

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

The prediction of corporate failures is an important and challenging issue that has served as the impetus for many academic studies over the past few decades. However, as corporate failure problem still continues in the modern economies, having significant economic as well as social implications along with unavailability of accurate and reliable method for predicting the event of failures, research interest is likely to continue. Corporate failure has been viewed from different perspectives. It has been a common occurrence and has been witnessed as a multiplier effect with the recent credit crunch hitting the entire globe.

Many corporate institutions are running short of cash flows to meet up, not only with their debt financing, but also with the cost of daily operations. This has therefore forced many to file in for liquidation as the way out. The effects of financial distress are not limited to the large and publicly traded companies but all companies are subject to failures. There is no unique definition of corporate failure (Altman, 1993).

The possible definitions range from firm's failure to earn an economic rate of return on invested capital given the risk of the corporate firm to legal bankruptcy followed by the liquidation of their assets. Corporate failure is the situation when the market value of assets of the assets of the firm is less than its total liabilities, the firm is unable to pay debts when they come due and when the firm continues trading under court protection (Pastena &Ruland- 1968).

A general view of corporate failure is the result of a mismatch between the current available liquid assets and current obligations. This indicates its earning's rate is less than its cost of capital (Weston & Copeland 1992).

There are various determining factors of corporate failures. Some of them are high interest rate, recession squeezed profitability, inappropriate diversification, deteriorating financial structures, heavy debt burden, ineffective financial risk assessment and management, ineffective working capital management leading to illiquidity, failure to eliminate actual or potential loss-making activities, inadequate financial planning and budgetary control, fraud, inadequate corporate governance, loss of key management and staffs, changes in regulations, technological/ technical obsolescence, loss of major customers and research and development failures. Further industry specific characteristics such as government regulation and the nature of operations can contribute to a corporate financial distress. Before a company's turns to failure it provides various signals and symptoms of failure. The signals of corporate failure tend to start with short term liquidity problems followed by operating losses, excessive use of external debt and inability to meet the obligations. Gradually these signals will emerge into the symptoms that results in the shortage of cash, decline in liquidity, profitability, turnover and financial ratios continuous decline in market price of shares.

A number of studies have been conducted related to the development of statistical models that are useful for the prediction of corporate failure using various financial ratios of failed and healthy companies (Beaver, 1966; Altman, 1968; Ohlson, 1980). Thus, the evaluation of corporate failure is limited and the major criticism of prior studies is limited to the attempts made to develop an appropriate theory of corporate failures. Those studies are limited to provide general results where financial ratios are mostly used as the predictors of corporate failures in the context of developed countries. Therefore it has been necessary to carry out a study in the context of Nepal.

1.2 Statement of the Problems

Corporate organizations especially banks and financial institutions are growing enormously in the world along with both success and failure in the present situation. It has emerged as a new research area in the present day context. The

major reasons behind whether the corporate institutions in Nepal have been failing recently, investors and bank customers need to worry or not as it reflects the country's economic growth and stability. Once the inflexible rules and regulations of the Nepal Rastra Bank (NRB) are adopted or followed strictly by the banks and financial institutions, these banks and financial institutions will also perform better. Scholars from different fields have made efforts to address various issues related to the performance of banks and financial institutions and the potential reasons for failure. They have introduced a number of theoretical concepts and empirical studies on the probable reasons for corporate distress and the economic downturn, financial crises, lessons regarding bank failure, prediction of bank failure and more. The empirical researches are broadly conducted only in the developed countries but are limited in the Nepalese context regarding the prediction of corporate failures. In the course of analyzing the multi-facet issues related to the effects on corporate failure risk that were small in national level have been used, different models as theoretical model, panic approach, fundamentalist approach, time series evidence, Regional dummy variables, Discriminant analysis, accounting ratios, empirical studies were used. More important fields are not covered by these studies. Other methodologies should be employed to predict corporate financial distress, such as neural networks and other advanced decision-making techniques. Further uneven local economic performance and economic conditions in the market, poor quality of liquidity emergence, regulatory structure and their implications, financial liberalization, macroeconomic instability, privatization, political development and bank failure, poor loan loss provisioning, technological innovations and globalization in banking industry, competition, present status of Nepalese banks and financial institutions, macroeconomic variables for the study of banks performance in Nepal, presence of asymmetric information in Nepalese corporate sector should also be taken into consideration for the study.

Companies all over the world are affected by the economic problems in the past few years where Nepal is also suffering from this directly or indirectly.

Many Nepalese companies are affected by the economic instability, political instability resulting in deteriorating profitability of those organizations. Corporate failure is not the result of instability in the country's economy and political condition but due to poor corporate governance, inefficient management, lack of efficient management, leadership, technical and technological know-how, financial analysis and lack of effective management. It is never the result of a random set of events but is normally a reflection of deep-seated corporate shortcomings. Therefore this study attempts to answer the following questions in the context of financial ratios and corporate failure in Nepalese context:

- Is there any difference in the behavior of the financial ratios of failed and healthy companies?
- Is there any significant difference between the failed and healthy companies?
- Which ratio (s) is the most important ratio as early warning signal of failure?
- Can multivariate discriminant analysis discriminate failed and healthy firm accurately?
- Which ratio or ratios are significant in discriminant function in the study of corporate failure?
- Which ratio is the most important ratio in discrimination of failed and healthy companies?
- Which ratio(s) is perceived important by the financial practioners in the context of Nepal?
- What types of symptoms can be observed of a failed company prior year to failure?

1.3 Objectives of the Study

The major objective of the study is to predict corporate failure in the context of Nepal. However, the specific objectives of the study are as follows.

- to assess the behavior of financial ratios of failed and non-failed companies.
- to test the significance differences of financial ratios of failed and non-failed companies
- to assess the classification accuracy of discriminant analysis.
- to develop model to identify an early warning signals that predicts corporate failures with reasonable accuracy.
- to assess the predictive power of financial ratios for failed and non-failed companies
- to carry out a survey to identify the causes and symptoms of corporate failures in Nepalese context.
- to find the consensus on financial ratio as predictors of corporate failure
- to provide appropriate superstation.

1.4 Significance of the Study

In Nepalese case previous empirical studies on the prediction of corporate failure have been limited. Many of the unresolved issues related to the corporate failures, proper identification of the variables causing bank failure beforehand as government regulations, structural economic transformation, political development, technological innovations, investment and saving pattern is useful in the identification of the financial health of banks to determine the success or failure of the corporate.

Corporate institutions are the very important factors in the financial system of the country where effects of corporate failures have been very significant. Corporate failure prediction has always been an interesting topic for several reasons. The performance assessment between the good and problematic corporate is itself an important area of study. Further the prediction of the corporate failure in advance is considered to be effective in order to reduce the cost of corporate failure and safeguard the depositors' interest and confidence. The ability to predict failures also helps to reduce the differences between the successful and unsuccessful one. The collapse of so many financial institutions

following the so-called "Credit Crunch" in 2008 with root causes well before of course, is surely proof of that. Indeed in all major corporate failures, the final collapse has happened at a catastrophic speed. Immoral practices or plain excessive risk taking or incompetence have been hidden to such an extent that it takes a catastrophic event for it to surface and it is usually too late to save the corporate in advance. Previous research has focused on the reasons and prediction for the corporate failure in the developed countries only neglecting the role of corporate in developing countries as Nepal. Therefore to determine the soundness of companies especially banks and financial institutions and to determine their activities related to liquidity enabling general public, investors and market to safeguard their capital and assets, facilitating capital allocation, investment and growth, performance of companies should be predicted properly. Present study helps to act as the alarm for the corporate failures and help determine the probable causes and consequences of their failure and find the probable solutions to reduce the failure rate and strengthen the position of those companies. Further it can act as a signal and describe the symptoms to take preventive actions before their failure. Thus it is very significant in predicting the rate of corporate failure and reduces the rate of failure through proactive measures of control mechanism.

1.5 Limitations of the Study

The limitations of this study are as follows.

- The study is made representative as much as possible but it is fact that there lie some shortcomings or limitations in this study as well. The data problem is more acute in conducting this type of study in Nepalese context to obtain reliable interpretation of the results.
- This research focuses on twenty companies selected from the two groups of companies' failure and non-failure. The duration of this study is limited to approximately three months. Due to the time frame allocated by the academic system there have been various boundaries for the purpose of investigating the issues considered for the study.

- Simple statistical tools are used in order to avoid complexity.
- Due to inadequate availability of the data and information about the failed companies it is difficult to arrive at appropriate conclusions.
- The study is limited to the companies within Kathmandu valley only, therefore more generalizable results could not be obtained from limited data.
- The study takes into consideration commercial banks, development bank and finance companies only, other financial and non-financial institutions are not considered.

1.6 Organization of the Study

Entire thesis has been organized into five parts, each devoted to some aspects of the study of the corporate failure. The titles of each part are as follows:

Chapter - I	:	Introduction
Chapter - II	:	conceptual framework & review of literature
Chapter - III	:	Research Methodology
Chapter - IV	:	Data presentation and Analysis
Chapter – V	:	Summary, Conclusion and Recommendations.

The rationale behind this kind of organization is to follow a simple research methodology approach. The content of each part of this study are briefly mentioned here.

The first chapter introduction describes background of the study, statement of the problem, the major issues to be investigated along with the objectives and scope of the study, limitation of the study and ends with the organization of the study.

The second chapter will provides the clear insights of the literature reviewed for the research purposes that lists out the findings of the previous studies made on the same field. This chapter also reviews the literature from foreign context, as well as the Nepalese context, highlighting the major contributions of different studies like international journals, Masters Dissertations and Nepalese journals.

The third chapter, Research Methodology, is the most important part to the study which discusses the methodologies used in the study. It deals with research design, sources and nature of data, sampling and population, test model and method of analysis as test methodology and definition of key terms.

The fourth chapter has clearly discussed analysis and presentation of primary data as well as secondary data to predict corporate failure using various financial ratios in the contest of Nepal.

The last chapter of the study states summary and conclusion, findings, suggestion and recommendation. Finally, an extensive, bibliography and appendices are also presented at the end of the thesis work.

CHAPTER - II

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

This chapter provides conceptual framework of the study and deals with review of prior literatures associated with the prediction of corporate failures. It is divided into three sections. First section presents a conceptual framework of the study. Second section consists of an in-depth review of related studies in the context of both developed and developing countries around the globe. And, finally the third section presents the research gap.

2.1. Conceptual Framework

Financial ratios are useful indicators of a firm's performance and financial situation. Most ratios can be calculated from information provided by the financial statements. Financial ratios can be used to analyze trends and to compare the firm's financials to those of other firms. In some cases, ratio analysis can predict future bankruptcy and failure. These ratios identify irregularities, abnormalities and surprises that require further investigation to ascertain the current and future financial standing of a company. Ratios can be used as the major predictor of corporate failure that indicates the financial soundness of the companies over the period of time. There are various types of ratios computed to analyze the financial health of the companies as liquidity, profitability, leverage, cash flow and others. Ratio analysis helps to analyze the financial statements of a company, judge the operating efficiency of business, useful for forecasting, locating the weak spot, useful in the comparison of financial position of different firms.

Corporate failure refers to those companies ceasing operations following its inability to make profit or bring in enough revenue to cover its expenses. This can occur as a result of poor management skills, inability to compete or insufficient marketing (Altman, 1993).

Table: 2.1
The conceptual framework of the study

Liquidity	Failed	Healthy	
Current Asset/Current liabilities	Low	High	
Working capital to total asset	Low	High	
Current asset to total asset	Low	High	
Current liabilities to total asset	Low	High	
Cash to total asset	Low	High	
Quick Ratio	Low	High	
Cash reserve ratio	Low	High	
Liquidity to total deposit	Low	High	
Liquid fund to total sources of fund	Low	High	
Profitability	Failed	Healthy	
Interest income to interest expenses	Low	High	
Return on equity	Low	High	
Return on Assets	Low	High	Corporate Failure
Return on capital equity	Low	High	
Net income to total asset	Low	High	
Total operating expenses to operating revenue	Low	High	
Leverage	Failed	Healthy	
Total debt to total asset	High	Low	
Long term loan to total asset	High	Low	
Total loan to total capital	High	Low	
Nonperforming loan to total loan	High	Low	
Shareholder's equity to total asset	Low	High	
Shareholder's equity to total debt	Low	High	
Fixed deposit to total deposit	Low	High	
Current deposit to total deposit	High	Low	
Investment to total deposit	Law	High	
Cash Flow	Failed	Healthy	
Cash flow to total debt	Low	High	
Cash flow to current liabilities	Low	High	
Other	Failed	Healthy	
Capital fund to risk weighted asset	Low	High	
Price earnings ratio	High	Low	

Above table indicates the conceptual framework used for the study. It indicates the major impacts of the financial ratios as liquidity, leverage, cash flow, profitability in the prediction of corporate failure.

2.2. Review of Literature

This section provides a review of major empirical studies associated with financial distress and failure. The review of empirical works along with the review of studies associated with the prediction of corporate failures, various ratio analysis models are presented in this section.

Altman (1968) had conducted a research on “*Financial Ratios, Discriminant Analysis and the prediction of corporate Bankruptcy*”.

The main objectives of the study were:

- to assess the issue related to the quality of ratio analysis as an analytical technique
- to investigate a set of financial and economic ratios for the prediction of bankruptcy.

For the study purpose multiple discriminant analysis was applied for the first time to investigate bankruptcy prediction. The sample consisted of sixty six corporations with thirty three bankrupt and thirty three non-bankrupt manufacturing firms. Ratio analysis technique was used for investigating corporate performance and discriminant model was developed with an initial sample of sixty-six firms that discriminated into two groups as bankrupt and non-bankrupt. The study period observed was five years prior to failure.

Further twenty two potential ratios were chosen based on their relevancy to the study along with the introduction of new ratios. Final profile of the ratio was determined through statistical significance of various independent variables, their correlation and through predictive judgment of analyst. In addition to this discriminant function was developed as prediction model of corporate bankruptcy as

$$Z = 0.012 X_1 + 0.014 X_2 + 0.033 X_3 + 0.006 X_4 + 0.999 X_5 \dots\dots\dots (i)$$

where α = intercept, X_1 = Working capital to total asset ratio (CA-CL/TA), X_2 = Retained earnings to total asset ratio (RE/TA), X_3 = Earnings before interest and tax to total asset ratio (EBIT/TA), X_4 = Market value of equity to book value of total debt (ME/ TD) and X_5 = sales to total debt (S/TD). A Z-score of less than 1.8 indicated a very high probability of failure, while a Z score greater than 3 indicated a high probability of non-failure. Z-score between 1.8 and 3 fell in the ‘grey zone’ where it was not possible to predict with confidence whether the firm would or would not fail.

The major findings of the study were:

- In general ratios measuring profitability, liquidity and solvency prevailed as the most significant indicators. A firm with poor profitability and solvency record might be regarded as a potential bankrupt. However the firm with higher liquidity situation was considered serious.
- the greater a firm’s bankruptcy potential the lower its discriminant score. There was high negative correlation between earning before interest and tax to total asset (EBIT/TA) and Sales to total debt(S/TD) in the bankruptcy group leading towards unexpected results. The negative correlation was also evidenced in the subsequent bankrupt group sample.
- Companies with moderate or even below average sales generating lower might possess extremely high Net sales to net worth ratio if the net worth was reduced due to cumulative operating losses. Therefore these ratios are ignored due to computational and interpretative difficulties

The major recommendations were:

- A potential theoretical area of importance lied on the conceptualization of efficient portfolio selection. The ideal approach was to include the securities possessing negative co-variance with other securities in the

portfolio. The discriminant-ratio model was suggested to make the problem of securities more soluble.

- The firms examined were all publicly held manufacturing corporations for which comprehensive financial data were obtained including market price quotation. Therefore the data used for the study was limited to manufacturing corporations. In almost every case the methodology was univariate in nature and the emphasis was placed on individual signals of impending problems. The actual variable measurement units were not comparable to each other and simple observation of the discriminant coefficients was misleading.

Karbhari Yusuf (2004) had conducted a research on *“Bankruptcy Prediction during the IMF Crisis: Evidence From Malaysian Listed Industrial Companies.”*

The main objectives of the study were:

- to make a modest contribution to the bankruptcy literature by studying firms operating in different accounting, legal, and economic environment in a developing economy, Malaysia
- to develop bankruptcy prediction model of considerable efficiency for firms listed and traded in a small developing economy.

For the study purpose data were collected from the secondary sources. The study was based on a set of financial ratios derived from financial statements of a sample of financially distressed listed companies for the period from 1980 to 1996. The total number of sample companies was 66 firms among which 24 were non-financial listed firms. Paired sample design technique was employed where each firm was assigned a non-failed “match” in the sample for the same period as a dependent variable and 64 ratios were used as independent variables. In addition to this univariate analysis and stepwise Multiple Discriminant Analysis was used to ascertain the discriminating power of the variables. A correlation test was performed by constructing three potential

groups and the model was tested for its predictive accuracy to test both internal and external validity.

The major findings of the study were:

- the number of corporate failures in Malaysia has increased in the 1990s and failure rate was higher for small and unlisted firms. The average of the total liabilities of failed firms was significantly higher compared to non-failed firms. The average total assets figures coupled with the fixed assets, current assets, and inventory and account receivables figures of the failed firms were much higher for the failed firms than the non-failed firms indicating that failed firms have higher investments. Therefore the failed firms were at risk due to excessive investments in fixed and current assets.
- Likewise the average sales of the failed firms were lower than those of their non-failed counterparts. Furthermore, significant differences were found in the net income/ (loss), income before interest and tax, and retained earnings figures. The failed firms were experiencing excessive low profitability compared to their non-failed counterparts. Excessive borrowings and investments, coupled with excessively low profitability, were significant characteristics of Malaysian firms that led the country into difficulties and eventually to the financial crisis.
- Based on the three-variable function of MDA, the ratio of Total Liabilities to Total Assets had the greatest power of discrimination, with the highest discriminant loading and F statistics, and the ratio of Cash to Current Liabilities had the least power of discrimination. Both the liabilities and assets of failed firms were important financial indicators in terms of their ability to discriminate between the failed and non-failed firms. The final variables in the model were consistent with the findings from univariate analysis.
- Five variables were found to significantly discriminate between failed and non-failed firms in the multivariate analysis (multiple discriminant

analysis), namely Total Liabilities to Total Assets, Asset Turnover, Inventory to Total Assets, Sales to Inventory and Cash to Total Assets. Finally, it was found that the firms that failed during the Asian Financial Crisis and which were used in the external validation procedures showed distress symptoms as early as five years before the year of actual failure.

The major recommendations of the study were:

- a firm can be defined as failed or non-failed much better using the cutting score, it is more meaningful if the firm's financial health can be classified in more based on Z-Score. As a result of the IMF Crisis, there is an urgent need to undertake research to understand the capital structures and other financial indicators, such as micro and macroeconomic variables that might affect firms' performance, and eventually develop a prediction model for failed and non-failed firms.

Lanine and Vennet (2005) had conducted a research on "*Failure prediction in the Russian bank sector with logit and trait recognition models*"

The main objectives of the study were:

- to build a bank failure prediction model based on the logit and trait recognition methodologies
- to analyze the determinants of bank failures
- to test the predictive accuracy of these approaches.

For the study purpose data were collected from the secondary sources and an empirical study was conducted. A sample of 582 banks over the period of 1988-2004 was taken into consideration where the samples of failed and non-failed banks were based on the availability of all bank specific variables. Further logit and trait recognition models were developed to build early warning system and to predict their failures among Russian commercial banks. In order to test the predictive power of both models holdout samples were used.

In addition tests were performed by the splits of failed banks between the original and holdout samples as 3, 6 and 9 months prior to failure. Moreover descriptive statistics were used for the study purpose along with statistical tests using seven independent variables as profitability, liquidity risk, capital adequacy, credit risk and size. A logistic distribution model was used for the study where the posterior probability of failure could be derived from the following specification as:

$$Z_i = \log \left(\frac{P_i}{1-P_i} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \text{ and } P_i = \frac{1}{1 + e^{-Z_i}} \dots \dots \dots (i)$$

Where, *log* is the natural logarithm, *P_i* is the probability that bank *i* will fail next period, *X_j* is the *j*th independent variable, and *β_j* is the coefficient of the *j*th predictor variable.

The major findings of the study were:

As expected liquidity plays an important role in bank failure prediction, but also asset quality and capital adequacy turn out to be important determinants of failure. The results suggested that both the logit model and the trait recognition approach were valuable statistical approaches for bank failure prediction.

- the predictive accuracy of both the approaches increased as the event of actual failure approaches although the trait recognition algorithm outperformed the logit predictions in most cases. From an economic perspective, bank failures were mainly caused by deteriorating liquidity of the banks, but deteriorating profits and low levels of capital adequacy were also important predictors.
- Overall, well capitalized banks exhibit a lower failure probability because the capital buffer was sufficient to absorb unexpected losses. An increasing level of liquidity risk, on the other hand, substantially increased the probability of severe distress. Finally, the size variable was never significant that indicated the failing banks were not consistently bigger or smaller than their non-failed peers.

The major recommendations of the study were:

- The selection of the variables that could help predict bank failures still was an unresolved issues due to lack of adequate data. Although the macroeconomic environment might have an impact on bank health those variables were not included in the model since all Russian banks were assumed to face the similar conditions. The focus of the study was limited to bank (in) stability and the bank specific balance sheet characteristics.
- further the study used return on assets as an overall measure of bank. Based on this a question was raised on the types of the banks categorized as vulnerable to shocks and whether or not the bank specific characteristics could be used to predict vulnerability to failures.
- the interpretation of the outcomes of the trait recognition results was theoretically straightforward, since the features were directly linked to the underlying fundamental determinants of bank health. Even liquidity played an important role in the bank failure prediction asset quality and capital adequacy was recommended to be important determinants of failure.

Dogany et al; (2006) had conducted a research on “*Predicting Financial Failure of the Turkish Bank*”.

The main objectives of the study were:

- to develop an early warning system that predicts bank failures with reasonable accuracy
- to identify the causes of the failures.

For the study purpose a number of multivariate statistical models such as multiple regression, discriminant analysis, logit, probit were used to assist interested parties in predicting the probability of financial failure of the Turkish Banks. The study was based on a five year (1997-2002) data with a sample of 42 banks where 19 failed and 23 successful banks were taken into

consideration. The data were based on the financial statements such as balance sheet and income statements prior to the financial failure. Bank specific variables were taken into consideration with twenty seven financial ratios as explanatory variables. Dependent variable was a binary variable that takes the value of 1 if the bank is failed, takes the value of 0 if the bank is successful. The multiple regression models was estimated as

$$Z_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_m x_{im}, \dots\dots\dots(i)$$

Where, Z_i referred to standardize and the cumulative standard normal distribution function calculated to obtain the probabilities and β refer to the coefficients of the explanatory variables.

The major findings of the study were:

- the negative coefficients were positively related to the failure and positive coefficients were negatively related to the failure.
- there was no bias against failed and successful bank prediction. Almost all models have the same classification power where there was no bias against failed and successful bank prediction.
- while examining the signs of the coefficients liquid assets/(deposits other liabilities) and net interest income/number of employees were positively related to failure whereas liquid assets denominated in foreign currency/liabilities denominated in foreign currency, total revenues/total expenses, and Net interest income/number of branches were negatively related to the failure. Failed banks three year prior the failure obtained large amount of loans from abroad, converted them into Turkish Lira, placed them with the deposits into very liquid assets especially into government debt securities that provided very attractive real returns. But high operating expenses exacerbated the situation, government debt securities demised that led towards failure.

The major recommendations of the study were:

- logit models can be used to assist interested parties to predict the probability of financial failure of the Turkish Banks. As the Turkish bank experienced financial difficulties and failure initiation of appropriate measures by the government would help the banks to prevent from substantial failure.
- Further regulatory authorities can use these models to identify the banks that are in financial difficulty and scrutinize them closely. If the models signal a possible failure, they may reconsider their investment decisions.
- Due to small sample size stemming from the limited number of banks in Turkey sample tests could not be performed. The natural extension of this study can be a neuro-fuzzy model to predict bank failures. Therefore by doing so it would be possible to compare the results of multivariate statistical methods with the results of those fuzzy based models that received popularity among the academicians rather than regulators.

Nazrinn (2008) had conducted a research on *“Financial Ratios as the predictor of corporate distress in Malaysia”*.

The main objectives of the study were:

- to determine the characteristics of distressed firms through the use of financial ratios
- to investigate the predictive powers of the ratios (independent variables) to correctly classify firms as being healthy or distressed.

For the study purpose data were collected from the secondary sources. A sample of 66 firms was taken into consideration with 53 healthy firms and 13 distressed firms for four years period. For the study purpose analytical tools, ratio analysis, logit regression model was used to analyze the relationship between the dependent and independent variables. The independent variables used were the financial classification of public listed companies in Malaysia classified as healthy or distressed companies and the thirteen ratios were used

as independent variables. Cross sectional analysis was used to investigate the variables value at a particular point. Further hypothesis was set to determine the financial distress of the Malaysian firms.

The major findings of the study were:

- the comparison of the average cumulative mean values for profitability ratios throughout the study showed that healthy non-distressed firms are more profitable than their distressed PN4 counterparts. Even the profitability of the healthy firm is positive every year the PN4 groups suffer losses each and every year.
- the mean values for healthy firms do appear to be stable with little variations overtime. Although the mean values for the PN4 group are consistently negative, its values appear to be more erratic.
- The differences between the two groups exist based on those factors. There exists large disparity between the two t-values indicating the probability of the means being similar is small and unlikely due to the impact of random errors or fluctuations.

The major recommendations of the study were:

- the differences between the mean values of healthy and distressed firms can be significant based on the analysis. Further to evaluate the factors that can influence group status and understand the nature of their connection, the perfect tool available is through the use of a logit regression analysis.
- In addition to this the conclusions presented by Altman and Beaver proves financial ratios can be used to distinguish between healthy and potentially unhealthy firms. Based on the variables or ratios deemed significant both the liquidity and profitability are important characteristics that can be used to differentiate and identify problematic firms.

The analytical tools presented earlier measures the significance of the differences amongst the healthy and distressed means that however fails to evaluate the relationship these factors or ratios have with the dependent variable. The use of financial ratios by themselves is meaningless as the values themselves do not mean much. The inferences are limited to other similar type firms where the use of ratio comparisons should be limited to companies of comparative sizes. Thus, using the results to form judgments on smaller non-listed entities may be misleading and inappropriate as companies of different size and industry operate and behave differently. As Balance Sheet items are often snapshots of values at a particular point of time, variations stemming from different dates can significantly affect the conclusions observed. Therefore accounting methodologies employed and the date when the analysis is conducted can also dictate the results from ratio analysis. Since the data collected is grouped by the fiscal year, certain biases are unavoidable and must therefore be interpreted carefully.

2.3. Research Gap

The above studies revealed that financial ratios are the major indicators for predicting corporate failure. These studies also reveals that the ratios of failed corporate begins to deteriorate many year prior to failure. Similarly, liquidity, profitability, leverage and cash flow ratios of failed companies are found always poor in comparison to the healthy companies. These studies are carried out using univariate and multivariate analysis in the context of developed countries. In the context of Nepal some efforts have been made to examine some of the issues related to the health of corporate institutions. But the attempts made have not been put forward to find out the absolute factors responsible for creating problems in the bank and financial institutions performance leading to failure or success. There is an urgent need to undertake research to understand the capital structures and other financial indicators, such as micro- and macroeconomic variables that might affect firms' performance, and eventually develop a prediction model for failed and non-failed firms.

Although this topic has been well researched, many issues surrounding it still remain to be resolved, and as long as there is a competitive business environment where market discipline ensures the survival of fittest, this issue will continue to be important. What is the present situation of Nepalese corporate institution? What are the methods used to examine and predict the bank failure in Nepal? Why Nepalese banks are classified as problematic and liquidated day by day? The research result is not uniform as most of the study were conducted in developed countries as there are variations in the economic condition, regulations, spending habit of the citizens and the financial stability of the institutions and the range of facilities provided by those institutions for the local people so a uniform model should be developed and adopted. As there is lack of such studies in our country one of the models should be followed to investigate the corporate failure. The above developed model was tested in a significant level so it is necessary to test it in different significant level for wide application and acceptance nationally and internationally. Since a study is imperative to address the health of Nepalese banks and financial institutions, it should aim to address the prediction of corporate failure especially in the developing countries like Nepal.

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology sets out overall plan associated with the study. It provides a basic framework on which the study is based. Before presenting the analysis and interpretation of data, it is necessary that research methodology be described first. This section therefore deals with the method of research used, nature and sources of data, population, major respondents of the study, sampling technique, instrument to be used, data analysis methods and techniques, models used for the study and the reliability and validation of the study.

3.1 Research Design

This study has employed descriptive research design to deal with the issues related to the prediction of corporate failures in the context of Nepal. The descriptive research design has been adopted for the fact-finding and searching adequate information related to the factors leading towards failure. In addition, comparative, exploratory analysis has also been used for the purpose of showing the relationship between the corporate failure and those factors causing failure or the financial ratios. Average ratio of both the failed and healthy corporate has been taken for the study. Further the data of five year prior failure has been taken into consideration.

3.2 Population and Sample

Population of this study includes all listed banks and financial institutions in Nepal Stock Exchange Limited (NEPSE) and the banks and financial institutions classified under “A”, “B” and “C” category under NRB. The corporate are selected on the basis of paired sampling method. For this study those banks and financial institutions declared problematic or send for liquidation by the NRB has been taken as the failed corporate. And those problematic/failed corporate are paired with the healthy corporate on the basis of similar asset size, same financial year and within the same industry/group.

Those corporate that failed within the sampling period of 2007-2012 have been taken into consideration. Out of 198 banks and financial corporate as of mid-November 2012, twenty companies: 10 failed and 10 non-failed companies have been selected from the list of financially trouble companies declared by Nepal Rastra Bank (NRB) during 2007 to 2012. The data collected are from the same years as those compiled for the failed corporate. Further the data are derived from the financial statements of the respective corporate five year prior to failure.

Table: 3.1
Composition of Sample and Population

Category	Population (N)	Sample (n)		Sample %	No of Observations
		Failed	Healthy		
Commercial Banks	32	1	1	6.25	10
Development Banks	88	4	4	9.09	40
Finance Companies	79	5	5	12.66	50
Total Corporate	198	10	10	28	100

(Source: www.nrb.org)

Above table shows the composition of population and sample taken for the study. The sample represents 28% of the population and total of 100 observations were studied. The commercial banks represent 6.25% of the population, development banks represent 9.09% and the remaining 12.66% is represented by finance companies for both failed and healthy corporate.

3.3 Selection of Failed and Healthy Companies

Corporate failure refers to those companies ceasing operations following its inability to make profit or bring in enough revenue to cover its expenses. This can occur as a result of poor management skills, inability to compete or even insufficient marketing (Altman 1993). A Company is declared as failed when it is no longer able to meet the obligations towards its creditors. It occurs when the corporate does not possess the assets to cover its debts. Moreover those corporate whose operating profits are in decreasing trend and the corporate are in the verge of closure those companies are in the condition of failure. Further a corporate whose debts are greater than its assets and where the obligations are higher than assets it is declared as failure. In addition to this those corporate

that failed results in the closure of business activity that result in a loss to its creditors, firm that stops working due to lack of profit, higher liabilities.

Whereas those corporate that possess healthy profitability, sound financial health and is operating smoothly over a period of time are considered as non-failed or healthy corporate. For this study purpose failed corporate are those that has been declared problematic, embezzlement and liquidated by the NRB. Those corporate that has been suffering from severe liquidity problem, lack of adequate profit and possess greater liability than its assets has been categorized as problematic corporate. The list of failed and healthy companies has been presented in Table 3.4 and 3.5 below.

Table: 3.2
Sample of Failed Companies

(Amounts in Millions)

S.N	Name	Class	Year of failure	Asset size
1	Nepal Bangladesh Bank Ltd	A	2007	13957.30
2	Nepal Development Bank	B	2007	15166.00
3	Gorkha Development Bank	B	2010	65529.60
4	United Development Bank Ltd	B	2010	2028.10
5	Samjhana Finance	C	2010	4835.30
6	Peoples Finance	C	2011	12506.00
7	Capital Merchant banking and Finance Ltd(NIDC)	B	2010	27092.10
8	Nepal Share market and Finance Ltd	C	2011	86936.30
9	Arun Finance and saving co Ltd	C	2008	855.00
10	Crystal Finance	C	2012	13494.80

Table: 3.3
Sample of Healthy Companies

(Amounts in Millions)

S.N	Name	Class	Asset size
1	Bank of Kathmandu Ltd	A	13948.60
2	Udhyam Development Bank	B	1275.00
3	Sanima Development Bank	B	73534.80
4	Mahakali Development Bank	B	2007.10
5	Shikar Finance	C	5175.20
6	Siddhartha finance Ltd	C	12271.60
7	Infrastructure Development Bank Ltd	B	21910.00
8	Valley finance Ltd	C	10979.60
9	Multipurpose Finance Co Ltd	C	800.00
10	Union finance	C	13316.90

(Source: www.nrb.org; BFIs no 51 to 57)

Table 3.2 and table 3.3 present the sample of failed and healthy corporate taken into consideration for the study purpose. It identifies the two groups failed and healthy corporate on the basis of their asset size, same financial year and within the same industry/group.

3.4 Nature and Sources of Data

Both primary as well as secondary data has been employed for the study. The secondary source of data has been employed to analyze the factors affecting the corporate failure and to predict the rate of their failure. The primary sources of data have been used to assess the opinion of respondents towards the efficiency and appropriateness of the ratios undertaken to predict the corporate failure in Nepalese context.

Table: 3.4
Sources of Data

S.N	Sources Of Data	Period
1.	Nepal Stock Exchange (NEPSE)	2007-2012
2.	Securities Board of Nepal (SEBON)	2007-2012
3.	Annual Reports of related BFIs	2001-2012
4.	Nepal Rastra Bank official Website	2001-2012

3.4.1 Secondary Data

This study is based primarily on the secondary data obtained through published annual reports of the selected corporate. The financial data has been obtained from NRB, SEBON, NEPSE and annual reports of respective corporate. The initial sample consisted of financial statements as balance sheet, profit and loss account of both failed and healthy corporate for the most recent dataset between the periods of 2007 to 2012 (i.e. period five year prior to failure). Overall, the period covered in the study is based on the date of declaration of problematic corporate by NRB that ranges from the fiscal year 2001/02 to 2011/12. Further the information regarding the problematic and failed corporate were derived from NRB.

3.4.2 Primary Data

This study is also based on the primary sources of data. The questionnaire survey has been conducted to record the perceptions and opinions of different persons regarding the prediction of corporate failure in Nepalese corporate especially in Nepalese banks and financial institutions. The survey has been designed to understand the different factors affecting the performance of the corporate and to determine significant ratios for deciding the failure. A total of 80 questionnaires were distributed to the officials of banks and financial institutions. The questionnaires contained total of 10 close ended questions type with four point Likert scale to identify the degree of agreement or disagreement of the respondents. The description of respondents' profile and response rate is presented in Table 3.5.

Table: 3.5
Response Rate of Questionnaire Survey

Distributed	Returned	Response rate
80	58	73%

The above table indicates the response rate of questionnaire survey where 58 questionnaires out of 80 distributed to different persons were returned leading to an overall response rate of 72 percent.

3.5. Method of Data Analysis

The main purpose of data analysis in the study is to test the predictive accuracy of different ratios in explaining the rate of corporate failure for the selected firms in Nepalese context. Besides, this study also attempts to identify and analyze the determinants of corporate failure. Therefore this section deals with statistical and econometric models used for the purpose of analysis of both the primary and secondary data. The methods of data analysis used in the study deals with secondary data analysis and primary data analysis. The secondary data analysis includes descriptive statistics, profile analysis, univariate and multivariate discriminant analysis, ratio analysis, logistic analysis and regression analysis. Further the study presents the method of primary data analysis. For this the data will be analyzed on the basis of questionnaire filled at different persons related with banks and financial institutions. In addition to this those data will be analyzed using SPSS to test reliability and validity of the study.

a. Profile Analysis

This study has used profile analysis to indicate the performance of the corporate on the basis of average scores of each firm. It has been used to represent the strength and weakness of the performance of failed and healthy corporate. Further the profile analysis takes into consideration different types of charts and line graphs to distinguish the failed corporate from that of healthy corporate. Moreover, the major purpose of analysis is to distinguish those two groups failed and healthy corporate in terms of different variables used to measure the traits of respective corporate. For the purpose of profile analysis mean comparison of failed and healthy corporate has been computed taking into consideration the data of corporate five year prior to failure.

b. Descriptive Analysis

This study has used the summary of descriptive statistics associated with dependent and independent variables of the sample corporate to explain the basic features of these data during the sample period. The descriptive statistics such as mean, standard deviation, maxima and minima of different variables such as liquidity ratios, profitability ratios, leverage ratios, cash flow ratios and other ratios have been used to describe the characteristics of the sample firms during the period of 2007 through 2012. The mean value has been computed to find the average of each variables within the failed and healthy corporate. In addition the standard deviation has been computed to analyze the actual deviation in the variables within the two groups.

c. Multivariate Discriminant Analysis

Univariate analysis has been used to show that single ratio can be used as the best indicators of corporate failure. The univariate data is presented to create a frequency distribution of each individual corporate that presents the number of attributes of the variable observed in the sample. For this a bar chart or graphical representation is presented. Further the study has used the multivariate analysis to predict the corporate failure. Univariate analysis relies completely on single ratio predictors whereas multivariate analysis combines a set of well selected ratios for the analysis. The multivariate analysis transforms the individual variables to a single discriminant score that has been used to identify the failed corporate and healthy corporate.

3.6 Models

For this study purpose discriminant analysis model has been employed. The discriminant analysis employed in this study intends to analyze the relationship between the corporate failure and different variables such as liquidity ratios, profitability ratios, leverage, cash flow and other ratios. Both the extended as well as stepwise discriminant model has been used to analyze the most effective and significant ratios for the prediction of corporate failure.

Multivariate discriminant Analysis (MDA) is a statistical technique used to classify an observation into one of several prior ‘groupings dependent upon the observation’s individual characteristics. In order to explain the linear combination of ratios which would best discriminate between groups under study the multivariate discriminant model is specified in equation 3.1.

$$Z = \beta_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_{23}x_{23} \dots \dots \dots (3.1)$$

Where, Z= Z-score

β_0 =constant

b1 to b23=coefficient of variable

x1 to x23= financial ratios

Equation 3.1 presents the Z-score multiple discriminant analysis developed for the study.

3.7. Research Variables

This section explains the variables employed for the purpose of the study. For this twenty eight ratios has been taken into consideration which has been categorized into five different groups as liquidity ratio, profitability ratio, leverage , cash flow and other ratios. The descriptions of the variables are as follows:

a. Liquidity Ratios

Liquidity ratio is a class of financial metrics that is used to determine a companies’ ability to pay off its short term debt obligations. There are various liquidity ratios included for the study such as current ratio, quick ratio and working capital ratio. When creditors are seeking payment a company’s ability to turn short term assets into cash to cover debts is of utmost importance. Generally, higher the liquidity ratio, larger is the margin of safety that the company possesses to cover short-term debts and it is expected that higher liquidity values provides a better buffer to failure and insolvency. Therefore the liquidity ratios are useful to determine whether a corporate will be able to continue as a going concern or discontinue its operation.

b. Profitability Ratios

Profitability ratios attempt to measure the success of the firm's in generating income. Those ratios reflect the combined effects of the firm's debt and asset management. These ratios help to determine the ability of the company to run the business and determine the performance as either better or worse. There are various profitability ratios taken into consideration for the study such as ROA, ROE, ROCE, II/IE, NITA, TOE/OR, CRR, LF/TDP, CD/TDP and IV/TDP. Generally, higher the profitability ratios, better it is and it indicates an enhancement in the effectiveness of the operating management of the company.

c. Leverage Ratios

Leverage ratios are one of the important measures of financial health that relates to the quantity of debt a company has on its balance sheet. Those ratios are used to measure a company's mix of operating costs, giving an idea of how changes in output will affect operating income. There is several leverage ratios considered for the study such as TD/TA, LTL/TA, TL/TC, NPL/TL, SETA and SETD. Generally, higher the leverage ratio, more debt a company has and riskier is their position.

d. Cash Flow Ratio

Cash flow ratio indicates the solvency and liquidity of the companies. For this study the ratio of CF/TD and CF/TL are taken into consideration. Generally, higher ratio of cash flow will indicate more cash flows will be available to meet financial obligations. Therefore a higher ratio values are expected to translate into lower risk of failure.

The overall ratio used for the study purpose can be summarized in Table 3.6 below.

Table: 3.6
Summary of Research Variables

S.N	Ratios name	Initials	Measures
1	Current Asset/Current liabilities	CA/CL	Liquidity
2	Working capital to total asset	WC/TA	Liquidity
3	Current asset to total asset	CA/TA	Liquidity
4	Current liabilities to total asset	CL/TA	Liquidity
5	Cash to total asset	C/TA	Liquidity
6	Quick Ratio	QR	Liquidity
7	Cash reserve ratio	CRR	Liquidity
8	Liquidity to total deposit	Liq/Tdep	Liquidity
9	Liquid fund to total sources of fund	LF/TSF	Liquidity
10	Cash flow to total debt	CF/TD	Cash Flow
11	Cash flow to current liabilities	CFCL	Cash Flow
12	Total debt to total asset	TD/TA	Leverage
13	Long term loan to total asset	LTL/TA	Leverage
14	Total loan to total capital	TL/TC	Leverage
15	Nonperforming loan to total loan	NPL/TL	Leverage
16	Shareholder's equity to total asset	SETA	Leverage
17	Shareholder's equity to total debt	SETD	Leverage
18	Fixed deposit to total deposit	Fdep/Tdep	Leverage
19	Current deposit to total deposit	Cdep/TDP	Leverage
20	Investment to total deposit	IV/Tdep	Leverage
21	Interest income to interest expenses	II/IE	Profitability
22	Return on equity	ROE	Profitability
23	Return on Assets	ROA	Profitability
24	Return on capital equity	ROCE	Profitability
25	Net income to total asset	NI/TA	Profitability
26	Total operating expenses to operating revenue	TOE/OR	Profitability
27	Capital fund to risk weighted asset	CF/RWA	Others
28	Price earnings ratio	PE Ratio	Others

The above table indicates that the overall summary of all the financial ratios taken into consideration for the study.

CHAPTER - IV

PRESENTATION AND ANALYSIS OF DATA

This chapter provides systematic presentation and analysis of secondary and primary data to deal with various issues associated with prediction of companies' failure in the context of Nepal. Various statistical and econometric models described in chapter three have been used for this purpose. It is divided into three sections. The first section deals with presentation and analysis of secondary data associated with different variables associated with the prediction of the company's failure in Nepalese context including the explanation of corresponding results. It also includes the explanation of descriptive statistics, profile analysis, test of equality of group means, model derivation and explanation, and classification accuracy of discriminant analysis and discriminating power of financial ratios. The second section covers the analysis of primary data and presents the results of questionnaire survey. Finally the third section discusses on the concluding remarks associated with findings from primary and secondary data analysis.

4.1 Analysis of Secondary Data

This section attempts to analyze the secondary data associated with both the failed and healthy companies. It analyses the financial ratios that shows the relationship and direction of both failed and healthy companies in Nepalese banks and financial institutions. Further empirical results obtained from statistical models has been tabulated and analyzed. A detail issue of findings from data analysis has been dealt in the respective sections.

4.1.1 Profile Analysis of Failed and Healthy Companies

This study has used profile analysis in a way of outlining the general relationships between failed and healthy companies. The results exhibit the difference between the failed and healthy companies in terms of different variables used to measure the relationship of respective companies. For the purpose of profile analysis mean comparison of failed and healthy companies

has been computed taking into consideration the data of companies five year prior to failure from 20 sample companies including 10 healthy and 10 failed from 100 observations in the five years prior to failure.

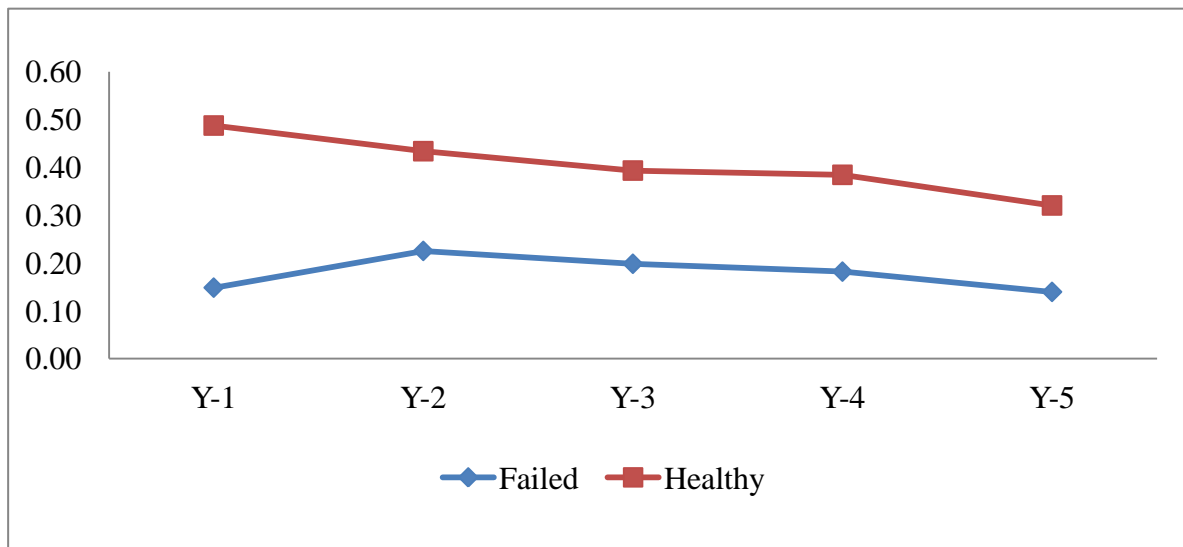
i. Current Ratio

**Table: 4.1
Current Ratio**

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CA/CL	Failed	Times	0.15	0.23	0.20	0.18	0.14
	Healthy	Times	0.34	0.21	0.19	0.20	0.18

(www.nrb.org.np, www.sebon.com)

**Figure: 4.1
Current Ratio**



The above table and figure depict that the current ratio of both failed and healthy companies are in increasing trend five year prior to failure. However in the first year before failure current ratio of failed companies starts declining while the current ratio of healthy companies is yet increasing. The ratio of healthy companies is higher compared to failed companies indicating higher ability of healthy companies to fulfill the short term obligations with current assets.

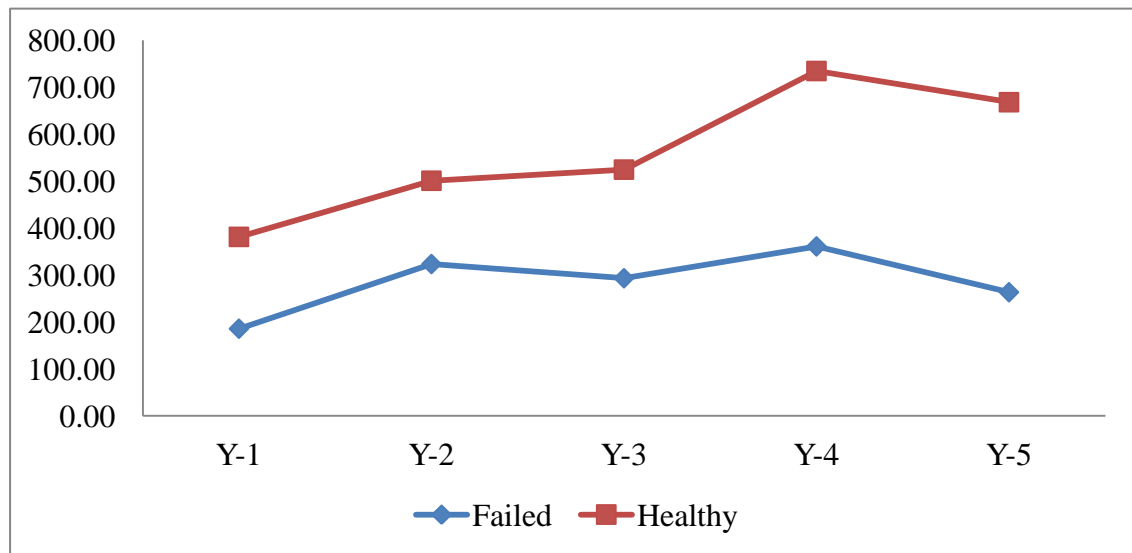
ii. Working Capital to Total Asset Ratio

Table: 4.2
Working Capital to Total Asset Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
WC/TA	Failed	Times	185.66	323.40	293.15	360.96	263.32
	Healthy	Times	195.62	177.51	231.48	373.75	404.88

(www.nrb.org.np, www.sebon.com)

Figure: 4.2
Working Capital to Total Asset Ratio



The above table and figure depict that the ratio of working capital to total asset of failed companies are in fluctuating trend whereas the ratio of healthy companies are in decreasing trend. The data also indicates that the gap between the two groups in terms of mean value of working capital to total assets ratio widens as they approach nearer to the year of failure.

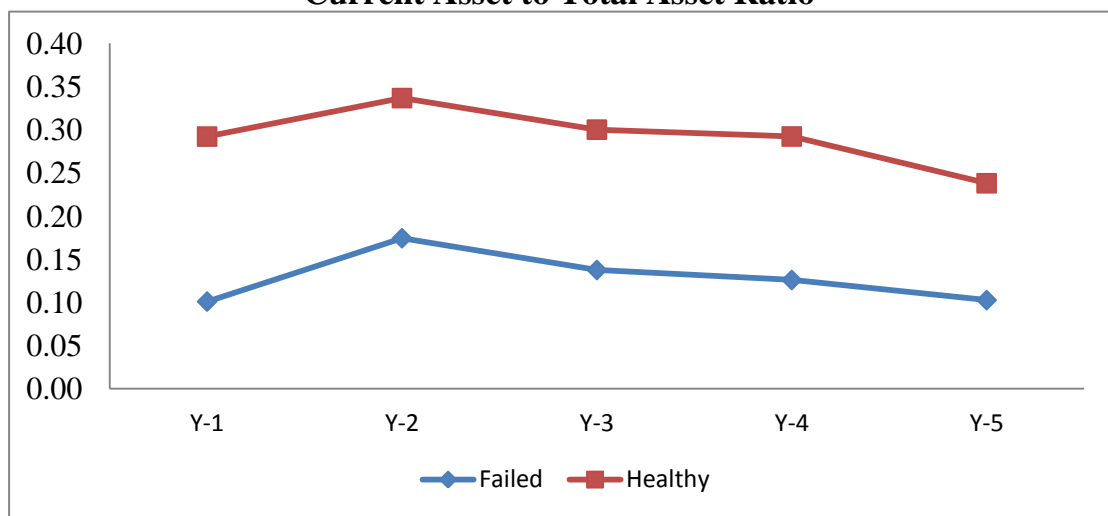
iii. **Current Asset to Total Asset Ratio**

Table: 4.3
Current Asset to Total Asset Ratios

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CA/TA	Failed	Times	0.10	0.17	0.14	0.13	0.10
	Healthy	Times	0.19	0.16	0.16	0.17	0.14

(www.nrb.org.np, www.sebon.com)

Figure: 4.3
Current Asset to Total Asset Ratio



The above table and figure depict the current asset to total asset ratio of failed and healthy companies five year prior to failure which indicates the fluctuating trend. The data shows the gap between the two groups that widens based on the mean value as the companies approaches nearer to failure. The difference in current asset to total asset ratio indicates that the company's liquidity position starts deteriorating as they are in the verge of failure compared to healthy ones.

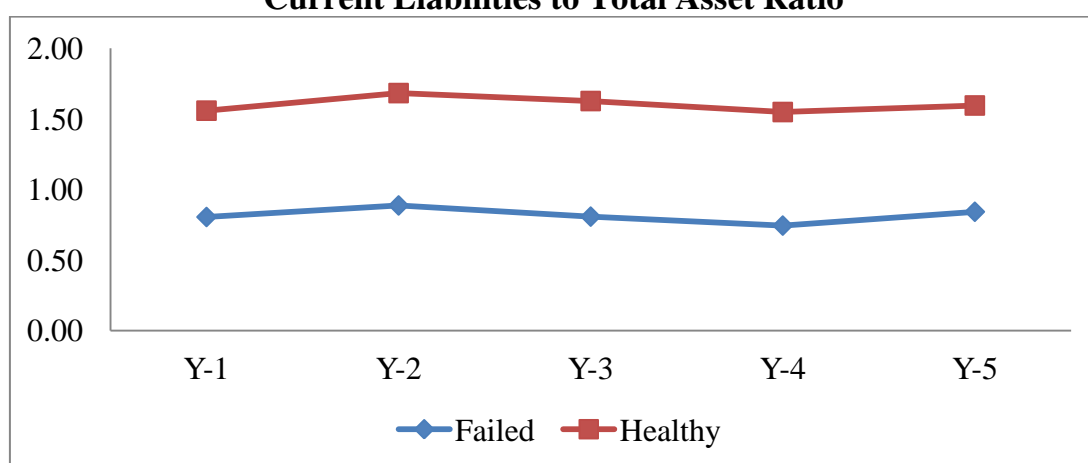
iv. Current Liabilities to Total Asset Ratio

Table: 4.4
Current Liabilities to Total Asset Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CL/TA	Failed	Times	0.80	0.89	0.81	0.74	0.84
	Healthy	Times	0.75	0.80	0.82	0.81	0.75

(www.nrb.org.np, www.sebon.com)

Figure: 4.4
Current Liabilities to Total Asset Ratio



The above table and figure depict that the current liabilities to total assets ratio of failed and healthy companies for the five years prior to failure. The ratio of CL to TA of failed companies fluctuates over the period whereas the ratio is stable for the healthy companies. The ratio indicates a wider gap among the failed companies as it moves towards the failure compared to healthy companies.

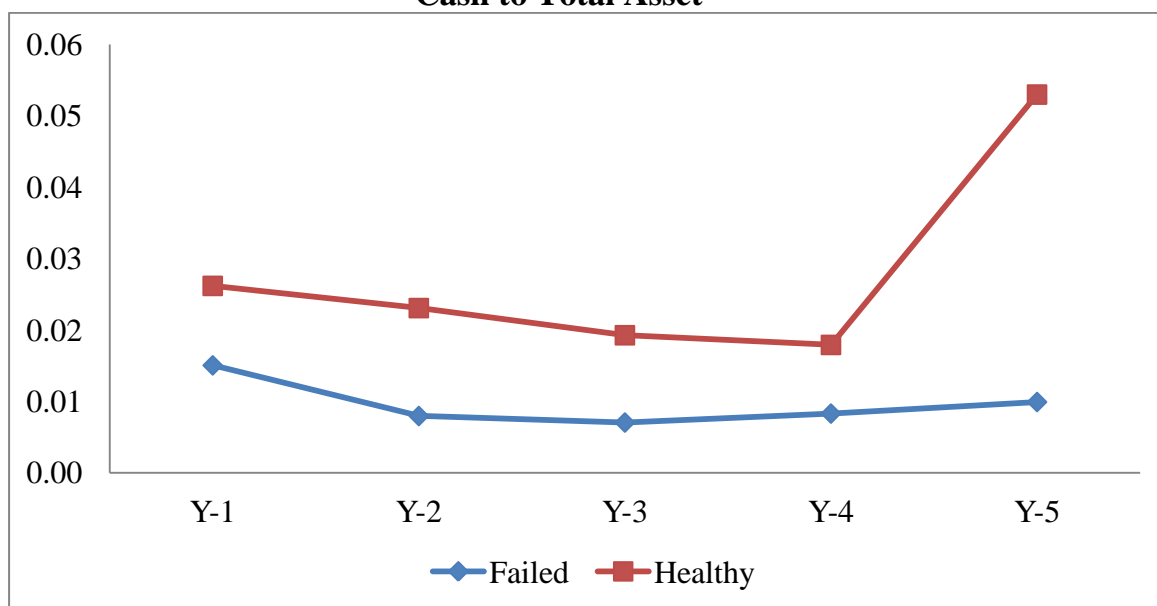
v. Cash to Total Asset

Table: 4.5
Cash to Total Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
C/TA	Failed	Times	0.02	0.01	0.01	0.01	0.01
	Healthy	Times	0.01	0.02	0.01	0.01	0.04

(www.nrb.org.np, www.sebon.com)

Figure: 4.5
Cash to Total Asset



The above table and figure depict the mean comparison of cash to total asset ratio of failed and healthy companies five year prior to failure. The data shows the gap between the two groups that is consistent one year to the fourth year prior to failure even the difference in the fifth year was greater.

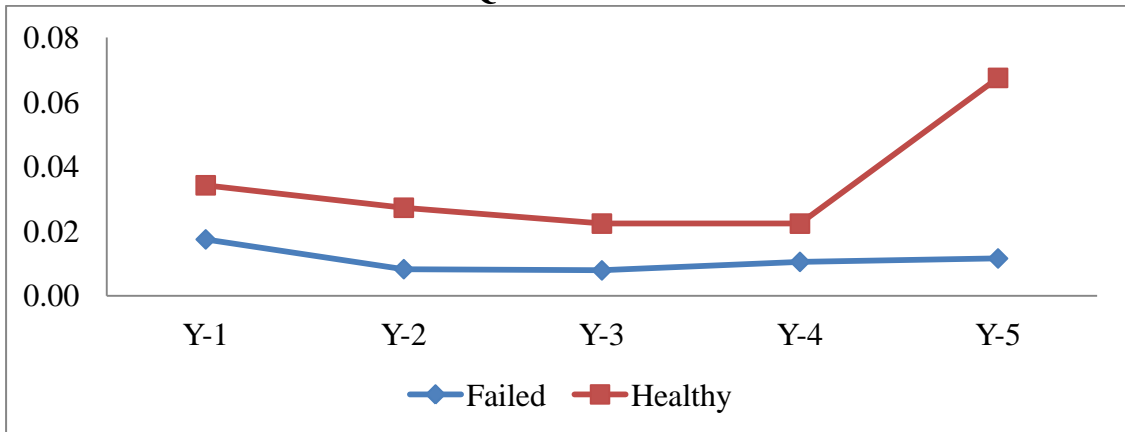
vi. Quick Ratio

Table: 4.6
Quick Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
QR	Failed	Times	0.02	0.01	0.01	0.01	0.01
	Healthy	Times	0.02	0.02	0.01	0.01	0.06

(www.nrb.org.np, www.sebon.com)

**Figure: 4.6
Quick Ratio**



The above table and figure depict that the quick ratio of failed and healthy companies five year prior to failure. The quick ratio of failed companies indicates the stable trend compared to fluctuating trend of healthy companies.

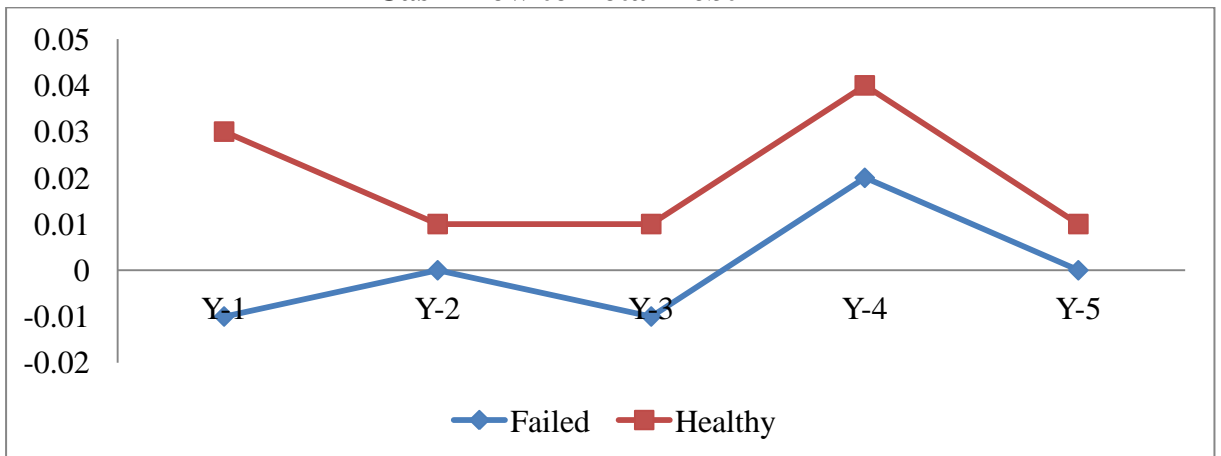
vii. Cash Flow to Total Debt

**Table: 4.7
Cash Flow to Total Debt**

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CF/TD	Failed	Times	-0.01	0.00	-0.01	0.02	0.00
	Healthy	Times	0.04	0.01	0.02	0.02	0.01

(www.nrb.org.np, www.sebon.com)

**Figure: 4.7
Cash Flow to Total Debt**



The above table and figure depict that the ratio of cash flow to total debt of failed companies is in decreasing trend and is negative in nature. Whereas the ratio of cash flow to total debt of healthy companies is positive and stable. The figure indicates a huge difference in the ratio among the failed and healthy companies five year prior to failure.

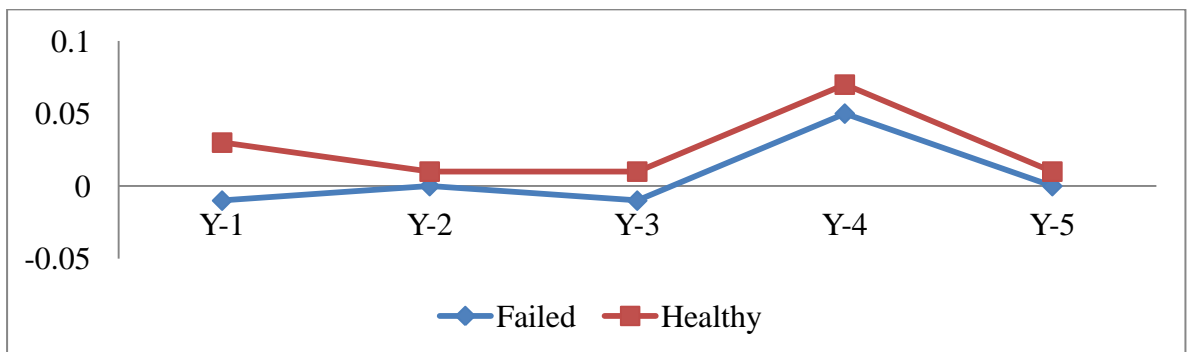
viii. Cash Flow to Current Liabilities

Table: 4.8
Cash Flow to Current Liabilities

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CFCL	Failed	Times	-0.01	0.00	-0.01	0.05	0.00
	Healthy	Times	0.04	0.01	0.02	0.02	0.01

(www.nrb.org.np, www.sebon.com)

Figure: 4.8
Cash Flow to Current Liabilities



The above table and figure depict the mean comparison of cash flow to current liabilities ratios of both failed and healthy companies. The mean ratio of cash flow to current liabilities of failed companies is negative from three year prior to failure which has sharply declined from the fourth year prior to failure. On the other hand the ratio of cash flow to current liabilities is positive in all the five year and is almost stable and increasing in nature.

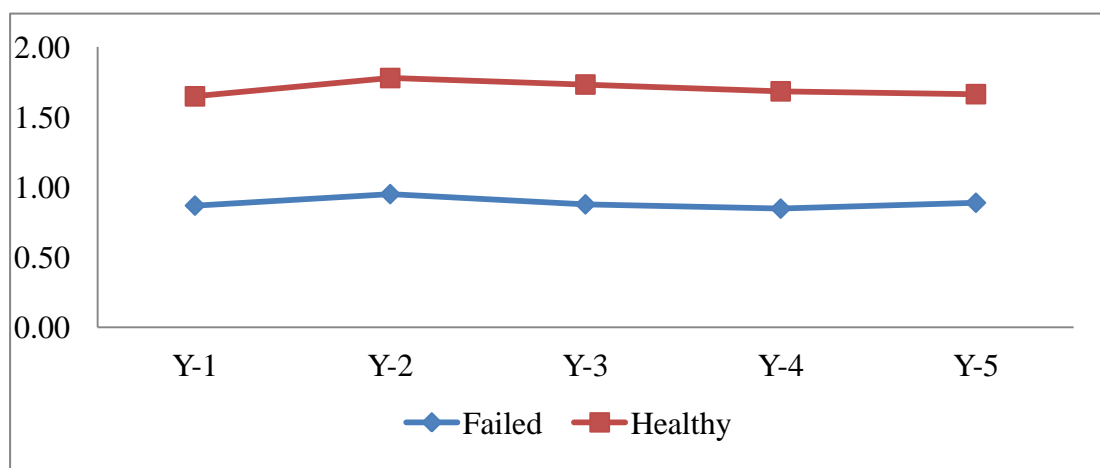
ix. Total Debt to Total Asset

Table: 4.9
Total Debt to Total Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
TD/TA	Failed	Times	0.87	0.95	0.88	0.85	0.89
	Healthy	Times	0.78	0.83	0.86	0.84	0.78

(www.nrb.org.np, www.sebon.com)

Figure: 4.9
Total Debt to Total asset



The above table and figure depict the mean comparison of the ratios of total debt to total asset of the failed and healthy companies five year prior to failure. It presents the fluctuating trend for both the companies where the gaps between the ratio of failed and healthy companies tend to increase tremendously as the companies moves toward failure.

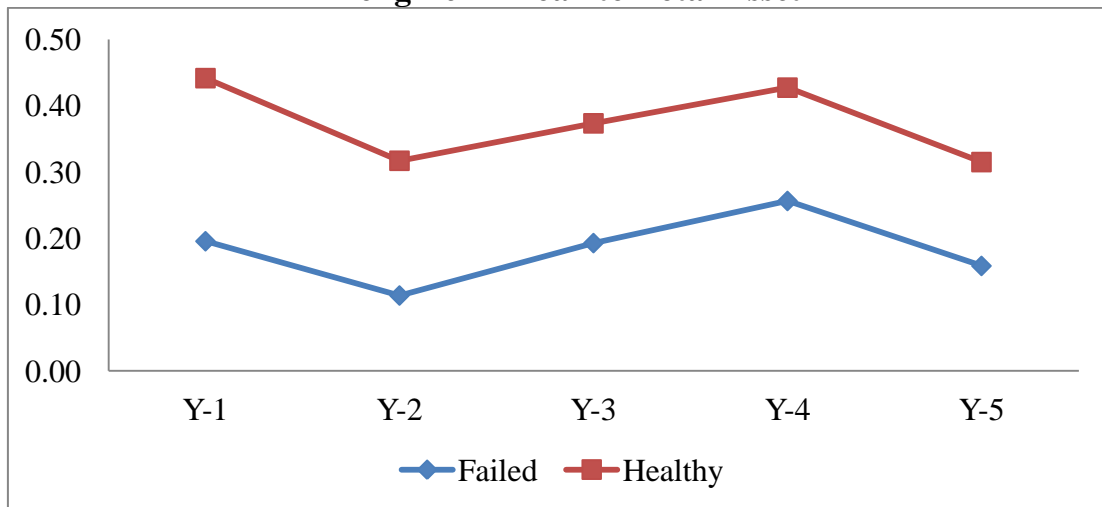
x. Long Term Loan to Total Asset

Table: 4.10
Long Term Loan to Total Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
TD/TA	Failed	%	0.20	0.11	0.19	0.26	0.16
	Healthy	%	0.25	0.20	0.18	0.17	0.16

(www.nrb.org.np, www.sebon.com)

**Figure :4.10
Long Term Loan to Total Asset**



The above figure depicts that the long term loan to total asset ratio of failed and healthy companies five years prior to failure. The ratio of failed firms indicates a decreasing trend, whereas the ratio of long term loan to total asset has been increasing over the five years prior to failure. From the above diagram, the gap between the failed and healthy companies can be depicted, which indicates the deteriorating condition of the failed companies as they move nearer to the year of failure.

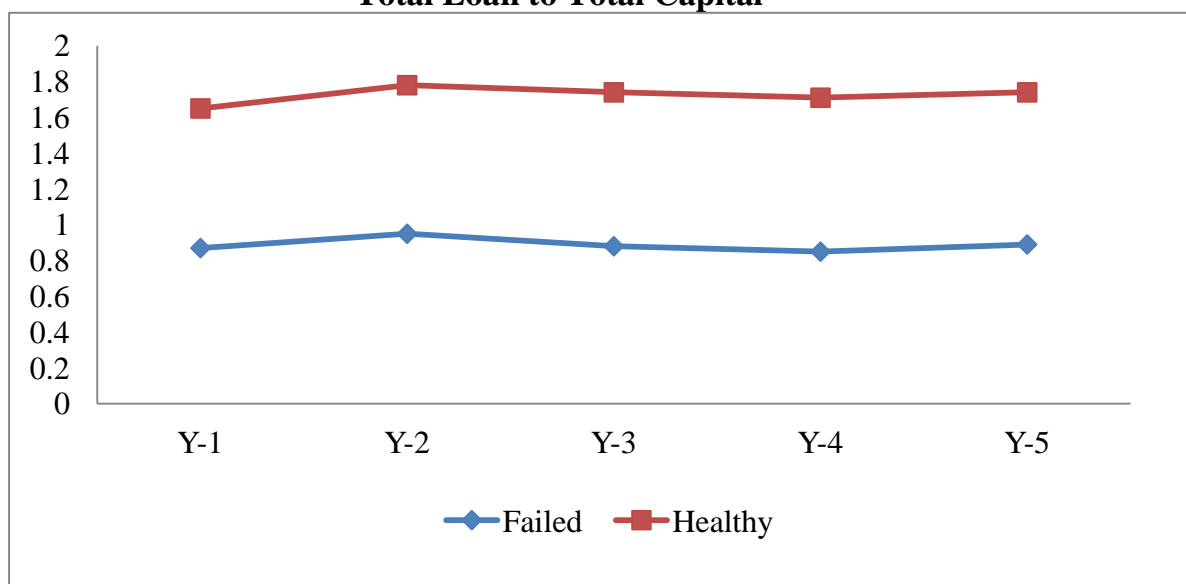
xi. Total Loan to Total Capital

**Table: 4.11
Total Loan to Total Capital**

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
TL/TC	Failed	%	0.87	0.95	0.88	0.85	0.89
	Healthy	%	0.78	0.83	0.86	0.86	0.85

(www.nrb.org.np, www.sebon.com)

Figure: 4.11
Total Loan to Total Capital



The above table and figure depict the mean comparison of the ratios of total loan to total capital for the failed and healthy companies five year prior to failure. The above diagram indicates a decreasing trend of the ratio of the failed companies up to third year prior to failure which tends to increase in the second year prior to failure that indicates the deteriorating condition of the failed companies as it moves towards the year of failure. Whereas the ratio of total loan to total capital ratio of healthy companies is in decreasing trend that indicates the robust financial health of the companies.

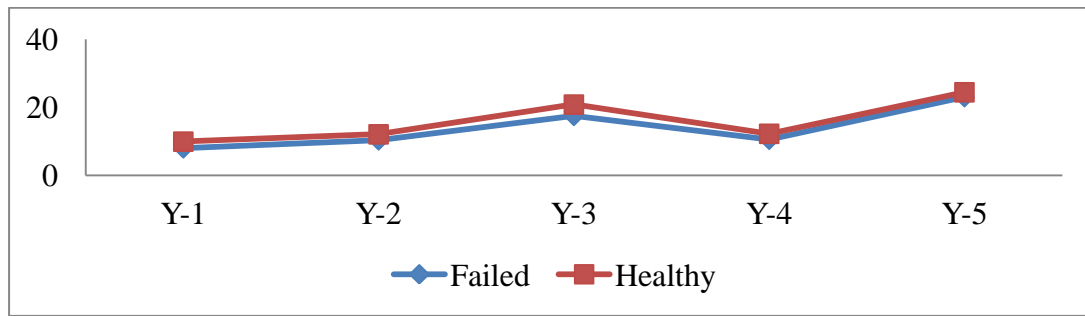
xii. Non Performing Loan to Total Loan

Table 4.12
Non Performing Loan to Total Loan

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
NPL/TL	Failed	%	8.03	10.38	17.56	10.55	23.07
	Healthy	%	1.95	1.75	3.31	1.73	1.41

(www.nrb.org.np, www.sebon.com)

Figure 4.12
Nonperforming Loan to Total Loan



The above table and figure depict the mean comparison of the ratio of nonperforming loan to total loan for the failed and healthy companies five year prior to failure. The ratio of NPL to TL of the failed companies is in decreasing trend as compared to the ratio of healthy companies. The higher NPL to total loan ratio of failed companies indicates the deteriorating financial condition of the failed companies as it moves towards the verge of failure.

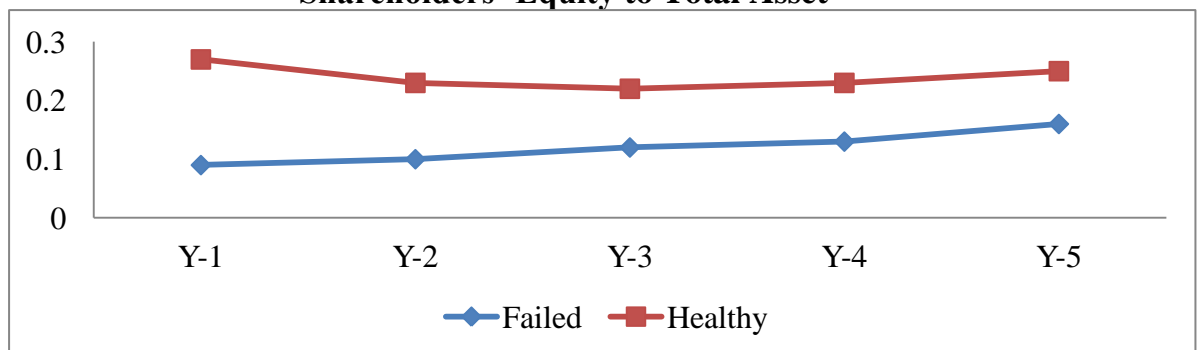
xiii. Shareholders' Equity to Total Asset

Table: 4.13
Shareholders' Equity to Total Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
SETA	Failed	%	0.09	0.10	0.12	0.13	0.16
	Healthy	%	0.18	0.13	0.10	0.10	0.09

(www.nrb.org.np, www.sebon.com)

Figure: 4.13
Shareholders' Equity to Total Asset



The above table and figure depicts the trend of mean ratio of shareholders equity to total asset for the failed and healthy companies five year prior to failure. It indicates the decreasing trend of the ratio for the failed companies five year prior to failure. On the other hand the ratio of shareholders equity to total asset of the healthy companies are in increasing trend indicating the widening gap among the two group as they reach towards the year of failure.

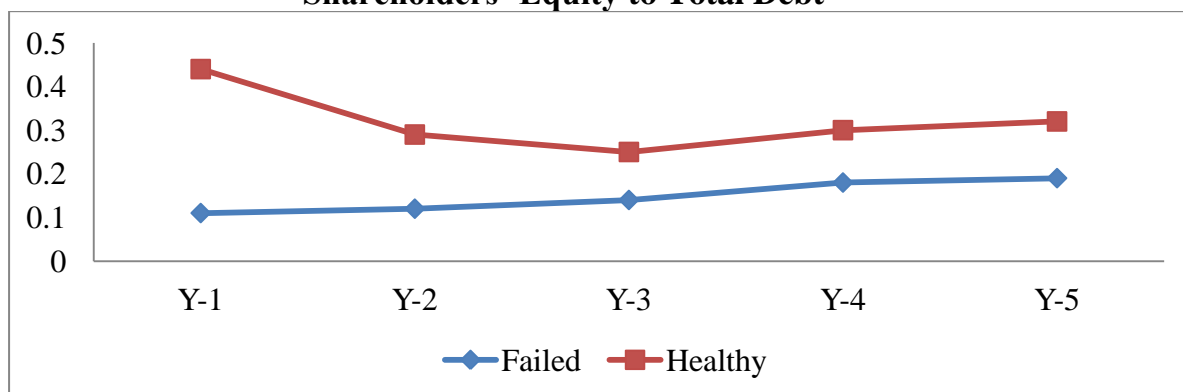
xiv. Shareholders' Equity to Total Debt

Table: 4.14
Shareholders' Equity to Total Debt

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
SETD	Failed	%	0.11	0.12	0.14	0.18	0.19
	Healthy	%	0.33	0.17	0.11	0.12	0.13

(www.nrb.org.np, www.sebon.com)

Figure:4.14
Shareholders' Equity to Total Debt



The above table and figure depict the trend of the mean ratio of shareholders equity to total debt of healthy companies five year prior to failure. It indicates the declining trend of failed companies as compared to healthy companies. The above figure indicates a widening gap between the two groups of companies as failed and healthy as they move closer to the year of failure.

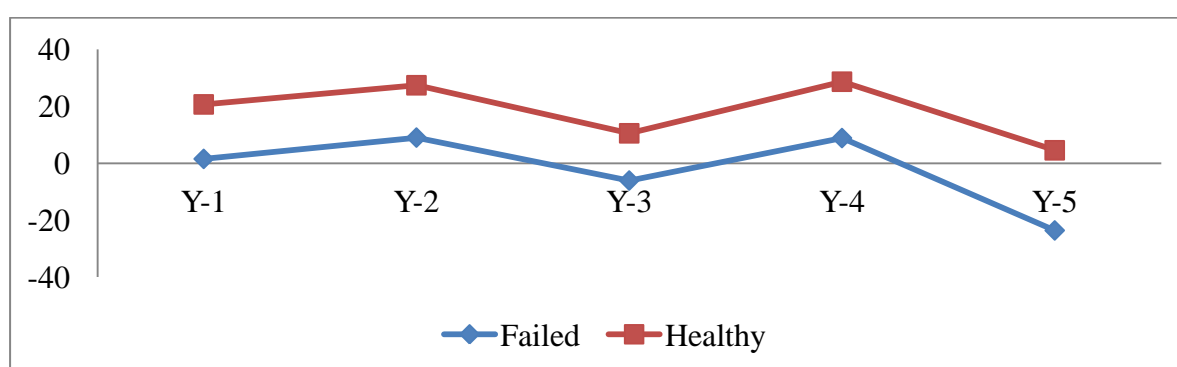
xv. Capital Fund to Risk Weighted Asset

Table: 4.15
Capital Fund to Risk Weighted Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CF/RWA	Failed	%	1.51	9.00	-6.10	8.83	-23.65
	Healthy	%	19.15	18.39	16.60	19.81	28.18

(www.nrb.org.np, www.sebon.com)

Figure: 4.15
Capital Fund to Risk Weighted Asset



The above table and figure depict the mean comparison of the ratio of capital fund to risk weighted asset of the failed and healthy companies five year prior to failure. There is a fluctuating trend of the ratio of capital fund to risk weighted assets of both the failed and healthy companies five year prior to failure. The ratios of the failed companies tend to decline sharply and are negative well whereas the ratios of healthy companies are all positive. In addition to this there is a huge difference in the ratio of the failed and healthy companies as the companies move towards the verge of failure.

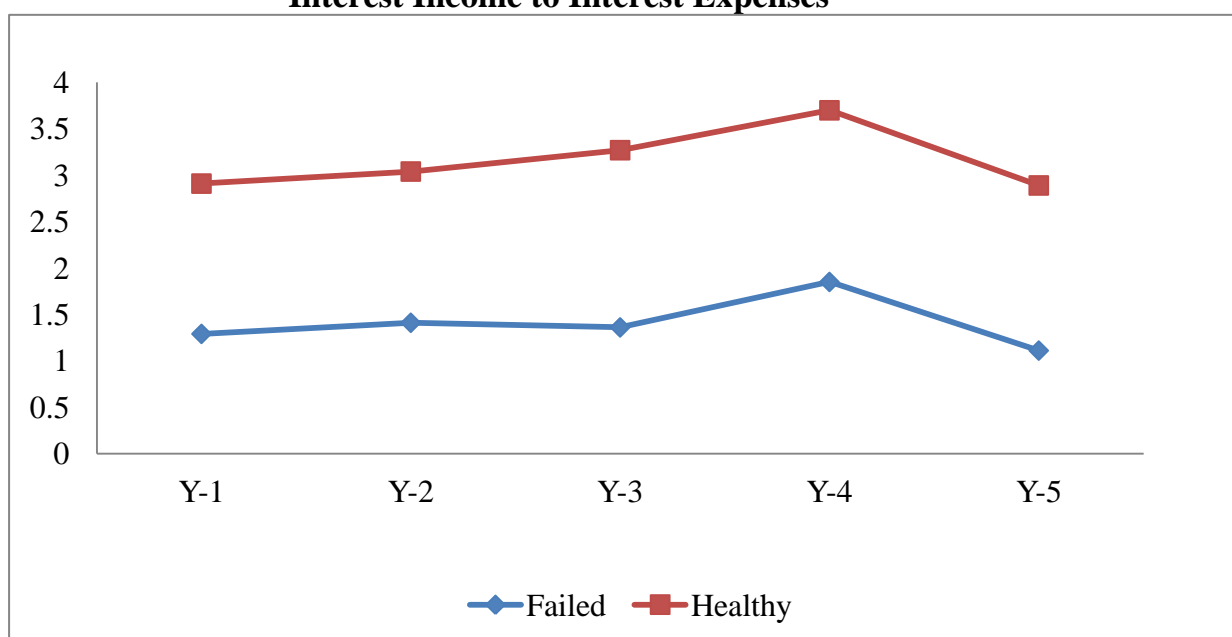
xvi. Interest Income to Interest Expenses

Table: 4.16
Interest Income to Interest Expenses

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
II/IE	Failed	%	1.29	1.41	1.36	1.85	1.11
	Healthy	%	1.62	1.63	1.91	1.85	1.78

(www.nrb.org.np, www.sebon.com)

Figure: 4.16
Interest Income to Interest Expenses



The above table and figure presents the mean comparison of the ratio of interest income to interest expenses of the failed and healthy companies five year prior to failure. The trend of the ratio of interest income to interest expenses of the failed companies is fluctuating which has declined as the companies moves nearer to the year of failure. In contrary to this the ratio of the healthy companies increases in the Fifth year prior to failure which has a stable trend till the first year prior to failure. Whereas the ratio of both the failed and healthy companies are widening as they reach nearer o the verge of failure.

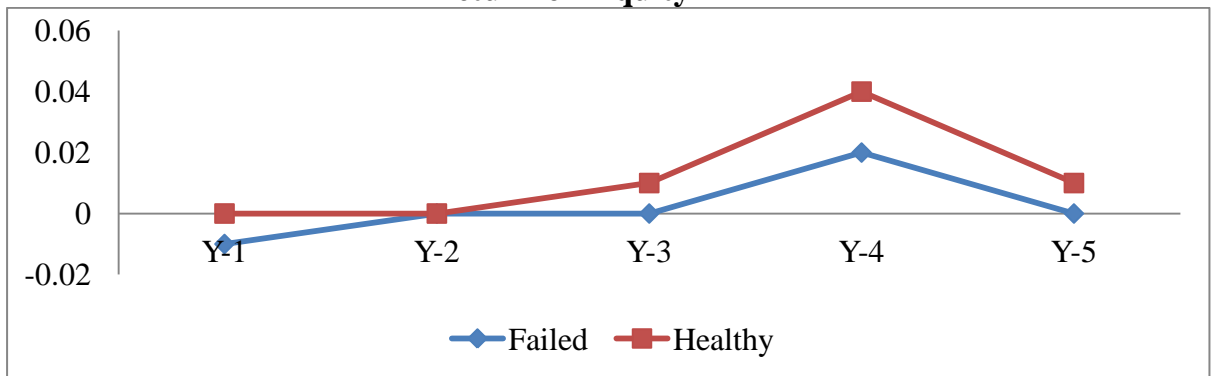
xvii. Return on Equity

Table: 4.17
Return on Equity

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
ROE	Failed	%	-0.01	0.00	0.00	0.02	0.00
	Healthy	%	0.01	0.00	0.01	0.02	0.01

(www.nrb.org.np, www.sebon.com)

Figure: 4.17
Return on Equity



The above table and figure depict that the ratio of return on equity of failed companies declines sharply and reaches to negative return as it moves nearer to the year of failure. Whereas the trend of the ratio of return on equity of the healthy companies is positive and stable in nature.

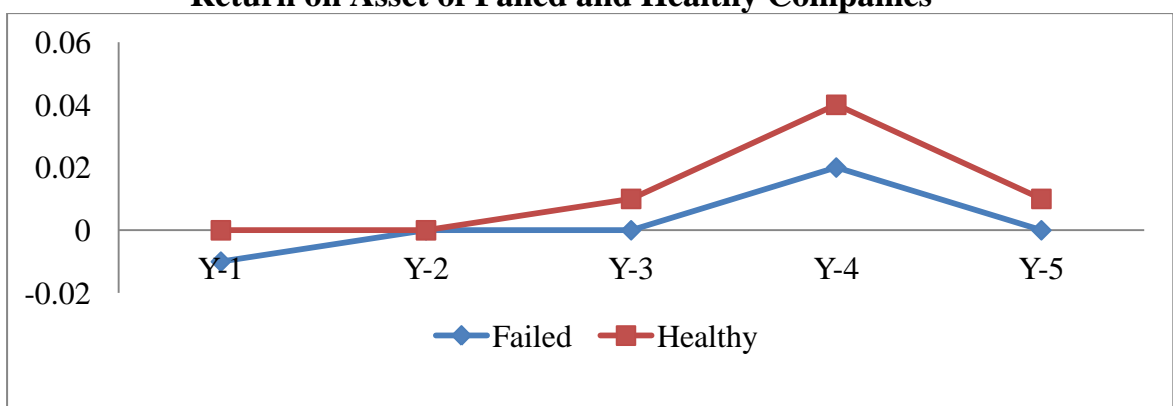
xviii. Return on Asset

Table: 4.18
Return on Asset

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
ROA	Failed	%	-0.01	0.00	0.00	0.02	0.00
	Healthy	%	0.01	0.00	0.01	0.02	0.01

(www.nrb.org.np, www.sebon.com)

Figure: 4.18
Return on Asset of Failed and Healthy Companies



The above table and figure depicts that the ratio of return on asset of failed companies declines sharply and reaches to negative return as it moves nearer to the year of

failure. Whereas the trend of the ratio of return on asset of the healthy companies are positive and stable in nature even it starts to decline from the fourth year prior to failure.

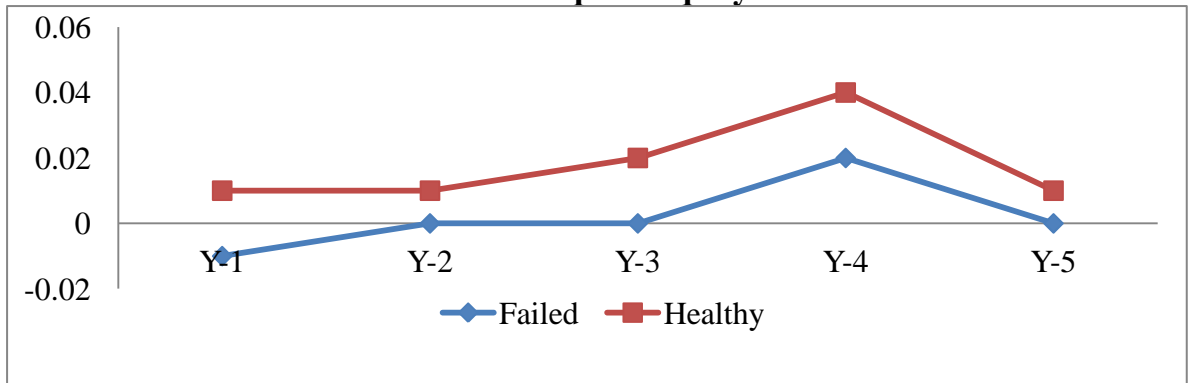
xix. Return on Capital Equity

Table: 4.19
Return on Capital Equity

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
ROCE	Failed	%	-0.01	0.00	0.00	0.02	0.00
	Healthy	%	0.02	0.01	0.02	0.02	0.01

(www.nrb.org.np, www.sebon.com)

Figure: 4.19
Return on Capital Equity



The above table and figure depict that the ratio of return on capital equity of failed companies declines sharply and reaches to negative return as it moves nearer to the year of failure. Whereas the trend of the ratio of return on capital equity of the healthy companies are positive and stable in nature even it starts to decline from the fourth year prior to failure. The gap tends to widen as the companies move closer to the year of the failure resulting in the deteriorating performance of the failed companies compared to healthy ones.

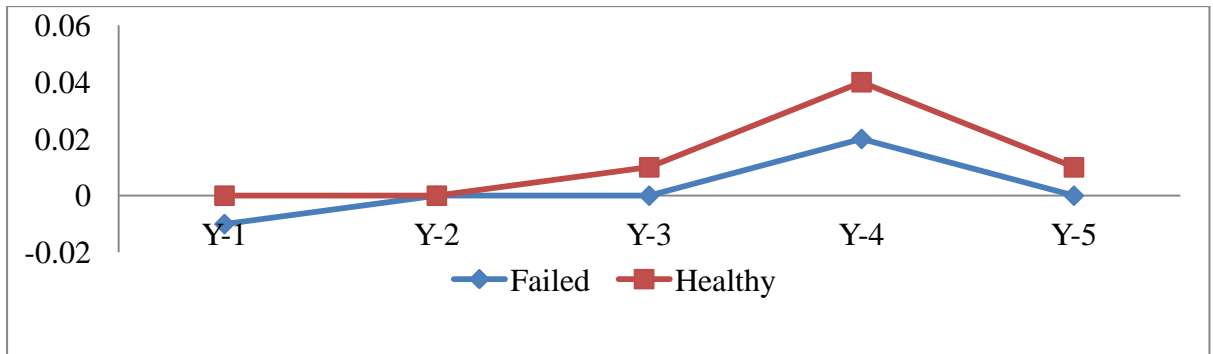
xx. Net Income to Total Assets

Table: 4.20
Net Income to Total Assets

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
NI/TA	Failed	%	-0.01	0.00	0.00	0.02	0.00
	Healthy	%	0.01	0.00	0.01	0.02	0.01

(www.nrb.org.np, www.sebon.com)

Figure: 4.20
Net Income to Total Assets



The above table and figure depict that the ratio of net income to total asset of failed companies' declines sharply and reaches to negative ratio as it moves nearer to the year of failure. Whereas the trend of the ratio of net income to total asset of the healthy companies are positive and stable in nature even it starts to decline from the fourth year prior to failure. The gap tends to widen as the companies move closer to the year of the failure resulting in the deteriorating performance of the failed companies compared to healthy ones.

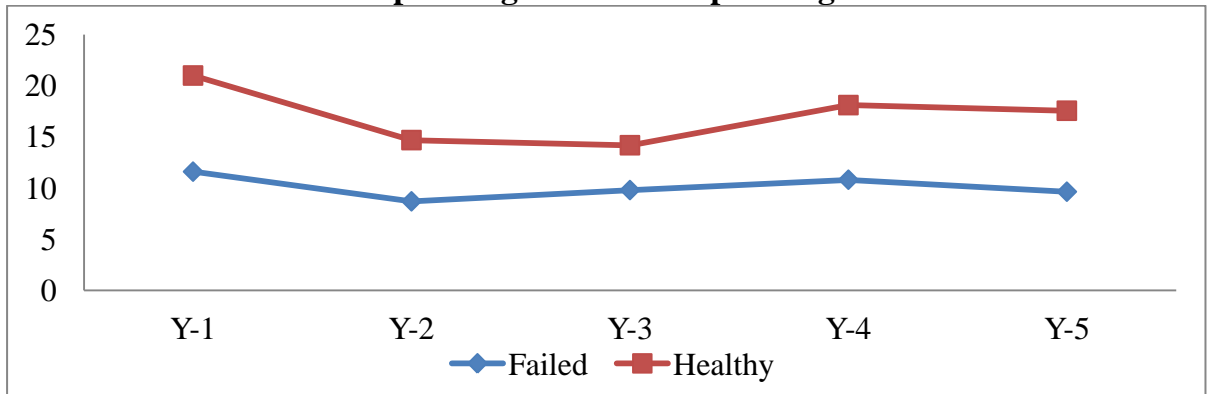
xxi. Total Operating Income to Operating Revenue

Table: 4.21
Total Operating Income to Operating Revenue

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
TOE/OR	Failed	times	11.60	8.70	9.80	10.81	9.64
	Healthy	times	9.39	5.98	4.38	7.29	7.91

(www.nrb.org.np, www.sebon.com)

Figure: 4.21
Total Operating Income to Operating



The above table and figure depict the mean comparison of the ratio of total operating income to operating revenue for the failed and healthy companies five year prior to failure. The figure presents a fluctuating trend where the ratio of TOI to OR increases first year prior to failure for both the failed and healthy companies but the gap between the two groups are greater. Therefore the ratio indicates huge difference in the ratio of healthy and failed companies as they move towards the verge of failure.

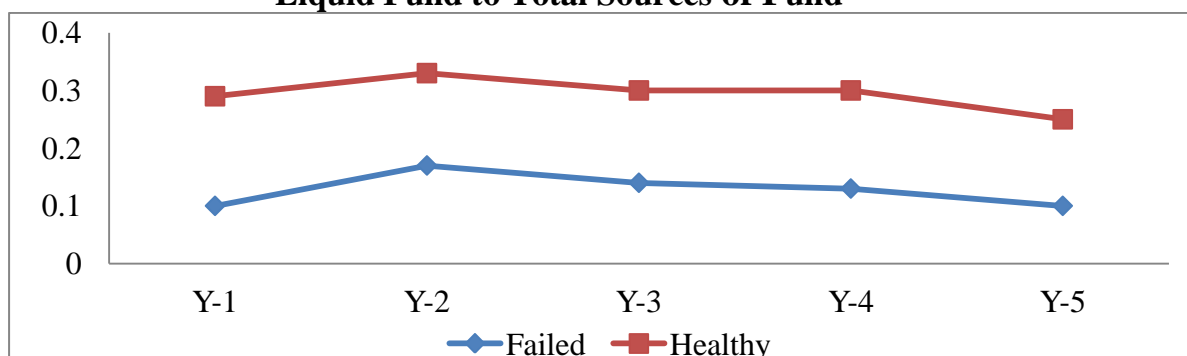
xxii. Liquid Fund to Total Sources of Fund

Table: 4.22
Liquid Fund to Total Sources of Fund

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
LF/TSF	Failed	times	0.10	0.17	0.14	0.13	0.10
	Healthy	times	0.19	0.16	0.16	0.17	0.15

(www.nrb.org.np, www.sebon.com)

Figure: 4.22
Liquid Fund to Total Sources of Fund



The above table and figure depict that the ratio of liquid funds to total sources of fund of failed companies indicates the increasing trend till the second year prior to failure which tend to decline as the companies to the point of failure. On the other hand the ratio of liquid fund to total sources of fund indicates increasing trend over the five year prior to failure. The figure above indicates a gap between the ratio of failed and healthy companies as they reach nearer to the year of failure.

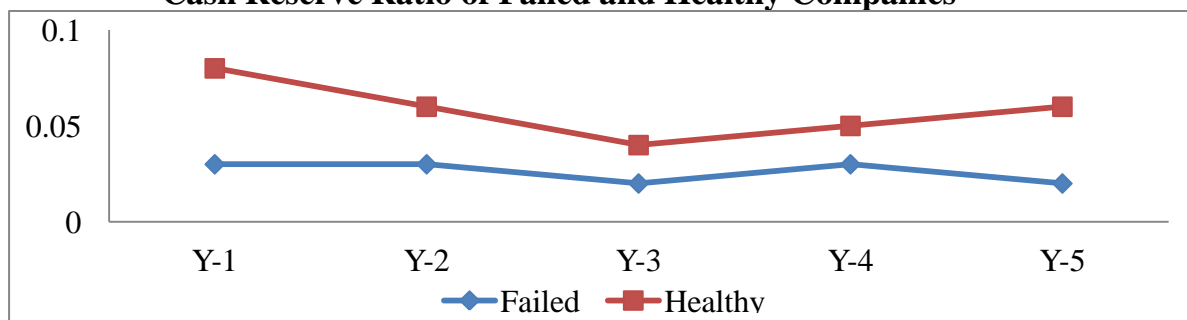
xxiii. Cash Reserve Ratio

Table: 4.23
Cash Reserve Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CRR	Failed	%	0.03	0.03	0.02	0.03	0.02
	Healthy	%	0.05	0.03	0.02	0.02	0.04

(www.nrb.org.np, www.sebon.com)

Figure: 4.23
Cash Reserve Ratio of Failed and Healthy Companies



The above table and figure depict the trend of cash reserve ratio of failed and healthy companies five year prior to failure. It indicates a fluctuating trend for the failed companies which tend to increase as the companies moves nearer to failure year. In contrary to this the cash reserve ratio of healthy companies is stable and increasing in nature indicating a sound financial position of those companies. Even the ratios of failed companies increase the gap between the failed and non failed companies' increases as the companies' moves towards failure.

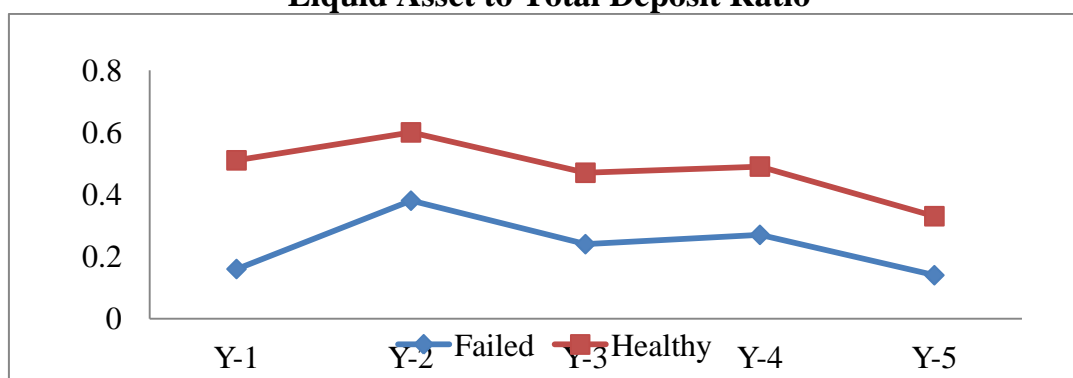
xxiv. Liquid Asset to Total Deposit Ratio

Table: 4.24
Liquid Asset to Total Deposit Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
Liq/Tdep	Failed	%	0.16	0.38	0.24	0.27	0.14
	Healthy	%	0.35	0.22	0.23	0.22	0.19

(www.nrb.org.np, www.sebon.com)

Figure: 4.24
Liquid Asset to Total Deposit Ratio



The above table and figure depicts that the liquid asset to total deposit of failed companies is fluctuating over the four year prior to failure which decreases tremendously in the first year prior to failure compared to healthy companies whose ratio indicates increasing trend.

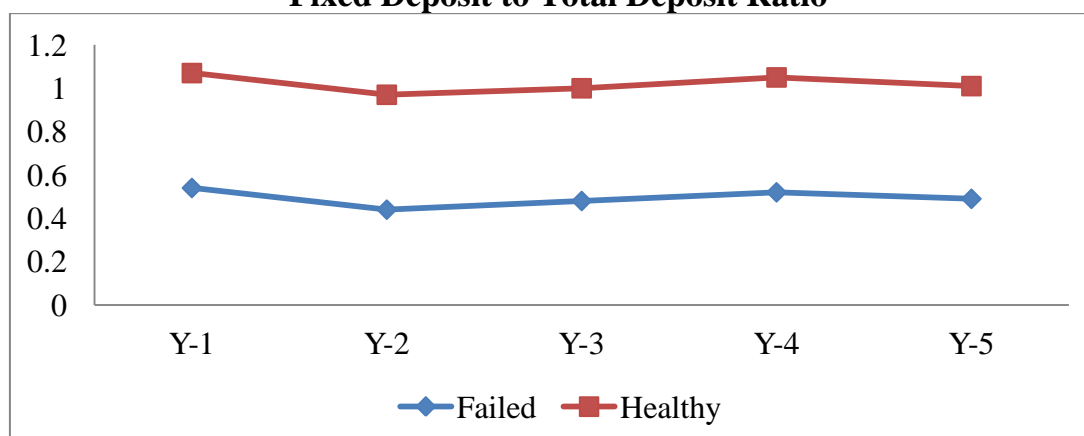
xxv. Fixed Deposit to Total Deposit Ratio

Table: 4.25
Fixed Deposit to Total Deposit Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
Fdep/Tdep	Failed	%	0.54	0.44	0.48	0.52	0.49
	Healthy	%	0.53	0.53	0.52	0.53	0.52

(www.nrb.org.np, www.sebon.com)

Figure: 4.25
Fixed Deposit to Total Deposit Ratio



The above table and figure depict that the ratio of fixed deposit to total deposit of failed companies to be stable which increases in the first year prior to failure. On the other hand fixed deposit to total deposit ratio of healthy companies is stable for the five year prior to failure. Further it indicates a widening gap among the failed and healthy companies as they move nearer to the verge of failure indicating higher proportion of fixed deposit with healthy companies compared to failed companies.

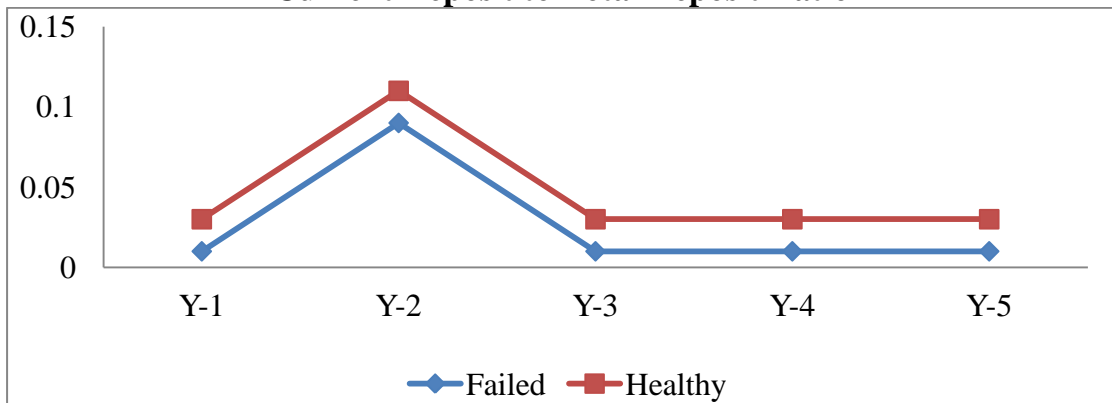
xxvi. Current Deposit to Total Deposit Ratio

Table: 4.26
Current Deposit to Total Deposit Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
CDP/TDP	Failed	%	0.01	0.09	0.01	0.01	0.01
	Healthy	%	0.02	0.02	0.02	0.02	0.02

(www.nrb.org.np, www.sebon.com)

Figure 4.26
Current Deposit to Total Deposit Ratio



The above table and figure depict that the ratio of current deposit to total deposit of failed companies is fluctuating in nature that indicates variability in the deposit of those companies. On the other hand the ratio of current deposit to total deposit of healthy companies is stable indicating sound financial performance of those companies.

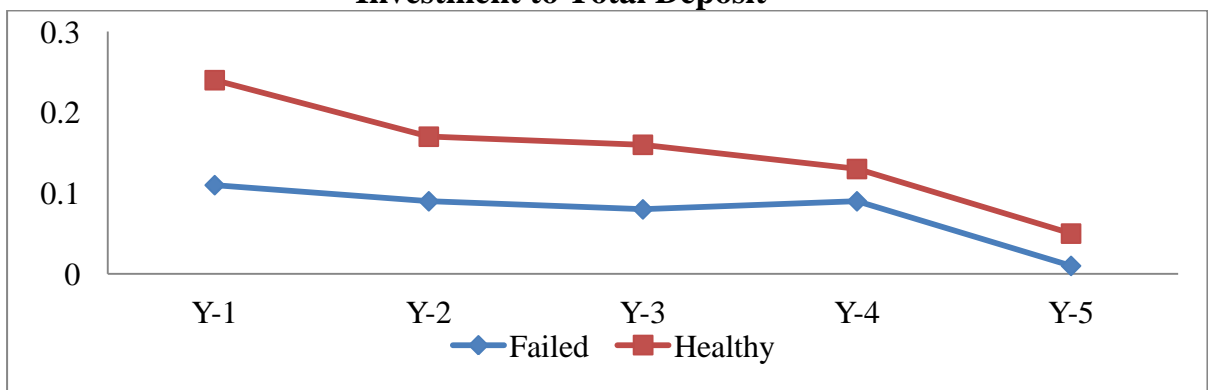
xxvii. Investment to Total Deposit

Table: 4.27
Investment to Total Deposit

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
IV/TDP	Failed	%	0.11	0.09	0.08	0.09	0.01
	Healthy	%	0.13	0.08	0.08	0.04	0.04

(www.nrb.org.np, www.sebon.com)

Figure 4.27
Investment to Total Deposit



The above table and figure depict that the investment to total deposit ratios of failed and healthy companies five year prior to failure indicates increasing trend. It also indicates widening gap among the failed and healthy companies as the companies reach towards the failure.

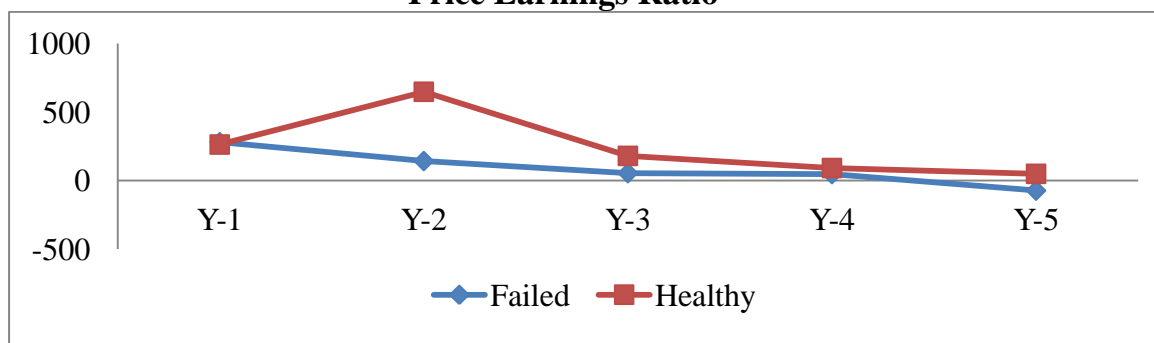
xxviii. Price Earnings Ratio

Table: 4.28
Price Earnings Ratio

Ratio	Group	Basis	Y-1	Y-2	Y-3	Y-4	Y-5
PE Ratio	Failed	Rs.	280.29	142.60	54.45	47.80	-73.04
	Healthy	Rs.	-16.98	505.89	125.95	43.96	122.31

(www.nrb.org.np, www.sebon.com)

Figure: 4.28
Price Earnings Ratio



The above table and figure depict that the mean Price Earnings ratios of failed companies is in increasing trend for the failed companies whereas the Price Earnings ratio of healthy companies is in fluctuating trend that has increased second through fifth year prior to failure which has declined at the year prior to failure.

4.1.2. Descriptive Statistics of Failed and Healthy Companies

This study has employed descriptive research design to describe the general relationship and differences in the financial ratios of both failed and healthy companies during the study period. The descriptive statistics used in this study consists of mean values, standard deviation, maxima and minima associated with variables under consideration.

a. Liquidity Ratios

Table: 4.29
Descriptive Statistics of Liquidity Ratios

Ratios	Group	Mean	SD	Min	Max	N
Liquidity						
CA/CL	Failed	0.18	0.14	0.01	0.57	50
	Healthy	0.23	0.25	0.03	1.73	50
WC/TA	Failed	285.30	395.72	0.35	1763.74	50
	Healthy	276.65	468.13	1.02	2017.61	50
CA/TA	Failed	0.13	0.10	0.01	0.50	50
	Healthy	0.16	0.12	0.02	0.61	50
CL/TA	Failed	0.82	0.24	0.21	1.35	50
	Healthy	0.79	0.14	0.07	0.91	50
C/TA	Failed	0.01	0.01	0.00	0.07	50
	Healthy	0.02	0.05	0.00	0.33	50
QA	Failed	0.01	0.02	0.00	0.09	50
	Healthy	0.02	0.06	0.00	0.41	50
CRR	Failed	0.03	0.03	0.00	0.11	50
	Healthy	0.03	0.04	0.00	0.26	50
Liq/Tdep	Failed	0.24	0.31	0.00	1.80	50
	Healthy	0.24	0.25	0.03	1.73	50
LF/TSF	Failed	0.13	0.10	0.01	0.50	50
	Healthy	0.17	0.12	0.02	0.61	50

A company's liquidity is its ability to meet its near term obligations, and it is a major measure of financial health. Liquidity can be measured through several ratios presented as below.

The ratio of current Asset to current liabilities of the failed companies ranges from minimum 0.01 million to maximum 0.57 million with an average of 0.18 and standard deviation of 0.14 whereas the ratio for healthy companies ranges from minimum 0.03 to maximum 1.73 million with an average of 0.23 and standard deviation of 0.25. The ratio of current asset to current liabilities of healthy companies is greater compared to failed companies indicating higher ability of the healthy companies to meet their short term obligation through short term assets.

The working capital to total asset ratio of failed companies ranges from 0.35 million to 1763.74 million with an average of 285.30 and standard deviation of 395.72. On the other hand the ratio of WC/TA of healthy companies ranges from minimum 1.02 million to 2017.61 million with an average of 276.65 and standard deviation of 468.13. The difference in WC/TA ratio of failed and healthy companies indicates unlike most healthy companies, failed companies suffer significantly from the problem of liquidity that indicates a need for external credit for the failed companies to operate on a day to day basis.

The ratio of current asset to total asset of the failed companies ranges from minimum 0.01 million to maximum 0.50 million with an average of 0.13 and standard deviation of 0.10 whereas the ratio for healthy companies ranges from minimum 0.02 to 0.61 maximum million with an average of 0.16 and standard deviation of 0.12. The difference in the average ratio of CA/TA indicates the deteriorating liquidity position of the failed companies.

The ratio of CL to TA of the failed companies ranges from minimum 0.21 million to maximum 1.35 million with an average of 0.82 and standard deviation of 0.24 whereas the ratio for healthy companies ranges from minimum 0.07 to maximum 0.91 million with an average of 0.79 and standard deviation of 0.14.

The ratio of C/TA of the failed companies ranges from minimum 0.00 million to maximum 0.07 million with an average of 0.01 and standard deviation of 0.01 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 0.33 million with an average 0.02 of and standard deviation of 0.05. The ratio of QA of the failed companies range from minimum 0.00 million to maximum 0.09 million with an average of 0.01 and standard deviation of 0.02 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 0.41 million with an average of 0.02 and standard deviation of 0.06.

The ratio of CRR of the failed companies ranges from minimum 0.00 million to maximum 0.11 million with an average of 0.03 and standard deviation of 0.03 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 0.26 million with an average of 0.03 and standard deviation of 0.04.

The ratio of Liq/Tdep of the failed companies ranges from minimum 0.00 million to maximum 1.80 million with an average of 0.24 and standard deviation of 0.31 whereas the ratio for healthy companies ranges from minimum 0.03 to maximum 1.73 million with an average of 0.24 and standard deviation of 0.24.

The ratio of LF/TSF of the failed companies ranges from minimum 0.01 million to maximum 0.50 million with an average of 0.13 and standard deviation of 0.10 whereas the ratio for healthy companies ranges from minimum 0.02 to maximum 0.61 million with an average of 0.17 and standard deviation of 0.12.

In conclusion the overall liquidity ratios of healthy corporations are greater compared to that of failed corporations. This indicates the failed company's ability to fulfill the short-term obligations is decreasing and they are suffering severely from liquidity problems.

B. Cash Flow Ratios

Table: 4.30
Descriptive Statistics of Cash Flow Ratios

Ratios	Group	Mean	SD	Min	Max	N
Cash Flow						
CF/TD	Failed	0.00	0.03	-0.08	0.11	50
	Healthy	0.02	0.06	-0.04	0.36	50
CFCL	Failed	0.01	0.06	-0.08	0.39	50
	Healthy	0.02	0.06	-0.04	0.36	50

Cash flow analysis focuses on the cash flow and indicates how solvent, liquid and viable the company is. The higher the ratio, the better the companies' financial flexibility and its ability to pay its debt and liabilities. The ratio of CF/TD of the

failed companies ranges from minimum –0.08 million to maximum 0.11 million with an average of 0.00 and standard deviation of 0.03 whereas the ratio for healthy companies ranges from minimum-0.04 to maximum 0.36 million with an average of 0.02 and standard deviation of 0.06.

The ratio of CFCL of the failed companies ranges from minimum-0.08 million to maximum 0.39 million with an average of 0.01 and standard deviation of 0.06 whereas the ratio for healthy companies ranges from minimum -0.04 to maximum 0.36million with an average of 0.02 and standard deviation of 0.06. In conclusion it can be depicted that the ratio of cash flow of failed companies are lower and negative compared to healthy companies. This indicates the failed companies are unable to generate adequate cash to fulfill their current and long term debt.

c. Descriptive Statistics of Leverage Ratios

Table: 4.31
Descriptive Statistics of Leverage Ratios

Ratios	Group	Mean	SD	Min	Max	N
Leverage						
TD/TA	Failed	0.89	0.15	0.60	1.35	50
	Healthy	0.82	0.14	0.08	0.93	50
LTL/TA	Failed	0.18	0.24	-0.35	0.79	50
	Healthy	0.19	0.10	0.03	0.65	50
TL/TC	Failed	0.89	0.15	0.60	1.35	50
	Healthy	0.83	0.09	0.35	0.93	50
NPL/TL	Failed	13.92	21.24	0.00	87.40	50
	Healthy	2.04	2.62	0.00	12.00	49
SETA	Failed	0.12	0.08	0.00	0.40	50
	Healthy	0.12	0.09	0.01	0.65	50
SETD	Failed	0.15	0.11	0.01	0.60	50
	Healthy	0.17	0.25	0.04	1.82	50
Fdep/Tdep	Failed	0.50	0.28	0.00	0.92	50
	Healthy	0.53	0.27	0.00	1.00	50
Cdep/TDP	Failed	0.03	0.12	0.00	0.81	50
	Healthy	0.02	0.04	0.00	0.16	50
IV/Tdep	Failed	0.08	0.09	0.00	0.25	50
	Healthy	0.07	0.11	0.00	0.49	50

A company's leverage relates to how much debt it has on its balance sheet, and it is another measure of financial health. Generally, the more debt a company has, the riskier its stock.

The ratio of TD/TA of the failed companies ranges from minimum 0.60 million to maximum 1.35 million with an average of 0.89 and standard deviation of 0.15 whereas the ratio for healthy companies ranges from minimum 0.08 to maximum 0.93 million with an average of 0.82 and standard deviation of 0.14. The ratio of LTL/TA of the failed companies ranges from minimum - 0.35million to maximum 0.79 million with an average of 0.18 and standard deviation of 0.24 whereas the ratio for healthy companies ranges from minimum 0.03 to maximum 0.65 million with an average of 0.19 and standard deviation of 0.10.

The ratio of TL/TC of the failed companies ranges from minimum 0.60 million to maximum 1.35 million with an average of 0.89 and standard deviation of 0.15 whereas the ratio for healthy companies ranges from minimum 0.35 to maximum 0.93 million with an average of 0.83 and standard deviation of 0.09.

The ratio of NPL/TL of the failed companies ranges from minimum 0.00 million to maximum 87.40 million with an average of 13.92 and standard deviation of 21.24 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 12 million with an average of 2.04 and standard deviation of 2.62. The ratio of SE/TA of the failed companies ranges from minimum 0.01 million to maximum 0.40 million with an average of 0.12 and standard deviation of 0.08 whereas the ratio for healthy companies ranges from minimum 0.01 to maximum 0.65 million with an average of 0.12 and standard deviation of 0.09.

The ratio of SE/TD of the failed companies ranges from minimum 0.01 million to maximum 0.60 million with an average of 0.15 and standard deviation of

0.11 whereas the ratio for healthy companies ranges from minimum 0.04 to maximum 1.82 million with an average of 0.17 and standard deviation of 0.25.

The ratio of F_{dep}/T_{dep} of the failed companies ranges from minimum 0.00 million to maximum 0.92 million with an average of 0.50 and standard deviation of 0.28 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 1.00 million with an average of 0.53 and standard deviation of 0.27.

The ratio of C_{dep}/TDP of the failed companies ranges from minimum 0.00 million to maximum 0.81 million with an average of 0.03 and standard deviation of 0.12 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 0.16 million with an average of 0.02 and standard deviation of 0.04.

The ratio of INV/T_{dep} of the failed companies ranges from minimum 0.00 million to maximum 0.25 million with an average of 0.08 and standard deviation of 0.09 whereas the ratio for healthy companies ranges from minimum 0.00 to maximum 0.49 million with an average of 0.07 and standard deviation of 0.11.

In conclusion the overall leverage ratios of failed companies are higher compared to that of healthy companies. Therefore these ratios indicate the debt of the companies increases as it moves toward failure indicating the risky position from the creditor's point of view. Further it indicates the higher proportion of debt to finance fixed assets of the failed companies.

d. Descriptive Statistics of Profitability Ratios

Table 4.32
Descriptive Statistics of Profitability Ratios

Ratios	Group	Mean	SD	Min	Max	N
Profitability						
II/IE	Failed	1.41	1.11	0.00	7.56	47
	Healthy	1.77	0.43	0.86	2.80	45
ROE	Failed	0.00	0.02	-0.06	0.08	50
	Healthy	0.01	0.03	-0.04	0.14	50
ROA	Failed	0.00	0.02	-0.06	0.08	50
	Healthy	0.01	0.03	-0.04	0.14	50
ROCE	Failed	0.00	0.02	-0.06	0.08	50
	Healthy	0.01	0.03	-0.04	0.16	50
NI/TA	Failed	0.00	0.02	-0.06	0.08	50
	Healthy	0.01	0.03	-0.04	0.14	50
TOE/OR	Failed	10.12	15.73	-1.05	62.98	47
	Healthy	6.92	11.54	-11.10	46.96	45

The profitability ratios determine how well a company is performing overtime. It attempts to measure the company's success in generating income and reflects the combined effects of the company's asset and debt management.

The ratio of II/IE of the failed companies ranges from minimum 0.00 million to maximum 7.56 million with an average of 1.41 and standard deviation of 1.11 whereas the ratio for healthy companies ranges from minimum 0.86 to maximum 2.80 million with an average of 1.77 and standard deviation of 0.43.

The ratio of ROE of the failed companies ranges from minimum -0.06 million to maximum 0.08 million with an average of 0.00 and standard deviation of 0.02 whereas the ratio for healthy companies ranges from minimum -0.04 to maximum 0.14 million with an average of 0.01 and standard deviation of 0.03.

The ratio of ROA of the failed companies ranges from minimum -0.06 million to maximum 0.08 million with an average of 0.00 and standard deviation of 0.02 whereas the ratio for healthy companies ranges from minimum -0.04 to maximum 0.14 million with an average of 0.01 and standard deviation of 0.03.

The ratio of ROCE of the failed companies ranges from minimum -0.06 million to maximum 0.08 million with an average of 0.00 and standard deviation of 0.02 whereas the ratio for healthy companies ranges from minimum -0.04 to maximum 0.16 million with an average of 0.01 and standard deviation of 0.03.

The ratio of NI/TA of the failed companies ranges from minimum -0.06 million to maximum 0.08 million with an average of 0.00 and standard deviation of 0.02 whereas the ratio for healthy companies ranges from minimum -0.04 to maximum 0.14 million with an average of 0.01 and standard deviation of 0.03.

The ratio of TOE/OR of the failed companies ranges from minimum -1.05 million to maximum 62.98 million with an average of 10.12 and standard deviation of 15.73 whereas the ratio for healthy companies ranges from minimum -11.10 to maximum 46.96 million with an average of 6.92 and standard deviation of 11.54.

In conclusion the overall profitability of the failed companies tends to deteriorate significantly indicating the company's failure to generate adequate income. Further it also indicates the failed companies' inability to generate adequate interest revenue where the expenses are higher. Those companies that are in the verge of failure are unable to turn their assets into profits and decline in company's return on its investment by their shareholders compared to healthy companies.

e. Descriptive Statistics of Other Ratios

Table: 4.33
Descriptive Statistics of Other Ratios

Ratios	Group	Mean	SD	Min	Max	N
Others						
CF/RWA	Failed	-2.08	30.64	-89.24	46.65	50
	Healthy	20.43	10.57	9.56	71.64	50
PE Ratio	Failed	80.46	476.90	-1889.34	2184.21	45
	Healthy	2642.91	16893.05	-746.85	113375.57	45

The other ratios includes capital fund to risk weighted asset and marketability ratio. The ratio CF/RWA of the failed companies ranges from minimum -89.24 million to maximum 46.65 million with an average of -2.08 and standard deviation of 30.64 whereas the ratio for healthy companies ranges from minimum 9.56 to maximum 71.64 million with an average of 20.43 and standard deviation of 10.57. The increasing trend of CF/RWA ratio of healthy companies indicates the companies possess adequate capital to mitigate the risk which is lower for the failed companies.

The PE ratio of the failed companies ranges from minimum -1889.34 million to maximum 2184.21 million with an average of 80.46 and standard deviation of 476.90 whereas the ratio for healthy companies ranges from minimum -746.85 million to maximum 113375.57 million with an average of 2642.91 and standard deviation of 16893.05. The decreasing trend of P/E ratio of failed companies indicates the unwillingness of investors to pay the current earnings. Whereas the P/E ratio of healthy companies are both positive and increasing indicating the willingness of investors to pay the current earning and indicates the better position of the companies.

4.1.3. Mean Differences

The test of statistical significance of coefficient is a procedure by which sample results are used to verify the truth or falsity of priori hypothesis. The data related to twenty samples companies have been evaluated for the mean comparison or test of significance of the variables used for the study. The mean comparison is concerned with whether there is significant difference between the ratios of failed and healthy companies in Nepalese context. The study takes into consideration the significance test at 1% and 5% level of significance. In the language of significance test, a regression coefficient is said to be statistically significant if the critical p-value of test statistic is less than the level of significance specified. By the same way, a test statistic is said to be statistically not significant if the critical p-value of test statistic is greater than the level of significance specified.

Table: 4.34
Mean Comparison

Ratios	Healthy company	Failed company	t	df	P value
Liquidity					
CA/CL	0.23	0.18	1.139	98	0.258
WC/TA	276.65	285.30	-0.10	98	0.921
CA/TA	0.16	0.13	1.573	98	0.119
CL/TA	0.79	0.82	-0.798	98	0.427
C/TA	0.02	0.01	1.266	98	0.209
QA/CA	0.02	0.01	1.504	98	0.136
Cash Flow					
CF/TD	0.02	0.00	1.867	98	0.065**
CFCL	0.02	0.01	0.931	98	0.354
Leverage					
TD/TA	0.82	0.89	-2.412	98	0.018*
LTL/TA	0.19	0.18	0.226	98	0.822
TL/TC	0.83	0.89	-2.078	98	0.04*
NPL/TL	2.04	13.92	-3.884	97	0*
SETA	0.12	0.12	-0.123	98	0.902
SETD	0.17	0.15	0.553	98	0.581
Profitability					
II/IE	1.77	1.41	2.045	90	0.044**
ROE	0.01	0	2.286	98	0.024**
ROA	0.01	0	2.236	98	0.028**
ROCE	0.01	0	2.062	98	0.042**
NI/TA	0.01	0	2.236	98	0.028**
TOE/OR	6.92	10.12	-1.107	90	0.271
LF/TSF	0.17	0.13	1.72	98	0.089**
CRR	0.03	0.03	1.084	98	0.281
Liq/Tdep	0.24	0.24	0.035	98	0.972
Fdep/Tdep	0.53	0.5	0.552	98	0.582
Cdep/TDP	0.02	0.03	-0.428	98	0.67
IV/Tdep	0.07	0.08	-0.087	98	0.931
Others					
CF/RWA	20.43	-2.08	4.91	98	0*
PE Ratio	2642.91	80.46	1.017	88	0.312

*=Significant at 1% level of significance, **= Significant at 5% level of significance

The above table presents the mean comparison of financial ratios of failed and healthy companies to examine whether there is any significant difference

between the two groups. It has been found that out of total twenty eight financial ratios eleven of them are significantly different. Among the liquidity ratios none of the ratios are significantly different between the failed and healthy group. It indicates there are no such distinguishing features among the failed and healthy companies in terms of those variables. Further the ratio of cash flow to total debt ratio, interest income to interest expenses, ROA, ROE, ROCE, NI/TA and LF/TSF ratios are significant at 5% level of significance and TL/TC, NPL/TL CF/RWA ratios are significant at 1% level of significance. Those ratios indicate there is significant difference in features between the failed and healthy companies. Therefore the failed and healthy company differentiates themselves in terms of liquidity, profitability, leverage, cash flow and other ratios.

4.1.4. Multivariate Discriminant Analysis (MDA)

Multivariate discriminant Analysis (MDA) is a statistical technique used to classify an observation into one of several prior 'groupings dependent upon the observation's individual characteristics (Altman 1968). It combines a set of well selected ratios for the analysis. It transforms the individual variables to a single discriminant score that has been used to identify the failed companies and healthy companies. Using multiple discriminant analysis, one could assign different coefficient to the set of most significant ratios obtained from the univariate statistical test. Further analysis could then be performed on the weighted financial ratios in order to develop a potential multivariate model. MDA is used to classify and make prediction in problems. For this the first step is to establish explicit group classification. The second step involves the collection of data for the object in the group. Further a linear combination of these characteristic are derived that best discriminates between the failed and healthy companies. Therefore in Nepalese context different financial ratios are considered for the development of multivariate discriminating function based on the selected variables under consideration.

4.1.4.1.MDA Classification Accuracy

MDA classification accuracy presents the actual and predicted outcomes of classification that occur five year prior to failure .For this purpose if the predicted and actual outcomes are similar those companies are identified as correctly classified and if there exist difference among the actual and predicted companies they are identified as misclassification. Type I error refers to the probability that the failed companies is mistakenly classified as healthy and Type II error refers to the probability that a healthy companies is mistakenly classified as failed. The misclassification represents a Type I error and correct classifications represents Type II error. The results for the classification accuracy is presented using classification chart. Further the percentage of classification or misclassification measures the variation of the dependent variable explained by independent variables.

Table: 4.35
Accuracy of Discriminant Classification One Year Prior to Failure

Year one			
	Predicted outcome		
Actual outcome	Failed	Healthy	Total
Failed	8	1	9
Healthy	1	7	8
Total	9	8	17
Correctly classified=88.2%			
Misclassification=11.8%			

The table presents the actual and predicted outcomes of classification that occur one year prior to failure. The row denotes the actual status and the column denotes the predicted outcome and each cell includes the number of companies fulfilling each condition. Out of ten failed companies, eight of them are correctly classified and one misclassified. Further the overall classification accuracy indicates the model is extremely accurate in classifying 88.2% of the total sample correctly and the total error is 11.8%.

Table: 4.36
Accuracy of Discriminant Classification Two Year Prior to Failure

Year two			
	Predicted outcome		
Actual outcome	Failed	Healthy	Total
Failed	8	1	9
Healthy	0	8	8
Total	8	9	17
Correctly classified=94.1%			
Misclassification=5.9%			

The above table presents the accuracy of discriminant classification two year prior to failure. From the table it can be depicted that out of ten failed companies, eight of them are correctly classified and one misclassified. Further the overall classification accuracy indicates the model is extremely accurate in classifying 94.1% of the total sample correctly and the total error is 5.9%.

Table: 4.37
Accuracy of Discriminant Classification Three Year Prior to Failure

Year three			
	Predicted outcome		
Actual outcome	Failed	Healthy	Total
Failed	9	0	9
Healthy	0	9	9
Total	9	9	18
Correctly classified=100%			
Misclassification=0%			

The above table presents the accuracy of discriminant classification three year prior to failure. From the table it can be depicted that out of ten failed companies, nine of them are correctly classified and none are misclassified. Further the overall classification accuracy indicates the model is extremely accurate in classifying 100% of the total sample correctly and the total error is nil.

Table: 4.38
Accuracy of Discriminant Classification Four Year Prior to Failure

Year four			
	Predicted outcome		
Actual outcome	Failed	Healthy	Total
Failed	9	1	10
Healthy	1	9	10
Total	10	10	20
Correctly classified=90%			
Misclassification=10%			

The above table presents the accuracy of discriminant classification four year prior to failure. From the table it can be depicted that out of ten failed companies, nine of them are correctly classified and one misclassified. Further the overall classification accuracy indicates the model is extremely accurate in classifying 90% of the total sample correctly and the total error is 10%.

Table: 4.39
Accuracy of Discriminant Classification Five Year Prior to Failure

Year five			
	Predicted outcome		
Actual outcome	Failed	Healthy	Total
Failed	10	0	10
Healthy	0	9	9
Total	10	9	19
Correctly classified=100%			
Misclassification=0%			

The above table presents the accuracy of discriminant classification five year prior to failure. From the table it can be depicted that out of ten failed companies, ten of them are correctly classified and none of them are misclassified. Further the overall classification accuracy indicates the discriminant analysis is extremely accurate in classifying 100% of the total sample correctly and the total error is nil.

4.1.4.2. Development of MDA Function

The discriminant model is developed with an initial sample of twenty companies selected from banks and financial institutions of Nepal utilized to

establish a function which best discriminate between companies in two mutually exclusive groups: Failed and healthy. A total of twenty eight financial ratios are first listed which are grouped under five categories as liquidity, profitability, leverage, cash flow and other. Twenty three ratios among the twenty eight finally emerged as good predictors of companies failure. The model correctly classified 84.1% of the total sample correctly classifying 82.2% as failed and 14% as healthy companies one year prior to failure. This formed the beginning attempts to build predictive models, and led to the well known Z-score model. Based on this classification the final multivariate discriminant model for the prediction and classification is developed as enter and stepwise model.

a. Enter Model

The enter model of MDA takes into consideration the twenty three ratios found as the good predictors of companies failure from a total of twenty eight ratios. The model for the prediction and classification is developed as below:

$$\begin{aligned}
 Z = & -0.968CA/CL + 0.222WC/TA - 0.478 CA/TA + 1.731CL/TA + \\
 & 0.419 C/TA - 0.47QR - 4.999CF/TD + 3.685CFCL - 1.32TD/TA - \\
 & 0.116NPL/TL + 0.074SETA + 1.442SETD - 0.32CF/RWA - \\
 & 1.266 II/IE - 1.384ROE + 2.744ROCE + 0.323TOE/OR - 0.439CRR + \\
 & 1.512 Liq/Tdep - 0.024Fdep/Tdep - 0.061Cdep/TDP + 0.303IV/ \\
 & Tdep - 0.115PE ratio \dots\dots\dots (i)
 \end{aligned}$$

$$r = 0.40$$

$$p \text{ value} = 0.000$$

$$\text{classification accuracy} = 84.1\%$$

The enter model of multiple discriminant analysis presented in the equation (i) presents canonical correlation at 40 % and is significant at 1 percent level of significance. Further the overall classification accuracy indicates the discriminant analysis is accurate in classifying 84.1 percent of the sample correctly.

b. Stepwise Discriminant Model

Although the enter method of discriminant analysis produced higher classification accuracy it is difficult to apply in practice using all variables. Thus stepwise procedure has been applied to develop the discriminant function for practical application. In order to develop the multiple discriminant functions the stepwise estimation model has been developed for the study. For these independent variables has been entered into the discriminant function one at a time on the basis of their discriminating power. The normal variable has been entered into the discriminant analysis. A total of twenty eight ratios were tested. Finally one variable that gives the highest hit ratio has been selected based on the significance of the variable. The step wise model is presented by equation ii.

$$Z = 0.420 + 0.440 \text{ CF/RWA} \dots\dots\dots (ii)$$

$$r = 0.40$$

$$p \text{ value} = 0.000$$

$$\text{classification accuracy} = 75\%$$

Where, Z= overall index

The stepwise analysis of multiple discriminant analysis presented in the equation (ii) indicates the correlation at 40 % and is significant at 1 percent level of significance. Further the overall classification accuracy indicates the discriminant analysis is accurate in classifying 75 percent of the sample correctly.

The above model indicates the Z-score of both failed and healthy companies of Nepal. It uses a total of twenty three significant ratios out of twenty eight financial ratios to predict the likelihood of failure among the companies. Lower the score, higher the probability that a companies will move towards failure. It implies that there is a strong positive impact of capital fund to risk weighted asset ratio.

4.1.4.3. Predictive Power of Financial Ratios

The technique in arriving at the final variable profile is to determine the relative contribution of each variable to the total discriminating power of the function and the interaction between them. The relevant statistic is observed as a scaled vector (Altman 1968). The scaled vectors indicate that the large contributors to group separation ratio contributes the most. The coefficients of the variables enable to evaluate the contribution of each variable on a relative basis.

Table: 4.40
Standardized Canonical Discriminant Function Coefficients

Ratios	Scaled vector	Ranking
CA/CL	-0.968	19
WC/TA	0.222	9
CA/TA	-0.478	18
CL/TA	1.731	3
C/TA	0.419	6
QA	-0.47	17
CF/TD	-4.999	23
CFCL	3.685	1
TD/TA	-1.32	21
NPL/TL	-0.116	14
SETA	0.074	10
SETD	1.442	5
CF/RWA	-0.32	15
II/IE	-1.266	20
ROE	-1.384	22
ROCE	2.744	2
TOE/OR	0.323	7
CRR	-0.439	16
Liq/Tdep	1.512	4
Fdep/Tdep	-0.024	11
Cdep/TDP	-0.061	12
IV/Tdep	0.303	8
PE Ratio	-0.115	13

The above table presents the standardized canonical discriminant function coefficients of twenty three variables. It indicates the predictive power of financial ratios and their relative contributions of the variables. The scaled vectors indicate that the larger contributors to group separation ratio is cash flow to current liabilities. However the second highest contribution is of return on capital equity. Further the other significant contributors are CL/TA, Liq/Tdep, SETD, C/TA, TOE/OR, IV/Tdep, WC/TA and SETA respectively. In addition to this the lower contributors of the variables are Fdep/Tdep, Cdep/TDP, PE ratio, NPL/TL, CF/RWA, CRR, Quick ratio, CA/TA, CA/CL, II/IE, TD/TA, ROE and CF/TD because of their negative coefficient values.

4.1.4.4 Determination of Cutoff Point

The discriminant function has been selected to emphasize the segregation of the two categories of failure. For this purpose different cutoff point has been determined to yield a trade-off between the two groups. The cutoff point is determined by categorizing the groups as predicted and actual one where the Z-scores are arranged in ascending order and a point of misclassification is determined which is taken as the cutoff point.

Table: 4.41
Determination of Cutoff Point

Case Number	AG	PG	Z-score
20	0	0	-0.3
8	0	0	-0.29
9	0	0	-0.17
7	0	0	-0.12
10	0	0	-0.06
25	0	0	-0.05
54	1	0	0.01
24	0	1	0.02
65	1	1	0.03
63	1	1	0.04
53	1	1	0.05
80	1	1	0.05
55	1	1	0.07
49	0	1	0.08

The above table presents the determination of the cutoff point for the failure and non-failure of the companies. The result implies that a Z-score of less than 0.01 indicates a very high probability of failure, while a Z-score greater than 0.01 signifies a higher probability of non-failure. Further the result also indicates that a Z-score that lie between 0.01 and 0.02 is classified as the zone of ignorance, where it is not possible to predict with confidence whether the companies will go under and fail or survive.

4.1.4.5 Validation of Discriminant Model

Using cross validation procedure the model has been tested and found that cross validation classification accuracy is same as original classification accuracy is 75 percent. The results show that the discriminant model is internally valid for its practical application.

Table: 4.42
Classification Results (b,c)

		Group	Predicted Group Membership		Total
			Failed	Healthy	
Original	Count	Failed	26	24	50
		Healthy	1	49	50
	%	Failed	52.0	48.0	100.0
		Healthy	2.0	98.0	100.0
Cross validated(a)	Count	Failed	26	24	50
		Healthy	1	49	50
	%	Failed	52.0	48.0	100.0
		Healthy	2.0	98.0	100.0

Table 4.42 presents the results of cross validation of the model. This indicates the cross validation classification accuracy of the model is 75 percent. This outcome indicates that the model is valid for application

4.2 A Survey on Financial Ratios and Corporate Failure

This section attempts to analyze the results of questionnaire survey conducted among the banking professionals at the lower level mid-level and top level in Nepalese banks and financial institutions. The questionnaire survey was designed to understand the view of the respondents regarding the major causes of companies' failure in Nepalese context, determination of most influential factors along with their recommendations. The results of the survey are presented in the following sections.

4.2.1 Respondents Profile

This section presents the results of primary data collected through questionnaire survey. For this overall mean weights, ranking and significance test is performed to determine the major predictors of companies' failure in Nepalese context. The profile of the respondents taken into consideration for the study is summarized in the table below

Table: 4.43
Respondents' Profile

Position	Number	Percent
Top level	1	1.72
Mid-Level	13	22.41
Lower level	44	75.86
Type		
CB	41	70.69
DB	10	17.24
FC	7	12.07
Total	58	100

The above table presents the composition of total number of respondents from different types of companies as commercial banks, development banks and finance companies from top level, mid-level and lower level banking professionals used in questionnaire survey. Out of total 80 questionnaires

distributed to 80 respondents, only 58 of them responded, which consisted of 1 top level manager, 13 mid-level managers and 44 low level managers.

4.2.2 Ranking of Indicators as per Predictors of Corporate Failure

This section presents the respondents view regarding the raking of the groups of financial ratios. The most important financial ratio is ranked 1 and the least important category is ranked as 4.44

Table: 4.44
Overall Mean Weights and Ranks for Financial Indicators

Ratios	CB		DB		FC		Total	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Liquidity	1.88	1	1.60	1	2.00	3	1.84	2
Profitability	1.83	2	1.60	1	1.71	2	1.78	1
Leverage	1.90	3	2.00	2	1.43	1	1.86	3
Cash Flow	2.00	4	2.20	3	2.43	4	2.09	4

The above table presents the overall mean weights and ranks for identification of most important financial indicators of companies' failure of Commercial banks, development banks, finance companies and total rank. The overall rank indicates liquidity as the most important indicator of company's failure followed by profitability, leverage and cash flow ratio. The respondents of CB and DB viewed liquidity ratio as the major indicator and cash flow ratio as least important indicators of failure whereas FC indicates leverage as the major indicator and cash flow as least indicator of failure. This indicates all the groups agree with the ranking score and are accurate.

4.2.3 Ranking of Ratios as Predictors of Corporate Failure

Table: 4.45
Overall mean weights and ranks for financial ratios

Ratios	CB	Rank	DB	Rank	FC	Rank	Total	Rank	F	P
Liquidity										
CA/CL	1.6	3	1.4	4	1.6	4	1.53	4	0.2	0.8
QR	2.3	17	1.8	7	2.3	9	2.19	18	1.4	0.3
LA/TA	2	8	2	9	1.7	5	1.95	9	0.7	0.5
CL/TA	2.2	16	1.8	7	1.4	3	2.03	11	5.3	0
LTL/TA	2.1	11	2.1	11	2.3	10	2.09	13	0.4	0.7
WC/TA	2.1	12	2.2	12	2.6	12	2.16	16	1.2	0.3
CA/TA	2	9	1.9	8	2	7	1.98	10	0.2	0.9
LA/TD	2	7	1.9	8	2	7	1.95	9	0	1
LA/TSF	1.9	6	2	9	1.6	4	1.88	8	0.6	0.6
CRR	1.8	4	1.3	3	1.3	2	1.64	5	1.8	0.2

Profitability										
ROA	1.5	2	1.2	2	1.1	1	1.41	2	2.6	0.1
NI/TDP	2.2	15	2.1	10	2	7	2.14	15	0.2	0.8
ROE	1.6	3	1.2	2	1.1	1	1.48	3	3.1	0.1
II/IE	2.1	13	2.3	13	1.9	6	2.1	14	0.7	0.5
ROCE	2	10	2.2	12	2.4	11	2.1	14	0.9	0.4
TOE/TR	2.2	16	2	9	2.3	9	2.17	17	0.2	0.8

Leverage										
TD/TA	1.4	1	1	1	1.3	2	1.34	1	3.2	0.1
SETA	2	7	2	9	1.9	6	1.95	9	0.1	0.9
SETD	1.9	6	2.1	10	2	7	1.95	9	0.3	0.8
TL/TC	1.8	4	1.7	6	2.1	8	1.81	7	1.3	0.3
TL/TD	1.9	5	2	9	1.9	6	1.88	8	0.2	0.8
NPL/TL	1.8	4	1.6	5	1.4	3	1.71	6	0.5	0.6

Others										
CF/RWA	2.1	14	1.9	8	2	7	2.07	12	0.3	0.7
PER	2.4	18	2.3	13	2.1	8	2.33	19	0.5	0.6

Cash Flow										
CFTD	2.6	20	2.8	14	2.3	9	2.6	21	0.2	0.8
CFCL	2.4	19	2.2	12	2.7	13	2.4	20	0.2	0.8

The above table presents the overall mean weights and ranks for financial ratios of commercial banks (CB), development banks (DB), finance companies (FC). For this the ratio with the lowest mean weight is assigned the rank of 1 and is considered the most important ratio for predicting companies failure, On the other hand the ratio with the highest mean weight is assigned the rank of 13 and is considered the least important ratio. The overall rank indicates that the most important ratio useful for the prediction of companies failure was TD/TA, followed by ROA, ROE, CA/CL, CRR, NPL/TL, TL/TC, LA/TSF, TL/TD, LA/TA, LA/TD, SETA, SETD, CA/TD, CL/TA, CF/RWA, LTL/TA, II/IE, ROCE, NI/TDP, WC/TA, TOE/OR, QR respectively and the lowest influential ratios are CFTD, CFCL and PER. There were some differences in the results of the respondents in commercial bank, development bank and finance companies. The respondents of CB viewed that the most influential ratios useful for the prediction of companies' failure were TD/TA, ROA, CA/CL, ROE, CRR, TL/TC AND NPL/TL. Similarly, the respondents of DB viewed TD/TA, ROA, ROE, CRR, CA/CL, NPL/TL, TL/TC as the most influential ratios for the prediction of companies' failure. In addition the respondents of FC viewed ROA, ROE, CRR, TD/TA, CL/TA, NPL/TL AND CA/CL as the most influential ratios for the prediction of failure. In order to analyze the significance difference in the ranking of financial ratios by the respondents mean comparison was performed. From the survey it was found that there was no significant difference among the group which indicates the respondents agree with the ranking of the financial ratios.

4.2.4 Causes of Corporate Failure

This section presents the overall mean weights regarding the reasons for corporate failure in Nepal based on the view of the banking professionals. The major reasons for failure are ranked on the basis of their importance as below.

Table: 4.46**Overall Mean Weights and Ranks for Reasons of Companies Failure**

Reasons	CB	Rank	DB	Rank	FC	Rank	Total	Rank	F	Sig.
Bad companies governance	1.34	1	1.10	1	1.14	1	1.28	1	0.88	0.42
Internal lending	1.85	4	2.10	8	1.29	2	1.83	4	3.31	0.04
Unhealthy competition	1.90	5	2.00	7	1.86	4	1.91	5	0.19	0.82
Weak capital base	2.10	8	1.90	6	1.71	3	2.02	7	0.96	0.39
Changes in government policies	2.41	11	2.40	11	2.43	7	2.41	13	0.00	1.00
Embezzlement by bank executive	2.02	7	2.20	9	1.86	4	2.03	8	0.71	0.50
Unexpected market condition	2.27	10	2.40	11	2.14	5	2.28	12	0.30	0.74
Weak management	1.95	6	1.80	5	1.86	4	1.91	5	0.26	0.77
Overexposure in real estate loan	2.02	7	1.70	4	1.71	3	1.93	6	0.83	0.44
Violation of BAFIA	1.66	2	1.60	3	1.29	2	1.60	2	1.75	0.18
Lack of transparency of transactions	1.66	2	1.30	2	1.71	3	1.60	2	1.50	0.23
Overexposure to bad loan	1.76	3	1.60	3	1.71	3	1.72	3	0.16	0.85
Tendency of bankers to influence central bankers board member to decide in their favor	2.63	12	2.60	12	2.57	8	2.61	15	0.02	0.98
Ineffective financial risk assessment and management	2.10	8	2.30	10	2.29	6	2.16	9	0.75	0.48
Inadequate financial planning and budgetary control	2.15	9	2.30	10	2.14	5	2.17	10	0.22	0.80
Political instability	2.15	9	2.20	9	2.43	7	2.19	11	0.31	0.74
Deterioration in economic growth rates	2.41	11	2.40	11	2.57	8	2.43	14	0.18	0.83

The above table presents the overall mean weights and ranks for the major reasons of company's failure based on the response of the respondents as CB, DB, FC and total. The overall rank indicates the major reasons for companies failure in Nepalese context are bad companies governance at the top followed by violation of BAFIA, lack of transparency, overexposure to real estate loan, internal lending, unhealthy competition, weak management, overexposure to real estate loan, weak capital base, embezzlement by bank executive, ineffective financial risk assessment and management, inadequate financial planning and budgetary control, political instability, unexpected market condition, deterioration in economic growth rates and tendency of bankers to influence central bankers board member to decide in their favor respectively.

The respondents of all three types CB, DB and FC viewed bad companies governance, as the major reasons of failure, lack of transparency in financial transactions, violation of BAFIA, overexposure to bad loan and internal lending as the major reasons of failure whereas the least influential reasons for companies failure were tendency of bankers to influence central bankers board member to decide on their favor, deterioration in economic growth rates and changes in government policies In addition to mean ranking a test of significance difference was conducted which depicted that there is no any significant difference in the ranking of the major reasons for failure. This indicates that all the groups as CB, DB and FC agree with the reasons and are almost correct.

4.2.5 Symptoms of Corporate Failure

The major symptoms for the corporate failure are ranked in Table 4.47 based on the views of the respondents:

Table 4.47
Overall mean weights and ranks for the symptoms of failure

Symptoms	CB	Rank	DB	Rank	FC	Rank	Total	Rank	F	Sig.
Decline in cash flow	2	8	2	8	2	6	2.2	9	0.3	0.72
Increase in leverage of the companies	2	5	1	2	1	3	1.7	6	3.5	0.04*
Decreasing net profit	2	7	2	7	2	5	2.1	8	0.1	0.89
Increasing liquidity problem	2	4	1	4	2	4	1.6	5	0.6	0.57
Worsening financial ratios	2	6	2	6	2	5	2	7	0	0.98
Liquidity of the companies tends to decrease prior to failure.	1	1	1	1	1	1	1.1	1	0.9	0.42
Leverage of the failed companies is higher compared to healthy companies prior to failure.	1	3	1	3	1	2	1.3	3	0.4	0.66
CF to RWA ratio of companies is the most significant variable for the prediction of companies' failure.	1	3	1	4	1	3	1.4	4	0.1	0.88
Profitability of the failed companies is higher as it moves towards the verge of failure.	2	4	2	5	2	4	1.7	6	0.1	0.88
Cash flow of the companies decreases as the companies moves towards failure.	1	2	1	2	1	1	1.2	2	0.9	0.4

The above table presents the overall mean weights and ranks for the symptoms of companies' failure based on the respondents of CB, DB and FC. The overall rank indicates the major symptoms of companies failure in Nepal are decline in cash flow followed by increase in leverage of the companies, decreasing net profit, increasing liquidity problem, worsening financial ratios, decreasing liquidity ratio, higher leverage and the minor symptom of failure was found to be decline in cash flow as the firm moves towards failure and higher profitability of failed companies as it moves towards failure. The p value

indicates a significant difference in the view of the respondents regarding the symptoms of failure that signifies the respondents are indifferent to the ranking in terms of increase in leverage.

The respondents of all three groups CB, DB and FC indicated liquidity of the companies decreases prior to failure as the major symptom of failure and decline in cash flow as the minor symptoms of companies' failure. In addition other symptoms important for consideration of failure are decrease in cash flow as the firm moves towards failure, higher leverage of failed companies, ratio of CF to RWA as the most significant variable for failure prediction and decline in net profit. This indicates that all the groups as CB, DB and FC agree with the ranking of symptoms of failure and are almost correct.

4.2.6 Recommendations for Failed Companies

The major recommendations for the failed companies are ranked on the basis of their importance as below.

Table: 4.48
Overall Mean Weights and Ranks for Recommendations

Recommendations	CB		DB		FC		Total	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Takeover of management by NRB	1.93	2	2.00	3	1.86	2	1.93	3
Transparency in accounting information	1.71	1	1.40	1	1.29	1	1.60	1
Merger with stronger companies	1.98	3	1.60	2	1.86	2	1.90	2
Need for legal framework facilitating rehabilitation of doomed companies instead of forcing towards liquidation or failure.	2.12	4	2.20	4	1.86	2	2.10	4

Above table presents the overall mean weights and ranks for the recommendation of companies' failure based on the respondents of CB, DB and FC. The overall rank recommended transparency in accounting information as the important recommendation followed by merger with stronger companies, takeover of management by NRB and need for legal framework ranked as least important. The respondents of all three groups as CB, DB and FC recommended transparency in accounting information as the most important one and takeover of management by NRB as the second important and need for legal framework to facilitate rehabilitation of doomed companies instead of forcing towards liquidation or failure.

4.3 Major Findings

Based on the analysis of data, the major findings of the study are summarized as follows:

- The ratio of CA/CL of healthy corporate is higher compared to failed corporate indicating higher ability of healthy corporate to fulfill the short term obligations with current assets.
- There is a fluctuating trend of WC to TA ratio of failed corporate whereas the ratio for healthy corporate is in decreasing trend indicating higher proportion of long term assets for healthy corporate compared to failed ones.
- The current asset to total asset ratio of failed and healthy corporate five year prior to failure indicates the fluctuating trend. The difference in this ratio indicates that the liquidity position of the corporate starts deteriorating as they are in the verge of failure compared to healthy ones.
- The ratio of CL to TA of failed corporate fluctuates over the period whereas the ratio is stable for the healthy corporate.
- The quick ratio of failed corporate indicates the stable trend compared to fluctuating trend of healthy corporate.

- The ratio of cash flow to total debt of healthy corporate is positive and stable and failed corporate is in decreasing trend and is negative in nature.
- The mean ratio of cash flow to current liabilities of failed corporate is negative and has sharply declined whereas the ratio is positive, stable and increasing in nature.
- The ratio of total debt to total asset of both the failed and healthy corporate is in fluctuating trend. The mean ratio of failed corporate are greater than that of the healthy corporate indicates the deteriorating condition of failed corporate five year prior to failure.
- The long term loan to total asset ratio of failed firm indicates a decreasing trend whereas the ratio of long term loan to total asset of healthy corporate has been increasing over the five year prior to failure.
- The ratio of NPL to TL of the failed corporate is in decreasing trend as compared to the ratio of healthy corporate. The higher NPL to total loan ratio of failed corporate indicates the deteriorating financial condition of the failed corporate as it moves towards the verge of failure.
- There is a decreasing trend of the shareholders equity to total asset for the failed corporate whereas healthy corporate indicates increasing trend that signifies a sound financial position of the corporate.
- The ratio of capital fund to risk weighted assets of the failed corporate are negative and has declined sharply compared to positive and stable ratio of healthy corporate.
- In comparison to the fluctuating trend of interest income to interest expenses of failed corporate the ratio of healthy corporate indicates an increasing and stable trend signifying the ability of the healthy corporate to generate adequate interest income.
- The ratio of return on equity of failed corporate declines sharply and reaches to negative return as it moves nearer to the year of failure compared to that of positive and stable ratio of healthy corporate.

- The ratio of ROA, ROCE, NI/TA indicates a deteriorating trend five year prior to failure whereas those ratios are stable and increasing for the healthy corporate signifying sound financial health of the healthy companies.
- The CRR of failed corporate are stable compared to fluctuating trend of healthy corporate.
- The ratio of liquid asset to total deposit, current deposit to total asset of failed corporate fluctuates tremendously compared to increasing trend of healthy corporate that signifies a sound financial position of healthy corporate.
- The PE ratio of failed corporate indicates an increasing trend compared to the fluctuating trend of healthy corporate.
- The ratio of cash flow to total debt ratio, interest income to interest expenses, ROA, ROE, ROCE, NI/TA and LF/TSF ratios are significant at 5% level of significance and TL/TC, NPL/TL CF/RWA ratios are significant at 1% level of significance. Those ratios indicate there is significant difference in features between the failed and healthy corporate.

CHAPTER - V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

The prediction of corporate failures is an important and challenging issue that has served as the movement for many academic studies over the past few decades. Corporate failure problem still continues in the modern economies, having significant economic as well as social implications along with unavailability of accurate and reliable method for predicting the event of failures, research interest is likely to continue. A number of studies have been conducted related to the development of statistical models that are useful for the prediction of corporate failure. The evaluation of corporate failure is limited and the major criticism of prior studies is limited to the attempts made to develop an appropriate theory of corporate failures. This study basically aims to examine the prediction of corporate failure in Nepal using financial ratios. The specific objectives of the study are: a) to assess the behavior of financial ratios of failed and non-failed companies. (b) to test the significance differences of financial ratios of failed and non-failed companies (c) to assess the classification accuracy of discriminant analysis. (d) to develop model to identify an early warning signals that predicts corporate failures with reasonable accuracy. (e). to assess the predictive power of financial ratios for failed and non-failed companies f) to carry out a survey to identify the causes and symptoms of corporate failures in Nepalese context.

The population of the study includes a total of 198 banks and financial institutions listed in Nepal Stock Exchange. The paired sampling method has been taken into consideration for the study where healthy corporate are selected on the basis of similar asset size within the same category of failed corporate. Thus, this study used selected 10 failed financial institution and 10 healthy institutions representing commercial bank, development bank and finance companies during the period of 2007 through 2012. Further the data are derived

from the financial statements of the respective corporate five year prior to failure. A total of twenty eight financial ratios were taken into consideration for the study which were grouped into five categories as liquidity, profitability, leverage, cash flow and others. Besides, the survey of bank personnel's as low level, mid-level and high level was conducted during study period. A total of 80 questionnaires were distributed to respondents. Among the total questionnaire distributed a total of fifty eight provided their responses on the determination of financial ratios and prediction of failure in Nepalese corporate. The method used to analyze the secondary data includes descriptive analysis, profile analysis, univariate and multivariate discriminant analysis. Whereas mean and rank have been used as method of primary analysis.

5.2 Conclusions of the Research

On the basis of major findings of the study, this study concludes that

- the ratios of healthy corporate were stable and positive in nature throughout the five year prior to failure. Whereas the ratios of failed corporate demonstrates a gradually deteriorating trend as the companies moves towards the verge of failure. This result exhibits a widening gap between the failed and healthy corporate that results in the constant difference in the mean ratios of both the failed and healthy corporate. Therefore this indicates that the difference in the average ratios between the failed and healthy corporate increases as the corporate moves nearer to failure.
- All the ratios are not capable of predicting the failure equally; the ratios must be used with discretion. Out of twenty eight ratios, the ratio of cash flow to current liabilities (CFCL) has excellent discriminatory power compared to twenty seven other variables under consideration. However, the predictive power of cash flow to total debt ratio is much weaker. The ratios are unable to predict the healthy and failed corporate with the same degree of success. Therefore it can be predicted that the

classification accuracy classifies the healthy corporate more appropriately and accurately compared to failed corporate.

- The data exhibits a higher degree of consistency among themselves and with the previous studies. From this it can be inferred that financial ratios can be used in the prediction of corporate failure five year prior to failure.
- The results of this study are consistent with those of previous studies explaining corporate failure using financial ratios. The prior studies indicate the companies are more likely to move towards failure if it suffers from liquidity problems, deteriorating profitability, higher leverage, depleting cash flow ratios (Wruck, 1990; Haniffa & Cooke, 2002). Further the analysis of univariate and multivariate analysis also indicated higher association of various liquidity, leverage, cash flow, profitability and marketability ratios to corporate failure. The major conclusion derived from the study is that the financial ratios are useful predictors of corporate failure. The multiple discriminant analysis can be used by assigning different coefficient to the set of most significant ratios that are obtained from the univariate analysis. In addition further analysis could be performed on the basis of weighted financial ratios to develop a potential discriminant model.

5.3. Recommendation of the Research

On the basis of major findings and conclusion of the study, this study recommends as flow:

- Liquidity ratio should maintain high to be a healthy company.
- Profitability ratio should be high to be a healthy company and long term sustain
- Cash flow ratio should be high and increasing trend for long term sustain.
- The capital fund to risk weighted asset should be higher.
- The company should maintain CA/ CL ratio positive and stable.

- Cash flow of the company should positive and increasing trend.
- There should be good corporate governance, transparency.
- The bank & financial company should analyze overall political situation of the country before making budget and long term plan.
- The regulatory body of the company should study the background and history of the major investors before establishment of the company.
- This study is limited only on financial institutions only. The study should be the subjected to other field like manufacturing, trading. Service and others.

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Master of Business Studies (M.B.S.)

Research report

On

"Prediction of Corporate failure: A case of Nepal"

Name (optional).....

Position.....

Institution –Class A ()

Class B ()

Class C ()

1. Which of the following financial indicators do you think is the most important? Please rank the following 1=Very important, 2=important, 3=Less important, 4=not important

	1=Very important	2=important	3=Less important	4=not important
a. Liquidity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Leverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Cash Flow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Why do corporate (banks and financial institutions) in Nepal move towards failure?(Please rank the following 1=Very important, 2=important, 3=Less important, 4=not important)

	1=Very Important	2=important	3=Less important	4=Not important
a. Bad corporate governance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Internal lending	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Unhealthy competition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Weak capital base	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Changes in government policies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Embezzlement by bank executive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Unexpected market condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Weak management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Overexposure in real estate loan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Violation of BAFIA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Lack of transparency of transactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Overexposure to bad loan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Tendency of bankers to influence central bankers board member to decide in their favor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Ineffective financial risk assessment and management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1=Very Important	2=important	3=Less important	4=Not important
o. Inadequate financial planning and budgetary control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
p. Political instability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
q. Deterioration in economic growth rates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. A corporate does not move towards failure. Which of the following signals of corporate failure do you think is more important in Nepalese context? Please rank the following 1=Very important to 4=not important)

	1=very important	2=Important	3=Less important	4=Not important
a. Decline in cash flow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Increase in leverage of the corporate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Decreasing net profit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Increasing liquidity problem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Worsening financial ratios	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Liquidity of the corporate tends to decrease prior to failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Leverage of the failed corporate is higher compared to healthy corporate prior to failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Capital Fund to Risk weighted asset ratio of corporate is the most significant variable for the prediction of corporate failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i Cash flow of the corporate decreases as the corporate moves towards failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. A company's liquidity is its ability to meet its near-term obligations, and it is a major measure of financial health. Which of the following liquidity ratio do you think is the most important? Please rank the following 1=Very important to 4= Not important

	1=very important	2=important	3=Less important	4=not important
a. Current Asset/Current Liabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Quick ratio (Quick Assets/Current Liabilities)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Liquid Asset/Total Asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Current liabilities/Total Asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1=very important	2=important	3=Less important	4=not important
e. Long term liabilities/Total Asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Working capital/Total Asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Current Asset/Total Asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Liquid fund/Total deposit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Liquid fund/Total Sources of fund	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. CRR (Cash Reserve Ratio)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Profitability ratios attempt to measure the firm's success in generating income. These ratios reflect the combined effects of the firm's asset and debt management. Which of the following profitability ratios do you think is the most important? Please rank the following on the basis of their importance (1=Very important to 4=Not important)

	1=Very important	2=important	3=Less important	4=Not important
a. ROA (Net income/Total Assets)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Net income/Total deposit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. ROE (Net income/Total Equity)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. II/IE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. ROCE (NPBT/Total capital)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. TOE/TR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. A company's leverage ratio relates to how much debt it has on its balance sheet and it is another measure of financial health. Generally, the more debt a company has, the riskier its stock is. Which of the following leverage ratio do you think is the most important? Please rank the following on the basis of their importance (1=Very important to 4=Not important)

	1=Very important	2= important	3=Less important	4=not important
a. Total debt/Total asset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. SETA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. SETD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. TL/TC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. TL/TD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. NPL/TL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. CF/RWA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1=Very important 2= important 3=Less important 4=not important

h. PE ratio

7. Cash flow focuses on how solvent, liquid and viable a company is. Which of the following cash flow ratio do you think is the most important?

- a. CF/TD
- b. CF/CL

8. Which of the recommendations do you think is the most important for those corporate moving towards failure? (Please rank the following 1=Very important, 2=important, 3=Less important, 4=not important)

	1=Very important	2= important	3=Less important	4=Not important
a. Takeover of management by NRB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Transparency in accounting information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Merger with stronger corporate	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Need for legal framework facilitating rehabilitation of doomed corporate instead of forcing towards liquidation or failure.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

THANK YOU

APPENDIX 1

Standardized Canonical Function

	Function
	1
CA/CL	-4.799
WC/TA	.000
CA/TA	-4.442
CL/TA	10.505
C/TA	11.844
QA	-10.826
CF/TD	-107.530
CFCL	59.984
TD/TA	-8.821
NPL/TL	-.008
SETA	.822
SETD	7.017
CF/RWA	-.014
II/IE	-1.520
ROE	-50.014
ROCE	90.062
TOE/OR	.023
CRR	-12.592
Liq/Tdep	5.259
Fdep/Tdep	-.093
Cdep/TDP	-.653
IV/Tdep	3.344
PERAtio	.000
(Constant)	.562

Unstandardized coefficients

APPENDIX 2

Classification Results(b,c)

			Predicted Group Membership		Total
			Failed	Healthy	Failed
Original	Count	Failed	37	8	45
		Healthy	6	37	43
	%	Failed	82.2	17.8	100.0
		Healthy	14.0	86.0	100.0
Cross-validated(a)	Count	Failed	30	15	45
		Healthy	12	31	43
	%	Failed	66.7	33.3	100.0
		Healthy	27.9	72.1	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b 84.1% of original grouped cases correctly classified.

c 69.3% of cross-validated grouped cases correctly classified.

Classification Results(a,b)

				Predicted Group Membership		Total
				Failed	Healthy	Failed
Cases Selected	Original	Count	Failed	9	1	10
			Healthy	1	9	10
	%	Failed	90.0	10.0	100.0	
		Healthy	10.0	90.0	100.0	
Cases Not Selected	Original	Count	Failed	27	10	37
			Healthy	18	16	34
	%	Failed	73.0	27.0	100.0	
		Healthy	52.9	47.1	100.0	

a 90.0% of selected original grouped cases correctly classified.

b 60.6% of unselected original grouped cases correctly classified.

APPENDIX 3

Classification Results(a,b)

				Predicted Group Membership		Total
			Group	Failed	Healthy	
Cases Selected	Original	Count	Failed	10	0	10
			Healthy	0	9	9
	%		Failed	100.0	.0	100.0
			Healthy	.0	100.0	100.0
Cases Not Selected	Original	Count	Failed	12	23	35
			Healthy	16	18	34
	%		Failed	34.3	65.7	100.0
			Healthy	47.1	52.9	100.0

- a 100.0% of selected original grouped cases correctly classified.
- b 43.5% of unselected original grouped cases correctly classified.

Classification Results(b,c)

			Predicted Group Membership		Total	
		Group	Failed	Healthy		
Original	Count	Failed	26	24	50	
		Healthy	1	49	50	
	%		Failed	52.0	48.0	100.0
			Healthy	2.0	98.0	100.0
Cross-validated(a)	Count	Failed	26	24	50	
		Healthy	1	49	50	
	%		Failed	52.0	48.0	100.0
			Healthy	2.0	98.0	100.0

- a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
- b 75.0% of original grouped cases correctly classified.
- c 75.0% of cross-validated grouped cases correctly classified.

Classification Results(a,b)

				Predicted Group Membership		Total
			Group	Failed	Healthy	
Cases Selected	Original	Count	Failed	10	0	10
			Healthy	0	9	9
	%		Failed	100.0	.0	100.0
			Healthy	.0	100.0	100.0
Cases Not Selected	Original	Count	Failed	12	23	35
			Healthy	16	18	34
	%		Failed	34.3	65.7	100.0
			Healthy	47.1	52.9	100.0

- a 100.0% of selected original grouped cases correctly classified.
- b 43.5% of unselected original grouped cases correctly classified.

APPENDIX 4

Functions at Group Centroids

	Function
Group	1
Failed	-.420
Healthy	.440

Unstandardized canonical discriminant functions evaluated at group means

Canonical Discriminant Function Coefficients

	Function
	1
CF/RWA	.045
(Constant)	-.422

Unstandardized coefficients

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	4.803(a)	100.0	100.0	.910

a First 1 canonical discriminant functions were used in the analysis.

Standardized Canonical Discriminant Function Coefficients

	Function
	1
CF/RWA	1.000

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1	.841	14.823	1	.000

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	Df	Sig.
1	.841	14.823	1	.000

APPENDIX 5

Descriptive Statistics

	N	Mean
CA/CL	57	1.53
QR	57	2.21
LA/TA	57	1.93
CL/TA	57	2.04
LTL/TA	55	2.11
WC/TA	57	2.16
CA/TA	57	1.98
LA/TD	57	1.96
LA/TSF	57	1.89
CRR	57	1.65
ROA	57	1.42
NI/TDP	57	2.12
ROE	57	1.49
II/IE	57	2.09
ROCE	57	2.12
TOE/TR	57	2.19
TD/TA	57	1.35
SETA	57	1.96
SETD	57	1.96
TL/TC	57	1.82
TL/TD	57	1.89
NPL/TL	57	1.72
CFTD	57	2.58
CFCL	57	2.42
Valid N (listwise)	55	

Standardized Canonical Discriminant Function Coefficients

	Function Vector
CA/CL	12.451
WC/TA	.430
CA/TA	-4.169
CL/TA	-3.320
C/TA	-2.684
CF/TD	-6.441
TD/TA	5.853
NPL/TL	.628
SETA	1.547
CF/RWA	2.354
II/IE	.387
Cdep/TDP	.713
IV/Tdep	-.067

APPENDIX 5

Case Number	Actual Group	Highest Group	Discriminant Scores
	Predicted Group	$P(D>d G=g)$	Predicted Group
Case Number	AG	PG	Z-score
11	0	0	-4.44
36	0	0	-3.81
21	0	0	-3.44
13	0	0	-2.78
18	0	0	-2.61
12	0	0	-2.49
14	0	0	-2.27
15	0	0	-2.27
28	0	0	-1.80
30	0	0	-1.67
2	0	0	-1.59
3	0	0	-1.59
41	0	0	-1.42
1	0	0	-1.38
31	0	0	-1.11
6	0	0	-0.81
22	0	0	-0.62
4	0	0	-0.42
5	0	0	-0.42
19	0	0	-0.30
20	0	0	-0.30
8	0	0	-0.29
9	0	0	-0.17
7	0	0	-0.12
10	0	0	-0.06
25	0	0	-0.05
54	1	0	0.01
24	0	1	0.02
65	1	1	0.03
63	1	1	0.04
53	1	1	0.05
80	1	1	0.05
55	1	1	0.07
49	0	1	0.08

Case Number	Actual Group	Highest Group	Discriminant Scores
	Predicted Group	$P(D>d G=g)$	Predicted Group
Case Number	AG	PG	Z-score
100	1	1	0.09
73	1	1	0.09
79	1	1	0.11
46	0	1	0.11
47	0	1	0.11
16	0	1	0.12
64	1	1	0.12
23	0	1	0.12
60	1	1	0.12
45	0	1	0.15
89	1	1	0.16
17	0	1	0.16
50	0	1	0.16
40	0	1	0.19
56	1	1	0.19
48	0	1	0.23
88	1	1	0.27
90	1	1	0.28
57	1	1	0.29
99	1	1	0.30
72	1	1	0.31
39	0	1	0.32
81	1	1	0.32
52	1	1	0.33
74	1	1	0.34
91	1	1	0.36
32	0	1	0.37
83	1	1	0.38
68	1	1	0.39
82	1	1	0.43
33	0	1	0.44
66	1	1	0.47
92	1	1	0.48
98	1	1	0.51
62	1	1	0.53
67	1	1	0.55

Case Number	Actual Group	Highest Group	Discriminant Scores
	Predicted Group	$P(D>d G=g)$	Predicted Group
77	1	1	0.59
38	0	1	0.60
96	1	1	0.61
86	1	1	0.63
87	1	1	0.64
78	1	1	0.65
43	0	1	0.71
35	0	1	0.72
84	1	1	0.73
85	1	1	0.78
93	1	1	0.79
34	0	1	0.88
69	1	1	0.88
70	1	1	0.88
75	1	1	0.91
71	1	1	0.91
51	1	1	0.94
37	0	1	1.04
29	0	1	1.13
95	1	1	1.20
27	0	1	1.22
76	1	1	1.22
26	0	1	1.32
94	1	1	1.33
42	0	1	1.68
61	1	1	2.81
Misclassified case			