

Relationship between Corporate Governance and Financial Distress: An Empirical Study of Distressed Companies in China

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Because of the effects of the internal and external environment on companies, it is argued that the way in which a company governs itself should make a difference to its susceptibility to financial distress. It is argued that companies with appropriate corporate governance should be less likely to suffer from the costs of financial distress than companies whose governance is inappropriate. Within this framework, we examined the relationships between selected aspects of corporate governance and the indirect costs of financial distress, using panel data of 193 financially distressed listed companies in China from 2000 to 2006. We find that ownership balancing at the governance level reduced the indirect costs of financial distress, while each of the following three aspects of corporate governance--the proportion of the company's shares that were held by the state, the percentage of independent directors on the board, and the proportion of total costs that were overhead costs--increased the indirect costs of financial distress. The results suggest that companies benefit from better corporate governance and that such improvements can help the companies to become financially healthy.

1. Introduction

It is common for companies to experience financial distress before and after running smoothly. Financial distress is usually regarded as the embarrassing situation of not being able to pay mature debts or expenses, which involves liquidity problems, insufficiency of equity, default debts and lack of current assets. Financial distress is the cost of falling into financial distress and some opportunity losses, and it can be easily divided into direct costs and indirect costs. Direct costs of financial distress include the diminishing of assets caused by quarrels between owners and creditors, the fees for lawyers, legal costs and other administrative costs. Indirect costs refer to the potential losses due to bankruptcy, which include decreasing clients or increasing costs caused by financial distress, and the decreasing of company's value caused by managers' actions to protect themselves. Some scholars (Branch, 2002) also regard the losses of creditors and stakeholders as indirect costs, as well as part of companies' losses.

Recent studies on financial distress have been concerned with the prediction of distress and calculation of indirect costs, but there has been little analysis of the factors and mechanisms involved, nor of the influence of corporate governance characteristics on indirect costs. Theoretically, good corporate governance should effectively prevent financial distress, and also be able to get rid of bankruptcy. However, the internal and external environment may change a lot due to financial distress, so some corporate

governance characteristics may have a positive effect on value when the firm is healthy and opposite effects when the firm is distressed. Especially in China, some characteristics like having an unbalanced shareholder structure, governmental interference and insider control, constitute significant 'opposite' influences. This paper will analyze the relationship between corporate governance characteristics and the indirect costs of financial distress of 193 listed companies in 2000–2006.

2. A Review of the Literature

In the study of the costs of financial distress, we should clarify the idea of financial distress first. However, there has not been an agreed definition until now. For example, Beaver (1966) defines bankruptcy, default preferred dividends and default debts as financial distress. Deakin (1972) believes companies with financial distress should only include those who have already been bankrupt, debt insolvent, or have made to liquidate for the creditors. It is difficult to give a clear definition of financial distress; with different classifications influencing how it is measured. It is common to measure financial distress from two aspects: operating performance and market value of equity. The former measures the company's operating loss from the firm's perspective, and the latter measures the loss of equity value, from the investors' perspective. Altman (1984) applied the operating performance model, attempting to estimate the indirect costs based on the unexpected loss of profits for the 3 years prior to bankruptcy. His analysis implies indirect costs of 4.5% for retail and 10.5% for industrial firms, but it fails to distinguish the influence of adverse economic shock. Actually, it is difficult to tell whether the loss in profits is in fact caused by financial distress or whether financial distress is caused by the loss in profits. Andrade & Kaplall (1998) applied both the model of operating performance and equity's value, measuring the indirect costs by the percentage change in operating margins, capital expenditure margins and net cash flow margins. They examined the impact of financial distress on operating income for 31 highly leveraged transactions. These results suggest the indirect financial distress costs may be in the range of 10–17% although they argue that these numbers could be biased upward. In addition, Opler & Titman (1994) reported that highly leveraged firms in financial distress tend to lose substantial market share; Chen & Merville (1999) found that the firms from healthy to distressed, experienced an average annual market value decline of 8.3% of their total assets. The existing literature suggests that the average indirect costs of financial distress are substantial.

Many scholars have already made empirical analyses of the correlation between corporate governance characteristics and the probability of financial distress. Chaganti (1985) found a low probability of bankruptcy of those companies with large scale of board of directors. Daily & Dalton (1994) found that firms with CEO duality and lower proportion of independent directors are more likely to go bankruptcy. Elloumi & Gueyie (2001) found that firms with blockholder and larger proportion of outside directors have less entry to financial distress. All these studies focus on the correlation of corporate governance characteristics and the likelihood of falling into financial distress, instead of the relationship with the indirect costs. According to the theory

of financial early warning, the former relationship lies in the normal operating phase, focusing on predicting and preventing financial distress, while the latter deals with the status of financial distress, focusing on decreasing and getting out financial distress. Of course, both are related, since the latter is caused by the former. It seems that corporate governance characteristics have different effects before and after financial distress. For example, Sudarsanam (2001) found that managers of non-recovery firms engage more intensively in strategy implementation than do those in recovery firms. Parker et al. (2002) found distressed firms with blockholders and a high proportion of insiders' share reveal strong capability of conquering the failure and carrying through. None of these studies have examined the influence of corporate governance on the indirect costs of financial distress, as well as to the firm's value.

3. Research Design

3.1. Measuring financial distress costs

Financial distress is a sustaining and dynamic process, with firms going bankrupt or getting out. As we said, the direct costs of financial distress occur ex post facto, including legal fees, accounting and management expenses related to liquidation or recomposition; while indirect costs occur in advance, referring to the harm to the company's operating capability caused by financial distress. This paper focuses on the latter, i.e. the influence of corporate governance characteristics on the operating capability of distressed companies.

We argue that the difference between operating performance and equity market value between normal operating periods and distressed periods that indicates whether there is financial distress costs and how much it is. According to the operating performance model, this paper uses PER (percentage of EBITDA to net sales revenue, EBITDA or earnings before interest, tax, depreciation and amortization) to indicate operating performance, as this ratio reflects capability, and effectively avoids the earning management of distressed companies. We use the average PER in the industry to eliminate the influence of adverse economic shocks. Thus, financial distress costs in the operating performance model can be expressed as:

$$FDC_1 = (PER_0 - PER_t) / APER_{t,i} \tag{1}$$

Where PER_0 is percentage of EBITDA to net sales revenue one year before financial distress, $APER_{t,i}$ is the average PER in the industry i during the year t . According to the market value equity model, financial distress costs are measured by the change of MVE (market value of equity) caused by the distress. Considering the influence of time on the value of money, we need to discount MVE in distressed years. The discount rate k is bank's weighted average (measured by days) costs of credit rate in 1-3 years which begins from one year before the distress. Thus, the financial distress costs in market value can be expressed as:

$$FDC_2 = \frac{MVE_0 - MVE_t / (1 + k)^t}{MVE_0} \tag{2}$$

Where MVE_0 stands for market value of equity one year before the distress, and n is the number of year of company's financial distress.

3.2. Research Hypotheses

(1) Ownership Structure

It is common to depict ownership structure by *ownership concentration* and *ownership balance*. Ownership concentration reflects the level of concentration among several major shareholders, while ownership balance degree reflects the relative strength of these major shareholders. Shleifer et al. (1986) argue that a small number of large shareholders with high ownership concentration can effectively get managers to increase firm value. However, La Porta et al. (1999) argue that ownership concentration decreases firm value because it leads to "tunnel" action by large shareholders who invade minor shareholders' interests, while having more outside shareholders prevents it from happening. We argue that these theories only apply for those companies operating normally, not for those with financial distress. On one hand, distressed companies' major shareholders improve supervision, with the aim of eliminating distress as soon as possible. They typically focus on improving operating performance with the help of minor shareholders, though minor shareholders might disappear simply by "voting with their feet". On the other hand, high ownership balancing degree will lead lower decision efficiency because of quarreling among directors. China's listed companies are mostly reformed and reorganized old state-owned companies, thus the state is often the single-largest-shareholder. The country might support those state-controlled companies by economic and political methods. Therefore, we hypothesize H_1 : Financial distress costs are positively related to ownership balance, the extent of outside shareholders, and negatively related to ownership concentration.

(2) Board Structure

This paper examines board structure through *CEO/chairman duality*, *the proportion of managers' shares* and *the proportion of independent directors*. In Stewardship Theory, the function of the board of directors is not only to supervise the CEO, but also to provide a consultant service. With their professionalism and social relations, directors can obtain information that managers do not have. That the CEO also serves as the chairman of the board could make leadership clear and consistent, and avoid conflicts between leaders. Obviously, this is very important for a company in financial distress. According to Organisation Theory, the improvement of a company's performance is closely related to collaboration among top managers. Providing managers with shares will connect the company's interest with their own, which encourages them to make joint efforts to alleviate distress. Independent directors who are financial and accounting experts can also play very important roles in decision making. Their supervision of executive directors and managers can prevent companies from falling into financial distress, as well as getting rid of it. Therefore, we hypothesize H_2 : Financial distress costs are negatively related to CEO/chairman duality, the proportion of managers' shares and the proportion of independent directors' shares.

(3) Agency Problem

According to the Agency Theory of Jensen and Meckling (1976), the separation of ownership and control typically increases agency costs, as well as the non-pecuniary compensation of managers. Managers in financial distressed companies may not work actively to improve the operating performance and company's value; on the contrary, they deplete shareholders' wealth deeply. Based on Agency Theory, Jensen explains how managers in distressed companies react to profits: There is always a large amount of mature debt and little free cash flow in these companies, thus managers have less opportunity to waste firm assets. In this paper, we measure agency cost by the *percentage of overhead costs to net sales revenue*. Overhead costs are incurred during the process of managing and organizing; these include luxury cars, parties, traveling, first-class office supplies and entertainments. We also use *financial fraud* as another variable, since managers often have the incentive to be dishonest. There are many types of fraud, for example, false disclosure of periodic report, delay of disclosure, incompleteness of disclosure, violation of operating laws, illegal actions of managers, illegal collaterals, etc. Therefore, we hypothesize H_3 : Financial distress costs are negatively related to the percentage of overhead costs and positively related to fraud.

3.3. Sample and data

The samples in the paper consist of China's listed companies that have been in financial distress during the period of 2000–2006. Distressed companies were all those which had shown negative net profit for over four years. The following companies were excluded: (1) financial companies; (2) companies which are engaged in several separated industries; (3) companies listed before 2002 and in distress for the past 3 years; and (4) companies whose debt ratio is greater than 100%. We were left with 193 listed companies, whose average period of financial distress was 4.18 years. Their industries and their first year of distress are listed in table 1. We applied the classification of industries of the China Securities Regulatory Commission to data obtained from CCER (China Center for Economic Research) database; some of the missing data were obtained from website www.cninfo.com.cn.

3.4. Variables and Modeling

In this paper, the dependent variables are FDC_1 and FDC_2 , which are measured by operating performance and value of equity respectively, The calculations are listed above in formulae (1) and (2). Independent variables are *ownership concentration*, *ownership balancing degree*, *proportion of state-owned shares*, *CEO/chairman duality*, *proportion of managers' shares*, *proportion of independent directors*, *percentage of overhead costs*, and *financial fraud*, as explained in table 2. Meanwhile, we have two controlling variables: *firm size* and *Asset-liability ratio*. As we know, large companies are less likely to be in financial distress, and different industries have quite different debt ratios. Therefore, we construct the following multivariable model:

$$FDC_{1,2} = \alpha_0 + \alpha_{1-8} \times X_{1-8} + \alpha_9 \times SIZE + \alpha_{10} \times ALR + \varepsilon \quad (3)$$

4. Analysis of empirical results

The means, medians and correlation coefficients are listed in table 3. Few correlation coefficients are greater than 0.3; most of them are between -0.1 and 0.1. From the second column of table 4, we find variance inflation factors that are less than 1.1, thus no multi-collinearity problem exists. As we used panel data instead of time series, there is little chance of serial correlation. In table 4, Durbin-Watson values are 0.845 and 1.241 respectively, indicating there is no autocorrelation in the large sample. White’s general test of hetero-scedasticity gave a probability of around 0.002 in no-crossing term tests, which indicates there is little hetero-scedasticity. Because of these results the model was modified using the Newey-West heteroscedasticity autocorrelation consistent covariance method.

Table 1 Sample distribution of companies in financial distress

Industry	Samples	Industry	Samples
Agriculture, forest and fishery (A)	7	Other manufacturing business (C ₉)	2
Mining (B)	1	Power, coal and gas (D)	1
Food and beverage (C ₀)	9	Construction (E)	3
Weaving and rag trade (C ₁)	9	Traffic and storage (F)	5
Paper making and printing (C ₃)	10	Information technology (G)	16
Petrochemistry and plastic (C ₄)	21	Wholesale and retails (H)	18
Electronics (C ₅)	5	Real estate (J)	7
Metal and nonmetal (C ₆)	11	Service (K)	6
Mechanical equipments (C ₇)	30	Culture propagation (L)	5
Medicine and biology (C ₈)	10	Comprehensive (M)	17
First year of financial distress	Samples	First year of financial distress	Samples
1995	8	2000	16
1996	9	2001	30
1997	12	2002	26
1998	23	2003	22
1999	17	2004	30

The regression results are given in table 4. The multiple coefficients of determination (R^2) are 0.157 and 0.409, respectively, and the F-statistics in analysis of variance are 13.588 and 25.845. The accompanied probabilities are both 0.000, indicating the overall significance of two models. In terms of signs, sizes and significance of variables, the two models have great similarity, suggesting there is little difference between the operating performance and equity value models.

In table 4, ownership balance is significantly positively related to financial distress costs, which suggests that the balance in ownership has different effects on different companies, in terms of financial health and financial distress. Most of the results suggest that highly balanced ownership reduces the disadvantage resulting from having a single-largest-shareholder and control by insider persons. It could prevent healthy firms from suffering distress. In the opposite direction when a company is already in distress, balanced ownership can limit large shareholders from 'helping' out. The proportion of state-owned shares was negatively related to financial distress costs, but not significantly. This points to active actions by the majority shareholder, but the reason for insignificant results may lie in the rent seeking brought by political interferences and personnel appointments. Ownership concentration was negatively related to financial distress costs, suggesting it can sometimes save firms from financial distress.

Table 2 Definition of Independent variables and controlling variables

Shareholder structure	X_1	<i>Ownership concentration (%)</i>	Shares of the top five holders / total shares \times 100%
	X_2	<i>Ownership balancing degree</i>	The shares of holders with share amount from the second biggest to the tenth / shares of the biggest holders
	X_3	<i>Proportion of state-owned shares (%)</i>	Shares owned by the state / total shares \times 100%
Board structure	X_4	<i>CEO/chairman duality</i>	If CEO also serves as the chairman or vice-chairman of the board, X_4 is assigned 1, or else it is 0.
	X_5	<i>Proportion of top manager's shares (%)</i>	The total share amount of directors, supervisors and managers / total shares \times 100%
	X_6	<i>Proportion of independent directors (%)</i>	Number of independent directors / number of people on the board \times 100%
Agency problems	X_7	<i>Percentage of overhead costs (%)</i>	Overhead costs / income of main business \times 100%
	X_8	<i>Financial fraud</i>	If there is any financial fraud during the distress year, X_8 is assigned 1; or else it is 0
Controlling variables	SIZE	<i>Firm size</i>	Natural logarithm of total assets
	ALR	<i>Asset-liability ratio (%)</i>	Total debt / total assets \times 100%

Among board structure variables, only the proportion of independent directors was significantly negatively related to financial distress costs. This result highlights the importance of having independent directors, both before and after financial distress. The CEO/chairman duality is positively related to financial distress costs, but not significantly, which perhaps indicates that the 'loss of conflict' between these two leaders is comparable with supervision costs. The negative correlation between the percentage of shares held by managers and financial distress costs was not significant, probably because the proportion of managers' shares is too small. Compared with a normal company's value of 0.19%, the average value of the distressed listed companies was only 0.025%, resulting in a small 'interest gathering' and 'position defending' effect.

The percentage of overhead costs was significantly negatively related to financial distress costs, confirming the 'profit effect' of financial distress among China's listed companies. Whitaker (1999) found that the average performance and market values of distressed companies have risen. Financial fraud is negatively related to financial distress costs, but not significantly. This suggests that the causes and types of fraud are very complicated, and not all of them help increase net profits. Besides, timing is very important as the fraud year may not be the same as the accounting year.

5. Conclusions and implications

This paper is an empirical study on the influence of corporate governance characteristics on the indirect costs of financial distress. The indirect costs of financial distress is given by changes in the industry-adjusted percentage of EBITDA to net sales revenue and the changing rate of adjusted equity values over time. Based on panel data of 193

Table 3 Descriptive statistics and correlations for the main variables

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	SIZE	ALR
Mean	53.966	0.784	24.343	0.585	0.025	21.035	22.859	0.339	20.650	66.802
Std. deviation	15.016	0.672	23.247	0.493	0.106	15.733	20.904	0.474	0.863	17.379
X ₁	1.000									
X ₂	-0.063	1.000								
X ₃	0.310	0.110	1.000							
X ₄	-0.030	-0.147	0.083	1.000						
X ₅	-0.012	-0.057	0.150	-0.069	1.000					
X ₆	-0.055	0.054	-0.023	0.002	-0.099	1.000				
X ₇	-0.178	0.077	0.210	0.021	-0.031	-0.036	1.000			
X ₈	-0.174	0.009	0.027	-0.006	-0.047	0.130	0.095	1.000		
SIZE	0.065	-0.067	0.306	0.023	0.000	0.160	-0.175	0.034	1.000	
ALR	-0.151	-0.066	0.284	0.073	-0.146	0.127	0.108	0.062	0.011	1.000

financially distressed listed companies in China from 2000 to 2006, we find significant results somewhat different from previous research. This is probably because of differences in the internal and external environment of our companies with and without financial distress. Having the appropriate balance among owners tended to decrease the indirect costs of financial distress. However, proportion of state-owned shares, proportion of independent directors and percentage of overhead costs are significantly negatively related to these costs. However, the relations with ownership concentration, CEO/ chairman duality, proportion of managers' shares and financial fraud were not significant.

Our findings in this paper can provide guidance for distressed companies. Specifically, they suggest that companies should have enough independent directors, as they have been shown to prevent and help companies get out of financial distress. Distressed companies should improve corporate governance, including centralizing financial controls, strengthening the supervision of managers, and developing incentive systems consistent with the company's overall interests. Also, in the case of China, the government should improve management in state-owned distressed companies and prevent the dissolution of managers' powers.

Table 4 Regression results of the models

		Model 1 (FDC ₁)		Model 2 (FDC ₂)	
Variables	VIF	Std. coefficient	T Statistics(Sig.)	Std. coefficient	T statistics(Sig.)
X ₁	1.089	0.014	0.319(0.750)	-0.046*	-1.015(0.121)
X ₂	1.051	0.096***	2.234(0.026)	0.053**	1.579(0.095)
X ₃	1.098	-0.097***	-3.522(0.021)	-0.036***	-1.593(0.046)
X ₄	1.034	0.026	0.602(0.547)	0.013	0.334(0.738)
X ₅	1.042	-0.031	-0.726(0.468)	-0.037	-0.938(0.349)
X ₆	1.073	-0.092***	-2.121(0.034)	-0.416***	-10.494(0.000)
X ₇	1.083	-0.028*	-1.632(0.127)	-0.05*	-2.258(0.109)
X ₈	1.056	-0.022	-0.507(0.612)	-0.026	-0.661(0.509)
SIZE	1.066	-0.180***	-4.155(0.000)	-0.095***	-2.397(0.017)
ALR	1.080	0.007	0.164(0.870)	-0.031	-0.786(0.432)
R ² (Adj.R ²)		0.157(0.141)		0.409(0.396)	
F(Sig.F)		13.588(0.000)		25.845(0.000)	
DW		0.845		1.241	

Notes: Generally, if VIF (variance inflation factor) is less and equal 10, there will be no multi-collinearity; ***, ** and * denote statistically significant at 5%, 10% and 15% respectively.

References

- Altman, E. (1984). A further empirical investigation of the bankruptcy cost question. *Journal of Finance*, 1067-1089.
- Andrade, G., & Kaplan, S. (1998). How costly is financial (not economic) distress? Evidence for highly leveraged transactions that become distressed. *Journal of Finance*, 1443-1493.
- Beaver, W. (1966). Financial ratios as predictors of failure. *Journal of Accounting Research*, 77-111.
- Branch, B. (2002). The costs of bankruptcy: a review. *International Review of Financial Analysis*, 39-57
- Chaganti, R., Mahajan, V., & Sharma, S. (1985). Corporate board size, composition and corporate failures in retailing industry. *Journal of Management Studies*, 400-417.
- Chen, G.M., & Merville, L. (1999). An analysis of the underreported magnitude of the total indirect costs of financial distress. *Review of Quantitative Finance and Accounting*, 277-293.
- Daily, C., & Dalton, D. (1994). Corporate governance and the bankrupt firm: an empirical assessment. *Strategic Management Journal*, 643-654.
- Deakin, E. (1972). A discriminate analysis of prediction of business failure, *Journal of Accounting Research*, 167-169.
- Elloumi, F. & Gueyie, JP. (2001). Financial distress and corporate governance: an empirical analysis. *Corporate Governance*, 15-23.
- Jensen, M., & Meckling, W. (1976). Theory of the firm: managerial behavior, agency costs and the ownership structure. *Journal of Financial Economics*, 305-360.
- La Porta, R., Lopez-de-Silanes, & Shleifer, A. (1999). Corporate ownership around the world. *Journal of Finance*, 471-517.
- Lu C.J., Xu L.L., & Zhou L. (2004). Comparative analysis of corporate financial distress and financial bankruptcy. *Economic Research*, 8:64-73.
- Opler, T., & Titman, S. (1994). Financial distress and corporate performance. *Journal of Finance*, 1015-1040.
- Parker, S., Peters, G., & Turetsky, H. (2002). Corporate governance and corporate failure: a survival analysis. *Corporate Governance*, 4-12.
- Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 461-488.
- Sudi Sudarsanam, & Jim Lai. (2001). Corporate financial distress and turnaround strategies: an empirical analysis. *British Journal of Management*, 183-199.

Whitaker, R. (1999). The early stages of financial distress. *Journal of Economics and Finance*, 123-133.

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