Corporate Survival: Analysis of Financial Distress and Corporate Turnaround of the UK Retail Industry

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Abstract
This study is undertaken to analyse the financial distress of businesses and how financially distressed businesses turnaround. A multiple discriminant model is developed. Samples for the study are 20 companies with two or more consecutive losses which have ceased to operate classified as failed companies; and 20 companies with two consecutive losses followed by profits, also classified as recovered companies. This data set is also used to find out how the financially distressed companies turnaround. Research results indicate that the model has 65% and 80% classification accuracies for failed and recovered companies respectively. The results for the descriptive statistics obtained through a bivariate analysis indicate that corporate turnaround is dependent on company size and management turnover.

Key Words: Corporate survival, financial distress, turnaround, discriminant model.

1. Introduction

Financial crises and economic recession put the survival of many businesses into question. The 2007/2008 financial crisis almost led to the collapse of the world financial system. Studies by El Hennawy and Moris (1983) and Mensah (1984) to find the effect of economic cycle in corporate failure revealed that companies are more vulnerable to failure during recessions (Platt, 1989). Taffler (1983) established that for a given financial profile the incidence of bankruptcy increases considerably in times of economic recession (Smith and Liou, 2007).

Wu, Liang and Yang (2006), explains the financial distress of an organisation as an inability to meet the financial obligation or have difficulty in payment.

Brandes and Brege (1993) define corporate turnaround as a, process that takes a company from a situation of poor performance to a situation of sustained performance (Harker and Sharma, 1993).

The pioneer of corporate bankruptcy prediction was Beaver who in 1968 used univariate approach to predict corporate failure. According to Charitou et al. (2004), there has been several works to improve upon Altman's work who pioneered the multiple discriminant analysis in 1968 and these include Deakin who in 1972, assigned prior probability membership class, Altman et al. (1977), employed quadratic classifier whereas Gentry, Newbold and Whitford (1987), used cash flow models.

Pompe and Bilderbeek (2004) used small and medium size industrial firms to study bankruptcy predictions forms using multiple discrminant analysis and neural network. In 2006, Wu, Liang and Yang analysed the financial distress of Chinese public companies using probabilistic neural networks and multivariate discriminant analysis.

In the UK, there has been an enormous research work since the 1970s.One famous researcher who use UK data to develop failure prediction model is Taffler and his contribution in this area has been undoubtedly valuable.

The study adopts the retail sector since the number of firms facing financial distress and bankruptcy in the sector continue to increase. The study therefore aims to analyse the financial distress of retail companies in the UK through information contained in their annual reports and subsequently assess the turnaround measures that bring distressed companies to a successful recovery.

2. Literature Review

2.1 Corporate Financial Distress

Corporate financial distress studies researchers use various statistical tools to predict financial distress and the ultimate failure. Fitzpatrick (1932); Beaver (1966); Casey and Bartczak (1984); and Neophythou *et al* (2000) were among the researchers that used univariate approach to find out which ratios acted as the best discriminators of failed and non-failed companies. However, due to its limitation of non-consideration of the interaction and contradiction of the variables, multivariate models have been developed.

Altman (1968, 1973); Edmister, (1971), Deakin (1972); Trieschmann and Pinches, (1973); Sinkey (1975), Moyer (1977); Pinches and Trieschmann, (1977); and Taffler (1984); Taffler and Tisshaw, 1977; Zavgren, 1985 all used multiple discriminant analysis (MDA) to predict corporate financial distress. Multivariate models tend to bring the simultaneous interactions between variables which were lacking in the univariate models. However, because of its methodological difficulties**,** other areas have recently received attention in the area of corporate financial distress including neural network, probit and logit models.

Wu, Liang and Yang (2006) sampled 32 Chinese public companies to train the probabilistic neural network (PNN) to identify financial distress. Seven financial ratios were used to construct the PNN model which produced 87.5% and 81.25% accuracies in the short-term and medium term respectively.

Cheng, Chen and Fu (2005) combined the radial basis function network (RBFN) and the logit analysis to develop financial prediction model. Sixty-four financially distressed firms were identified from Taiwan Stock Exchange.

There was 1:2 matching of financially distressed firm with healthy firm and this resulted in a total sample of 192 firms. Results obtained through computations indicated that the radial basis function network was better than the others in the predictive accuracy of unseen data. Also, Ginoglou, Agorastos and Hatzigagios (2002) used linear probability model (LPM), logit, probit and discriminant analysis models to predict corporate failure of problematic firms in Greece. The study sampled 20 healthy and 20 problematic firms and in their conclusion all the models were very successful in the prediction of financial crisis. The multiple discriminant analysis especially achieved 75% and 95% success classification rates for problematic and healthy firms respectively.

Neophytou and Molinero (2001) used different approach called multidimensional scaling to predict corporate failure. 100 UK public industrial companies made up of 50 failed and 50 healthy firms. Forty financial ratios categorised into financial leverage, operating cash flow, liquidity, profitability and activity were used. The findings of the study indicated that with the six-dimensional map, financially unhealthy companies were on the right-hand side of the map while the financially sound companies were grouped on the left-hand side.

2.2 Corporate Turnaround

According to Pearce and Robbins cited in Chathoth et al., (2005) a turnaround situation exists when a firm encounters multiple years of declining performance subsequent to a period of prosperity. Traditionally, turnaround strategy is summarised by a four category strategic action typology which are revenue generation, product/market refocusing, asset reduction and productivity improvement as stated by Hofer, Hoffman and Schendel cited in Gowen, III and Tallon (2002).

In most cases turnaround situations are caused not only by the external environmental factors but by the incompetence and inexperience of a firm's management which is responsible for the firm's strategic decisions. Franks et al., (2001) found answers to the question of how capital markets discipline the management of poorly performing firms by running a 'horse race' between the five principal parties which are the shareholders, acquisition of large block of shares, bidders, outside directors and new equity holders. Information relating to a sample of 243 companies' performance and board turnover over the period 1988 to 1993 combined with information on ownership, sales of share blocks, takeovers, board structure, and capital structure were collected. The regression analysis conducted indicated that capital structure is a significant determinant of board changes and high levels of board turnover in poorly performing companies.

Weisbach (1988) on the other hand, found out that firms with the dominance of outside managers showed stronger relationship between performance and resignation as compared with firms dominated by inside owners.

Jostarndt and Sautner (2008) investigated how financial distress impacts on corporate ownership and control. The research sampled 267 German firms that were financially distressed between 1996 and 2004. The findings indicated that there was a decrease in ownership as private investors reduce their dominating role. On the other hand ownership represented by banks and outside investors doubled in size.

Gilson (1989) investigated management turnover and financial distress. The study sampled 190 firms that were financially distressed and 397 non-financially distressed firms. The analysis showed that 52% of the sampled firms which were financially distressed had a change in senior management while 19% of the healthy firms showed a change in senior level management.

Also O'Neill (1986) examined the relationship of contextual factors to the effectiveness of four primary turnaround strategies which are management, cutback, growth and restructuring. The model developed by him predicted a negative relationship between growth strategies and turnaround success in situations where there were competitive pressures. In situations where firms were in weak market positions, the model predicted a successfully relationship between turnaround and cutbacks and restructuring strategies.

2.3 Hypotheses Development

H1. Multivariate model built from a careful selection of individual financial ratios with the appropriate weight attached, ultimately differentiate a financially distressed company from the one which is not. In finding answers to the questions of which ratios are most important in detecting company insolvency, what weights should be attached to the selected ratios and how should those weights be objectively established, Rushinek and Rushinek, 1987 selected 30 borrowing entities ten of which were insolvent,

from the files of regional bank. A discriminant model was built from seven variables which were; Net Income/Net Sales, EBIT/Interest Charges, Total Liabilities/Tangible Net Worth, Current Ratio, Long-term Liabilities/Capitalisation, Net Sales/Tangible Net Worth and Sales/ Working Capital. The discriminant function when tested revealed that 80 per cent of the cases were classified correctly. However, the study found out that the discriminant score vary from borrower to borrower and needed to be evaluated empirically for each individual case.

H2. Successful turnaround is associated with the existence of a company's free assets. According to White (1989), companies with the existence of excess assets over liabilities, which is "free assets", are not likely to be bankrupt since these companies are able to raise additional funds which are necessary for their turnaround. Routledge and Gadenne (2000) ascertained that the availability of free assets was an important distinguishing variable in separating financially distressed companies that are able to successfully turnaround from those companies that do not and thus ultimately collapse.

H3. Successful turnaround is associated with the adoption of efficient corporate strategies. Efficiency-oriented strategies involve cost cutting and the various forms of the retrenchment exercises which aim to improve the performance and profitability of badly performing companies. Retrenchment which is part of efficiency- oriented strategies is found to be related to successful turnaround. Arogyaswamy and Yasai-Ardekani (1997) also found efficiency and cutbacks to be associated to successful turnaround.

H4. Larger companies are successful in turnaround than smaller companies. The consequences of larger companies going into liquidation such as loss of employment and investments are severe than the smaller ones and because of this, these larger companies are able to get support for their recovery.

This is supported by White (1989) who argues that larger businesses can raise extra funds necessary to keep them viable. Also, Campbell (1996) found that companies which successfully recovered were the larger ones as opposed to the liquidated smaller ones.

3. Methodology

3.1 Sample

Sample for the study was collected between 2000 and 2008 from Financial Analysis Made Easy (FAME database). The criteria for the selection of companies was to use absolute profit figures as used by other researchers which according to Chowdhury and Lang (1996) include Schendel and Patton, 1976; Schendel, Patton, and Riggs, 1976; O'Neill, 1986; and Thietart, 1988.

Companies which had two to four consecutive periods of losses and have ceased to operate were selected and this yielded a total of 20 companies.. Also, companies with two or more losses followed by two or more profits were selected as recovered companies from the same source. This also yielded a total of 20 companies classified as recovered companies. In all 40 companies were sampled for the study. Factors such as company size which was determined by turnover, the level of assets and the company year ends were considered in selecting the samples.

3.1 Variable Measurement

3.1.1 Profit after Interest but before Tax/Total Assets

This ratio explains how a firm is able to utilise its available assets both tangible and intangible to generate profit.

The reason for this ratio to be included as one of the variables in the discriminant analysis is that it brings to the analysis the profitability of the firms selected in relation to their assets size which is a significant part of the firms' operations.

3.1.2 Working capital/net capital employed

A working capital is a company's current assets less its current liabilities whereas the net capital employed is that of the working capital added to the firm's total fixed assets.

It measures the firm's own resources both in the short term and in the long term.It was included in the discriminant analysis since it considers the short-term liquidity and asset base of the firms under consideration

3.1.3 Total liabilities/net worth

A firm's total liabilities is it's short-term and long term liabilities added together whereas net worth is the total assets both tangible and intangible less the total liabilities. It measures the proportion of debts in relation to the worth of the business.

A firm with a high figure for total liabilities but with a low total asset figure faces serious financial crises as the debts cannot be covered by the available assets and it was therefore important for this ratio to be included in the discriminant analysis to analyse the financial distress of the firms selected.

3.1.4 *Quick assets/current liabilities*

Quick assets are the company's current assets less stock. The ratio of quick assets/ current liabilities measures how quickly a firm is able to meet its very short term obligations when stock which is not easily cash convertible is eliminated from the firm's current assets. Thus, it brings to the analysis the very short term liquidity of the firms under consideration. These ratios are a fair representation when it comes to the financial, liquidity and profitability aspects of a company's operations.

3.1.5 Efficiency

Efficiency turnaround actions are those put in place to ensure that the firm's available resources are put to a better use. It involves the improvements in the firm's internal processes so that drastic actions such as the closure of marginal plants, downsize of staff and the stressing of cost-cutting are embarked on as a means of improving efficiency.

According to Choudhury and Lang (1996) efficiency measures serve as visible evidence of the serious intent of management to effect turnaround and are therefore likely to generate substantial support from key stakeholders.

In this study however, profit per employee was used to measure efficiency as it measures the amount of profit attributed to each employee after staff cost has been cut, some plants have been shut down and non-essential costs have also been removed. This supports studies by Campbell (1996) who found profitability to be an important indicator in differentiating financially distressed companies that are able to turnaround successfully from those which fail.

3.1.6 Free Assets

The amount of free assets, that is, an excess of assets over liabilities, is an important variable that is able to differentiate between companies which are able to turnaround successfully and those which finally fail. Companies which are financially distressed but have sufficient assets are able to increase their chances of

survival since they are able to raise the extra money required for their recovery. Therefore the availability of free assets is an important factor in the turnaround of unsuccessful companies as indicated by Campbell (1996) and Routledge and Gadenne (2000).
Free assets according to Smith and Graves (2005) are measured as:

$$\frac{\text{Total tangible assets- Secured loan}}{\text{Total tangible assets}}$$

This measurement of free assets was adopted in the study.

3.1.7 Size of the Company

The size of a company has influence on the success of the company's turnaround process. Large companies are able to raise the financial resources which are much needed in times of poor performances and economic downturn, from their owners. The high profile nature of large firms might warrant them being kept alive.
Thus research by Campbell (1996) revealed size to be an important distinguishing factor and found that the successfully reorganised companies were the larger ones as compared to the liquidated smaller ones. However, Pant (1991) previously found that successful companies were smaller ones but not the larger companies.
Researchers use different variables including sales revenue, the number of employees and total tangible assets to determine the size of a company. For the purpose of this study, sales revenues were used to determine corporate size.

4. Findings

The study investigated the relationship between a dichotomous (0, 1) variable (failed or recovered) and four independent variables which were; profit before interest and tax/total assets (χ_1); working capital/net capital employed (χ_2); total liabilities/net worth (χ_3); and quick assets/current liabilities (χ_4). SPSS was used to run discriminant analysis. The discriminant analysis was divided into three parts representing year one, year two and the overall four year period.
The reason being the fact that the ratios in the retail industry although are fairly stable, they are affected by economic recession. This therefore enabled the researcher to see the effects of different periodic ratio variables on the Z score by analysing the data in these three periods.
However, the data for all the cases did not occur in the same four year period but in the eight year period but for the purpose of the analysis, it was assumed that the data occurred evenly in the four year period.
The descriptive statistics for year one highlight the fact that the means of the two groups were different with the recovered companies which had higher values in terms of working capital/net capital employed and total liabilities/net worth.
On the other hand, profit after interest but before taxes/total assets and quick assets/current liabilities also recorded significant mean values for distressed or failed companies in the same period. However, in year two it was only the profit after interest but before tax/total assets that had higher value for failed companies than the recovered companies. These higher mean values for these variables show their significance in their respective groups in running the discriminant analysis.
The test of equality which shows how the selected variables differ between the two groups, in year two revealed that, profit after tax but before interest/total assets was significant. In the four year period, profit after tax but before interest/total assets and the quick assets/ current liabilities were also significant.

These variables differentiated between the two groups of cases and this was due to the fact that their values were less than 0.05. In year one however, none of the variables differentiated between the two groups of cases.

Wilks' Lambda was used to test the relationship between the dependent and the independent variables.

In all the periods considered, it was only in the whole four year period that indicated a relationship between the independent and dependent variables since the value of the Wilks' Lambda was 0.0001 less than 0.05 as shown in tables 4.1, 4.2 and 4.3.

The analyses of the relationship of these variables were significant since they revealed which ones had the strongest effects on the Z score. Another important SPSS output that determines which of the periods' Z score function is highly reliable is the structure matrix. It identifies the correlation between each independent variable and each function. Each variable is interpreted on the function that it loads most highly on.

The discriminator variable and the value of the loading lies between +1 and -1 and the closer the absolute value of the loading of a variable to 1, the more communality there is between the discriminating variable and the discriminant function and vice versa.

From the analysis of the three periods, all the variables were good predictors except the working capital/net capital employed variable in year two. This was due to the fact that its absolute value in the structure matrix was less than 0.30 as indicated by the tables4.4, 4.5 and 4.6. Even though the structure matrix revealed that the working capital/net capital employed variable was not a predictor variable in year two, the tolerance values of all the variables were above the cut off value of zero for all the three periods analysed. This therefore meant that all the variables were candidates for inclusion in the discriminant function. Therefore, the Z score derived from the canonical discriminant function coefficients for the three periods as indicated by tables 4.7, 4.8 and 4.9 were;

$Z = 0.383 + 2.393\ \chi_1 + 0.103\ \chi_2 + 0.008\ \chi_3 - 0.486\chi_4$;

$Z = 0.894 + 8.389\ \chi_1 - 0.031\ \chi_2 + 0.004\ \chi_3 - 0.057\ \chi_4$ and

$Z = -1.262 + 1.345\ \chi_1 - 0.001\ \chi_2 + 0.215\ \chi_4$

In order to characterise the usefulness of the discriminant model a comparison was made between the cross-validated accuracy rate to 25% more than the proportional by chance accuracy.

The proportional by chance accuracy was arrived at by squaring and summing the proportion of cases in each group from the table of prior probabilities. In a period where the cross-validated accuracy rate computed was greater than or equal to the proportional by chance accuracy, then the criteria for classification was satisfied. From the SPSS output, the proportional by chance accuracy for each of the three periods was 62.5%. It was only in the four year period that the cross-validated accuracy of 92.5% exceeded the proportional by chance accuracy of 62.5%. The tables 4.10, 4.11 and 4.12 show the classification results for the three periods. Having determined which of the models correctly classified the cases, it was important to find out the cut off values. Companies which fell above the cut off value were seen as healthy and vice versa. From the functions at group centroids for all the three periods, the cut off values were zero (0).

This was computed as follows;

Usual cut off value = $\dfrac{n1Z1 + n2Z2}{n1 + n2}$

For year one, the cut off value = $\dfrac{20(-0.322) + 20(0.322)}{20 + 20} = 0$

The other periods cut off values were similarly computed and the ultimate results were zero (0). Tables 13, 14 and 15 show the functions at group centroids for all the three periods.

5. Analysis

In analysing the financial distress of the selected companies, their Z scores were computed and compared with the cut off value of zero. Based on the cut off value of zero, companies which had positive Z score were regarded as healthy while those with negative Z score were seen as financially distressed or otherwise failed. The Z score used was that of year two and the variables used were the sum of the variables for the four year period. Even though its cross-validated value was lower as compared with that of the four year period, the Z score for year two was used since that of the four year period had a zero constant in total liabilities/net worth. This zero constant value in the four year period might have been due to the fact that there were some few missing values in years three and four. Table 4.16 shows the companies and their Z score as computed by the discriminant model for year two which as stated earlier is

$$Z = 0.894 + 8.389X1 - 0.031X2 + 0.004X3 - 0.057X4$$

According to the Z score computations, 65% of the healthy/recovered companies were correctly classified while the failed/unhealthy companies had 80% correct classification.

The descriptive statistics used in analysing whether free assets, size and efficiency affected the turnaround of the companies were the mean, the standard deviation and the coefficient of variation. The absolute values of these statistical figures meant that, for the mean, the higher the value the better it was in explaining the relationship.

On the other hand, the standard deviation and the coefficient of variation explained the relationship better with lower absolute values. It was also significant to consider the relationship of the variable within and among the two groups of cases.

However, among these statistical values, the coefficient of variation was used to find the extent to which the variables affected the companies' turnaround. With this, efficiency and size affected the turnaround and downturn recovery as shown in tables 5.1 to 5.6. For efficiency, it was due to the fact that the descriptive statistics revealed positive coefficient of variation values for recovered companies but negative ones for the failed groups.

As far as size was concerned, the recovered cases had lower values for the coefficient of variation as compared to the failed group of cases. The free assets did not affect the turnaround since it had lower coefficient of variation value for the failed group in comparison to the recovered group.

Other studies however, have shown that, availability of free assets contributes to the successful recovery of distressed companies. Casey et al. (1986), Campbell (1996) and Routledge and Gadenne all identified the existence of free assets to be a contributory factor in the recovery of badly performing companies.

The difference to this study might possibly be due to the amount and nature of the data used.

6. Recommendations and future Research

The findings may encourage corporate bodies to have a general idea about their future existence and continuity through the discriminant model which had 65% and 80% classification accuracy for healthy and failed companies respectively. Businesses which are financially distressed with persistent operational losses will know which turnaround factors to use to turnaround their financial performance.

The research was carried out in the retail industry with 40 cases and four variables. Future research should be done in other industries like the banking industry where business financial risk are high and also with a higher number of cases and variables.

The research data was drawn from companies with a maximum turnover of

£7million. Future study should concentrate on drawing data from large corporate bodies. Future related research which the author believes would be of immense help to financial distress analysis and corporate

turnaround in the retail industry include uncovering more variables which are important in the discriminant analysis and using other modules other than the discriminant analysis which correctly distinguished distressed companies from those healthy ones and determining more variables which can be used in the turnaround process and the model development.

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Appendix

Table 4.1**Wilks' Lambda for Year 1**

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.902	3.730	4	.444

Table 4.2**Wilks' Lambda for Year 2**

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.882	4.541	4	.338

Table 4.3 **Wilks' Lambda for the 4 Year Period**

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.299	43.506	4	.000

Table 4.4 **Structure Matrix for Year 1**

	Function 1
x1	.554
x4	-.412
x3	.354
x2	.295

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions Variables ordered by absolute size of correlation within function.

Table 4.5 **Structure Matrix for Year 2**

	Function 1
x1	.961
x3	.346
x4	.034
x2	.017

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Table 4.6 **Structure Matrix for the 4 Year Period**

	Function
	1
x4	.895
x1	.392
x2	-.056
x3	.035

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Table 4.7 Canonical Discriminant Function Coefficients for Year 1

	Function
	1
x1	2.393
x2	.103
x3	.008
x4	-.486
(Constant)	.383

Unstandardized coefficients

$Z = 0.894 + 8.389X1 - 0.031X2 + 0.004X3 - 0.057X4$

Table 4.8 Canonical Discriminant Function Coefficients for Year 2

	Function
	1
x1	8.389
x2	-.031
x3	.004
x4	-.057
(Constant)	.894

Unstandardized coefficients

$Z = -1.262 + 1.345X1 - 0.001X2 + 0.215X4$

Table 4.9 Canonical Discriminant Function Coefficients for the 4 Year Period

	Function
	1
x1	1.345
x2	-.001
x3	.000
x4	.215
(Constant)	-1.262

Unstandardized coefficients

Table 4.10 **Classification Results (b,c) for Year1**

			Predicted Group Membership		
		comp	.0000	1.0000	Total
Original	Count	.0000	14	6	20
		1.0000	10	10	20
	%	.0000	70.0	30.0	100.0
		1.0000	50.0	50.0	100.0
Cross-validated(a)	Count	.0000	12	8	20
		1.0000	14	6	20
	%	.0000	60.0	40.0	100.0
		1.0000	70.0	30.0	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b 60.0% of original grouped cases correctly classified.

c 45.0% of cross-validated grouped cases correctly classified.

Table 4.11 **Classification Results (b,c) for Year 2**

			Predicted Group Membership		
		Comp	.0000	1.0000	Total
Original	Count	.0000	9	11	20
		1.0000	3	17	20
	%	.0000	45.0	55.0	100.0
		1.0000	15.0	85.0	100.0
Cross-validated(a)	Count	.0000	8	12	20
		1.0000	6	14	20
	%	.0000	40.0	60.0	100.0
		1.0000	30.0	70.0	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b 65.0% of original grouped cases correctly classified.

c 55.0% of cross-validated grouped cases correctly classi

Table 4.12 **Classification Results (b,c) for the 4 Year Period**

		Comp	Predicted Group Membership .0000	1.0000	Total
Original	Coun	.0000	20	0	20
	t	1.0000	3	17	20
	%	.0000	100.0	.0	100.0
		1.0000	15.0	85.0	100.0
Cross-	Coun	.0000	20	0	20
validated(a)	t	1.0000	3	17	20
	%	.0000	100.0	.0	100.0
		1.0000	15.0	85.0	100.0

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
b 92.5% of original grouped cases correctly classified.
c 92.5% of cross-validated grouped cases correctly classified.

Table 4.13 **Functions at Group Centroids for Year 1**

	Function
comp	1
.0000	-.322
1.0000	.322

Unstandardized canonical discriminant functions evaluated at group means

Table 4.14 Functions at Group Centroids for Year 2

	Function
Comp	1
.0000	-.357
1.0000	.357

Unstandardized canonical discriminant functions evaluated at group means

Table 4.15 Functions at Group Centroids for the 4 Year Period

	Function
Comp	1
.0000	-1.494
1.0000	1.494

Unstandardized canonical discriminant functions evaluated at group means

Table 4.16 Z score Values for Recovered and Failed Companies

Recovered Comp.	Z score	Failed Comp.	Z score
SMURFIT KAPPA IRISH PAPER SACKS LIMITED	0.599	ALLDERS LIMITED	-1.755
SOMERFIELD LIMITED	1.135	ALLDERS DEPARTMENT STORES LIMITED	-5.173
HOUSE OF FRASER (STORES) LIMITED	1.956	MYRIAD CHILDRENSWEAR GROUP LIMITED	-0.663
SURGICARE LIMITED	-5.141	PRG POWERHOUSE LIMITED	-4.569
MOTHERCARE UK LIMITED	1.146	AC REALISATIONS (2007) LIMITED	-6.066
S. BURROWES LIMITED	-0.286	HOMEFORM GROUP LIMITED	-4.747
ONE STOP STORES LIMITED	-0.748	UNWINS WINE GROUP LIMITED(THE)	0.012
POUNDLAND HOLDINGS LIMITED	2.022	UNWINS LIMITED	-0.178
GRATTAN PUBLIC LIMITED COMPANY	0.204	MVC ENTERTAINMENT LIMITED	-0.939
FOCUS (DIY) LIMITED	5.036	LEAR HOLDINGS LIMITED	-2.468
STAPLES UK RETAIL LIMITED	-0.329	MILLER BROTHERS GROUP LIMITED	0.769
EMAP INTERNATIONAL LIMITED	-0.198	MILLER BROTHERS (ELECTRICAL) LTD	-1.255
PUNCH PARTNERSHIPS (PML) LIMITED	0.107	BB REALISATIONS LIMITED	-0.531
WELCOME BREAK GROUP LIMITED	1.484	THE PIER RETAIL GROUP LIMITED	0.893
VESTEL UK LIMITED	1.378	THE PIER (RETAIL) LIMITED	-4.210
PRET A MANGER HOLDINGS LIMITED	0.524	DBC HOLDINGS LIMITED	-12.068
BORDERS (UK) LIMITED	0.926	DEWHURST BUTCHERS LIMITED	0.104
EBUYER (UK) LIMITED	-3.112	3CL REALISATIONS LIMITED	-11.996
ALLIED CARPETS GROUP PLC	1.675	MARSTON MILLS LIMITED	-3.101
PRET A MANGER (EUROPE) LIMITED	-0.774	LOWREACH LIMITED	-1.568

Table 5.1 Descriptive Statistics for Free Assets for Recovered Companies

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Coefficient of Variation
Year1	20	-0.4874	1	11.8067	0.590335	0.460442673	77.99684
Year2	20	-0.4347	1	10.8756	0.54378	0.478421263	87.98067
Valid N (listwise)	20						

Table 5.2 Descriptive Statistics for Free Assets for Failed Companies

Descriptive Statistics — Free Assets Failed Companies

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Coefficient of Variation
Year1	20	-0.1708	0.9977	14.6685	0.733425	0.385273682	52.53075
Year2	20	-0.227	1	14.3244	0.71622	0.402200363	56.15598
Valid N (listwise)	20						

Table 5.3 Descriptive Statistics for Turnover for Recovered Companies

Descriptive Statistics — Sales Recovered Companies

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Coefficient of Variation
	20	203910	5343212	15732640	786632	1383833	175.9188
Year2	20	36172	4369500	10892822	544641.1	916884.7	168.3466
Valid N (listwise)	20						

Table 5.4 Descriptive Statistics for Turnover for Failed Companies

Descriptive Statistics — Sales Failed Companies

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	
Year1	20	36700	398100	2619956	130997.8	101889	77.77915
Year2	20	33750	434285	2787725	139386.3	118261	84.84412
Valid N (listwise)	20						

5.5 Descriptive Statistics for Efficiency for Recovered Companies

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Coefficient of Variation
Year1	20	-133.892	572.8936	300.0124	15.00062	134.9271	899.4766
Year2	20	-38.6053	132.9148	21.7309	1.086545	32.70901	3010.369
Valid N (listwise)	20						

5.6 Descriptive Statistics for Efficiency for Failed Companies

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Coefficient of Variation
Year1	20	-43.3198	14.4534	-99.9901	-4.99951	10.70036	-214.028
Year2	20	-18.4336	-0.4661	-92.5035	-4.62518	4.631909	-100.146
Valid N (listwise)	20						