Review of Corporate Governance Practices and Financial Distress Prediction

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Abstract

Good corporate governance practices play an import role in increasing the firm value. Based on the agency theory related to corporate governance, if an agent (management) does not protect interest of principal (shareholders) then, agency cost is occurred and this creates a bad impact on the corporate performance. Therefore, it is necessary to address weak corporate governance practices in early stages otherwise firms can go in financial distress and eventually become bankrupt. The objective of this current study is to conduct a nonsystematic review of literature on theories and models related to corporate governance and financial distress. In the light of thorough review of literature, it is found that corporate governance variables (i.e. ownership concentration, board size, board composition, CEO duality, level of independence of board from management and managerial ownership) are good predictors for predicting financial distress. Moreover, it is also found that these corporate governance variables were not only used separately for predicting financial distress but also used along with others variables (firm level and country level) for the purpose of enhancing quality of financial distress models.

Keywords: Corporate Governance, Nonsystematic Review, Financial Distress, Agency Theory.

1. Introduction

The issue of corporate financial distress has always been point of focus for researchers. When companies do not take necessary actions at initial stage of financial distress then it may leads to wards bankruptcy. For this reason, both financial distress and bankruptcy studies are used interchangeability. Financial distress including bankruptcy, suspension of securities and delisting which cause serious financial and social problems. Financial distress prediction is always challenging for researchers. In this regards extensive literature is available on distress prediction. Early studies are carried out by Beaver (1-2). Later on, many researchers continued research and incorporated new variables and applied new statistical tools for getting a better predictive ability (3-10). Chronology of some key research is mentioned in figure 1.1

Corporate governance includes mechanism, process and relationship by which corporations are controlled and directed. According to Butt (11), trust between lenders and investors is built on the principals of corporate governance. In the light of agency theory, corporate governance is linked with existence of agency problem and its roots can be traced back to separation of ownership and control of firm. In early studies of prediction financial distress, researchers used only accounting and economic variables as predictors. However in Chaganti et al. (12) used first time non-financial variable like corporate governance. Since 1980s, there is a large body of literature available that point out the importance of corporate governance and financial distress (12-19).

2. Theories in Perspective of Financial Distress and Corporate Governance

Many empirical studies were carried out for default prediction, but could not successful to determine any established theory related to financial distress. However, financial distress and its implication faced the fundamental question of defining distress. In this regard as pioneers (1-2, 4) developed their own accounting based models to predict financial distress. Another school of thought is based on market information. Merton (20) developed a predictive model based on market data. Different models have their different aspects for measure and predict financial distress. They share the fact that bad financial performance and high leverage may increase financial distress. This study includes different theories in perspective of financial distress, some of them are available in finance literature which is discussed in specific and some theories of corporate governance and business sustainability are discussed in general.

2.1 Static Trade-off Theory

In order to understand financial distress, one should understand the capital structure choices. To determine the optimal capital structure, it has always been challenging for researchers. In this regard, this issue has been widely discussed in finance literature since Modigliani (21). According to the static trade-off theory, interest is tax deductible so firms can increase debt in their capital structure for getting tax shield benefits. As the firms increase their debt utilization the value of firms is increased due to tax shield benefits. This debt utilization is suitable up to certain level but beyond certain level of debt, firms can face financial distress.

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Trade-off theory suggests that firm should tradeoff between tax benefits and cost of financial distress. Many business people agree that moderate borrowing saves taxes and excess leverage can lead to financial distress. However, some empirical evidence weak the theory e.g. Kester (22) found that return on assets is most sig-
nificant variable for setting debt ratio. Moreover, researcher ar-
gues that if the firm earns higher profit, then no matter how much
firm is taking debts.

2.2 Signaling Theory
Financial distress and probability of default is an important aspect
of signaling theory. According to this theory, when firm adopts
aggressive borrowing strategy then positive signal prevails in
market. Investors perceive that firm’s management is confident
that can generate sufficient cash flows to meet current and futures
obligations. Signaling theory was proposed by Ross (23). this
theory is based on asymmetric information between management
and investors. Theory is true only when management invests funds
efficiently, but adverse situation may leads to financial distress
and its related bankruptcy costs. Moreover, when firm faces finan-
cial distress then conflict may rise between shareholders and
creditors. Normally when firms are in good health then creditors
do not show serious concerns with management decision. Howev-
er, firms take excessive borrowing only when there is lower level
of bankruptcy costs.

2.3 Agency Theory
Agency theory is a supposition that explain the relationship be-
tween principal and agent and also explains that how to best or-
ganize relationship through which shareholders (principal) evalu-
ates the work of management (agent). The theory argues that under
the condition of asymmetric information, agency problem is
raised. Moral hazard is an example of such problem. Moral hazard
can occur when management (agent) has more information than
principal (shareholders). Theory of firm was proposed by Jensen
(24) this theory based upon conflict of interest between different
parties e.g. shareholders, managers and creditors. Agency prob-
lems may arise in result of separation of capital providers (share
holders and lenders) and company management. The fundamental
objective of agency theory is to minimize the agency problem and
cost associated with it. Due to asymmetric information managers
are well informed about company’s growth so they can increase
debt in capital structure (25). Agency theory and corporate gover-
ance both are designed to address the problems and costs resulting
from agency conflict. Scope of agency problem and mechanism of
corporate governance is different from one firm, industry or cul-
ture to another.

2.4 Stewardship Theory
Stewardship theory is based on socialology, psychology and views
management as considering the long-term interest of a variety of
stakeholders rather than its own self-interested short-term oppor-
tunistic behavior. Stewardship is defined by Hernandez (26) “the
extent to which an individual (management) willingly subjugates
his or her personal interest to act in protection of other’s (stake-
holders) long term welfare”. This theory is very relevant to the
emerging corporate sustainability. For the purpose of protecting
interest of all stakeholders, this theory requires management to
exercise due diligence and stands accountable for improving fi-
nancial and non-financial indicators but management is not guided
that how these indicators can be improved. As far as financial
indicators of firm are concerns, this study includes financial sus-
tainability as financial indicator and corporate governance as non-
financial indicators.

2.5 Stakeholder Theory
Stakeholders of firm can be classified into two categories internal
stakeholders (shareholders, Managers and employees) and external
stakeholders (suppliers, lenders, creditors, customers, government
agencies and society). Hannan (27) proposed stakeholder theory.
According to this theory, form view of shareholders firm should
work for profit maximization and stakeholders are not only
stakeholder, interest of others stakeholders should be addressed
and protected. Stakeholder theory is a theory of management and
business ethics.

Financial sustainability is a common aspect of both shareholder
theory and stakeholder theory. In context of shareholder wealth
maximization, non-financial sustainability activities (environmental,
social and governance) can create conflict. So In this regard
stakeholder theory proposes that firm should also invest in envi-
ronmental and social activities (28).

3. Models for Predicting Financial Distress
According to Aziz (29), there are three main types of default pre-
diction studies based on employed models. These are: (a) the sta-
tistical models (b) the theoretical models and (c) the artificial in
telligence models. These models are comparable with each other
in term of their predictive quality. Statistical models are univariate
or multivariate in nature and they focus on symptom of default,
while information is normally taken from business accounts. The-
oretical models are different from statistical models because they
focus of qualitative side of default reasoning more over these
models are multivariate and apply a statistical technique in order
to provide qualitative support to the theoretical support. Finally,
artificial intelligence models are based on computer technology
and machine learning. These models are usually multivariate in
nature and use information from business accounts.

3.1 The Statistical Models
Statistical models were used in earliest studies of default predic-
tion. Initially studies were carried out by using univariate analysis.
Later on researchers used multivariate techniques for improving
prediction accuracy. FitzPatrick (30) was first researcher who used
traditional financial ratio on paired sample of default and non-
default firms. Later on Beaver (1) did comprehensive study of dis-
criminatory power of financial ratio, which helps for detection
of default and non-default firms. The main characteristics of this
univariate and it addresses only individual signal of firms’ forth-
coming bankruptcy. so classification can take place for only one
ratio at a time.

Univariate model is simple to use as involves single financial ratio
as a single predictor of failure. at the same time this feature be-
comes its back draw because this model may give confusing and
contradictive classification results for different financial ratios of
same firm. For example classifying a company with poor profita-
bility and above average liquidity would be very confusing (31).
To understand financial status of a firm is not an easy task and it
cannot be explain by using single financial ratio, so it is necessary
to incorporate other financial ratios for understanding the financial
situation in best manners (32).

In order to solve the problem, Altman used multiple discriminant
analysis (MDA). This statistical technique is usually used to clas-
sify an observation into many groups based their individual charac-
teristics. Main advantage of MDA technique is dealing with
classification problems is simultaneously analyzing its whole var-
able profile (2). Sample of 66 manufacturing firm divided equally
into bankrupt and non-bankrupt groups, both groups data was
collected from 1946 to 1965. The average asset size of these firms
was USD 6.4 million. After finalized sample 22 potential financial
ratios were evaluated, these ratios were categorized into five dif-
ferent types named profitability, liquidity, solvency, leverage and
activity. The final multiple discriminant as used to predict bankruptcy by Altman (2).

\[ Z = 0.12 \times X_1 + 0.14 \times X_2 + 0.033 \times X_3 + 0.006 \times X_4 + 0.999 \times X_5 \]

Where

\( X_1 = \) working capital / total assets ratio, \( X_2 = \) retained earnings / total assets ratio, \( X_3 = \) earnings before interest and taxes / total assets ratio, \( X_4 = \) market value of equity / book value of total debt ratio, \( X_5 = \) sale / total asset ratio and \( Z = \) index (Z score)

Altman’s Z score model provided bankruptcy prediction before two years of occurrence of bankruptcy or financial failure. There were three types of zone discussed in Altman’s study first if Z score greater than 2.99 then it is treated as safe zone or non-bankruptcy zone. If Z score between 1.81 and 2.99 is the zone of ignorance and lastly if Z score below 1.81 then is treated as danger or bankruptcy zone. Although discriminant analysis is widely used, but there are some disadvantages associated with its assumptions. Multivariate discriminant analysis (MDA) requires three assumptions. First independent variables in this model must be multivariate and normally distributed. Its classification is sensitive to the date when distribution of data is not normally distributed (33) but practically this assumption is normally ignored which may cause a major bias (34-36). Second assumption is about variance-covariance matrices, these matrices should be equal in failing and non-failing groups. Last assumption is that the prior probability default and the mis-classification of failed and non-failed firms. Logit analysis is another statistical technique that is used by many researchers to predict default and bankruptcy. Ohlson (4) introduced logit technique using firm-specific indicators. He noted that analytical power of any model depends on availability of information (financial ratio).

Ohlson used sample of 2058 non-bankrupt and 105 bankrupts firm and data was collected from 1970 to 1976. He incorporated nine independent variables in his model are \( X_1 = \) log of total assets (SIZE), \( X_2 = \) total liabilities / total assets (TLTA), \( X_3 = \) working capital / total assets (WCTA), \( X_4 = \) current liabilities / current assets (CLCA), \( X_5 = 1 \) if total liabilities > total assets, 0 otherwise (OENAG), \( X_6 = \) net income / total assets (NITA), \( X_7 = \) funds provided by operations divided by total liabilities (FUTL), \( X_8 = 1 \) if net income was negative for last two years.Ohlson model could predict of bankruptcy before one and two years before event its accuracy is 96.1% and 95.5% respectively. According to Javid and Iqbal (37), Yu and Zhou, (2008) logit regression model is better than artificial neural network (ANN) in term of predictive ability.

### 3.2 Theoretical Models

Balance sheet decomposition measure and cash management theory are commonly used as theoretical models for default prediction. Firms generally attempt to maintain their balanced capital structure, in this regards balance sheet decomposition measures variation in balance sheet structure. Moreover these models address the change in capital structure but not considering the direction of change therefore these models should focus on the reason behind this change that change in capital structure is either due to company growth or company default. Consistent with this limitation, Moyer (38) argued that such decomposition measures are not appropriate predictors for financial distress. Cash flow theory states that major concern of all firms is to manage cash on short term basis. Although cash management theories explain well the reasons of default prediction but other than these measures, there are many other factors that might be good predictors for financial distress (29). In addition, theoretical models had been used in less number as compare to statistical and artificial intelligence models (39-40)

### 3.3 Artificial Intelligence Models

Artificial intelligence models are based on computer knowledge and machine technology. These models include different techniques such as recursive partitioning (6), neural network (41) rough sets (7) and support vector machines (42). These techniques were applied on cross sectional-data. Recursive partitioning (RP) technique is also known as decision tree (DT). Frydman et al. (6) first time used this techniques for predicting financial distress topic. Later on many researchers applied this technique e.g. (43-46). It is very famous technique for classification and prediction as compare to some statistical and data mining techniques, the main attraction of DT is that it represents rules of classification in such a form that human can easily understand even these rules can be easily applied on date in raw form (47-48)

Artificial Intelligence Networks (ANN) is another type of artificial intelligence technique which is computer program that imitate human brain function and learning process (49). First time this technique was applied in early 1990 for corporate default prediction then application of this technique got fame and currently some commercial loan are based on neural network models. Key advantage of neural network (NN) models is their flexibility to the data characteristics. These models can also deal with non-linear functions and complex pattern, moreover these models require no assumptions like MDA and they have ability to deal with missing or incomplete data (50). In machine learning, support vector machines (SVM) are supervised learning models with associated learning algorithms that analyze data for classifying distressed companies vs. solvent companies. In recent years some studies applied the support vector machine (SVM) to predict financial distress (51-52).

### 4. Conclusion

Early studies of financial distress were focusing only on financial and accounting information, as (1-2, 4) used only financial ratios. However, several researchers argue that financial data alone do not provide better predictive quality of financial distress. Therefore it is necessary to add variables related to corporate governance for building better models (8, 15, 53). Corporate governance is a growing area of management studies, especially for developing economies. Corporate governance practices/ mechanism has been become a focus point for researchers. There are many variables can be used for measuring corporate governance in any organization. Corporate governance consists of two major aspects 1) Ownership Structure; and 2) Board Structure. On the basis of literature most important measures of corporate governance are ownership concentration, institutional ownership, managerial ownership board size, No. of independent directors and CEO/Chairman duality.

### References


