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Conference Title

Financial performance evaluation and bankruptcy prediction (failure)(*)

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ABSTRACT

Despite the copious number of statistical failure prediction models described in the literature, testing of whether such methodologies work in practice is lacking. This paper examines the performance of the same companies with solvency for predicting bankruptcy and comparison in both models. This model is suggested for measuring the values of financial performance (Al-Kassar and Soileau; 2012), and applying the financial failure model (Z-score) used by Taffler (1983). The data of six companies were examined for the period 1998-2011.

The methodology which used at empirical study includes measuring financial performance according to both models. Then both results have been shown in table (8). The correlations between their results for both models are shown highly relationship. They were tested by T-test. Therefore, they were classified and ranked the companies according to these values.

The research also demonstrates the need to include measures of both financial and non-financial performance in the evaluation as they complement each other. Without both financial and non-financial, the evaluation process is incomplete and does not provide desired results or the correct image of the process. The research suggests including comprehensive measures of performance evaluation of projects by using indicators of adopted criteria. Thus, the application of both models leads to better results and assists users in maintaining greater objectivity while obtaining more accurate results than from analysis based on personal evaluation alone.

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1. Introduction

Since the development of the Z-Score, financial innovation has paved the way for further development of corporate bankruptcy prediction models. The option pricing model developed by Black and Scholes in 1973 and Merton in 1974 provided the foundation upon which structural credit models were built. KMV (Kealhofer, McQuown and Vasicek), Now Part of Moody's Analytics Enterprise Risk Solutions, was the first to commercialize the structural bankruptcy prediction model in the late 1980s. Miller (2009) noted that "the Distance to Default is not an empirically created model, but rather a mathematical conclusion based on the assumption that a company will default on its financial obligations when its assets are worth less than its liabilities. It is also based on all of the assumptions of the Black-Scholes option pricing model, including for example, that asset returns are log-normally distributed".

There are many dimensions upon which to measure the performance of a credit scoring system, but the most relevant way to compare models with different sample sets is by measuring the models' ordinal ability to differentiate between companies that are most likely to go bankrupt from those that are least likely to go bankrupt (Bemmann, 2005).

Many governments are interested in establishing investment projects because of the importance of the role government play in the efforts to build a stable economic base. This is reflected in many developing countries which are looking for opportunities to improve their political, economical, social and cultural aspects. Generally, projects need a lot of money and resources to finance them. Therefore, finding and using the best method to control these investments and resources to achieve development objectives in different fields and avoid insolvency is of great importance. Gerdin (2005), states that Management Accounting Systems (MAS) can be considered as "those parts of the formalized information system used by organizations to influence the behavior of their managers that leads to the attainment of organizational objectives". Managers in some organizational contexts are likely to benefit from accounting information that is detailed and issued frequently, whereas MAS information in other contexts tends to be general rather than detailed, and issued less frequently (Gerdin, 2005).

The empirical literature reviewed by Chenhall (2006), for example, indicates that non-financial performance measures are more widely adopted in just in time (JIT) and total quality management (TQM) settings. Other studies like Abdel-Kader and Luther (2008), have highlighted the need for additional research to increase our understanding of organizational and environmental factors that explain the development of management accounting systems, including the use of non-financial measures. Accounting information plays an important role in individual and corporate decision making. In particular, a fundamental use of accounting information is to help different parties make an effective decision concerning their investment portfolios. Much of the accounting literature assumes that accounting and financial reporting in a country is a function of its environment (Belkaoui and AlNajjar, 2006). The management accounting literature reveals that changes in the environment and the technology of a company can lead to new decision making and control problems (Abdel-Maksoud et al., 2010).

1.1. Research objectives

1. To apply a model created by Al-Kassar and Soileau (2012), this can measure the financial performance of the companies mathematically.
2. To apply Taffler's model (1983) namely Z-score to measure financial failure(solvency) of the same companies, and,
3. To see whether there is correlation between the above results for each company, through testing the values by t-test, and classify and rank them accordingly.

1.2. Research problems

The research problem focuses on the following:

1. To investigate the correlation between values of financial performance and failure from each model.
2. In order to avoid personal intervention during the evaluation process and to use objectively steps to evaluate all companies by carrying on the comprehensive performance evaluation to companies by using indicators and criteria adopted.

1.3. Research scope and methodology

The research paper will cover both theoretical and empirical materials. The theoretical side includes defining of financial performance, criteria, factor analysis and Taffler's model. While, the empirical side includes the studying of financial performance values, financial failure values (company solvency), testing and correlation, and rank and classify the companies. Different materials, articles, reports, and sites have been used to assist the research paper. Thus the proposed paper attempts:

1. To measure of financial performance values according to suggest model.
2. To measure financial failure values according to Taffler's model.
3. To test the above values.
4. To classify and rank the companies.

1.4. Population of the study

The data for six companies have been used in both models. These companies 1, 2, and 3, related to a Mill, Transportation, and Heritage and Museums company respectively. The remaining three, companies 4, 5, and 6 are for commercial oil companies (petrol stations). The period of the study is between the years 1998-2011.

The paper is organized as follows: the next section provides a review of literature and previous studies. Section three begins with the types of performance evaluation indicators and criteria in both financial and non-financial groups as internal and external indicators. Section four presents financial performance formula, computation of financial performance, the mathematical model and empirical study of six companies. Section five presents the measuring of financial failure (solvency). Section six presents the testing of the values of the models. Finally, section seven provides findings.

2. Literature Review Previous studies

Many studies have been carried out in measuring company performance and the likelihood of business failure according to various factors.