this line. Average financial income is above the 10% line, and 5 CUs are above this line.

Figure 4.17 Investment Yield Trend Lines

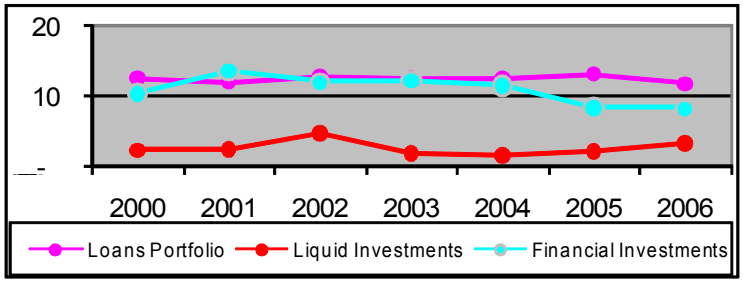


Figure 4.17 indicates that loan income trend line was stable in 2000 to 2005. In 2006, it went down. Liquid investment line was going up in 2005 & 2006, on the other hand, financial investment line shows a downward trend. The result of the present study of PBCUs in Bangladesh is in contrast with the studies of the CUs of Bolivia, Ecuador, Kenya, the Philippines and Poland (Evans, 1999 & Branch, 1999 & Richardson, 2001) in terms of yield information. PBCUs received lesser interest on loans to members compared to other CUs study.

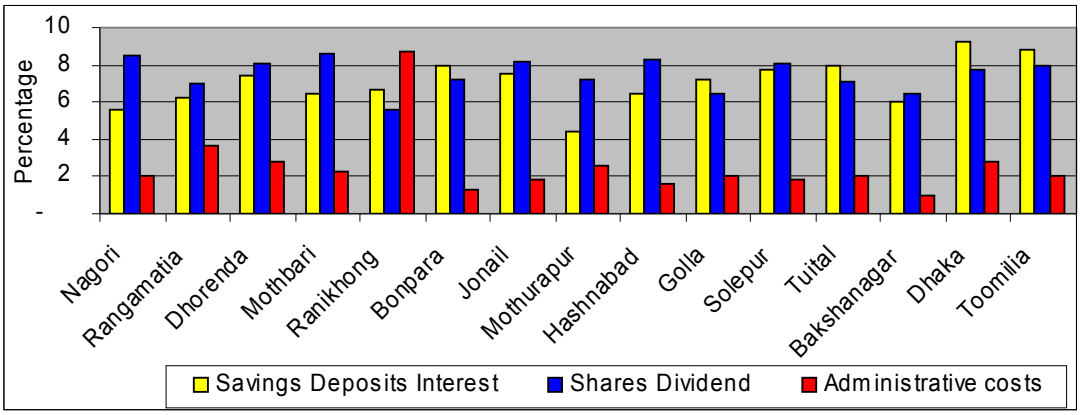
The study shows that there is no significant difference among the PBCUs in terms of investment yield. One reason is that they are following the same rate on lending among the members. The results of the investment yield information permit ranking according to the best and worst yields. The results show that lesser interest on loans to members encourages accepting more loans. On other hand, the result of loan delinquency study shows that it is much higher than the WOCCU standard. This new finding will guide PBCUs with negative financial management. The results of the present study in terms of financing the assets accepts the idea of Matthew (2006) that it is important to recognize

that safe, flexible micro-savings are also urgently needed. Since micro-savings reduce household vulnerability, and the poorest families are the most vulnerable, micro savings may actually be needed more urgently. Through this new policy, PBCUs may increase interest rate on loans to members and member savings deposit. It will reduce the loans to members and it will also reduce delinquency. At the same time, it will increase member savings. PBCUs should find profitable opportunities for financial investment of their valuable assets to increase member benefits.

Operational Costs Information

Operational costs are also important. They are broken down into three main areas: financial intermediation costs, administrative costs, and profitability. Financial intermediation cost evaluates the financial costs paid on deposit savings, member shares and external loans. Administrative costs include the cost associated with the management of all CU's assets, and profitability refers to measure the adequacy of earnings and also the capacity to build institutional capital.

Figure 4.18 CU Wise Operational Costs: Compared among PBCUs



Financial intermediation Costs: Table 4.9 indicates that interest rates on member savings deposits vary from a low 4.40% (Mothurapur) to a high of 9.24% (Dhaka). In the table, four CUs are giving excellent interest between 9.24% to 8.00% (Dhaka 9.24%, Toomilia 8.80%, Tuital 8.00% and Bonpara 8.00%) and four CUs are giving 7.16% to 7.76% (Solepur 7.76, Jonail 7.50%, Dhorenda 7.42%, and Golla 7.16%) and other seven CUs are giving lower interest of 4.40% to 6.62% (Ranikhong 6.62%, Mothbari 6.50%, Hashnabad 6.48%, Rangamatia 6.29%, Bakshanagar 6.00%, Nagori 5.57% and Mothurapur 4.40%) on member savings deposits (R5).

PBCUs offer little higher interest rate on savings deposit than local commercial banks. Six CUs: Jonail, Solepur, Bonpara, Dhaka, Dhorena, and Toomilia have high loans delinquency ratio (32.79%, 18.82%, 17.41%, 11.94% 10.38%, and 9.58%, respectively), but they are offering comparative dividend and interest policy. This is not a fair financial management; these CUs should balance their loan delinquency ratio. On

the other hand, Mothurapur, Nagori, Ranikhong, and Mothbari, have lower dividend and interest compare to other CUs and higher loan delinquency ratio. All of these above mentioned CUs have lesser provisions for loan losses ratios, which are lower than the WOCCU standard. Therefore, these CUs need more professional and corporate governance to protect their assets and member benefits.

In terms of dividend to member capital shares, Table 4.9 indicates that rates vary from 5.57% of Ranikhong to a high of 8.62% of Mothbari. Three CUs offer lower interest (Ranikhong 5.57%, Golla 6.50% and Bokshanagar 6.50%) for member savings than others (Table 4.9, R5), and twelve CUs offer dividends of 7.00% to 8.62%.

Figure 4.19 Year Wise Operational Costs: Compared Last 7 Years

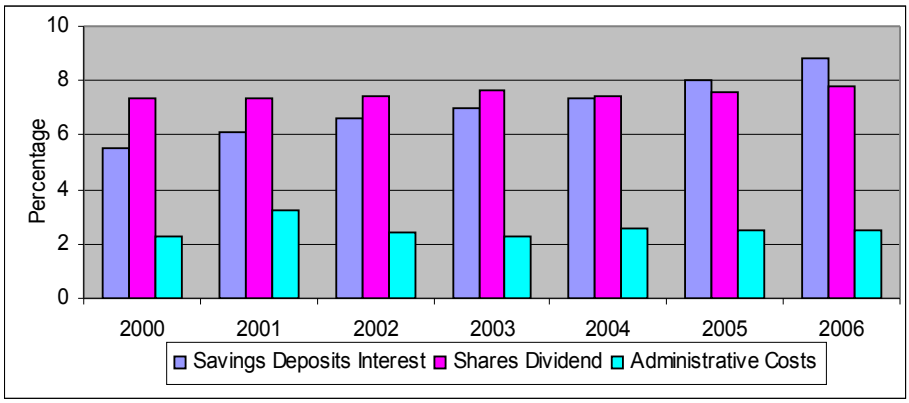


Table 4.10 and Figure 4.19 indicate that PBCUs have been offering higher dividends to member share than interest on member savings deposit for the last four years, in 2000 to 2004 and last the two years, in 2005 to 2006, member savings interest is higher than member share dividend.

Figure 4.20 Operational Cost Trend Lines

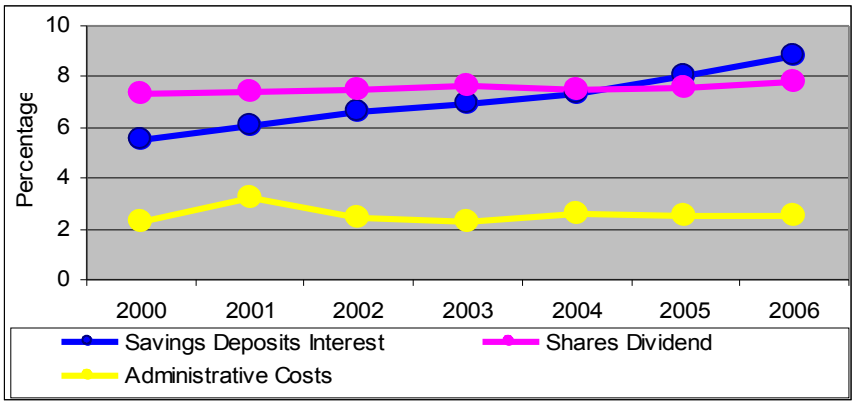


Figure 4.20 indicates that member savings deposit trend line was going high in 2004 than share dividend trend line. Share dividend and savings deposit interest trend lines have higher movement during the study period. The results are similar to the results of Bolivia, the Philippines, and Poland CUs studies in terms of financial intermediation costs (Evans, 1999). PBCUs give lesser interest and dividend on member savings deposit and share capitals compared to other CUs studies of Ecuador, Kenya (Evans, 1999), Niger (Ouattarr, 1999). There are several reasons for this –lesser interest against loan to members, minimum earning from financial investment, lack of business orientation and innovation, and lack of financial investment management capability. PBCUs credit unions have a tradition to follow uniformity in terms of financial services, even Dhaka, Toomlia, Nagori Rangamatia and Mothbari which are larger than others. PBCUs need to improve financial investment management capabilities for the sake of member financial benefits according to their asset quality and institutional capacity.

Administrative Costs: The PEARLS system recommends maintaining administrative costs at 5% of average total assets. Bankshanagar CU has a lower rate of 0.97% and Ranikhong CU has higher rate of 8.76% for administrative costs (R9). The other thirteen CUs have similar 2.02% to 3.68% administrative coast (R9). As a whole, for the last 7 years, PBCUs had similar administrative costs of 3.24% to 2.25% (Table 4.10 & Figure 4.19). Administrative costs line went up in 2001 and had been the same since 2002 to 2006. Compared to the WOCCU goals (R9, 5%), PBCUs have lower yearly administrative costs during the study period.

The result of the present study is similar to the studies of Kenya, Poland, El Salvador and Ecuador CUs and in contrast with Bolivia and the Philippines case studies. The results showed that there is significant improvement in terms of administrative costs. There are several reasons for the improvement. Many of the Catholic parishes accept it as their social development project, and members voluntarily serve in the credit unions without any payment or with little traveling charge. Moreover, the firms use parish administration set up without or with minimum charge. PBCUs managed to build up larger loan amount within fifty years, so administrative costs are spread over a large loan size.

Profitability

Operating efficiency in the PEARLS system is measured by ratios such as R8 (Total gross income margin/average assets) and R12 (Net income/Average total assets).

Table 4.10 indicates that Ranikhong CU has 11.81% income margin (R8) but only 3.06% net income (R12) because of the 8.76% administrative costs (R9). Eight CUs have good net income: Bakshanagar 7.77%, Golla 5.88%, Hashnabad 5.17%, Bonpara 5.11%, Dhoreda 4.54%, Jonail 3.93%, Mothurapur 3.57%, and Ranikhong 3.06%. The other six CUs have less than 2% net income (Table 4.10 & figure 4.21). But, Bakshanagar, Golla, Bonpara, Dorenda, Jonail, Mothurapur and Ranikhong CUs do not use this opportunity to increase provisions for loan losses in terms of assets protection.

Figure 4.21 Income: Compared among PBCUs

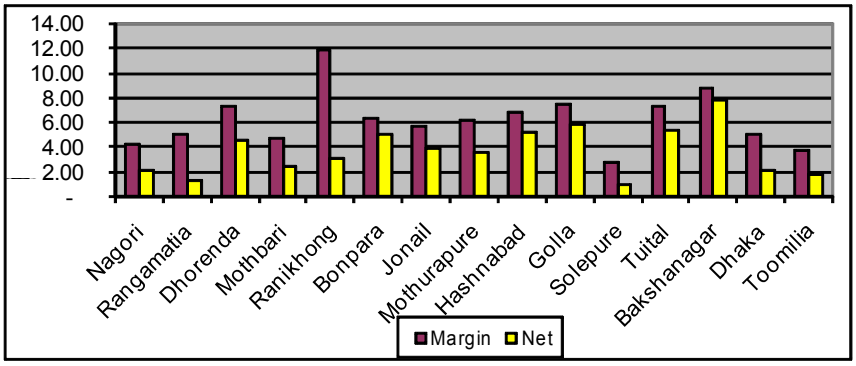


Figure 4.22 Income: Compared the Last 7 Years

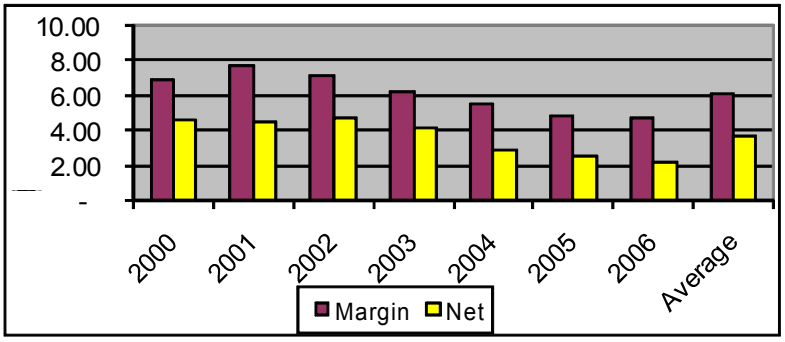
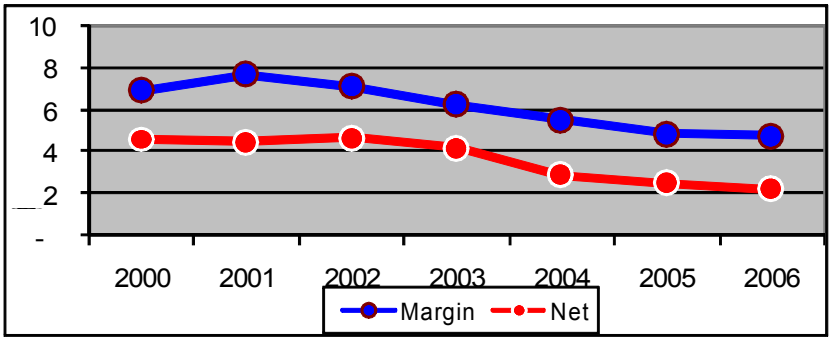


Figure 4.23 Income Trend Lines



Figures 4.22 and 4.23 indicate that, as whole, PBCUs had higher net income in 2000 to 2002 (4.64%, 4.43% and 4.68%, respectively) and in 2003 to 2006 (3.96%, 2.89%, 2.50%, and 2.24% respectively). Income line had been going down yearly and only went up in 2005 (4.35%). The result is similar to the study of Branch (1999) and contrasts with Evans' (1999). The results show that PBCUs have higher profitability ratios than Poland, Kenya, and Bolivia, but have similar profitability with El Salvador, the Philippines and have lesser profitability ratios than Ecuador, Niger, and Guatemala. Financial self-sufficiency is the ability to generate sufficient income to cover operational and financial costs of the firms and industry level. But according to WOCCU advice, PBCUs should increase net income ratio as they have had 50 years of operating experience. The results of the present study affirm the comment of Branch (1999) that CUs do not change their traditional product offerings and do not let go of their social orientation by charging market rates of interest. PBCUs individual and yearly net income indicators show that CUs have the ability to generate sufficient income.

4.2.5 Liquidity Measurement

The maintenance of adequate liquidity reserve is essential to sound, financial management in the WOCCU model. The PEARLS System analyses liquidity from two perspectives: Total Liquidity reserves (**L1** = Short Term Investments + Liquid Assets-Short Term Payables / Savings Deposit) and Idle Liquid Funds (

L3 = Non-Earning Liquid Assets / Total Assets).

Table 4.11 PBCUs Liquidity Indicators (%): Compared with WOCCU Standard
(Consolidated CU Wise L Ratios for 7 years)

CUs	L1	L3
WOCCU Standard	Min 15%	<1%
Nagori	22.28	5.91
Rangamatia	10.09	10.16
Dhorenda	16.66	0.18
Mothbari	15.19	7.95
Ranikhong	18.4	4.33
Bonpara	5.64	6.30
Jonail	19.87	4.31
Mothurapur	36.49	13.48
Hashnabad	31.20	10.11
Golla	25.84	8.46
Solepur	20.87	15.53
Tuital	29.03	7.09
Bakshanagar	634.83	23.90
Dhaka	16.54	1.27
Toomilia	10.90	2.99
Average	**60.92**	**8.13**

Table 4.12 PBCUs Liquidity Indicators (%): Compared with WOCCU Standard
(Consolidated Year Wise L Ratios for 15 Cus)

	WOCCU Standard	2000	2001	2002	2003	2004	2005	2006	Average
L1	Min 15%	57.64	58.37	63.96	76.51	66.05	64.98	37.69	**60.92**
L3	<1%	9.97	8.73	7.68	7.32	8.42	8.85	5.52	**8.13**

Liquidity Reserves

The ideal target is to maintain a minimum of 15% liquidity reserve (L1). Table 4.11 indicates that 3 CUs could not maintain the indicator: Bonpara 5.64%, Rangamatia 10.09%, and Toomilia 10.09%. Eight CUs have excess liquidity: Bakshanagar 634.83%, Mothurapur 36.49%, Nagori 22.28%, Jonail 19.87%, Hashnabad 31.20%, Golla 25.84%, Solepur 20.87%, and Tuital 29.03%. The other four CUs have been able to maintain average liquidity reserves, except one, Dhorenda 0.18%. All 14 CUs have excess idle liquid funds (L3) Table 4.11 & Figure 4.24).

Figure 4.24 Liquidity Reserves:
Compared among PBCUs & with WOCCU Standard

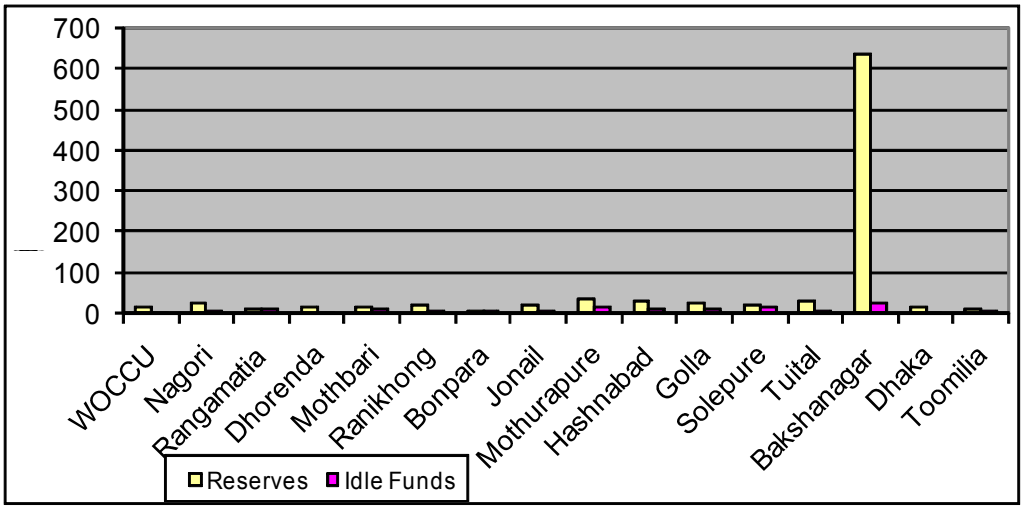


Figure 4.25 Liquidity Reserves:
Compared with WOCCU Standard

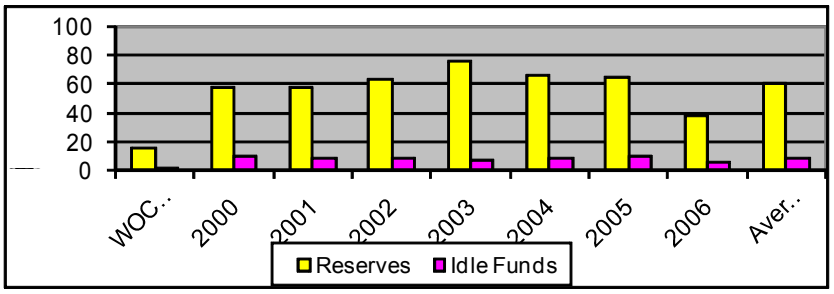


Table 4.12 and Figure 4.25 indicate that

PBCUs have excess liquidity reserve of 37.69% to 76.51% and idle liquid funds of 5.52% to 9.97% for the last 7 years. PEARLS system advises liquidity reserves at 15% and idle fund at less than 1%. The results show that liquidity management is very weak. They imply lost opportunity cost. There are several reasons for higher liquid fund. Firms are located in rural area where banks could not reach yet. Some credit unions keep liquid

fund with the parish priest for security purpose. This unveiled weak communication with CCULB regarding technical and operation assistance.

5.2.6 Signs of Growth Measurement

The only successful way to maintain asset values is through strong, accelerated growth of assets, accompanied by sustained profitability (Richardson, 2002). The advantage of the PEARLS system is that it links growth to profitability, as well as to the other key areas by evaluating the strength of the system as a whole. Growth is measured in five key areas- Total Assets (S11), Members Loans (S1), Members Savings Deposits (S5), Members Shares (S7), and Institutional capital (S9).

Table 4.13
PBCUs Growth Indicators (%):
Compared among PBCUs
(Consolidated CU Wise S Ratios for 7 years**)**

CUs	S1	S2	S3	S5	S7	S8	S10	S11
WOCCU Standard	Dep.E1	Dep.E2	Dep.E3	Dep.E5	Dep.E7	Dep.E8	>12%	>Infl.
Nagori	4.13	271.61	26.57	15.39	11.24	150.29	2.39	13.08
Rangamatia	14.52	17.49	74.46	22.18	10.61	10.48	15.54	17.57
Dhorenda	27.08	47.68	27.82	28.25	20.75	28.83	3.90	25.30
Mothbari	21.78	-3.78	44.76	21.25	16.27	14.22	2.32	19.08
Ranikhong	19.78	46.82	5.48	39.16	20.99	28.9	11.87	19.21
Bonpara	23.49	42.68	1323.81	27.66	18.52	13.07	3.66	20.93
Jonail	23.71	35.41	386.52	11.12	15.72	4.98	3.56	21.47
Mothurapur	16.6	20.17	11.00	18.47	15.20	12.52	1.00	16.52
Hashnabad	9.63	154.45	44.81	62.21	-0.4	19.03	1.00	18.70
Golla	19.84	16.03	73.64	43.6	10.84	18.65	2.44	24.87
Solepur	22.72	2.92	260.04	27.35	28.46	19.57	8.09	27.83
Tuital	22.39	32.38	109.97	61.44	-0.6	11.82	3.28	27.90
Bakshanagar	14.12	28.76	9.64	93.8	17.27	13.26	1.72	17.9
Dhaka	10.45	20.23	15.24	18.3	10.89	16.2	5.95	15.77
Toomilia	20.16	1.13	13.67	20.75	11.87	7.89	3.97	17.54
Average	**18.18**	**48.90**	**161.83**	**34.06**	**13.87**	**24.79**	**5.24**	**20.25**

Table 4.14 PBCUs Growth Indicators (%):
Compared among PBCUs
(Consolidated Yearly S Ratios for 15 CUs)

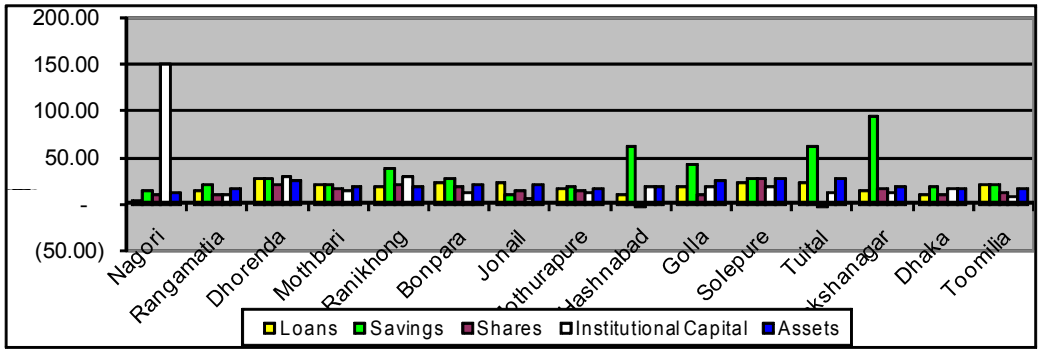
	WOCCU Standard	2000	2001	2002	2003	2004	2005	2006	Average
S1	Dependent on E1	20.62	19.47	16.25	16.62	12.45	17.69	24.14	**18.18**
S2	Dep.E2	35.95	13.27	28.01	134.26	28.48	95.22	7.09	**48.90**
S3	Dep.E3	61.61	45.95	114.45	82.76	623.92	167.93	36.16	**161.83**
S5	Dep. E5	27.95	28.41	38.02	22.05	38.47	28.84	32.73	**34.06**
S7	Dep. E7	15.57	18.45	15.70	14.33	13.52	11.18	8.34	**13.87**
S8	Dep. E8	15.42	17.72	18.12	12.34	7.15	85.80	16.97	**24.79**
S10	>12%	12.04	5.42	4.80	3.61	3.61	3.53	3.70	**5.24**
S11	>Inflation	20.14	18.96	21.48	18.63	17.62	21.53	23.38	**20.25**
	Inflation	2.79	1.94	2.27	4.38	6.60	7.00	7.20	**4.60**

Total Assets

Table 4.13 indicates that six CUs have more than 20% asset growth (Dhorenda 25.30%, Bonpara 20.93%, Jonail 21.47%, Golla 24.87% & Solepur 27.83%) and eight CUs have 15-20% growth (Rangamatia 17.57%, Mothbari 19.08%, Ranikhong 19.21%, Mothurapur 16.52%, Hashnabad 18.70%, Bankshanagar 17.90%, Dhaka 15.77% & Toomilia 17.54%), while Nagori (13.08%) CU has lower growth. Table 4.14 indicates that as a whole, PBCUs yearly growths were 20.14% in 2000, 21.48% in 2002, 21.53% in 2005 and 23.38% in 2006. In 2001, 2003, and 2004, there were lower growths of 18.96%, 18.63% & 17.62% respectively. Figure 4.28 shows that in 2003 and 2004, growth line went down and in 2005 and 2006, it went up. According to the WOCCU, the ideal goal for all CUs is to achieve real positive growth (i.e. net growth after subtracting for inflation) each year. The average inflation rate of the study period (7 years) is 4.60 % in Bangladesh. The study of Evans (1999), Branch (1999), and Richardson (2001) showed

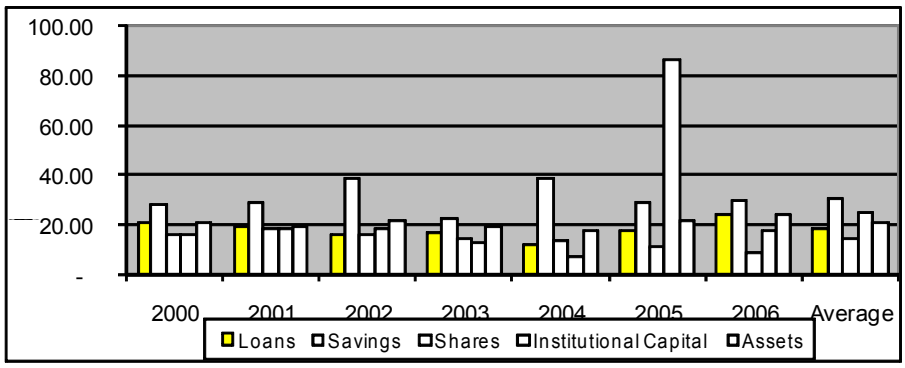
that other countries like Ecuador, Poland, El Salvador, Kenya, the Philippines are more progressive than PBCUs in terms of growth in total assets. All of the mentioned countries, except Ecuador, have lesser net income growth than PBCUs. The results of the present study show that there is significant growth in PBCUs in terms of total assets and profitability. The results of the present study bear very clear evidence that PBCUs have more possibility to increase and develop sustained and sufficient profitability through strong, accelerated growth as a whole.

Figure 4.26 CU Wise Growth of Loans, Savings, Share, Institutional Capital and Assets



: Compared among PBCUs

Figure 4.27 Year Wise Growth of Loans, Savings, Share, Institutional Capital and Assets: Compared among PBCUs



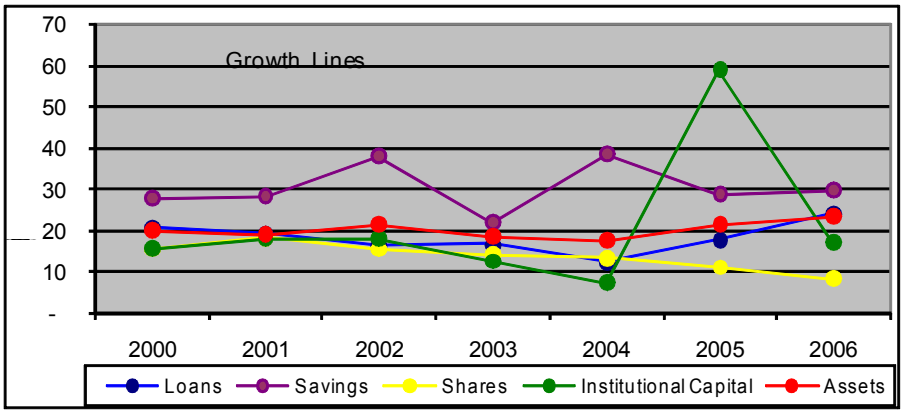
Loans to Members

The loan portfolio is the most important and profitable credit union asset. Table 4.13 indicates that seven CUs have more than 20% loan growth (S1): Dhorenda 27.08%, Mothbari 21.78%, Bonpara 23.49%, Jonail 23.71%, Solepur 22.72%, Tuital 22.39% and 20.06%. On the other hand, Tables 4.7 and 4.3 indicate that all the above mentioned CUs (Jonail, Solepur, Bonpara, Dhaka, Dhorena, and Toomilia Mothurapur, Nagori, Ranikhong, Mothbari) have high delinquency ratio and lower ratio for provisions for loan losses. So growth of member loans ratio has negative impact on firms. Six CUs have 10-20% growth: Rangamatia 14.52%, Ranikhong 19.78%, Mothurapur 16.60%, Golla 19.84%, Bakshanagar 14.12% and Dhaka 10.45%. Two CUs have lower growth than others: Nagori 4.13% and Hashnabad 9.63%. Figure 4.26 shows that six CUs: Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, and Toomilia have greater loan growth rates than

asset growth rates while the other 9 CUs have lower growth rates than assets growth rates.

The years 2000, 2001 and 2006 (20.62%, 19.47%, and 24.14% respectively) have higher and greater loan growth rates than asset growth rates (Table 4.14 & Figure 4.27). Figure 4.28 shows that growth in total loans lines had been going up in 2004 to 2006 (12.45%, 17.69%, and 24.14 respectively) and kept pace with the growth in total assets line. If growth in total loans keeps pace with growth in total assets, there is a good likelihood that profitability will be maintained (WOCCU). The results show that the growth in loans of Nagori, Hashnabad and Dhaka CUs could not keep pace with growth in total assets, compared to other CUs. Nagori, Hashnabad and Dhaka CUs members are richer than others and have money at hand for their livelihood. The rest of the PBCUs' growth in total loans and assets are competitive. On the average, the growth of total loans had improved for the last seven year. However, they need to improve the loan delinquency ratio. Then, PBCUs will meet sufficient profitability for loans portfolio.

Figure 4.28 Growth Trend Lines of Loans, Savings, Shares, Institutional Capital and Assets



Growth in Member Savings Deposits and Share Capitals

Figure 4.26 indicates that all CUs have higher savings growth rate than share capital rate; only Jonail Cu has lower savings rate than share. The Figure also indicates that total asset growth depends on member savings growth. Jonail has lower savings deposit growth and its assets growth is also lower. Table 4.13 indicates that three CUs (Hashnabad, Tuital & Bakshanagar) have more than 50% savings deposit growth rate and twelve CUs (Rangamatia, Dhorenda, Mothbari, Ranikhong, Bonpara, Golla, Solepur and Toomilia) have more than 20% savings deposit growth rate. Table shows also that three CUs (Dhorenda, Ranikhong & Solepur) have more than 20% share capital growth and two CUs (Hashnabad & Tuital) have negative growth rates. Higher growth of share capital indicates that CUs are still focused on lending money instead of savings, and lower growth CUs have lower loan portfolio and improve delinquency and savings deposit. It is a positive indicator, and according to the WOCCU, these CUs have already

employed the new model CU system. Members' livelihood is better and they have cash at hand to save and enjoy sufficient interest.

Figure 4.27 indicates that in the last 7 years (2000 –2006), member savings deposits were higher than member share capital growth. Figure 4.28 shows that member savings deposit growth line was always higher than other growth lines while share capital growth line gradually went down in the last 7 years. Growth trend lines also indicate that PBCUs saving deposit line had gone up and down until 2005. During the last two years (2005 & 2006), it had become more stable. If PBCUs increase savings deposit, other sectors also will have rapid growth. The results of this study in terms of growth in member savings deposit and share capitals is in contrast with the study of Evans (1999). This present study shows that there is a gradual growth in member savings deposit, and it is not compatible with other CUs studies although the service of savings deposit has started in PBCUs in Bangladesh twenty years before (see Table 2.1). There might have been several reasons. Members are still focused on lending money rather than savings. Moreover, firms have difficulty gaining trust and confidence. There is a positive sign in the results that PBCUs have higher member savings deposits growth ratio than shares capital. It indicates an ability of the PBCUs to adapt to the new system of promoting deposits over shares.

The study bears mixed results of financial performance (both negative and positive); therefore, the results are significant contribution to the improvement of PBCUs welfare and an addition to CU's organizations. Results show that some of the CUs ratios maintained the WOCCU standard financial indicators and others are need more attention to reach the WOCCU standard. The results also indicate that the financial performances of fifteen CUs are not the same; they have significant differences due to various factors that have been discussed previously for each PEARLS indicator.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS AND DIRECTION FOR FUTURE RESEARCH

5.1 Conclusions

This chapter summarizes significant findings and conclusions of the study to address the main objectives raised in Chapter 1- to evaluate and examine the financial indicators of PEARLS of PBCUs and compare with the WOCCU standard. The objective raised can be addressed by reference to major findings concerning protection of assets (provisions for loans losses), effective financial structure, asset quality (delinquency), rates of return & costs (profitability), liquidity, and growth. The study bears mixed results of financial performance both negative and positive; therefore, it will be a significant contribution to knowledge and an addition to CU's organizations. The results show that some of the CUs ratios maintained the WOCCU standard financial indicators and others need more attention to reach the WOCCU standard. The results also indicate that the financial performances of fifteen CUs are not same, they have significant differences.

The study has several null hypotheses tested. The study wanted to find out whether there are no significant differences on the credit unions' financial ratios when grouped into: a. Effective Financial Structure, b. Assets Quality Measurement, c. Rates of Returns and Costs, d. Liquidity Measurement and e. Signs of Growth Measurement. ANOVA results show, that E, A, L ratios show significant differences; on the other hand, the PBCUs R and S ratios denote no significant differences across the time periods.

In terms of protection of assets, **provision for loan losses** ratios delivered negative results in PBCUs as a whole, compared with the WOCCU. At firm level, only two CUs: Hashanah (P1-245.66%, P2-141.00%) and Tuital (P1- 207%, P2 – 57.16%) showed positive results of significant improvement compared with the WOCCU standard (P1 – 100%, P2 – 35%) (Hashnabad and Tuital CU also maintained WOCCU standard loan delinquency ratio), the rest of the twelve CUs have very lower ratio than WOCCU (except Golla P1 – 100%). The results showed the hesitancy to provide allowance for loan losses from year 2000 to 2001, however, the provisions steadily improved from year 2002 to 2006. The provision for loans losses still has negative results compared with the WOCCU standard but is steadily improving. Inadequate loan loss protection produces two undesirable results in credit unions, namely: inflated asset values and fictitious earnings (Richardson, WOCCU, 2002). Even 50 years later, most of the PBCUs view their capital reserves as the primary source of protection against loan losses, but WOCCU promotes the principle that the allowance for loan losses is the first line of defense against non-performing loans.

The effective financial structure ratios showed mix results. In terms of **assets structure**, the results indicate that Rangamatia, Dhorenda, Ranikhong, Bonpara, Jonail, Mothurapur, Golla, Tuital, and Toomilia CUs have significant improvements and Nagori, Mothbari, Hashnabad, Solepur, Bakshanagar and Dhaka CUs have no significant improvements in loan portfolio, liquid investments and financial investments. PBCUs have declining assets structure ratio during the study period of 2000 to 2006.

The **comparative results** (P,E, A and R ratios) of the present study indicates that Dhorenda, Mothbari, Ranikhong, Bonpara, Jonail, Mothurapur and Toomilia CUs have higher loan delinquency and higher loan to member ratio and inadequate provisions for loan losses. Also, the above mentioned CUs pay good dividend and interest. But their financial performance is in danger in future. They have the possibility to adjust through professional and corporate governance.

In terms of **capital structure**, the results indicate that there is no significant improvement in member savings, share capital, and institutional capital. At the firm level, only Nagori and Solepur CUs maintained member saving deposit standard. Only Solepur maintained share capital standard. Bonpara, Jonail, Hashnabad, Tuital and Bakshanagar CUs managed to maintain institutional capital standard. At industry level, PBCUs could not maintain the WOCCU standard indicator during the study period (member savings is lesser, share capital is higher and institutional capital is lesser than WOCCU standard).

PBCUs could not enter into a new capitalization system, although it has celebrated its 50 year foundation anniversary. PBCUs have weak and less institutional capital structure; they use more expensive member savings deposits or member share capital to absorb losses from loan delinquency and/or operational deficits or finance for emergency infrastructure improvement. On average consolidated results (15 firms and 7 year period) of PBCUs, assets structure is within the WOCCU standard, and liabilities and capital structure are below the WOCCU standard.

Assets quality ratios showed negative results in PBCUs as a whole. At the firm level, in terms of **loan delinquency,** Bankshanagar (4.29%), Rangamatia (3.67%), Golla (2.62%), Tuital (2.62%), Hashnaband (1.37%) maintained the WOCCU standard (<=5%) (Hashnabad, Golla and Tuital CUs also maintained WOCCU standard Provisions for loan losses ratio). Other ten CUs could not maintain loan delinquency, especially Mothbari 93.23%, Jonail 32.79%, Ranikhong 28.40%, Mothurapur 19.76%, Solepur 18.82%, and Bonpara 17.41%. They have higher ratio than other CUs. In terms of **non-earning assets,** only Dhorenda CU maintained the WOCCU standard and fourteen CUs could not maintain non-earning assets. In terms of **financing of non-earning assets**, six CUs (Dhorenda, Bonpara, Jonail, Tuital, Dhaka and Toomilia) are able to maintain the WOCCU standard and nine CUs failed to reach the standard. Further, the trend analysis showed that PBCUs could not maintain any of the assets quality of the WOCCU standard but steadily improved in all ratios from 2000 to 2006.

In terms of profitability, **yield information** ratios showed that PBCUs produce almost the same yield from loan portfolio and financial investments. Compared with commercial banks in Bangladesh, they produce the lesser yield from their investments. Operational cost ratios showed that PBCUs are able to give higher and sufficient interest and dividend against member savings deposits and member share capital compared to local commercial banks. Almost all CUs, except Ranikhong, have average administrative costs: five CUs (Bonpara, Jonail, Hashnabad, Solepur and Bankshanagar) have less than 2%, eight CUs (Nagori, Dhorenda, Mothbari, Mothurapur, Golla, Tuital, Dhaka, Toomilia) have 2-3%, and Rangamatia has 3.68% and Ranikhong has 8.76%. Except for Ranikhong, other CUs' administration cost is positive, which is lower than the WOCCU standard.

Six CUs: Jonail, Solepur, Bonpara, Dhaka, Dhorenda, and Toomilia have high loans delinquency ratio, but they are offering comparative dividend and interest policy. This is not fair financial management; these CUs should balance their loan delinquency ratio. On the other hand, Mothurapur, Nagori, Ranikhong, Mothbari, have lower dividend and interest compared to other CUs and higher loan delinquency ratio. All of these above mentioned CUs have lesser provisions for loan losses than the WOCCU standard. Therefore, these CUs need more attention to protect their assets and member benefit.

Net income is also almost the same for all CUs. As a whole, PBCUs have similar net income for the last seven years. Net income rate showed a decline from 2000 to 2006. The results indicate that a poor growth rate for member savings deposits and high loan delinquency are the major and strong causes of decline in net profit. At firm and industry levels, PBCUs have the ability to generate sufficient income to cover operation expenses although it is not compatible with its fifty year establishment.

Liquidity reserves ratios showed mixed results for PBCUs. In terms of **liquid reserve**, Bonpara (5.64%), Toomilia (10.90%) and Rangnamatia (10.09%) have lower ratios than the WOCCU standard (Minimum 15%). Other 13 CUs have enough liquid reserves for lending and withdrawable savings deposits are available although Bakashanagar (634.83%) Mothurapur (36.49%), Tuital (29.03%), have excess liquidity.

For the trend analysis, the liquid reserve showed excesses in 2000 to 20006 (57.64%, 58.37%, 63.96%, 76.51%, 66.05%, 64.98% and 37.69%, respectively) than the WOCCU standard (Minimum 15%), and **idle fund** was also higher in 2000 to 2006 (9.96%, 8.73%, 7.68%, 7.32%, 8.42%, 8.85% and 5.52%, respectively) than the WOCCU standard (<1%). Liquidity reserves are important, but they also imply a lost opportunity cost (Richardson, 2002).

Growth measurement ratios showed mixed results. PBCUs in Bangladesh have achieved growth in terms of loan to members, member savings deposits, member share

capital, institutional capital, membership and total assets, which are the major factors in CU institutions. **Growth of the assets** at firm level ranged from 20% to 13% for all CUS while at industry level, from 23.38% to 18.63% for years 2000 to 2006. Moreover, liquid investment and financial investment growth are compatible with asset growth for the last seven years both at firm level and industry level.

Loan portfolio growth ranged from 23% to 14% at firm level for all CUs, except Nagori (4.13%) and at industry level from 20% to 16% for 2000 to 2006 and increased in 2006 (24.14%). **Member savings deposits growth** for Nagori, Jonail and Dhaka ranged between 20% to 10%; 50% to 20% for Rangamatia, Dhoreda, Mothbari, Ranikhong, Bonpara, Mothurapur, Golla, Solepur, and Toomilia, while Hashanabad, Tuital and Bakshanagar incurred above 50%. At industry level, savings deposit growth is between 38% to 27% from 2000 to 2006 and is steadily improving.

Shares capital growth at firm level is 10-28%, except Hashnabad (-0.40%) and at industry level between 18 - 8% and it is steadily decreasing. **Institutional capital growth** at firm level is 28% to 12% for most of the CUs, except for a higher growth in Nagori (150.29%) and lower growth for Rangamatia (10%), Toomilia (7.89%) and Jonail (4.98%). At industry level, growth ranged from 18% to 12% in 2000 to 2006, except in 2005 (85.80%). **Membership growth** at firm level is 5% to 1% for most of the CUs, except Rangamatia (15.54%), Ranikhong (11.87%) and Solepur (8.09%). At industry level, growths are 12% to 3% in 2000 to 2006 and steadily decreasing. The study showed

that there is gradual growth in member savings deposit, but it is not compatible with other CUs studies cited in Chapter 2, although, the service of savings deposit started in PBCUs in Bangladesh twenty years ago (see Table 2.1), it is very limited compared to other studies.

To sum up**,** the present study computed 29 financial ratios out of 44 ratios in WOCCU standard PEARLS monitoring system, which analyzes and collects information from 315 financial statements of PBCUs within a seven-year period using 15 samples or a total of 105 observations. These are the major ratios and the rest are not fit for PBCUs in Bangladesh since they do not receive any external loans nor do they cover some other sectors. PBCUs encounter positive implications of the results for assets structure and loan portfolio. It has negative results on delinquency, assets protection, non-earning assets, financing of non-earning assets and liabilities, and capital structure. They have mixed results on profitability, growth, and liquidity reserves. Individually, the fifteen PBCUs have shown mixed financial performance results based on the PEARLS indicators over the seven-year analysis.

5.2 Recommendation for Bangladesh PBCUs and Policy Makers

The study bears mixed results of financial performance (both negative and positive); some of the CUs ratios maintained the WOCCU standard financial indicators and others are in need of more attention to reach the WOCCU standard. The consolidated

results of 15 Bangladesh parish-based credit unions for 7 years indicate 11 negative indicators which could not maintain WOCCU standard and 18 positive indicators which maintained the WOCCU standard. Therefore, it will be a significant contribution to knowledge and an addition to PBCU's organizations. The results also indicate that the financial performances of fifteen CUs are not the same, they have significant differences. So the present study strongly proposes the following recommendations to improve the financial management performance of PBCUs in Bangladesh.

The present study encountered some difficulties with the old accounting system of PBCUS (the lack of standard financial statement systems, old bookkeeping style, and disorganized funding). The present study recommends PBCUs to accept immediately as soon ass possible a **new uniform financial reporting format** (see Appendix B) (standard accounting system), which is designed exclusively for credit unions by the WOCCU. Standardized accounting system makes it easier to compare credit unions with each other, and establishes meaningful performance and reporting criteria, to allow more correct calculation of yields. A new uniform financial reporting format for all PBCUs will have to be developed to present the critical areas of PBCU operations, and a series of indicators will be developed for evaluating the financial performance of CUs. The accounting system becomes a powerful new tool for credit unions' development. It quickly improves the accuracy and reliability of the financial information and reduces the time needed to prepare the monthly reports. During annual planning and budgeting, the firms should present a detailed plan to indicate how the firm will achieve its goals. The

entrepreneurial business plan can become a key tool for the credit unions in achieving their targets/goals.

The present study unveiled that the major concern for Bangladesh PBCUs is negative **loan delinquency ratio**, which is higher than the WOCCU. The consolidated (15 CUs) results for the 7 year period is negative delinquency ratio except for five CUs (Hashnabad, Rangamaita, Golla, Bokshanagar, and Tuital). All other credit unions have negative loan delinquency ratio.

Firstly, the present study recommends PBCUs to promote a strict methodology of reporting and classifying loan delinquency, and accept as priority in credit administration of PBCUs the implementation of stricter loan collection standards (reducing delinquency to industry standards). A more businesslike management of the CUs could significantly improve loan delinquency rates and profitability like the CU proven cases in El Salvador, Bolivia, Philippines, Ecuador, Kenya, Poland and Latin America CUs. These countries follow the same suggestions regarding delinquency reducing.

Secondly, the present study accepts the advice and recommendation of the WOCCU that PBCUs should ask technical assistance and training in borrower screening, credit risk analysis and collection practices from a national association, CCULB, to achieve lower loan delinquency (Richardson, 2001). CCULB also should introduce strict

discipline for CUs to analyze delinquency and provisions for loan losses to maintain the WOCCU standard, systems, policies and procedures.

Thirdly the study suggests that PBCUs should reconsider the suggestion of UK CUs researcher Thomas (2000) to apply that Credit and Behavioral Scoring as strategies/techniques that help organizations decide whether or not to grant credit to members who apply for loans.

The present study also has concerns on the **allowances for loan losses**. They show lesser ratios for all PBCUs, except two CUs (Hashnabad and Tuital), than the WOCCU standard. The present study strongly recommends PBCUs management to create a strict discipline for the creation of provisions for loan losses, and promote concrete rules and regulations to follow the WOCCU standard to improve provisions for loan losses to protect members' valuable assets. Otherwise, PBCUs will encounter negative financial problems in the future. The study also strongly suggests CCULB to give technical assistance and education to discover loan losses and its impact on the firms.

The present study unveiled that PBCUs still focus mainly on lending money to members. The present study recommends PBCUs to **develop comprehensive and effective marketing programs** for internal change of CUs operations. A marketing study can do with the participation of all PBCUs to conduct surveys to collect individual

member data to provide financial service demand and to better fit customer needs. Then the CUs can identify to offer more competitive products and services. The CUs can begin a systematic improvement on the quality of their products and services, and the physicall facilities of CUs. The PBCUs should increase healthy percentage of member savings deposit to achieve financial independence (The present study revealed that the members of Golla, Hashnabad, Tuital, Solepur, Bakshanagar, and Bonpara CUs want to save more). CUs can offer a variety of savings services: voluntary withdrawable savings accounts, fixed deposits, savings for educational fees, savings for holidays or vacations, Christmas savings, savings for infant delivery expense, retirement savings, youth savings, etc. When CUs operate with local savings for lending, social pressure becomes a more effective tool to push borrowers to repay. It is also a sign that members are no longer saving in order to borrow money, but are instead saving because of the competitive interest rates offered. In this operation policy, PBCUs may increase interest rate on loans to members and member savings deposit. It will reduce the loans to members and delinquency, and increase member savings deposit. PBCUs should also find profitable opportunities for financial investment of their valuable assets to increase member benefits and improve profitability

The present study has a special concern for some CUs in terms of balancing loan delinquency ratio and financial intermediation costs ratios. Six CUs: Jonail, Solepur, Bonpara, Dhaka, Dhorenda, and Toomilia have high loans delinquency ratio, but they are offering comparative dividend and interest policy, it is not fair financial management.

These CUs should balance their loan delinquency ratio. On the other hand, Mothurapur, Nagori, Ranikhong, Mothbari, they have lower dividend and interest compared to other CUs and have higher loan delinquency ratio. These CUs need more professional and corporate governance to protect their assets and member benefit. **Firstly**, these CUs should increase financial investment to earn more, than offer competitive interest on member savings which will encourage members to save more than to borrow more. **Secondly,** CUs should increase provisions for loan losses fund every year for the greater welfare of the members and the firms. **Thirdly,** these CUs need to revise lending policies and procedures and, interest on loans to encourage people to get more commercial loans and more savings deposits.

Assets growth is an important factor for CUs. In terms of loan to members, the present study recommends to policy makers to connect the strategy of consumer loan to commercial loans for larger PBCUs (Dhaka, Toomilia, Nagori, Bonpara, Dhorenda, Rangamatia and Mothbari). For other PBCUs, the study suggests to help the lower income groups increase their assets through developing positive credit relationship, establishing an enterprise, accessing working capital, increasing income through business expansion, meeting housing credit needs, and increasing wealth through savings. Old members take out larger loans for business, production needs, housing and expansion of business or project based on repayment capacity, and real collateral. These members contribute to savings deposit, their focus is save more and borrow less. As they shift to larger loans to reduce their borrowing, members stop investing in shares and shift their

investment to deposit savings. Members become net savers, investing savings in withdrawable deposit services offering market rates of return. This strategy will help increase member savings. PBCUs need to improve membership growth to promote strong and accelerated assets growth. The present study recommends that Bakshanagar, Ranikhong, Mothurapur, and Tuital CUs need to increase membership growth so they can focus on saving deposit services. They need to improve their assets volume for their total growth.

The present study recommends PBCUs to practice **professionalism in operation system and corporate governance in leadership** policy. In credit union governance policy, directors are elected from the general membership on a one-person-one-vote basis. Credit unions that begin at a small community or closed group level often depend upon volunteers to undertake operation, governance, and representation of membership. Volunteer participation helps small credit unions by maintaining low operating costs, accessing the personal familiarity of directors with the personal condition and risk of loan applicants. Boards dominated by volunteer non-professionals can be very responsive to local community social issues, but fail to have financial and business expertise required of a financial institution. When credit unions become larger, they generate sufficient income to hire professional staff. Credit unions then involve volunteers less in operational matters. Decision-making is carried out by professional staff and volunteer owner representatives are called upon for decision monitoring and oversight. Overall, the problems can be controlled by clear rules in the credit unions by-laws and supervisory

regulations, director roles, and management responsibility for technical credit decisions. The present study also recommends the management personnel to practice professionalism rather than nepotism or politicized motive in their leadership.

The present study highly recommends to the PBCUs management to **renew common bond** (common bond in financial reality) **community build up spirit** among executives, line managers, office staff and members. The management needs to promote financial discipline in day-to day operations. CUs in general suffered from public mistrust and insider abuse, it is very necessary to adopt rigid standards to gain public trust. PBCUs management should go through a continuous training and formation program to help executives, line managers, staff, members be more aware about common bond, social responsibility, and Christian values renewal which are the keys for PBCUs success. CCULB as National credit union should keep positive liaison with regional credit union (AACU), world credit Unions (WOCCU) and the members firms. Effective cooperation will bring more success and effective renewal of PBCUs to fulfill its founders' dream and to alleviate poverty in the Christian community.

Finally, the present study recommends to PBCUs to evaluate the CU's financial situation, administration and control, and marketing on an annual basis by a team of experts. WOCCU has established international prudential standards for credit unions operations system called PEARLS monitoring components. It is designed as a financial management tool that goes beyond the simple identification of problems. The

standardized financial ratios and formulas create a universal financial language that everyone can speak and understand. It helps executives, office staff, internal auditors, managers and policy makers find meaningful solutions to serious institutional deficiencies. The present study realizes the importance of PEARLS monitoring system to evaluate effective financial performance management and supervisory mechanism of Bangladesh PBCUs movement. The present study revealed that PBCUs have the capability and potentiality to provide higher financial benefit to their members, but they need more professionalism and corporate governance.

The empirical results and recommendation of this study offer a more robust and reliable significant contributions to the financial performance literature, credit unions and CCULB management, external and internal auditors, executives, board of directors, accountants, future researchers, office staff, and members. To sum up, not in all present situations and settings can PBCUs deliver all positive gains as evident in this study. This calls for the refinement of the PBCUs financial management system and policy in Bangladesh. The results of this study calls for financial management renewal and reformation of PBCUs as they have rendered fifty golden years of service to the Christian community in the developing country of Bangladesh.

5.3 Direction for Future Research

This study provides some starting points for future accounting researchers, who would like to analyze financial performance of CUs particularly on credit union firms in Bangladesh. It provides new empirical evidence for the regulatory board, especially for CCULB to improve the financial performance of entire firms. The study presents a unique comparison between WOCCU and PBCUs standards and among the CUs.

For accounting researchers, this study opens others areas to be investigated in the future such as:

- Comparison study of financial management performance between PBCUs and multi-group CUs in Bangladesh
- Comparison study of financial management performance and policy between Bengali parishes and tribal parishes
- Comparative study of profitability and growth of PBCUs in Bangladesh in the last fifty years
- Comparative study of provision for loan losses, loan delinquency and rates of return and costs of Bangladesh PBCUs' competitive financial performance
- Measuring the impact of PBCUs in terms of members' satisfaction and benefits
- Comparing if there are any discrimination in receiving benefit between executive management and ordinary members

- How the PBCUs respond to poverty alleviation in the Christian community

These are important issues that need to be addressed in a separate study for future research.

For accounting researchers, this study provides a starting point of further research concerning the impact of CUs financial performance in Bangladesh. It will be useful to separately examine financial performance of CUs in Bangladesh and increase the number of the CUs according to the needs of the people. These are the acknowledged limitations of the present study that are left for future research.

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Appendix A

Summary of the Recent Empirical Studies of Credit Unions

This is the summary of the recent empirical studies of Credit Unions with description of boundaries and, the measurements used and the findings.

Study	Country/ Industry	Main Measured Used	Findings
Branch and Evans, (1999)	Bolivia CUs	PEARLS	The results of PEARLS components of Bolivia CUs study (include 20 CUs, in 1999): Net income 1.51%, External Credit 8.24%, Operational Expenses 8.15%, Institutional capital 3.97%, Delinquency 5.20%, Loan loss provisions 100% for more than 12 months and 76.40% for less than 12 months, effective interest rates for savings 10% and Loans 18-24% where inflation rate is 4.39%.
Branch and Evans, (1999)	Ecuador CUs	PEARLS	The results of PEARLS components of Ecuador CUs study (include 19 CUs, in 1999): Net income 6.86%, External Credit 1.83%, Operational Expenses 12.68%, Institutional capital 12.62%, Delinquency 15.45%, Loan loss provisions 100% for more than 9 months and 22.11% for less than 9 months, effective interest rates for savings 22.38% and Loans 42.07% where inflation rate is 43%.
Branch and Evans, (1999)	El Salvador CUs	PEARLS	The results of PEARLS components of El Salvador CUs study (include 13 CUs, 1999): Net income 3.72%, External

			Credit 2.20%, Operational Expenses 7.69%, Institutional capital 6.48%, Delinquency 16.41%, Loan loss provisions 100% for more than 12 months and 25.30% for less than 12 months, where inflation rate is 4.39%.
Branch and Evans, (1999)	Kenya CUs	PEARLS	The results of PEARLS components of Kenya CUs study (include 10 CUs, in 1998): Net income 0.28%, External Credit 0.44%, Operational Expenses 4.26%, Institutional capital 3.54%, Delinquency 0.45%, Loan loss provisions 0% for more than 12 months and 0% for less than 12 months, effective interest rates for Loans 15.30% where inflation rate is 10.60%.
Mahon (1999)	Nicaragua CUs	Feasibility study	A study of Nicaragua 20 CUs indicated that 6 CUs serving 2,833 members, were actively engaging in micro enterprise development and were reaching proportionately more women borrows. More than 56% of micro enterprise loans were made to women, compared to 48% of all credit union loans.
Westley and Shaffer (1997)	Latin America/ Credit Union	Financial indicator / Overall performance	The study of Latin America credit union indicated a number of important guidelines for the successful operation of credit unions in developing countries. The importance of higher interest rates reducing delinquency and increasing profitability, interest rate ceilings should be avoided in order to avoid damaging credit union financial health. Also to be avoided are subsidized, targeted credit programs that undermine the adoption by credit unions of higher, market-based deposit and loan rates. Some of the potential benefits of credit union supervision are also indicated in the study which suggests that stricter loan collection standards and a more business

			like management of the CU could significantly improve delinquency rates and profitability.
Branch and Evans, (1999)	Poland CUs	PEARLS	The results of PEARLS components of Poland CUs study (include 36 CUs, in 1998): Net income 3.04%, External Credit 4.86%, Operational Expenses 6.28%, Institutional capital 1.2%, Delinquency 0.78%, Loan loss provisions 0% for more than 12 months and 0% for less than 12 months, effective interest rates for savings 3-4% and Loans 1-2% where inflation rate is 8.9%.
Ramesha (2003)	India / Cooperative Banking	Normative analytic frame work Points out that Self Help Groups (SHGs)	Urban cooperatives Banks are more influenced more by banking sector reforms in the short-run than other credit cooperatives. Cooperative character of urban cooperative banks can be captured in terms of the adherence to cooperative principles.
Metthews (2006)	Canada / Credit Unions	A survey of 27 Canadian credit unions professionals	Every village on earth, no matter how poor or remote, has the financial and human resources it needs to build its own financial institution. If it is poor and / remote, it must have its own financial institution; it hopes to have adequate and uninterrupted access to financial services in future.
Ofei, (2001)	Ghana / Credit Unions	PEARLS System	The study gives some noticeable developments in that organization. These could be summed up as follows: savings and deposit are not enough, this financial structure indicates a low ration of share to total assets, earnings generated by CUA are quite low whole administrative costs are high, there has been a decreasing trend in Asset Growth, there has been a considerable shift form deposits to shares and this is in spite of the high mobilization of savings and deposits. In

			general the analysis shows considerable fluctuations and inconsistencies in its financial performance indicators. It indicates that the financial performance of CUA I not up to deal targets set by WOCCU. These suggest that CUA is not financially healthy. An assessment of CUA's operational self-sufficiency shows that its incomes has been able to cover its operational costs. CUA therefore has not been able to achieve self-sufficiency and financial independence (Ofei, 2001).
Pille (1998)	Ontario Canada / Credit Unions	DEA	DEA model provides results comparable to the equity / asset ratio when a slack adjusted efficiency score is used to measure efficiency, particularly for credit unions with larger asset sizes. DEA also provides indications of where opportunities lie for improvements by weak units by providing specific information, relevant to managers.
Emmons and Schmid (1998)	USA/Credit Unions and bond	Theoretical model / semi-parametric empirical model	Results suggest that credit unions with multiple common bonds have higher participation rates than credit unions that are otherwise similar but whose membership shares a single common bond.
Thomas (2000)	Credit Unions / UK	Statistical or operational / linear regression	Credit scoring and behavioral scoring are the techniques that help organizations decide whether or not to grant credit to consumers who apply to them.
Ouattara and other (1999)	West Africa / Micro-finance	Caisses villageoise model	To identify some common threads that may explain the success or failure of this type of organizations as well as common factors that may generally facilitate or limit their future expansion.

Branch and Evans (1999)	WOCCU/ Credit Unions	Sustainability and outreach	Credit unions manage to reach significant scale and to attain financial self-sufficiency. Financial performance of cu affiliated with woccu technical service programs in different world regions.
Jones (2001)	England/ Rural Credit Unions	Steering group model	The research proposed a more professional, business and market-oriented model of credit union development that has the potential of strengthening credit unions as economically sound financial institutions. The research found that in order to operate successfully within a rural context, the structures, systems and resources of the new credit union development model are even more important than within the urban environment.
Worthington (1998)	Australia/ Credit Unions	DEA	The results question the applicability of a traditional profit based, physical production approach to a not-for-profit, cooperative setting.
McKillop	UK/ Credit Unions	DEA / Radial and non-Radial efficiency Measures	Two interesting findings emerged, first that UK credit unions over-spend on dividend payments; second, that they under-spend on labor costs.
(Goddard and Mckillop and Wolson, (1999)	Credit Unions/ US	Univariate model/ the Law of proportionate effect (LPE) and Multivariate model	Large credit unions grew faster than small credit unions during 1990s. There is evidence of negative persistence between growth rates and growth is more variable among small than among larger credit unions. The positive size-growth relationship appears to have been slightly stronger for the assets than for the membership size measure. For this reason the advantages of larger credit unions derived more from being able to increase business with existing members than form being able to attract new members.

Evans (1999)	Poland / credit union	PEARLS	WOCCU international performance standards.
Dong and Featherstone (2004)	China / Rural Credit cooperatives	Bootstrapping approach in DEA	Provides insight into guidelines for the current effort to reform and restructure RCCs in China and for future reform in a wider range. it involves government policy on reform of their managerial system, their form of ownership, and dealing with past non-performing loans.

Appendix B

Financial Statements for Credit Unions

(a) Balance Sheet Format
Credit Unions

LIABILITIES	ASSETS
INTEREST BEARING LIABILITIES	**EARNING ASSETS**
A. Savings Deposits	A. Loans to Members
Regular Savings Deposits	Short Term (<=1 year)
Fixed Savings Deposits	Medium (>1<= 3 years)
Youth Savings Deposit	Long term (>3 years)
Children Savings Deposits	Other Special Loans
Christmas Savings deposits	Allowances for Loan Loss
Special Savings Deposits	Total Net Loans
Pledge Savings Deposits	
Total Savings Deposits	B. Liquid Assets
B. External Credit	Liquidity Reserves – CFF
Short Term Loans – CFF <=1 year	Deposits – CFF
Long Term Loans –CFF >1 Year	Savings Deposits – Bank, etc.
Loans – Banks	Securities & Investments
Loans – Other External Institutions	Other Miscellaneous Investments
Total External Credit	Total Liquid Assets
Total Interest Bearing Liabilities	
	C. Financial Investments
NON-INTEREST BEARING LIABILITIES	Shares – League / Affiliation
	Deposit – CFF
A. Short-Term Accounts Payable (<=30 Days)	Savings Deposits – Banks, etc
B. Provisions (e.g. Wage / Benefits)	Securities & Investments
C. Other Liabilities	Other Miscellaneous Investments
Total Non-Interest Bearing Liabilities	Total Financial Investments
Total Liabilities	D. Non-Financial Investments
	Various
CAPITAL	**Total Earning Assets**
A. Member Share Capital	
Obligatory Shares	Additional Loan Portfolio Information
Voluntary share	Delinquency Calculation Method
Total member share Capital	Delinquency
B. Non-Institutional Capital	1 to 12 months
Asset Appreciation Over Cost	More than 12 Months
Education & Social Reserves	Total Delinquency
Monetary Reserves	
Other Reserves	

Undistributed Net Income	Loan Portfolio
Total Non-Institutional Capital	Accumulated Charge-offs
C. Intuitional Capital	Recovery of Charged-offs
Statutory & Legal Reserves	
Retained Earnings	**NON-EARNING ASSETS**
Special Asset Reserves	
Donations / Other Reserves	A. Liquid Assets
YTD Net Income (Loss) Transfer	Cash & Equivalents
Total Institutional Capital	Current (Checking) Accounts
Total Capital	Foreign Currency
	Liquidity Reserves
Total Liabilities and Capital	Other
	Total Liquid Assets
	B. Accounts Receivable
	Debtors
	Interest Receivable
	Notes Receivable
	Payroll Deductions Receivable
	Other accounts Receivable
	Allowance for Receivable Losses
	Total Accounts Receivable
	C. Fixed Assets
	Land
	Buildings (cost)
	Leasehold Improvement (cost)
	Accumulated Depreciation
	Total Net Fixed Assets
	D. Other Assets
	Assets in Liquidation
	Organization Expenses
	Other Assets
	Accumulated Amortization
	Total Other Assets
	E. Problem Assets
	Doubtful Assets
	Accounting Discrepancy – Assets
	Other
	Total Problem Assets
	Total Non-Earning Assets
	Total Assets

(b) Income Statement Format
Credit Unions

INCOME
A. Income – Loans
Interest Income – Loans
Penalty Interest Income – Loans
Commissions / Fees – Loans
(Less) Insurance Premiums – Loans
NET INCOME – LOANS
B. Income – Liquid Assets
C. Income – Financial Investments
D. Income – Non-Financial Investments
E. Income – other
Gross Income

FINANCIAL COSTS
A. Interest Expense – Savings Deposits
B. Insurance Premiums – Savings Deposits
Financial Costs – Savings Deposits
C. Financial Cost – External Credit
D. Dividend Expense Shares
E. Insurance Premiums – Shares
Financial Costs – Shares

F. Other Financial Costs
Total Financial Costs
Gross Margin

EXPENSES
Operating Expenses
Personnel
Representation
Administration
Marketing
Total Operating Expenses
Provisions – Risk Assets
Net Income from Operations

Other Income / Expense
Extraordinary Items (Net)
Previous Period adjustments (Net)

Net Income / Loss

Appendix C: Consolidated Raw Data for Statistical Test (15 CUs and 7 Years: 2000-2006)

YEAR	Nagori	Rangamatia	Dhorenda	Mothbari	Ranikhong	Bonpara	Jonail	Mothurapur	Hashnabad	Golla	Solepure	Tuital	Bakshanagar	Dhaka	Toomilia
	P Ratios														
2000	15.89	11.23	32.1	0.23	13.25	26.4	4.6	10.99	180.89	57.6	35.23	113.56	28.12	1.25	3.25
2001	15.99	11.56	31.45	0.33	14.89	26.6	4.10	11.98	182.32	59.3	38.23	120	29.56	2.89	3.22
2002	17.12	11.98	31.55	0.56	14.25	27.10	4.9	11.56	188.33	59.3	39.56	130.7	29.99	2.02	4.10
2003	17.33	11.02	32.1	0.23	15.86	26.9	5.6	12.61	195.45	61.3	42.66	132.00	30.01	2.53	4.23
2004	18	12.87	32.89	0.53	15.00	28.36	5.10.	12.89	200.05	63.6	44.65	140.33	30.25	2.89	4.25
2005	18.2	12.56	32.65	0.51	15.36	29.10	5.6	12.98	202.66	65.3	45.36	140.6	30.45	3.89	5.32
2006	18.7	12.66	33.21	0.86	15.2	29.9	5.7	13.88	203.56	65.3	50.89	150.2	30.56	3.22	5.86
	A Ratios														
2000	60.9	31.23	95.53	37.74	36.33	115	116	57.67	93.34	45.3	37.83	108.8	52.23	103.3	65.00
2001	42	31.05	91.69	36.07	42.51	139	396	48.54	45.94	47.4	34.99	88.78	119.4	89.00	70.8
2002	66.3	36.87	107.55	32.15	49.48	94.5	210	44.69	74.92	55.1	30.82	83.40	81.99	93.07	124
2003	10.8	31.89	156.59	54.41	59.39	156	198	46.24	54.89	80.9	33.59	104.4	47.57	97.73	133
2004	10.5	30.83	156.08	72.64	50.07	62.9	132	32.02	235.31	46.3	29.71	243	36.48	93.73	96.6
2005	12.4	39.30	234.54	52.06	49.55	50	192	44.46	44.71	41.20	39.52	212	40.27	111.7	120.10
2006	11.6	34.20	325.29	149	71.10	118	123	60.75	74.17	43.7	94.10	148.7	44.50	136	128
	R Ratios														
2000	5.15	5.13	5.79	4.82	5.97	5.47	6	7.92	6.37	5.26	8.70	6.21	8.53	5.62	7.10
2001	4.57	5.99	6.69	11.17	12.93	7.18	6.2	5.62	6.63	5.26	8.46	6.83	8.04	5.77	6.95
2002	10.5	5.4	10.83	7.23	5.93	5.97	7.6	8.98	4.99	6.84	6.32	6.64	9.09	5.71	7.07
2003	5.45	4.92	7.19	6.31	5.44	11.7	5.7	5.96	5.68	6.55	6.26	6.85	8.03	6.06	6.41
2004	5.80	5.41	5.88	10.36	6.41	4.96	6.5	6.35	6.15	5.96	5.33	6.72	7.25	5.79	6.42
2005	5.45	5.52	5.74	6.06	6.72	5.98	7.3	6.05	4.77	5.94	5.77	6.54	6.91	6.08	6.63
2006	5.32	5.50	5.61	6.03	5.78	6.72	6.7	5.01	4.45	8.97	5.82	6.64	7.12	6.17	6.85
	L Ratios														
2000	15.9	14.16	9.05	17.99	25.44	6.08	22	19.13	30.36	30.9	30.23	26.20	241.72	6.18	11.60
2001	13.7	9.06	11.69	21.23	8.95	4.42	4	23.90	40.89	29.7	28.82	30.55	257.26	7.09	12.1
2002	3.81	8.19	19.46	15.55	11.44	6.58	7.3	27.06	12.41	27.3	19.46	32.32	332.07	9.00	5.42
2003	7.69	9.70	5.36	9.45	10.17	3.54	8	26.12	21.35	9.01	16.97	21.49	463.89	9.50	6.55
2004	13.00	11.97	3.79	6.25	3.64	7.56	17	36.88	3.53	7.71	14.87	6.03	407.57	12.75	5.56
2005	14.5	7.42	3.04	9.05	14.17	10.1	11	26.76	26.53	7.73	11.03	4.95	393.24	9.95	3.55
2006	16	10.38	6.57	4.49	5.76	3.51	15	15.03	9.53	7.68	6.07	4.92	209.80	7.87	3.85
	S Ratios														
2000	12.8	32.19	27.39	17.35	40.65	33.7	###	14.64	45.38	27.2	34.04	15.69	12.84	16.11	13.1
2001	12.3	10.84	38.18	18.39	11.25	22.70	2.2	9.60	55.69	40.00	33.09	14.34	16.08	16.41	17.2
2002	6.85	13.87	38.57	8.30	32.63	9.05	16	22.97	38.86	37.3	215.7	11.52	2.32	14.18	14.5
2003	243	40.87	23.83	37.21	20.31	8.60	67	14.29	33.62	15	21.18	11.03	14.29	11.87	14.4
2004	8.75	15.27	15.09	11.96	-7.61	1189	9.30	26.86	7.13	19.7	14.97	12.07	49.64	12.38	9.46
2005	133	25.39	19.46	21.25	168.64	31.9	259	14.27	121.42	25.7	11.00	49.09	20.04	12.78	8.41
2006	16	21.57	20.90	4.46	-11.49	-5.5	21	7.87	6.32	18.8	17.38	121.3	12.35	17.06	9.96

Appendix D: Raw Results of Statistical Tests

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
PRATIOS	Nagori	7	17.3143	1.0727	.4055	16.3222	18.3064	15.89	18.65
	Rangamatia	7	11.9829	.7361	.2782	11.3020	12.6637	11.02	12.87
	Dhorenda	7	32.2786	.6659	.2517	31.6627	32.8944	31.45	33.21
	Mothbari	7	.4643	.2236	8.451E-02	.2575	.6711	.23	.86
	Ranikhong	7	14.8300	.8509	.3216	14.0431	15.6169	13.25	15.86
	Bonpara	7	27.7429	1.3638	.5155	26.4816	29.0042	26.35	29.85
	Jonail	7	5.0629	.5906	.2232	4.5167	5.6090	4.10	5.66
	Mothurapur	7	12.4129	.9730	.3677	11.5130	13.3127	10.99	13.88
	Hashnabad	7	193.3229	9.5073	3.5934	184.5301	202.1156	180.89	203.56
	Golla	7	61.6629	3.0912	1.1684	58.8039	64.5218	57.62	65.32
	Solepure	7	42.3686	5.2094	1.9690	37.5507	47.1865	35.23	50.89
	Tuital	7	132.4800	12.6448	4.7793	120.7855	144.1745	113.56	150.23
	Bakshanagar	7	29.8486	.8313	.3142	29.0798	30.6174	28.12	30.56
	CCCU Ltd. Dhaka	7	2.6700	.8511	.3217	1.8829	3.4571	1.25	3.89
	Toomilia	7	4.3186	.9822	.3712	3.4102	5.2269	3.22	5.86
	Total	105	39.2507	52.6840	5.1414	29.0550	49.4463	.23	203.56
ERATIOS	Nagori	7	31.2071	.9567	.3616	30.3224	32.0919	29.74	32.89
	Rangamatia	7	32.0243	.2836	.1072	31.7620	32.2866	31.44	32.24
	Dhorenda	7	32.4557	.1573	5.944E-02	32.3103	32.6011	32.21	32.67
	Mothbari	7	31.9043	.7758	.2932	31.1868	32.6218	30.16	32.37
	Ranikhong	7	31.5143	.6281	.2374	30.9334	32.0952	30.27	32.14
	Bonpara	7	32.9657	.1936	7.316E-02	32.7867	33.1447	32.60	33.18
	Jonail	7	31.5700	1.9788	.7479	29.7399	33.4001	27.17	32.77
	Mothurapur	7	32.4600	.2987	.1129	32.1838	32.7362	31.90	32.78
	Hashnabad	7	33.1300	6.377E-02	2.410E-02	33.0710	33.1890	33.05	33.23
	Golla	7	31.7429	1.1317	.4277	30.6962	32.7895	30.52	33.01
	Solepure	7	31.0043	1.2860	.4861	29.8149	32.1936	28.69	32.07
	Tuital	7	32.4029	.1757	6.639E-02	32.2404	32.5653	32.06	32.57
	Bakshanagar	7	33.0843	1.4138	.5344	31.7768	34.3918	31.49	35.94
	CCCU Ltd. Dhaka	7	31.8786	.5051	.1909	31.4115	32.3457	31.23	32.59
	Toomilia	7	31.6886	.3852	.1456	31.3324	32.0448	31.06	32.02
	Total	105	32.0689	1.0352	.1010	31.8685	32.2692	27.17	35.94
ARATIOS	Nagori	7	30.6214	25.1948	9.5227	7.3202	53.9227	10.46	66.25
	Rangamatia	7	33.6243	3.3230	1.2560	30.5510	36.6976	30.83	39.30
	Dhorenda	7	166.7529	85.7889	32.4252	87.4113	246.0944	91.69	325.29
	Mothbari	7	62.0086	40.8020	15.4217	24.2730	99.7441	32.15	148.99
	Ranikhong	7	51.2043	11.3040	4.2725	40.7499	61.6587	36.33	71.10
	Bonpara	7	104.9786	38.4867	14.5466	69.3843	140.5728	50.01	155.81
	Jonail	7	195.4000	96.4734	36.4635	106.1770	284.6230	116.48	395.69
	Mothurapur	7	47.7671	9.4686	3.5788	39.0101	56.5242	32.02	60.75
	Hashnabad	7	89.0400	66.8616	25.2713	27.2033	150.8767	44.71	235.31
	Golla	7	51.4171	13.7017	5.1788	38.7452	64.0891	41.20	80.89
	Solepure	7	42.9371	22.8317	8.6296	21.8214	64.0529	29.71	94.10
	Tuital	7	141.3000	63.1559	23.8707	82.8905	199.7095	83.40	243.04
	Bakshanagar	7	60.3486	30.0240	11.3480	32.5810	88.1162	36.48	119.40
	CCCU Ltd. Dhaka	7	103.4986	16.1719	6.1124	88.5421	118.4551	89.00	135.98
	Toomilia	7	105.2586	27.9977	10.5821	79.3651	131.1521	65.00	132.86
	Total	105	85.7438	64.9159	6.3351	73.1810	98.3066	10.46	395.69
RRATIOS	Nagori	7	6.0300	1.9937	.7536	4.1861	7.8739	4.57	10.47
	Rangamatia	7	5.4100	.3355	.1268	5.0998	5.7202	4.92	5.99
	Dhorenda	7	6.8186	1.8623	.7039	5.0962	8.5409	5.61	10.83
	Mothbari	7	7.4257	2.3985	.9065	5.2075	9.6439	4.82	11.17
	Ranikhong	7	7.0257	2.6367	.9966	4.5871	9.4643	5.44	12.93
	Bonpara	7	6.8571	2.2675	.8570	4.7600	8.9543	4.96	11.72
	Jonail	7	6.5714	.6805	.2572	5.9421	7.2008	5.69	7.55
	Mothurapur	7	6.5557	1.3938	.5268	5.2667	7.8448	5.01	8.98
	Hashnabad	7	5.5771	.8507	.3215	4.7903	6.3639	4.45	6.63
	Golla	7	6.3971	1.2797	.4837	5.2136	7.5806	5.26	8.97
	Solepure	7	6.6657	1.3505	.5105	5.4167	7.9147	5.33	8.70
	Tuital	7	6.6329	.2165	8.182E-02	6.4327	6.8331	6.21	6.85
	Bakshanagar	7	7.8529	.8005	.3026	7.1125	8.5932	6.91	9.09
	CCCU Ltd. Dhaka	7	5.8857	.2133	8.062E-02	5.6884	6.0830	5.62	6.17
	Toomilia	7	6.7757	.2913	.1101	6.5063	7.0451	6.41	7.10
	Total	105	6.5654	1.5134	.1477	6.2725	6.8583	4.45	12.93
LRATIOS	Nagori	7	12.0829	4.5993	1.7384	7.8293	16.3365	3.81	16.02
	Rangamatia	7	10.1257	2.3140	.8746	7.9857	12.2658	7.42	14.16
	Dhorenda	7	8.4229	5.7175	2.1610	3.1351	13.7107	3.04	19.46
	Mothbari	7	12.0014	6.3027	2.3822	6.1724	17.8304	4.49	21.23
	Ranikhong	7	11.3671	7.1219	2.6918	4.7805	17.9538	3.64	25.44
	Bonpara	7	5.9729	2.3977	.9062	3.7554	8.1904	3.51	10.12
	Jonail	7	12.0943	6.3768	2.4102	6.1967	17.9919	3.98	22.13
	Mothurapur	7	24.9829	6.8896	2.6040	18.6111	31.3546	15.03	36.88
	Hashnabad	7	20.6571	13.0617	4.9369	8.5771	32.7372	3.53	40.89
	Golla	7	17.1557	11.4367	4.3227	6.5785	27.7329	7.68	30.92
	Solepure	7	18.2071	8.8529	3.3461	10.0196	26.3947	6.07	30.23
	Tuital	7	18.0657	12.4273	4.6971	6.5724	29.5590	4.92	32.32
	Bakshanagar	7	329.3643	96.1569	36.3439	240.4340	418.2946	209.80	463.89
	CCCU Ltd. Dhaka	7	8.9057	2.1614	.8169	6.9067	10.9047	6.18	12.75
	Toomilia	7	6.9457	3.5035	1.3242	3.7056	10.1859	3.55	12.09
	Total	105	34.4234	82.9461	8.0947	18.3713	50.4755	3.04	463.89
SRATIOS	Nagori	7	61.8314	92.0167	34.7790	-23.2698	146.9327	6.85	243.42
	Rangamatia	7	22.8571	10.8196	4.0894	12.8507	32.8636	10.84	40.87
	Dhorenda	7	26.2029	9.1335	3.4521	17.7558	34.6499	15.09	38.57
	Mothbari	7	16.9886	10.6997	4.0441	7.0930	26.8842	4.46	37.21
	Ranikhong	7	36.3400	61.4294	23.2181	-20.4727	93.1527	-11.49	168.64
	Bonpara	7	184.2257	443.3463	167.5692	-225.8013	594.2527	-5.52	1189.14
	Jonail	7	62.8100	90.4205	34.1757	-20.8150	146.4350	2.23	259.32
	Mothurapur	7	15.7857	6.8438	2.5867	9.4563	22.1151	7.87	26.86
	Hashnabad	7	44.0600	38.8281	14.6756	8.1500	79.9700	6.32	121.42
	Golla	7	26.2429	9.4624	3.5765	17.4916	34.9941	14.98	40.00
	Solepure	7	49.6243	73.7589	27.8782	-18.5913	117.8399	11.00	215.71
	Tuital	7	33.5743	40.9876	15.4919	-4.3329	71.4815	11.03	121.28
	Bakshanagar	7	18.2229	14.8704	5.6205	4.4701	31.9756	2.32	49.64
	CCCU Ltd. Dhaka	7	14.3986	2.1289	.8047	12.4296	16.3675	11.87	17.06
	Toomilia	7	12.4357	3.2219	1.2178	9.4559	15.4155	8.41	17.16
	Total	105	41.7067	121.5645	11.8635	18.1809	65.2324	-11.49	1189.14

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
PRATIOS	Between Groups	286890.6	14	20492.188	1040.503	.000
	Within Groups	1772.505	90	19.695		
	Total	288663.1	104			
ERATIOS	Between Groups	42.869	14	3.062	4.018	.000
	Within Groups	68.584	90	.762		
	Total	111.452	104			
ARATIOS	Between Groups	247516.3	14	17679.736	8.342	.000
	Within Groups	190746.8	90	2119.409		
	Total	438263.1	104			
RRATIOS	Between Groups	41.344	14	2.953	1.350	.195
	Within Groups	196.868	90	2.187		
	Total	238.212	104			
LRATIOS	Between Groups	655280.6	14	46805.757	69.923	.000
	Within Groups	60245.008	90	669.389		
	Total	715525.6	104			
SRATIOS	Between Groups	179178.2	14	12798.446	.848	.616
	Within Groups	1357727	90	15085.856		
	Total	1536905	104			

ABOUT THE AUTHOR

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