

Analysis of Business Distress Prediction:-

Abstract:-

Accurate business failure prediction model would be extremely valuable to many industrial sectors, particularly in financial investment and lending. The potential value of such model has been recently emphasized by the extremely costly failure of high profile businesses in India & Overseas., such as Satyam(India) and Enron (USA). Consequently there has been a significant increase in interest in business failure prediction from both industries and academia.

Introduction:-

Many objectives have been imputed to the corporate entity but perhaps the most important is that of survival. To survive, a firm needs to be profitable and financially sound. The consequences of failure are experienced by Shareholders, Employees, financial institutions, Suppliers and customers. In all economies, business failure is a reality of commercial life. The Failure Phenomenon has encouraged researchers to focus on developing models to predict corporate failure. This article briefly reviews the theoretical understanding in the prediction of corporate failure and then goes on to describe a number of univariate & multivariate predictor models and survival analysis.

Causes of Corporate Failure:-

Company failure is an enigma in that quite often it comes as a major shock to Shareholders, Bankers and the financial community. There are many theories which attempt to explain the reasons for failure. Argenti (1976), after analyzing the factors associated with the collapse of Rolls Royce, gave six causes of failure which are as follows:

- Bad management structure
- Lack of accountancy information
- Not responding appropriately to change
- Over trading
- Involvement with a big project
- High gearing

Altman (1968) on the basis of his research into failure in the United States list two principal causes of failure being either *incompetence or lack of experience*. Ross and Kami (1973) after an extensive analysis of a large number of American companies, both successful and unsuccessful came up with a list of ten basic principles of management which if followed, should avoid failure. The ten principals are as follows:

1. Develop and communicate a strategy... a unified sense of direction to which all members of the organization can relate.
2. If you want to achieve plans, programs and policies, then overall controls and cost controls must be established.
3. Exercise care in the selection of a Board of Directors and require that they actively participate in management.
4. Avoid one man rule.
5. Provide management depth.
6. Keep informed of change and react to change.
7. Don't overlook the customer and the customer news power.
8. Use but don't misuse computer.
9. Do not engage in accounting manipulation.
10. Provide for an organizational structure that meets the needs of the people.

What is clear from all the studies is that the blame for failure lies squarely with the management which of course includes the Board of Directors.

From a financial perspective, Accountants should exercise care that they do not unwittingly mask any symptoms of failure with accounting reports which are wildly optimistic. Frequently we find that the Audited Accounts of an entity do not give a clear signal to the market of impending financial distress. *Recent corporate failures around the globe have highlighted the inadequacy of the audit report as a guarantee of the concept of the "true and fair" views of published accounts. This situation has given rise to what has been termed the "Expectation Gap".*

Univariate Prediction of failure:-

Research on univariate predictors (single ratio) of business failure commenced in the early half of the twentieth century. The research was focused on selecting one financial ratio which can be applied to financial statements to reliably predict the propensity of failure. Fitzpatrick (1974) examined companies that failed in the 1920s and found the best ratio to be NET PROFIT: NET WORTH. Smith (1974) came up with WORKING CAPITAL : TOTAL ASSETS as the best predictor while Merwin (1974) also found Smith's ratio to be the best. The most influential piece of research on univariate predictors was carried out by Beaver (1966) who tested group of ratios covering cash flow, net income, gearing, liquidity and turnover. His research indicated that CASH FLOW : TOTAL DEBT was the best predictor. In a later study Beaver carried out a more detailed analysis of the liquidity ratios and their potential as predictors of business failure.

On the basis of his study, he made the following generalization about failing firms:

1. They generate less sales and the sales growth is less than that of non failed firms.
2. They have less current assets but more current debts.
3. They have fewer inventories than non-failed firms.

His data showed that the NET WORKING CAPITAL AND QUICK ASSETS ratios predicted better than the CURRENT ASSETS ratio. The CASH RATIO predicted best of

all. Some researchers claim that a single ratio is not sufficiently reliable to be used as a failure predictor. Consequently, researcher turned their attention to Multivariate predictor models.

Multivariate Predictors of Failure:-

The first multivariate predictor model constructed was that of Altman(1968). He used linear multiple discriminate analysis to develop a five variable model of the form:-

$$Z = .012X_1 + .014X_2 + .033X_3 + .006X_4 + .999X_5$$

Where X_1 = Working Capital/ Total Assets

X_2 = Retained earnings/ Total Assets

X_3 = Earning Before Interest/ Total Assets

X_4 = Market value Of Equity/ book Value of total debts

X_5 = Sales/ Total Assets.

Altman gave a working rule for the cut-off point of the Z score as follows

- Z score less than 1.81 indicates definite failure
- Z score of more than 2.99 indicates definite non failure.
- Z score between 1.81 and 2.99 is the gray area and suggest the cutoff point of 2.675 to minimize error.

The predictive accuracy of the model ranged from 95% for one year prior to failure to 36% for five years prior to failure.

Survival Analysis:-

These techniques used to analyze the time till a certain event. Thus this approach is fundamentally different from the above mention approaches. It used two function to analyze the survival of business $S(t)$ and $h(t)$.

$S(t)$:- it's a survival function which represent the probability that a business will survive post a certain time t .

$h(t)$:- it's a hazard function which represent the instantaneous rate of failure at a certain time t .

Value of $h(t)$ as per regression method = $g(t, X^T\beta)$

where $h(t)$ = Transpose of X

g = Arbitrary function

β = Covariates

Value of $S(t) = 1 - h(t)$

Commentary on the Model:

Altman's model has established itself as the leading multivariate predictor model of corporate failure and it has been the subject of numerous tests around the world. Other researches have used Altman's methodology to construct multivariate predictor models. It would be use full to employ the Altman model in evaluating Indian firms and endeavor to establish the reliability of the model. It could be that cut off point for the Z score should be altered from that established in the original study.

Conclusions:-

Companies fail because they lack good management and have inadequate planning and accounting information system. Accounting plays a crucial role in the composition of the management information system. The size of the company is no guarantee that proper and timely information will be available and used properly.

This article has briefly explored the causes of corporate failure and has reviewed a number of predictor models. It is recommended that some of these models be used to analyze the performance of Indian firms. In this way the reliability of the models can be established over time and their usefulness can be established. Predictor's models should always be used with caution. They are best viewed as aids in providing early warning signals to put decision makers on the alert.

References

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