

RESTRUCTURING IN VOLUNTARY ADMINISTRATION – EVIDENCE FROM AUSTRALIAN LISTED PUBLIC COMPANIES

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Abstract

Introduction of the statutory voluntary administration (VA) process in mid 1993 represented a significant change to corporate insolvency law in Australia in providing greater opportunity for companies to attempt to resolve their financial distress. The final decision regarding the administration outcome is determined by company creditors, who can conclude the relatively short administration period by supporting a deed of company arrangement (DOCA) or have the company wound-up in a statutory liquidation. The focus of this paper is on the relationship between financial information available at the time a company enters VA and the VA outcome. In particular, we explore how financial information that indicates a company's capacity to restructure its debt contracts and assets relates to the VA outcome. Cluster analysis is used to explore the financial profiles of companies that have three different VA outcomes, which are: liquidation, a deed of arrangement that provides for company reorganisation, or a deed of arrangement (or liquidating deed) that provides for sale of the company's business or assets. Our analysis indicates that (1) different financial profiles at the time of entering VA are associated with different VA outcomes and, (2) a company's ability to restructure its debt contracts and issue new financial claims against assets are critical to the VA outcome.

Key Words: Voluntary Administration; Restructuring, Financial profile

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Restructuring in Voluntary Administration – Evidence from Australian Listed Public Companies

1. Introduction

Introduction of the statutory voluntary administration (VA) process in mid 1993 represented a significant change to corporate insolvency law in Australia. The VA procedure was drafted to provide greater opportunity for companies to attempt to resolve their financial distress. A key feature of the legislation is that it provides a flexible framework within which insolvent companies can attempt to reach a compromise arrangement with their creditors. The final decision regarding the administration outcome is determined by company creditors, who can conclude the relatively short administration period by supporting a deed of company arrangement (DOCA) or have the company wound-up in a statutory liquidation. The focus of this paper is on the relationship between financial information available at the time a company enters VA and the VA outcome. In particular, we explore how financial information that indicates a company's capacity to restructure its debt contracts and assets relates to the VA outcome.

A generally accepted view of financial distress (insolvency) is that it results from a mismatch between currently available liquid assets and current obligations. Rectification of this mismatch can be achieved by restructuring company assets, restructuring debt in private or formal renegotiations, or issuing new financial claims against future cash flows generated by assets (John 1993a). Accordingly, we expect the nature of financial distress resolution will be dependent on a company's ability to restructure in any of these areas.

Although VA has become the preferred method for dealing with corporate insolvency in Australia, there continues to be little empirical analysis associated with its operation. This paper makes an important contribution by extending existing empirical analysis of the VA procedure. In addition, to our knowledge there has been no prior empirical analysis of listed companies that have entered VA.

1.1 Overview of VA

The VA procedure, which is found in Part 5.3A of the *Corporations Act* (2001), was introduced as part of Australia's corporate insolvency regime in June 1993. The new legislation resulted from a review of insolvency law carried out by the Australian Law Reform Commission in their *General Insolvency Inquiry* (1988) (Report No 45, the "Harmer Report"). The Commission recommended change to Australian insolvency law because of concern that there was:

“little emphasis upon or encouragement of a constructive approach to corporate insolvency by, for example, focusing on the possibility of saving a business (as distinct from the company itself) and preserving employment prospects.” (Harmer Report, par. 53).

The Explanatory Memorandum to the Corporate Law Reform Bill (1992, par.448) observed that liquidation was frequently embraced by companies which could have continued trading and which may well have ultimately survived. Prior to the implementation of Part 5.3A an insolvent company had few viable options other than

proceeding with winding up. The company could attempt to institute a scheme of arrangement as an alternative to winding up, however, this provision was rarely used due to the time and cost involved in obtaining the necessary court approvals and meeting the onerous requirements for scheme ratification (Crutchfield 1994). Alternatively, the company could appoint an official manager. This option was only available if the company was certain to repay all creditors in full - an unlikely prospect for most companies in financial distress.

The primary purpose of Part 5.3A is to provide a flexible and relatively inexpensive procedure in which a company can attempt to formulate an arrangement with its creditors. The objectives of administration are twofold: to save the business conducted by the company or, alternatively if this is not possible, to improve the return to creditors that would have resulted from an immediate winding up of the company¹. Central to the operation of the legislation is protection of the company's property during the administration. Protection is achieved by the moratorium provisions contained in Division 6 of Part 5.3A, which prevent action by creditors against the company or its property during the period of the administration. The moratorium allows the appointed administrator to investigate the affairs of the company and explore the possibility of a compromise arrangement with creditors.

The decision as to whether a reorganisation plan will be accepted is made by a meeting of creditors. The administrator, having investigated the affairs of the company, will advise the creditors on the suitability of attempting reorganisation. If creditors vote to approve reorganisation, the company will enter into a deed of company arrangement. The deed will be binding for the company and supporting creditors until its terms are completed or the company fails to comply with its provisions and winding up proceeds.

2. Prior research

Since the work of Altman (1968) an extensive literature investigating differing characteristics of distressed and non-distressed companies has developed. A number of Australian studies (Castagna and Matolski 1981, Lincoln 1984, Izan 1984, McNamara, Cocks and Hamilton 1988, Cybinski 1995) developed multivariate models that distinguished distressed and non-distressed companies. Detailed review of these studies is of limited usefulness here as they addressed distinguishing distressed from non-distressed firms rather than the current research issue which involves identifying differences among distressed companies.

As noted previously, there has been little prior empirical analysis of the operation of the VA procedure. Frost-Drury et al. (2000) investigated the proposition that companies entering VA could be distinguished from companies that directly entered liquidation. They reported that the financial characteristics of VA's differed from liquidations in that companies with greater proportions of assets tied to working capital were more likely to liquidate than enter VA. The Frost-Drury (2000) study considered the choice between VA and liquidation which is a different event to that considered in this paper. Our analysis is concerned with the subset of insolvent firms that enters VA, and considers subsequent outcomes of the VA process.

¹The objectives are outlined in *The Corporations Law* (Cth) s 435A. All further section references in this paper are to the *Corporations Law* (Cth) unless noted otherwise.

Routledge and Gadenne (2000) investigated whether companies that reorganise can be distinguished from those that liquidate under VA. Their logistic regression analysis indicated that greater liquidity and positive owners' equity were distinguishing characteristics for companies that reorganised. The explanation for these results was based on analysis of claimant behaviour within VA. It was suggested that greater liquidity indicated a company's ability to provide a reasonable and immediate return to unsecured creditors, which increased the chance of a reorganisation plan being approved. Moreover, it was suggested that positive owners' equity indicated the company had at least some capacity to secure future borrowings to fund reorganisation. The current study extends this prior research in several ways. First, by refining the categorisation of VA outcomes, we are able to distinguish creditor approval of a deed that provides for the liquidation of a company's business and assets as a different outcome from a company proceeding from VA to statutory liquidation. Second, we include in our analysis variables that enable more detailed analysis of the effect of capacity to renegotiate or restructure debt. Third, we consider the effect of capacity to restructure assets on the VA outcome. Finally, the analysis is conducted using a homogeneous sample of listed companies. The samples used by both Frost-Drury et al (2000) and Routledge and Gadenne (2000) comprised a mix of private, unlisted public and listed public companies. Moreover, the sample size in the Frost-Drury et al. (2000) study was quite small, comprising only 13 VA companies.

Studies of legislative regimes in other jurisdictions which deal with insolvency reorganisation also inform this research. Foremost are the extensive studies of distress resolution under the United States Chapter 11 procedure. The US procedure differs in some respects from the Australian VA procedure. Perhaps the most salient difference is that Chapter 11 companies remain under the control of management rather than an appointed independent administrator. Despite differences between the two legislative schemes, both provide debtor companies an opportunity to make a formal compromise arrangement with creditors to resolve their financial distress.

An early study by Comerford (1976) reported that financial ratios representing liquidity, profitability and leverage were significant in a discriminant analysis that distinguished firms that liquidated from those that successfully reorganised under Chapter 11. Comerford used factor analysis to determine the predictor variables to be included in the discriminant analysis.

Casey et al. (1986) used probit analysis to identify variables relevant to determining whether a firm would liquidate or reorganise under Chapter 11, and reported that prior profitability and the percentage of uncollateralised (free) assets were important predictors of distress resolution. The study suggested that past profitability indicated a firm had more attractive earnings prospects, and would be better positioned to generate funds internally or borrow additional funds in order to successfully emerge from Chapter 11. Likewise, firms with more 'free' assets had a greater ability to obtain additional funds needed to effect a reorganisation. Kennedy and Shaw (1991) extended the Casey et al. (1986) study by including the firm's going-concern audit opinion as a predictor of distress resolution. They reported that the audit opinion had incremental predictive value in addition to past profitability and free assets.

Campbell (1996) examined distress resolution for a sample of closely-held firms that

entered Chapter 11. Significant financial variables in a probit analysis were similar to those reported in the Casey et al. study. These were: asset profitability, borrowing capacity (as indicated by the amount of free assets), and firm size. Campbell (1996) suggested that larger firms enjoyed greater economy of scale with respect to direct bankruptcy costs, thereby improving the chance of reorganisation. Campbell also reported that firms with larger numbers of secured creditors with insufficient security to protect their claims were more likely to reorganise as undersecured creditors would have a higher chance of their claims being compromised in liquidation.

More recently, Barniv et al. (2002) used financial and non-financial data to predict whether a firm entering the US Chapter 11 procedure would be acquired, emerge, or proceed to liquidation. Significant variables in a multinomial logistic regression included firm size (measured by assets) and level of secured debt. Barniv et al (2002) suggested that secured debt holders would be more likely to promote liquidation as it would be possible their claim could be compromised in an alternative outcome.

A study by Asquith et al. (1994) comprehensively examined firm response to financial distress. A principal finding was that sale of assets is a restructuring mechanism used by firms to avoid bankruptcy. Other studies by Brown et al. (1994), and Ofek (1993) also present evidence that distressed firms use asset sales as a restructuring mechanism. The nature of assets held by a company has also been found to be important to a company's ability to effect assets sale as a restructuring mechanism. When assets are held that have an inherent going-concern value that is lost upon sale, the costs of restructuring by asset sale will be greater (John and Vasudevan 1992; Shleifer and Vishny 1992). John (1993b) showed that the costs of asset restructuring are negatively associated with 'the collateral' value of assets. Collateral value was measured by the ratio of inventory plus gross plant and equipment to total assets. Berger et al. (1996) estimated the 'exit' value of classes of assets when a firm's operations were discontinued and found that non-inventory current assets had the highest exit value at about 75 percent of book value. In contrast, inventory and fixed assets both had exit values at about 50 percent of their book value.²

In summary, prior studies of VA and the US Chapter 11 process consistently indicate that the nature of resolution will be dependent on a company's ability to renegotiate debt contracts, obtain new financing or restructure its assets. In the next section, propositions are developed regarding how financial information might signal a company's ability to restructure in each of these areas, and how this relates to the VA outcome.

3. Testable propositions and variables

Analysis in this paper is concerned with relating the VA resolution to the financial profile of companies immediately prior to entering VA. The general proposition tested is that different VA outcomes will be associated with different financial profiles at the time a company enters VA. Prior studies have suggested that the nature of VA resolution will be dependent on a company's ability to renegotiate debt contracts, obtain new finance, or restructure its assets. Therefore, we expect that profile

² The estimates were based on information from 157 United States firms that discontinued operations in a period between 1984 and 1993.

differences will exist based on variables that signal a company's ability to restructure in each of these areas.

The first three propositions relate to the ability of a distressed company to renegotiate or restructure its debt. In the context of VA, it is assumed that debt can be categorised into two broad groups: secured and unsecured debt. Secured creditors will generally have more complex 'hard' contracts with the company. The VA process is designed so that the interests of secured creditors are not compromised. In contrast, unsecured creditors hold what could be called 'soft' contracts with the company. Unsecured creditors are much less able to restrict the actions of the company in VA, however, their claims must be addressed in any arrangement proposed by the company.

As already mentioned, obligations to secured creditors fall within the category of 'hard' contracts. Holders of these 'hard' contracts are unlikely to agree to any arrangement that would compromise recovery of their debt or realisation of their security. Their security, and associated debt covenants are likely to provide the power to veto any proposed arrangement that will affect their position. Therefore, these contracts will not be readily renegotiated or extended. We include in our analysis the ratio of long-term debt to total liabilities (LTDTL) as a proxy for the extent of secured liabilities in the company's debt structure. Based on the above discussion, we expect that lower levels of long-term debt and leverage will be associated with companies that enter a reorganising deed. We expect the opposite for companies entering a 'liquidating' deed or proceeding to statutory liquidation.

A measure of overall leverage is incorporated in our analysis. As a distressed company's overall leverage position deteriorates, it will become increasingly likely that existing 'hard' contract holders will act on their security or enforce debt covenants. As a consequence, it will become increasingly difficult for a company to secure any additional finance required to continue its operations. The measure of overall company leverage included in the analysis is the ratio of total assets to total liabilities (TATL). The following propositions summarise our expectations as to the relationship between the long-term debt and overall leverage variables and VA outcomes:

Proposition 1a: Companies that proceed from VA to liquidation will have greater levels of long-term debt.

Proposition 1b: Companies that enter a 'liquidating deed' will have greater levels of long-term debt.

Proposition 1c: Companies that enter a 'reorganising deed' will have lower levels of long-term debt.

Proposition 2a: Companies that proceed from VA to liquidation will have higher leverage.

Proposition 2b: Companies that enter a 'liquidating deed' will have higher leverage.

Proposition 2c: Companies that enter a 'reorganising deed' will have lower leverage.

In contrast to 'hard' contracts with secured creditors, claims by unsecured creditors ('soft' contracts) would be far more readily renegotiated. There is a good chance that unsecured claims will be eliminated entirely if the company proceeds to statutory liquidation. Therefore, a DOCA proposal that offers even a marginally improved

return to unsecured claimants would be likely to secure their approval. The ratio of current liabilities to total liabilities (CLTL) is used as a proxy for the extent of unsecured debt. The following propositions outline the expected relationship between the current debt variable and the VA outcome:

Proposition 3a: Companies that proceed from VA to liquidation will have lower levels of current debt.

Proposition 3b: Companies that enter a 'liquidating deed' will have higher levels of current debt.

Proposition 3c: Companies that enter a 'reorganising deed' will have higher levels of current debt.

The review of literature presented above shows that restructuring of assets (by asset sales) is an important mechanism available to companies seeking to resolve their financial distress. However, a company's ability to effect restructuring by sale of assets is dependent on the nature of the assets held. John (1993b) showed asset restructuring capacity to be greater where companies held greater levels of inventory and plant and equipment, as these assets had greater collateral value. We include the ratio of property, plant and equipment plus inventory ('collateral' assets) to total assets (COLLAT) in our analysis as a proxy for capacity to restructure assets through asset sales. Higher levels of 'collateral' assets may be restructured to fund continued operations, or as part of arrangements in a liquidating DOCA. The following propositions are made as to the relationship between the extent of 'collateral' assets held and the VA outcome:

Proposition 4a: Companies that proceed from VA to liquidation will have lower levels of 'collateral' assets.

Proposition 4b: Companies that enter a 'liquidating deed' will have higher levels of 'collateral' assets.

Proposition 4c: Companies that enter a 'reorganisation deed' will have higher levels of 'collateral' assets.

Routledge and Gadenne (2000) reported that higher levels of liquidity were associated with creditor approval for reorganisation in VA. Their discussion of creditor bargaining indicated that greater current liquidity meant a company was better able to fund an immediate return to unsecured creditors as part of a reorganisation proposal. Berger et al. (1996) found that non-inventory current assets had the highest 'exit' value as a class of assets. We anticipate that companies with greater levels of liquid assets will be in better position to secure unsecured creditors' approval for either a liquidating or reorganising DOCA. The measure of liquid assets included is the ratio of cash plus receivables to total assets (LIQ). The following propositions are made:

Proposition 5a: Companies that proceed from VA to liquidation will have lower levels of liquid assets.

Proposition 5b: Companies that enter a 'liquidating deed' will have higher levels of liquid assets.

Proposition 5c: Companies that enter a 'reorganisation deed' will have higher levels of liquid assets.

Prior studies by Campbell (1996) and Barniv et al. (2002) reported a relationship

between firm size and distress resolution under the US Chapter 11 scheme. Campbell (1996) suggests this is a result of an economy of scale with respect to direct bankruptcy costs enjoyed by larger firms. Accordingly, we have included size as a control variable in our analysis. The variable is measured as the natural log of total assets (LNTA).

4. Empirical tests

4.1 Sample selection

The first stage of developing the sample for this study was to identify listed public company's that had entered VA between 1999 and 2003. This was accomplished by searching the Aspect database on various keywords that would be associated with the announcement of an administrator's appointment. After having identified relevant companies, financial data was retrieved and a final sample of 61 public listed companies with necessary financial data was obtained. Financial reports issued in the full reporting year immediately prior to the company entering VA were used to ascertain the values for each of the variables included in the analysis.

An important aspect of the sampling process related to identifying the final resolution of the VA. This involved a comprehensive review of announcements made by the company after the VA appointment. In some cases, creditors rejected any arrangement with the company, and the company quickly proceeded to liquidation. In other cases, a deed of company arrangement was proposed, and was approved or rejected by the company's creditors. Approved deeds of arrangement were assessed to determine whether they provided for reorganisation of the company's affairs with a view to continued trading, or whether they were a liquidating deed. The final sample comprised 27 companies that proceeded from VA to statutory liquidation; 22 companies that entered a deed of arrangement that provided for reorganisation and continued trading; and, 12 companies that entered a deed of arrangement that provided for sale of the companies assets or business (a liquidating deed).

4.2 Statistical method

The aim of this paper is to determine whether companies that have a particular VA outcome have certain financial characteristics at the time they enter VA. To this end, cluster analysis is used to explore the pre-VA financial data. Cluster analysis is a statistical technique that classifies a set of observations into two or more mutually exclusive groups based on combinations of many variables. It is considered that the use of this technique in the current study is more appropriate than other classification techniques such as discriminant analysis or logistic regression as (1) there is no requirement for a priori information about the number of clusters and (2) our aim is to construct groups in such a way that the profiles of companies in the same groups are relatively homogenous whereas the profiles of companies in different groups are relatively heterogeneous.

The TwoStep Cluster analysis procedure available within SPSS Release 12 allowed simultaneous input of the categorical VA outcome variable and the continuous variables set out in propositions stated above. The technique empirically determines the optimal number of clusters by comparing the values of a model-choice criterion across different clustering solutions and uses a likelihood distance measure to

determine cluster values.³ All of the cluster analyses used the SPSS ‘noise handling’ adjustment. This adjustment reduces the effect of outlying cases by removing them from the analysis during calculations and subsequently reassigning them to appropriate clusters once final clusters have been determined.

5. Results

Table 1 below presents cluster frequencies based on the three VA outcomes. Cluster one comprised most of the companies that proceeded from VA to liquidation. Cluster two comprised companies that entered either a liquidating or reorganising deed.

Table 1: Cluster Frequencies

	Liquidation		Liquidating Deed		Reorganising Deed	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Cluster 1*	27	96.4%	1	4.8%	1	8.3%
Cluster 2*	1	3.6%	20	95.2%	11	91.7%
Combined	28	100%	21	100%	12	100%

* Denotes Chi-square statistic significant at $p < .05$

The Group Centroids table below (Table 2) shows the combined and centroid mean, and standard deviation for the cases in each cluster.

Table 2: Group Centroids

Variable	Statistic	Cluster		Combined
		1	2	
LTDTL	Mean	*0.32	**0.07	0.19
	Std. dev	0.29	0.09	0.24
TATL	Mean	**2.54	5.69	4.19
	Std. dev	2.30	7.90	6.10
CLTL	Mean	0.60	*0.82	0.72
	Std. dev	0.32	0.25	0.30
LIQ	Mean	0.24	0.31	0.27
	Std. dev	0.21	0.24	0.23
COLLAT	Mean	0.51	0.31	0.40
	Std. dev	0.46	0.31	0.39
LNTA	Mean	17.64	**16.37	16.97
	Std. dev	2.22	1.11	1.83

LTDTL = Long-Term Debt/Total Liabilities
TATL = Total Assets/Total Liabilities (in prior year to VA)
CLTL = Current Liabilities/Total Liabilities (in prior year to VA)
LIQ = Cash + Accounts Receivable/ Total Assets (in prior year to VA)
COLLAT = Property Plant and Equipment/Total Assets (in prior year to VA)
LNTA = Natural Log of Total Assets (in prior year to VA)

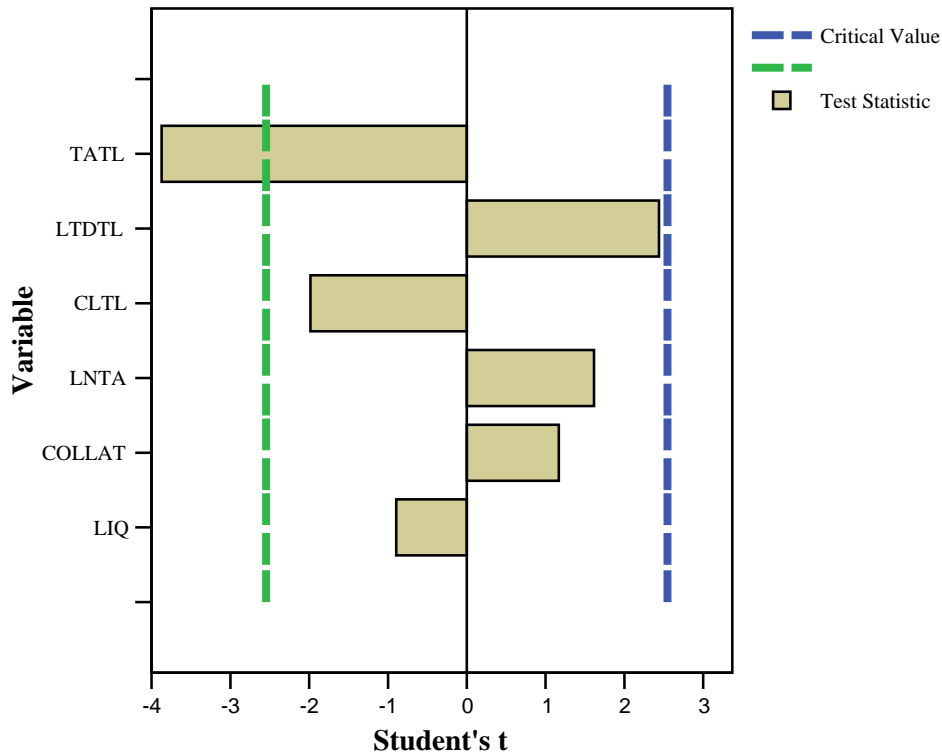
* Denotes t statistic significant at $p < .10$

** Denotes t statistic significant at $p < .05$

The TwoStep Cluster procedure in SPSS allows testing of significance of continuous variables in the formation of each cluster. The significance of contributing variables for cluster one, which captured 96.4 percent of companies that proceeded from VA to liquidation, is shown in Figure 1 below. The vertical lines in Figure 1 mark critical values for determining the significance of each variable at $p < .1$. A negative t statistic indicates that the variable generally takes smaller than average values within the cluster, while a positive t statistic indicates the variable takes larger than average values within the cluster.

³ The final ‘best’ number of clusters in the solution was determined using the Akaike Information Criterion (AIC)

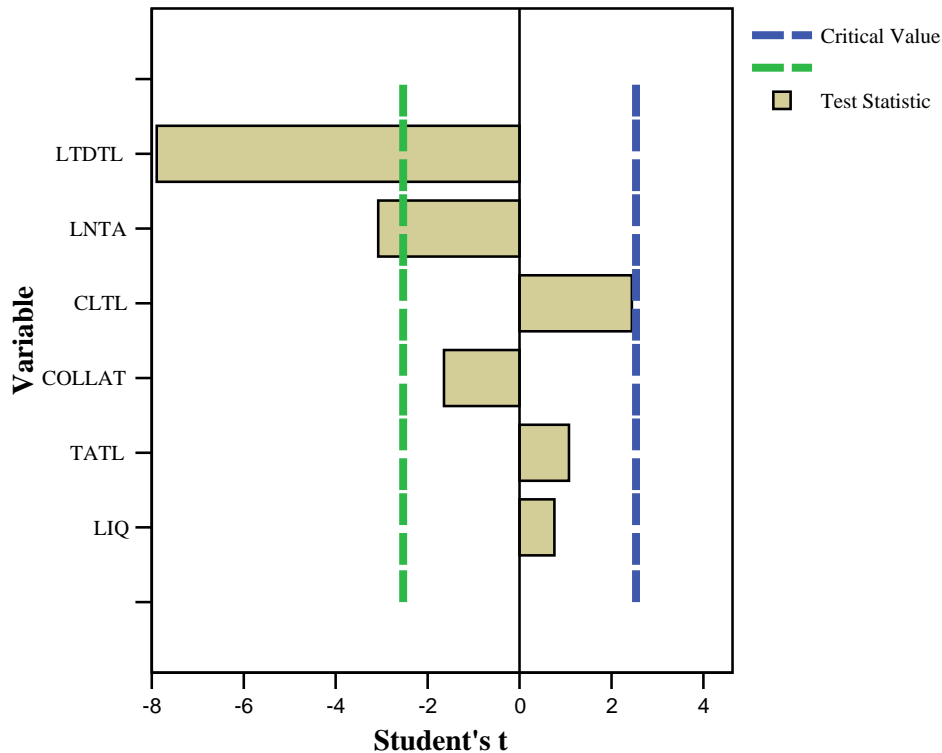
Figure 1 - Variable Contribution for Cluster One



The significant continuous variables that contribute to the formation of cluster one, (which captured 96.4 percent of companies that proceed from VA to liquidation) are leverage (TATL) and the level of long-term debt (LTDTL), which supports propositions *1a* and *2a*. The results indicate that companies with more ‘hard’ contracts and a lack of borrowing capacity due to high leverage are severely constrained in their ability to restructure. For this cluster, the mean for LIQ is lower than the combined mean, while the mean of COLLAT is higher than the combined mean, although these variables were not significant in the formation of the cluster. The mean values may suggest that firms in this cluster are unable to realise the collateral value of fixed assets or inventory to meet current ‘hard’ obligations. This may be due to the assets being company-specific in nature. Alternatively, the assets may be secured by long-term debt holders, thereby preventing their disposal. Given that the companies in this cluster have high leverage and large amounts of long term debt, the latter explanation may be more appropriate. As expected, the mean value of ‘soft’ contracts as represented by CLTL tended to be lower than the combined mean for this cluster as expected, although again the variable was not significant at $p < .1$.

Figure 2 shows the contribution of variables included in the analysis to the formation of cluster two (which captured 95.2 percent of companies that entered a reorganising deed, and 91.7% of companies that entered a liquidating deed). The vertical lines in Figure 2 mark critical values for determining the significance of each variable at $p < .1$.

Figure 2 - Variable Contribution for Cluster Two



The significant continuous variables that contribute to the formation of the cluster are the level of long-term debt (LTDTL), size (LNNTA) and current liabilities (CLTL), which supports propositions 1c, 3b and 3c. The results suggest that smaller companies with less 'hard' contracts and more unsecured debt ('soft' contracts) are better able to reach an agreement with creditors. The result that companies that entered a DOCA tended to be smaller in size is contrary to findings in prior studies of the US Chapter 11 outcomes. The cluster mean for LIQ is higher than the combined mean, while the cluster mean of COLLAT is lower than the combined mean, although these variables were not significant. The means for LIQ and COLLAT may indicate that the companies in this cluster had taken steps to sell down assets with collateral value prior to entering VA. Although the variable TATL was not significant, it appears that companies in this cluster are not generally constrained by excessively high leverage. Surprisingly, the profile of companies entering either liquidating or reorganising deeds is consistent. Our propositions suggested a unique profile for companies that entered a liquidating deed. In particular, we proposed that companies entering a liquidating deed would have greater levels of long-term debt and higher overall leverage (see propositions 1b and 2b respectively). The analysis does not support these propositions given that the level of long-term debt was significant and generally lower and overall leverage was generally lower for the cluster (although not significant).

Overall, the cluster analysis suggests that debt renegotiation or restructuring is critical to resolution once a company enters VA.

6. Summary and conclusions

In this paper, we focus on the relationship between capacity of a company to restructure its debt contracts and assets and the VA outcome. Cluster analysis was used to explore financial data which indicated capacity to restructure for companies that had entered VA. Results of cluster analysis suggest a company's ability to restructure its debt is critical to the VA outcome.

Sampling issues are a limitation of this study. The non-random sampling technique necessarily limits generalisation of the results. In addition, both the overall sample size, and number of cases in some outcome categories are small. A further limitation relates to the choice of variables included in the cluster analysis. Other variables may be more relevant to distinguishing companies that have different VA outcomes.

Companies in the sample fell into two clusters. One cluster comprised companies that proceeded from VA to statutory liquidation, the other comprised companies that entered a deed of arrangement with creditors for either reorganisation (a reorganising deed) or sale of the company's assets or business (a liquidating deed). The cluster of companies that liquidated were characterised by greater levels of long-term debt (a proxy for the extent of secured debt) and high overall leverage. These cluster characteristics suggest that when companies are critically constrained in their ability to renegotiate or restructure debt they will proceed from VA to statutory liquidation. The other cluster was characterised by lower levels of long-term debt, higher current liabilities, and smaller size measured by assets. These characteristics suggest that companies entering VA with less 'hard' contracts and more unsecured debt are better able to reach an agreement with creditors.

Overall, the analysis presented demonstrates the relevance of financial information to the determination of VA outcomes for listed public companies. The results show that particular VA outcomes are associated with companies having unique financial characteristics. Several issues from this study that could be considered in future research. The role of asset restructuring (particularly asset sales) prior to entering VA could be examined more thoroughly. In particular, asset restructuring through sales may occur in the period of time leading up to the VA event. A longitudinal study may provide a more complete picture of how companies attempt to address their insolvency related problems prior to entering VA. The current study was limited to a few key variables; future research could more extensively examine the effect of company position and performance on the VA resolution. For example, our results indicated no difference on the variables included in the analysis between companies that concluded VA with either a liquidating or reorganising deed. More extensive analysis may assist in determine the effect of pre-VA position on the nature of the DOCA concluded. In addition, the nature of deeds of arrangement could be examined in greater detail and be more finely classified.

Detailed analysis of the role and importance of financial information and its relevance to the operation of VA could serve to improve decision-making associated with VA and assist in formulating changes to the legislative regime that might improve its operation.

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