PREDICTING FINANCIAL DISTRESS IN MALAYSIAN MARKET: A LOGIT ANALYSIS

RUSLIZA YAHAYA
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ABSTRACT

This study was carried out to apply logit analysis in the prediction of financial distress in Malaysia. Its focus is to appraise whether the factors of firm's performance, risks, age, size and industrial grouping sector can be a good forecast for financial distress in Malaysia. In this study, financial distress is defined as companies placed under PN 4 sector on the Kuala Lumpur Stock Exchange (KLSE). There are 86 companies from the main board of KLSE designated as samples in this study. Amongst these, 43 companies are classified as PN4 and the other 43 companies are considered as 'healthy' ones. When the gathered data are analysed, only total debt ratio (TDR), earning per share (EPS) and construction sector proved to be significant in classifying the firms into the correct group (distressed vs 'healthy'), based on logit analysis. Among these three variables, TDR is the most influential one as it can predict financial distress up to three years prior to it. The model is accurate in classifying 75.73 per cent of the total sample. The logit analysis also shows that, higher level of accurate prediction is achieved when the data are analyzed separately according to years. We observe excellent and accurate classification based on data from the first two years and it can also correctly classify 92.59 per cent and 90.48 per cent for the first and second year preceding to financial distress respectively.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

A firm's financial distress remains as one of the most prevalent research areas. Since 1960s, researchers have been trying to perform predictive financial distress models using financial and economic indicators. Several technical methodologies are being used in the previous researches, essentially based on financial ratios, to classify the healthy and the distressed firms.

Financial distress is a situation where a firm's operating cash flows are not sufficient to satisfy current obligations (such as trade credits or interest expenses) and the firm is forced to take corrective action. This situation may lead the firm to default on a contract, and involve financial restructuring between the firm, its creditors, and equity investors. According to (Ross *et. al.* 1993), the firm is usually forced to take actions that it would not be required if it had adequate cash flow. Amongst the steps taken are: selling major assets, merging with other firm, reducing its capital expenditures and research and development, issuing new securities, negotiating with banks and other creditors, exchanging equity for debt and filing for bankruptcy.

Many recent academic studies have been developed on various aspects of dealing with financial distress and the mechanism of resolving the default. Amongst the popular methods employed to develop failure prediction models are: multivariate statistical techniques such as discriminant analysis (e.g. Altman, 1968; Casey and Bartezak, 1985); logit and probit (e.g. Ohlson, 1980, and Theodossiou, 1991); or neural network approach (Coats and Fants, 1993; Abid and Zouari, 2002). The validity of the result depends on the assumptions underlying the methods used.

The Multivariate Discriminant Analysis (MDA) approach has been the most popular technique employed in the bankruptcy prediction studies. Although it is appropriate for this purpose, it has some drawbacks, as MDA requires the fulfillment of several assumptions. However, some of the problems associated with Multivariate Discriminant Analysis (MDA) in finance could be avoided by using logit analysis. Specifically, the use of logit does not depend on the assumption that independent variables are distributed multivariate normal. Logit analysis also enables direct interpretation of the various explanatory variables coefficient estimates (Dietrich and Soronsen, 1984).

A large number of corporate failures in Malaysia since the Asian financial crisis in 1997 have provided us with an excellent opportunity for constructing and testing a business failure prediction model by using logit analysis. This study utilizes the logit model because it is easier to estimate than the other models. Moreover, its performance is at least as good as that of probit or discriminant analysis (Kahya, 1997). In addition to constructing and testing the logit model, this paper will also highlight the factors that could be a good predictor for financial distress in Malaysia.

1.2 Problem Statement

Business failures and financial distresses are common in competitive business environments where market discipline ensures that the survivors would only be the toughest one. The effect of a major corporate failure could bring unbearable hardship and misery. The collapse of many Malaysian Conglomerates after the 1997 financial crisis for example, has sent many corporate firms, banks and other financial institutions into financial difficulties. Losses by banks from major corporate failures during the financial turmoil exceeded the interest income earned on their lending activities. Similarly, investors have also suffered major losses in their investment.

The Kuala Lumpur Stock Exchange (KLSE) has established and implemented a number of measures to maintain an orderly and fair market for securities that are traded on the KLSE. Therefore, to enhance market integrity, the KLSE has implemented its latest measures relating to Practice Note 4/2001 (PN4), which has taken into effect since February 15, 2001. Under these new Listing Requirements, all companies listed on the KLSE are required to have an adequate level of financial condition in order to warrant continued trading and listing on the Official List of Exchange. This measure is meant to alert investors and at the same time to ensure that troubled companies must take necessary action within the stipulated 12 months period or face delisting.

More than 90 companies listed on the Kuala Lumpur Stock Exchange (KLSE) are reported to be failing and they are facing the possibilities of delisting. The KLSE reveals that, as on September 1, 2002, 99 companies (out of 861 listed outfits) are categorized under PN4 category (The Edge Malaysia, 9/9/2002). These companies are plagued with mounting debts and uncertainties in the continuance of their business. Millions of ringgits in public funds and bank loans have been wiped out. Why these companies fall into severe financial difficulty and whether they can predict their financial distress are two interesting questions that need to be addressed and studied.

It cannot be denied that there is a need to continuously evaluate the performance of listed firms. This is to identify and address the potential failures as it has adverse effects on the nation's economic growth and its business community. Therefore, the purpose of this study is to highlight whether the factors of performance, risk, age, size and industrial grouping sector of the companies can predict financial distress earlier before it occurs. This is important, as it is vital in ensuring the survival of businesses. According to Muhamad Sori *et. al* (2002), the ability to predict impending failures can help formulate and implement pre-emptive measures to avoid or mitigate the adverse effects of such failures. Clearly, these could avoid the financial distress to all stakeholders, reduce the costs of failures and assure the stability of business and financial environment.

1.3 Objective of the study

The specific objective of this study is to use logit analysis to examine whether there is any significant difference of performance, risk, size, age and industrial grouping sectors between healthy companies and PN4 companies. A comparison of the above variables was carried out to find out whether they can be a good predictor of financial distress.

1.4 Significance of the study

The ability to anticipate financial distress and corporate bankruptcy is considered necessary to the users of financial statements especially to those who use them in their planning process such as managers, investors, creditors and auditors. This study will determine whether the factors of age, size, risk, performance and industrial sector could be used as indicators to financial distress in Malaysia.

A few studies on the prediction of financial distress have been conducted in Malaysian Market. Muhd. Sori et. al. (2002) have developed a model to determine financial distress by using Multivariate Discriminant Analysis. Other studies on bankruptcy prediction were conducted by Soo *et.al*. (2001) and also by A. Rahman S.A. (2001). Both studies employed logit model in developing the model. This study also employ logit analysis to examine factors that can be good predictors for financial distress. However, this study is different from the above studies in terms of different samples and variables used. Soo W.L *et. al.* used the companies that filed for court protection against creditors under Section 176 in the year 1998 as their sample while in this study, our sample for financial distressed companies comes from PN4 companies as of July 2002.

In addition, variables to be tested in this study are totally different from variables being tested by A.Rahman S.A (2001) and Soo W.L *et. al.* (2001). A.Rahman S.A (2001) used only cash flow variables namely cash flow / total asset, cash flow/total debt, cash flow/current liabilities and cash flow/ shares. In Soo W.L *et. al.* (2001) the variables of net income/total assets, sales/current assets, current assets/current liabilities, stockholders' equity/total liabilities, current assets/total assets, cash & marketable securities/total assets, log total assets, cash flow from operating activities/total liabilities, cash flow from investing activities/total liabilities, cash flow from financing activities/total liabilities, and change in net income were used as variables. However, this study focuses on different factors that may be good predictors of financial distress in Malaysia. Therefore, by looking at different factors from the previous studies, this study will add to new knowledge in the financial distress prediction study in Malaysia.

The findings would guide the policy-makers and financial institutions in formulating effective pre-emptive measures to mitigate corporate failures. It is also hoped that it would direct managers to take corrective measures and possible failure prevention in their own firm. Managers may use them to minimize the impact on their firm encountering the future financial difficulties. The difficulties could be avoided before it is too late. McBeth (1992) argues that financial distress research may help "in preventing a repeat of the dramatic corporate collapse of the 1980s".

This study would also be beneficial to investors and creditors as they could improve their performance if they can distinguish the trouble firms from the healthy ones. If investors or creditors were able to predict which company is on the path to financial distress or bankruptcy before anyone else, they would be able to liquidate the investment or obtain settlement of a debt. This would minimize the losses. Foster (1986) suggests that "the potential contribution of the financial distress analysis literature" to society "is substantial". Whereas, Lincoln (1987) points that research in financial distress is useful to lenders, security analysts, auditors and managers. Lenders may use the research findings to help reducing the losses from bad debts. These savings may be substantial. Meanwhile, Ferguson (1992) states that the financial distress literature might help lenders to better predict firms that will encounter financial difficulties, thus enabling them to reduce problem loans and resultant losses.

Financial analysts could also benefit from financial distress literature. Clark and Weinstein (1983) find that shares of bankrupt firm became worthless. Again better prediction may help reduce these losses. Besides this, financial distress literature may also help auditors in their going concern judgement hence reduce their litigation costs and damages payouts.

Lastly, since auditors need to identify the going concern of their clients' companies, they could use of this study to determine their clients' ability to continue their existence.

1.5 Structure of the report

The report is organized into five chapters as follows:

Chapter one: Introduction

This chapter discusses the financial distress and the KLSE Practice Note 4/2001 that lead to research objective.

Chapter two: Literature Review.

This chapter provides extensive literature on the previous researches undertaken relating to financial distress of the companies. Several models that were used by previous researchers in predicting financial distress are also explored in this study.

Chapter three: Research Methodology

This chapter describes the procedures used in performing this research. The sample selection and the statistical analysis carried out are also presented in this chapter.

Chapter four: Research Findings.

The empirical results of the study are discussed in this chapter. The findings are shown together with the tables and detail analysis so that the readers could easily follow the flow of the study.

Chapter five: Conclusions

This chapter presents the summary of this study and the concluding remark of the research findings. Some limitations of the study and the possible future research are also suggested in this chapter.