

# **Secured Creditor Recovery Rates from Management Buy-outs in Distress**

David Citron  
City University Business School

Mike Wright  
Centre for Management Buy-out Research  
Nottingham University Business School

Rod Ball  
Centre for Management Buy-out Research  
Nottingham University Business School

Fred Rippington  
City University Business School

## **Abstract**

**Buy-out literature suggests that secured creditors will recoup substantial proportions of the funds they extend to finance the initial buy-out. This paper uses a unique dataset of 42 failed MBOs to examine the extent of credit recovery by secured lenders under UK insolvency procedures and the factors that influence the extent of this recovery. On average, secured creditors recover 62 per cent of the amount owed. The percentage of secured credit recovered is increased where the distressed buy-outs is sold as a going concern and where the principal reason for failure concerns managerial factors. The presence of a going concern qualification in the audit report and the size of the buy-out reduce the recovery rate by secured creditors.**

*Keywords:* Bankruptcy; Secured debt; Financial distress resolution

*JEL Classification:* G33, G32

Corresponding author:

Professor David Citron  
City University Business School  
Frobisher Crescent  
Barbican Centre  
London EC2Y 8HB, UK  
Phone: +44 (0)20 7040 8665  
Fax: +44 (0)20 7040 8881  
Email: d.b.citron@city.ac.uk

# **Secured Creditor Recovery Rates from Management Buy-outs in Distress<sup>\*</sup>**

## **1. Introduction**

Considerable attention has been devoted to the role of debt in management (MBOs) and leveraged buy-outs (LBOs). High leverage has been argued to play an important role in committing management to improve efficiency (Jensen, 1986). MBO loan agreements tend to contain more covenants than general corporate lending agreements with specialist secured creditors also engaging in close monitoring (Citron, Robbie and Wright, 1997). Buy-out specialists may increase monitoring that substitutes for tighter debt terms (Cotter and Peck, 2001). High leverage in MBO/LBO transactions has been argued to trigger bankruptcy at a point that preserves greater going concern value than in firms that are predominantly equity financed (Jensen, 1991). Andrade and Kaplan (1998) show for a sample of 31 highly leveraged transactions (HLTs) that became distressed, that the value of the distressed HLTs did not decline and that the costs of financial distress amounted to 10-20 per cent of firm value. This literature suggests that secured creditors will recoup substantial proportions of the funds they

---

<sup>\*</sup> Financial support from Deloitte & Touche, Barclays Private Equity and Lloyds/TSB is gratefully acknowledged. Thanks to Ameziane Lasfer, Maria Carapeto, Steve Toms and participants at a staff seminar at Nottingham University Business School for comments on an earlier version.

extend to finance the initial buy-out. However, as yet there is no evidence either on the extent of credit recovery by secured lenders in MBOs nor on the factors that influence the extent of this recovery.

In order to gain a deeper understanding of the process by which secured creditors recover funds they have extended to MBOs, this paper utilizes evidence from a unique dataset of 42 failed buy-outs compiled by the authors. Compilation of the dataset involved the monitoring of a cohort of MBOs from deal completion to receivership and detailed archival analysis of the reports of the receivers.

We find that on average, 62 per cent of secured credit is recovered when buy-outs enter the receivership process. This is comparable with the 70 per cent found to be recovered by banks in Franks and Sussman's (2000) study of privately held small and medium sized companies. However, our study finds a lower secured creditor recovery rate for MBOs than those found for non-MBOs in the US that range from 80.1 per cent to 100 per cent (Weiss, 1990; Franks and Torous, 1994; Tashjian, et al., 1996). Using univariate analysis, we find some evidence that secured creditors recover a higher percentage of their lending where there is only one creditor, where asset realisation by the receiver is as a going concern, and where the cause of failure is managerial. Recovery rates by secured creditors are lower where the audit report receives a going concern modification. Recovery rates are not found to vary significantly with duration of the MBO, whether the receivership firm was a Big-6 accounting firm, nor according to the size and sector of the MBO nor the state of the economic cycle. Multiple regression and logistic regression analysis showed that percentage of secured credit recovered is increased where the distressed buy-outs is

sold as a going concern and where the principal reason for failure concerns managerial factors. The presence of a going concern qualification in the audit report and the size of the buy-out both serve to reduce the recovery rate by secured creditors. The paper is organized as follows. The next section briefly outlines the institutional framework in the UK. The second section discusses the expected determinants of the amount of repayment to secured creditors. This is followed by a description of the dataset used. The third section presents the results of the study in terms of both univariate statistics and cross-section regression analysis. Finally, some conclusions are drawn.

## **2. Institutional Framework**

Marked differences exist in the process of resolving financial distress between the US and the UK. Most notably, the courts are seen to play an active role in the US, while in the UK this is much less so (Franks and Sussman, 2000).

There are five corporate insolvency procedures under the UK's 1986 Insolvency Act – compulsory liquidation, creditors voluntary liquidation, administrative receivership, administration and voluntary arrangements. During the period 1992 to 1998 there were 135,039 such procedures of which 85 percent were liquidations (compulsory or voluntary), 12 per cent were administrative receiverships, one per cent were administrations and two per cent were voluntary arrangements (Department of Trade and Industry, 1999). The company voluntary arrangement (CVA) is a relatively new debtor rehabilitation process intended to help financially troubled companies,

particularly small and medium sized enterprises, resolve their difficulties without being forced into receivership or liquidation by secured creditors anxious to recover their funds (Cook et al., 2001), although the high fixed costs of the process may mean that it is not as widely used as anticipated.

Administrative receivership, the focus of this study, can be instigated only by a creditor whose security is held as a floating charge (see for example Franks, Nyborg and Torous, 1996). A floating charge is a form of security over assets which are changing in nature, such as stocks or work in progress. Moreover administrative receivers owe their prime duty of care to their appointer, the floating charge holder, and few obligations to others.

The administrative receiver has complete control over the firm and can, for example, liquidate the business without the permission of other creditors or the court. In theory, however, fixed charge holders can constitute an important constraint on the activities of the administrative receiver. Fixed charge holders are creditors who hold security over an identifiable corporate asset such as property (real estate) and they have the right to realize their specific security in priority to any other claimants. In practice, creditors usually ensure they hold both floating and fixed charges, the former to give the right of appointment of administrative receiver and the latter to gain priority over certain asset realisations. In UK management buy-outs, banks typically obtain a high level of security by taking a fixed and floating charge over the assets of the company (Sterling and Wright, 1990; Kreuger, 1990; Wright, Normand and Robbie, 1990).

Franks, Nyborg and Torous (1996) state that administrative receivership results in a speedy settlement of claims. However, they also cite the argument that, by emphasising the rights of the secured creditors, this procedure is often criticised for leading to the premature liquidation of firms which may have been worth more as going concerns. This stands in contrast to Chapter 11 proceedings in the US which aim to keep firms as going concerns even in instances where the liquidation value may be greater. The UK Department of Trade and Industry's 1999 Consultation Document does cite the opposite view of those who claim that the receivership process has a long history of business and job preservation. However, it also recognises that the very need for consultation about and review of UK insolvency procedures arises from concerns that businesses may not be being rescued where that would maximise value.

### **3. Determinants of Recovery Rates**

One stream of research into payments by financially distressed firms to their creditors has focused on firms that have not entered formal bankruptcy proceedings. Brown et al. (1994), for example, examine the circumstances under which financially distressed firms pay out the proceeds of asset sales to creditors, and Detragiache (1995) investigates the role of mixed cash and equity payments to creditors in corporate debt workouts.

There has, however, been little previous research into the determinants of recovery rates by creditors from firms that have entered formal bankruptcy proceedings. Prior

research into bankruptcy resolution has focused primarily on issues such as the direct costs of the process, the extent of violation of priority rules and the extent of creditor recovery rates under a variety of US bankruptcy resolution procedures, but generally has not investigated the determinants of creditor recovery rates. Regarding specifically secured creditor recovery rates, the focus of this paper, Weiss (1990) finds that in 33 of his 37 Chapter 7 and Chapter 11 cases the secured creditors recoup 100%. In Franks and Torous' (1994) 37 Chapter 11 cases they receive an average of 80.1%, and Tashjian et al. (1996) find a mean 99.3% repayment rate to secured creditors in 41 prepackaged bankruptcies. Of these studies, Franks and Torous (1994) analyse the determinants of overall recovery rates by all classes of creditors. They find that recovery rates are higher the stronger the performance of the economy but are negatively related to levels of asset sales which presumably take place at prices below their values in best use.

This study therefore extends previous work in the area by focusing on the determinants of secured creditor recovery rates from firms that have entered formal bankruptcy proceedings, and by its use of a new data set, UK MBOs. The percentage of secured credit recovered is taken to be a function of a vector of MBO firm specific characteristics related to distress, the effectiveness of monitoring the MBO and the effectiveness of the receivership procedure.

### *3.1 Distressed MBO firm characteristics*

In the stylized MBO, the firm is in a mature, niche sector with stable cash flow and low capital investment needs (Jensen, 1991). These characteristics facilitate the taking

on of high leverage that, together with significant levels of managerial equity, encourages managers to seek profitable opportunities. In general, therefore, firms may become distressed, that is enter receivership, due to one or more factors related to shortcomings in these operational, financial and managerial aspects (Wright, et al., 1996).

The MBO firm's market may not necessarily remain stable post-MBO. A major reason for a parent company to divest a division is market decline. Where the firm fails because of trading problems, recovering significant amounts of secured debt may be more difficult as the indication is that the operational base of the enterprise has been eroded due to market decline.

Trading problems may lead to difficulties in servicing highly leveraged financial structures. However, financial difficulties may also arise due excessive leverage introduced at the time of the MBO. Bruner and Eades (1992) show in the case of the failed REVCO buy-out that the company's interest and fixed dividend obligations arising from the leverage used to fund the buy-out meant there was a very low probability that the company could survive. Kaplan and Stein (1993) show in their study of larger US buy-outs completed in the late 1980s that the greater amounts of leverage taken on in this period increased the probability of failure. For a sample of 110 failed UK MBOs, Wright et al. (1996) find that the lower the net worth ratio, an inverse proxy for high leverage, the greater the probability of failure.

Even though high leverage leads to financial distress, MBOs may still have viable trading activities (Andrade and Kaplan, 1998). High leverage in MBO/LBO



transactions has been argued to trigger bankruptcy at a point that preserves greater going concern value than in firms that are predominantly equity financed (Jensen, 1991). Hence, the high leverage and loan covenants used in buy-outs may mean that a relatively high underlying value of the enterprise is preserved. In such cases, it may be feasible to recover a high degree of secured debt by selling the business as a going concern either in whole or in part. However, companies that fail with the most acute financial and cash flow problems, perhaps exacerbated by trading problems, may be most difficult to sell on a going concern basis as it is likely to be difficult to persuade buyers to take on these difficulties.

Management may be incentivized to a greater extent in an MBO than beforehand but their performance may be poor because they do not have the expertise to lead the now independent entity. The MBO financiers' screening process is expected to identify individuals who are unlikely to make the transition from divisional managers to peak tier co-ordinators. However, financiers are faced with an asymmetric information problem since they are unable to observe the management performing their new role prior to making an investment. Moreover, financiers may only be able to judge imperfectly the value of managers' private information regarding the firm's future prospects and their ability to act upon it. Managerial problems may thus only become apparent subsequent to MBO. Both the operating activities of the business and financial aspects may have an underlying soundness that can be addressed with the replacement of inadequate management. In the case of MBO failure primarily because of poor management, therefore, it may be expected that secured creditor recovery rates will be relatively high.

Evidence suggests that in general, MBOs do not fail quickly. Wright, et al. (1995) find that in a cohort of 158 UK MBOs, less than one per cent had failed after three years but that after six years seven per cent had failed. A shorter period to failure may reflect financial difficulties due to excessive leverage or trading problems due to the loss of major customers. Secured creditors in MBOs tend to receive greater information for monitoring purposes that is used to take corrective actions when covenants are breached (Citron, Robbie and Wright, 1997). This monitoring by banks may be closer in the early years of an MBO when there is less track history and risk is high. A longer period to failure is consistent with the relatively slow decline of a market where management are unable to successfully introduce new products. A higher repayment rate might be expected out of longer-lived MBOs as debt outstanding is likely to fall with MBO life. However, in MBOs that enter receivership, debt may not have fallen as much as it would have done in successful MBOs (Wright, et al., 1996; Andrade and Kaplan, 1998). In addition, if the trading base has been eroded over time and assets have become old or obsolete due to a lack of cash to replace them, realization values may be low. Hence, it is expected that secured creditor recovery rates will be higher for MBOs that become distressed sooner after buyout.

Larger and smaller buy-outs are more prone to failure than medium sized ones (Wright, Wilson, Robbie and Ennew, 1996). Informational asymmetries may be greater for smaller transactions whereas larger MBOs typically have complex financial structures and are more prone to excessive leverage (Kaplan and Stein, 1993). It may be possible to generate significant amounts of cash from the disposal of parts of larger MBOs, some of which may be sold as going concerns. However, this

may still leave significant problematical activities. It may thus be difficult to find buyers willing to acquire a large troubled business unless they pay a proportionately lower price because of the size and complexity of the restructuring task. Hence, overall larger buy-outs are expected to be negatively associated with higher repayments to secured creditors.

Asset security is an important aspect of lending to MBOs by banks. There is some debate about the impact of the nature of the assets on likely repayment of secured debt. The industrial sector in which a firm is located provides an indicator of the nature of assets. For non-MBOs, LoPucki (1983) shows that manufacturing firms are more likely to reorganise than liquidate and hence lead to greater repayment. However, as the manufacturing firms in her sample tended to be larger than other firms, this finding may also reflect size rather than industry effects. In contrast, and after controlling for size, Campbell (1996) finds also for non-MBOs that construction and manufacturing firms are more likely to liquidate than to reorganise.

Firms in retail and wholesale sectors may be more likely to have assets (stores) that can be sold readily. The presence of such assets are typically used as collateral for higher lending and may be targeted for piecemeal disposal to pay down certain tranches of debt as for example in the cases of the Safeway LBO in the US (Denis, 1994) and the Gateway LBO in the UK (Wright, Wilson, Robbie and Ennew, 1994). Similarly, when such MBOs become distressed, it may be possible to dispose of stores piecemeal to raise cash. However, it is not clear that it will be possible to raise *proportionately* greater amounts of cash from the property of retail/wholesale MBOs in distress than for MBOs in other sectors.

### *3.2 Monitoring*

Two aspects of monitoring that are especially pertinent to recovery rates of secured debt in distressed MBOs concern the audit report opinion and the number of secured creditors.

The presence of an audit report with a going concern modification may be a signal that the MBO is becoming distressed. Research into listed companies in the UK shows that auditors appear reluctant to modify their audit report for going concern uncertainties unless the company is already in dire financial straits (Citron and Taffler, 1999). Assuming auditor behaviour is similar in this population of unlisted companies, it is expected that if receivers are not called in until after a modified audit report has been issued, then the secured creditors will obtain relatively low rates of debt recovery.

The effectiveness of the monitoring role of secured creditors may be influenced by the number that are present in a particular deal. Bolton and Scharfstein (1996) show that it is optimal for firms with low credit quality to maximize liquidation values by borrowing from just one secured creditor and by adopting rules that make it easier to complete an asset sale. Liquidation value may be lower with multiple creditors. While difficulties in getting agreement among creditors to sell may increase the sale price to persuade them to sell, this may be more than offset by the unwillingness of potential bidders to sink the costs of becoming informed about the firm's assets. Wilkins and

Zimmer (1996) show how an independent third party adviser to creditors can align the various interests of the various claim-holders.

However, the greater the number of lenders in a loan syndicate, the greater the potential conflicts of interest among claim-holders (Wruck, 1990), the greater the renegotiation costs associated with default (Smith, 1993) and the less likely is private renegotiation of financial distress to be successful (Gilson, John and Lang, 1990). Evidence from the syndication of venture capital investments suggests that larger syndicates impose increasingly greater coordination costs (Lockett and Wright, 2001). Where there are syndicates in MBO lending, all primary contacts with the client are generally channelled through the lead (agent) bank so that syndicate members have less influence on monitoring (Citron, et al., 1997). As a result, syndicated lending in MBOs leads to significantly longer delays in implementing action than in single creditor lending (Citron, et al., 1997). Moreover, such actions are also reported to be significantly less effective in syndicate lending.

It is possible, therefore, that a multiplicity of secured creditors could both lead to delayed corrective action prior to receivership and adversely affect the conduct of the receivership when it occurs. If different creditors have different and possibly conflicting priorities and objectives, the variety of pressures on the receivers and the accompanying co-ordination problems may result in a lower overall rate of payout to the body of secured creditors.

### *3.3 Effectiveness of Receivership Procedure*

The proportion of debt repayable may be affected by the expertise of the receiver handling the failed MBO. More expert receivers with greater reputations, such as members of Big 6 accounting firms, may be expected to be more adept at disposing of failed businesses for higher prices.

Receivers may dispose of failed MBOs in two principal ways. Either the business may be sold as a going concern or liquidated as a set of assets. The highly secured position has led to a suggestion that banks will prefer to liquidate companies prematurely rather than undergo a rescue process. Franks and Sussman (2000) show in their UK study of financially distressed small and medium sized companies that banks do not automatically liquidate firms upon distress. They find that almost a half of firms placed in bankruptcy are sold as going concerns. US evidence indicates that the prices of asset sales under both reorganization (Chapter 11) and liquidation (Chapter 7) regimes are substantially lower than prices obtained by non-distressed firms as bankruptcy status attracts “low ball” bids (Pulvino, 1999).

As noted above, the use of higher leverage in buy-outs and closer institutional control may mean that firms signal financial distress earlier than if they were funded substantially by equity (Jensen, 1991). MBO firms that default on loan payments and subsequently enter receivership may retain greater value. As a result, they may have good prospects of being reorganized and sold as going concerns rather than being liquidated. Andrade and Kaplan (1998) show in their sample of HLTs that the majority exit Chapter 11 restructuring as public companies, with only a small number being sold or liquidated.

Shleifer and Vishny (1992) argue that increased liquidity in the market for corporate assets from the 1980s onwards enabled higher leverage to be extended to MBOs since significant amounts of debt could be paid down from the subsequent sale of assets. Franks and Torous (1994), in their study of firms undergoing informal and Chapter 11 bankruptcy resolution, find evidence to support this thesis. This increased liquidity in the market for corporate assets also suggested that it would be more feasible to recoup significant amounts of debt from the sale of MBOs entering bankruptcy. Hence, it is expected that distressed MBOs which are subsequently sold as going concerns will lead to greater percentages of secured debt recovery than cases where sale is piecemeal.

The effectiveness of the receivership process may also be affected by the state of the economic cycle. It may be that those MBOs set up during or close to a period of recession will have more conservative financial structures and be monitored more closely and may, therefore, achieve higher repayments to secured creditors. However, many firms fail as the economy emerges from recession. These companies will have been weakened by the recession years and then find they are insufficiently capitalised to cope with the growth of the immediately post-recession period. Thus the receiverships of these severely weakened firms will be put at a relative disadvantage, as a result of which they may achieve lower repayments than those occurring a number of years after recession. Furthermore, the liquidity of markets for corporate assets may be reduced in conditions of recession, hence potentially reducing the prices at which receivers can sell MBOs in distress (Shleifer and Vishny, 1992; Franks and Torous, 1994).

#### **4. Data and Methodology**

The study involved the compilation of a novel dataset of MBOs completed in the period 1992 and 1995 that had subsequently entered receivership. This period was selected for two main reasons. First, the start date represented a time when the UK economy was still in recession. Second, the end date allowed sufficient time for failures to emerge and for the completion of the receivership process in a significant proportion of cases.

The Centre for Management Buy-out Research (CMBOR) database was used to identify the cohort of buy-outs. The CMBOR database is compiled from a wide range of sources including twice yearly surveys of private equity and debt providers to buy-outs<sup>1</sup>, press releases by these financiers, the financial press, stock exchange circulars issued by companies divesting subsidiaries as MBOs and companies annual reports. The database has no lower size cut-off and is unique in effectively representing the universe of buy-outs in the UK. Data on failures of buy-outs and buy-ins are collected by CMBOR from its regular surveys of participants in the buy-out market, Companies House returns and Extel, monitoring of the financial press and the London Gazette.

---

<sup>1</sup> These surveys generally obtain a 100% response rate from all the financiers active in the buy-out market as they receive a free copy of a quarterly review of aggregate market trends based on the data they supply which is recognised as the leading source of information in the market.



A total of 2,241 buy-outs and buy-ins were completed in the period 1992 to 1995 with a combined transaction value of £15.2 billion. By June 2000, a substantial proportion of these buy-outs and buy-ins had changed their ownership form (Table 1) with receivership being the second most common. Some 202 deals had entered receivership, 9 percent of the total. In value terms, 4.1 percent of the capital directed at all deals during the period was used for buy-outs with a known value that had subsequently failed by June 2000.

TABLE 1 HERE
--------------

It was possible to obtain Companies House microfiches for 139 of the 202 MBO receivership cases identified on the CMBOR database. Of these, 71 were found to be unsuitable for analysis for a number of reasons such as lack of data on appointment of the receiver or absence of receivers' receipts and payments accounts; receiver appointed very recently; some cases of voluntary liquidations; and problems with establishing correct company identity.

Of the remaining 68 potentially suitable cases, the receivership process was still continuing at the time our analysis was undertaken in 26 firms. It is likely that further amounts will be realised for the secured creditors in these cases. The analysis in this paper, therefore, relates to the remaining 42 cases (Table 2). Of these, in 33 cases (79%) the receivership process was complete, with the company having been struck off. While the remaining nine (21%) of cases were technically continuing, they were treated as completed. These are cases where the receiver has filed the final receipts and payments accounts or strongly indicated that future payments will be

insignificant, and one case where the receivers informed us directly that the receivership was effectively complete. The names of the 42 MBOs together with details on the date each MBO was set up, its value at that date, the date it entered receivership and the percentage of secured debt repaid are contained in the Appendix to the paper.

TABLE 2 HERE
--------------

Data on the number of secured creditors and the amounts owing to each are obtained from the directors' Statements of Affairs. The mode of sale of the MBO by the receivers, the identity of the receivers, the MBO's industry sector and the cause of failure are obtained from the receivers' report to the creditors. The amount of secured debt repaid by the receivers is determined from their annual receipts and payments accounts. The duration of the MBO from creation until receivership is obtained from the CMBOR database, while the value of the MBO at the date it is set up is taken in 29 cases from the CMBOR database supplemented in nine additional cases by the value of total assets less current liabilities from the first published balance sheet subsequent to the MBO being established.

Accounting data from the MBOs' published financial statements are available for only a subset of our population. Balance sheet and audit report information is available in 23 cases. Where more than one set of accounts is available, the last set prior to the appointment of the receivers is used.

As shown in Table 3 the average duration of the 42 MBOs was 30 months. For the 32 cases in our population for which we have data, the mean (median) length of the receivership was 829 days ie. 2.3 years (783 days ie. 2.2 years), ranging from a minimum of nine days to a maximum of 1,656 days (4.6 years).

TABLE 3 HERE
--------------

The mean amount of secured debt owing at the date of the receivership was £980,900 (median = £603,500), of which an average of 62 percent was repaid (all averages cited in this paper are unweighted, so that no greater weight is given to cases with larger amounts of debt outstanding). Supporting expectations that secured creditors will hold both fixed and flexible charges, of our population of 42 receiverships, in 39 (92.9 per cent) cases the secured creditors held exclusively both fixed and floating charges, while in three cases some creditors held both while others held only fixed charges. This degree of holding fixed and floating charges exceeds the top end of the range of 52.6 per cent to 91.2 per cent across the three banks examined by Franks and Sussman (2000), indicating a higher degree of fixed and floating charge holding by banks in MBOs than in smaller private firms generally.

## **5. Results**

### *5.1 MBO Firm Characteristics*

### *Cause of Receivership*

In 37 of the 42 cases the receivers referred to the cause of MBO failure in their report attached to the Statement of Affairs. In Table 4, Panel A these causes have been categorised as operational, financial, managerial or other (these being cases where the cause is simply ascribed to losses or inheriting loss-making companies).<sup>2</sup> The mean repayment rate in the 12 cases where cause is managerial or other is 76%, significantly higher (at the 5 per cent level, two-tailed test) than the 54 per cent mean repayment when the cause is operational or financial.

TABLE 4 HERE
--------------

### *Duration of the MBO*

Table 4, Panel B shows secured debt repayment analysed by percentage repaid in quartiles, including the number of cases with 100 percent repaid. It also shows the average duration of the MBOs falling in each repayment category. The table reveals no discernible relationship between percentage repaid and duration of the MBO. While the seven cases in the lowest repayment category (up to 25%) had a relatively

---

<sup>2</sup> It is recognised that classifying cause of failure involves an element of subjective judgement. Cause of failure is classified as operational where the problems are primarily external to the company. Cause of failure for Biltens Tableware, for example, is classified as 'operational' as it suffered from the strong pound sterling and economic recession in the Far East, leading to a sharp drop off in sales. Personality Profiles is classified as 'financial'. The company started life with significant deferred purchase liabilities and unpaid acquisition costs as well as substantial debt. These factors together with sales ledger problems resulted in excessive strain on cash flow. Truck and Van is classified as 'managerial' because when a large loss-making contract was terminated, although required redundancies were identified they were not implemented.

short average duration of only 24 months, the average duration of the ten cases achieving 100 percent repayment is identical and also below the overall average of 30 months.

The average life of the 24 MBOs in which the repayment exceeded 50 percent was 27.8 months while that of the 18 cases with a less than 50 percent repayment was somewhat longer at 32.6 months. However this difference is not statistically significant. Looking at the most long-lived MBOs, the five cases which lasted over four years repaid an average of 78 percent to secured creditors while the other 37 cases repaid only 59 percent. Again, however, this difference is not statistically significant.

The absence of any significant relationship here may be due to: (a) The countervailing influence of opposing factors such as described at the beginning of this section. (b) The possible overriding influence of case-specific factors. This would point to the importance of carrying out thorough due diligence procedures in each case. (c) The strong influence of a few cases in the analysis given the relatively small number of cases available.

### *Size*

To investigate whether size of MBO is associated with higher payments to secured creditors out of receivership, we look at size as measured by value of the MBO at the date it was established. Data are available on value for 36 of the 42 cases.

While there is a significant positive association between value and the amount of secured debt due at the date of the receivership (correlation coefficient = .46;  $p = .005$ ), there is no relation between value and the proportion of this debt repaid (correlation coefficient = -.13;  $p = .44$ ).

### *Sector*

The buy-outs in our sample can be grouped into seven broad industries. Highest repayments to secured creditors range from means of 100% in finance ( $n=1$ ), 80% in timber/furniture ( $n=5$ ), 75% in transport ( $n=2$ ) and 71% in systems ( $n=4$ ) at the upper end through to 43% in paper/printing/publishing ( $n=7$ ) and 44% in retail/wholesale ( $n=6$ ) at the lower end. The 19 manufacturing firms in the sample recouped an average 62% of secured debt.

The mean repayment in the six retail/wholesale cases of 44% compares with 65% for all other 36 companies, although the difference is not significant ( $p = .16$ , two-tailed test) (Table 4, Panel C). The lower repayment rate among retail/wholesale companies may be due to lower balance sheet liquidity prevalent in that sector. We explore this proposition by analysing balance sheet ratios taken from the last set of published accounts prior to receivership for the small number of companies for which these are available. The acid test ratio (ratio of debtors + cash/current liabilities) has a mean value of 0.60 (median = 0.67) for the four retail/wholesale companies for which data are available compared with a mean of 0.77 (median = 0.68) for the 19 companies in other sectors, neither of these differences being statistically significant. The mean ratio of debtors to creditors is only 1.01 for the four retail/wholesale companies compared with 52.07 (median = 1.70) in the 15 other cases. The difference in medians

is marginally significant at  $p = .07$  using the Kruskal-Wallis test indicative of some lower degree of liquidity among retail/wholesale firms.

## *5.2 MBO monitoring*

### *Audit Report Going Concern Modification*

In only two (nine per cent) of the 23 cases for which audit reports are available did the auditor modify the report on the grounds of going concern uncertainties (Table 5, Panel A). The average repayment rate in these two cases was only 28 per cent compared with 62 per cent in the other 21 cases, a difference significant at the seven per cent level (one-tailed test). There is thus some evidence that a greater proportion of the value of a business will have been lost if receivers are not called in until a going concern modified audit report is issued.

TABLE 5 HERE
--------------

### *Number of secured creditors*

In our sample, 28 cases had one secured creditor while 14 had more than one (Table 5, Panel B). The 28 receiverships with a single secured creditor achieved a 66.6 percent repayment rate on average, while those with more than one secured creditor paid back an average of only 51.9 percent, a difference weakly significant at the 9 percent level (one-tailed test).

Interestingly, the only case in the sample with as many as four secured creditors, Coventry Binders, achieved a high 86 percent repayment. Excluding this case from

the analysis produces an even stronger result for the remaining 41 receiverships, with the 66.6 percent repayment in the 28 single creditor cases now comparing with only 49.3 percent in the 13 cases with two or three secured creditors (difference statistically significant at the 6 percent level, one-tailed).

As can be seen from Table 5, there is no difference in repayment rates between cases with two secured creditors as compared to those with three. It would appear, therefore, that the crucial cut-off is having more than one such creditor.<sup>3</sup>

### *5.3 Effectiveness of Receivership Procedure*

#### *Identity of Receivership Firm*

The identity of the receivership firms was also analysed to see if Big Six receivers achieved higher repayment rates (Table 6, Panel A). Exactly half of the 42 cases fell into each of the two receiver firm categories. The repayment rates achieved by each group were virtually identical, with the 21 Big Six receivers repaying 63 percent of secured debt and the 21 non-Big Six firms 61 percent. This, therefore, is not a determining factor.

---

<sup>3</sup> Table 5 also indicates that a greater number of secured creditors is associated with a larger amount of secured debt outstanding at the date of the receivership. In fact this positive correlation is statistically significant (correlation coefficient = 0.48;  $p = .001$ ). While the percentage repaid appears to be negatively associated with the amount due, the result is not statistically significant (correlation coefficient = -0.19;  $p = .24$ ). It therefore seems that it is the number of secured creditors rather than the total amount due that is the stronger driver of repayment rates, but this issue warrants further research.



TABLE 6 HERE
--------------

### *Mode of Sale*

The mode of realization of an MBO's assets is determined by reading the receivers' statements to the creditors. Cases are classified as 'going concern' sales where this is explicitly stated. The receivers usually try initially to sell the business as a going concern, often to parties with whom the MBO directors had been in contact prior to the receivership. A typical statement is that "the business was sold as a going concern on (date) for (amount)." Where an MBO is sold partially as a going concern with the remaining assets sold piecemeal it is classified as a 'mixed' sale, and all other cases are treated as 'piecemeal' realisations.

Eight (19 per cent) of the 42 MBOs are going concern sales and these achieve a mean 64 per cent repayment to secured creditors (Table 6, Panel B). Six cases (14 percent of the total) are mixed sales with a mean 82 percent repayment rate, while the remaining 28 cases (67 percent of the total) repay an average of 57 percent. Combining the going concern and mixed cases shows that the mean repayment in the 14 cases with a going concern element in their asset sales was 71 per cent compared with only 57 percent in the 28 piecemeal realisations, a weakly significant difference at the 9 per cent level (one-tailed test).

### *Economic Cycle*

Comparing the repayment rates of the 21 MBOs set up in the recessionary period before 1994 with those for the 21 post-1993 cases, it can be seen that the secured creditors of the earlier MBOs received a 63.5 percent repayment on average while

those of the later cases received a slightly lower 59.9 percent (Table 6, Panel C). However, this difference is not statistically significant.

To test the expectation that receiverships of severely weakened firms may achieve lower repayments than those occurring a number of years after recession we compare repayment rates for the 18 receiverships dated 1995 or earlier with those for the 24 cases dated 1996 or later. While the 18 earlier receiverships achieved an average payout of 65.2 percent, the 24 later cases paid back an average of only 59.0 percent. Once again, however, the difference is not statistically significant.

#### *5.4 Multivariate Analysis*

Multivariate analysis is undertaken to examine the relation between each explanatory variable and debt repayment rates while taking account of the effect of the remaining independent variables.

The factors influencing the amounts recovered by secured creditors were analysed in a multivariate framework using multiple and logistic regression. Equations of the following general form were estimated:

$$REC_i = SECCRED_i + SALMOD_i + MBODUR_i + RECTYP_i + FAILCAUS_i +$$

$$LogSIZE_i + IND_i + ECON_i + QUAL_i$$

For multiple regression the dependent variable (REC) was measured as the proportion of secured debt repaid. With respect to logistic regression, a binary measure was used which took a value of 1 for amounts of recovery at or above the median (64.9 per cent) and 0 otherwise.<sup>4</sup>

The multiple regression and the logistic regression are each run twice, once with the independent variable for the number of secured creditors measured as the actual number of such creditors (SECCREDCONT), and once as a binary variable taking the value 1 where there is more than one secured creditor and the value 0 when there is only one secured creditor (SECCREDBIN).

The remaining independent variables are defined as follows:

SALMOD     = 1 if going concern or mixed (partly going concern) sale  
              = 0 if wholly piecemeal sale

MBODUR     = life of MBO measured in months

RECTYP     = 1 if receiver is not a Big Six firm  
              = 0 if receiver is a Big Six firm

---

<sup>4</sup> As there was some skewness in the data towards the higher end of the distribution, a second set of logistic regressions was run with the binary measure taking the value 1 where 90% or more of the secured debt was repaid and 0 otherwise was constructed. The overall regressions are as significant as those reported here although the coefficients on individual independent variables are not. These results are therefore not reported in this paper.

FAILCAUS = 1 if managerial or other  
= 0 if financial or operational

LogSIZE = Natural logarithm of value of MBO at date it was established or, if  
this not available, the balance sheet value of total assets minus current  
liabilities

IND = 1 if not retail or wholesale  
= 0 if retail or wholesale

ECON = 1 if receiver appointed in 1996 or later  
= 0 if receiver appointed before 1996<sup>5</sup>

Table 7 presents the results of the multiple regressions of the above variables on the proportion of secured debt repaid for the 31 cases with full data availability. In the full model, Model 1, three of the independent variables are significant. As expected going concern asset realisation (SALMOD) is highly positively associated with higher debt repayment ( $p = 0.056$ ). In Model 1 a higher repayment rate is also associated with cause of failure (FAILCAUS) being managerial or other ( $p = 0.093$ ). Also as expected, the larger the MBO (LogSIZE) the lower the repayment rate to secured

---

<sup>5</sup> Regressions were also run with an alternative date cut-off representing whether the MBO was established in 1992/1993 or from 1994 onwards. The results are very similar although somewhat less significant than those reported here. It should be noted that there is a positive correlation of 0.518 ( $p = 0.003$  two-tailed) between MBODUR and ECON, indicating not surprisingly that the longer lived MBOs in our sample appointed their receivers at a later date.

creditors ( $p = 0.057$ ). The number of secured creditors, measured as a continuous variable, is not significant. However, the overall equation for Model 1 was insignificant at the 10 per cent level. In Model 2, the insignificant variables IND and ECON are removed. The same three variables remain significant with improved significance levels and the overall model is now significant at the 9 per cent level.

TABLE 7 HERE
--------------

In Models 3 through 6 a new variable, QUAL, representing the presence or absence of a going concern modification is introduced as follows:

QUAL = 1 if last audit report prior to failure is not modified for going concern uncertainties  
= 0 if last audit report prior to failure is modified for going concern uncertainties

Models 3 and 4, like Models 1 and 2, measure the number of secured creditors as a continuous variable while Models 5 and 6, use a binary measure. In addition, in Models 3 through 6, two of the previously used independent variables are omitted as being significantly correlated with QUAL. These are MBODUR with a correlation of  $-0.42$  ( $p = 0.062$  two-tailed) and RECTYP with a correlation of  $-0.37$  ( $p = 0.110$  two-tailed). The number of cases with data availability is reduced to 20.

Models 3 through 6 have higher adjusted  $R^2$ s than Models 1 and 2, ranging from 0.31 to 0.38. Two of the same independent variables – SALMOD and LogSIZE – remain

significant, as is the new variable QUAL with the presence of an audit report going concern modification being associated with a lower repayment rate as expected. FAILCAUS, measuring the cause of failure, is no longer significant.

The results of Models 1 to 6 are tested further using the same independent variables in a logistic regression with the dependent variable = 1 if the percentage of secured debt repaid is above the median of 64.9<sup>6</sup> per cent and = 0 if below the median. The results, shown in Table 8, are very similar to the multiple regression models but with generally stronger significance levels. Models 7 through 10 are significant overall with high correct classification rates (from 80.7 per cent to 87.1 per cent), and with the same three independent variables – SALMOD (all Models), FAILCAUS (Models 7 and 8) and LogSIZE (Models 7, 8 and 10) - significant with the same signs.

TABLE 8 HERE
--------------

## **6. Conclusions**

This paper has examined the extent and determinants of recovery rates by secured creditors from management buy-outs in distress using a unique data set of 42 management buy-outs that entered receivership.

We find that on average, 62 per cent of secured credit is recovered when buy-outs enter the receivership process. This is comparable with the 70 per cent found to be recovered by banks in Franks and Sussman's (2000) study of privately held small and

medium sized companies. However, the recovery rate is below that identified in US studies of non-buyouts (Weiss, 1990; Franks and Torous, 1994; Tashjian et al., 1996). The determinants of secured creditor recovery rates were hypothesized to relate to three areas: the characteristics of the MBO firms, the nature of the MBO monitoring process and the effectiveness of the receivership process. Using various specifications, our multivariate analysis provides evidence of support for elements of each of these three explanations. As regards the characteristics of the MBO firms, we find weak evidence that the percentage of secured credit recovered is increased where the principal reason for failure concerns managerial factors and is reduced the larger the buy-out. With respect to monitoring, the presence of a going concern qualification in the audit report serves to reduce the recovery rate by secured creditors but the number of secured creditors does not appear to be significantly associated with the recovery rate. The effectiveness of the receivership process is evident in that the percentage of secured credit recovered is increased when the distressed buy-out is sold as a going concern but neither the reputation of the receiver nor the timing of the economic cycle were found to be significantly associated with the recovery rate.

The finding of consistency in the secured credit recovery rate between our study and that of Franks and Sussman (2000) for small to medium sized non-MBOs suggests that banks may have developed similar monitoring policies across their portfolios (Citron et al., 1997:292). The absence of a significant association between the number of secured creditors and the secured credit recovery rate suggests that coordination of lending syndicates in MBOs is not generally problematical. However, our findings may raise questions about the claimed specialist screening and monitoring by banks

---

<sup>6</sup> This is the median for the total sample of 42 cases, not for the 31 cases entered in the logistic

engaged in lending to MBOs. The finding of lower recovery rates for larger MBOs is particularly interesting in this context given the general development of larger transactions in the UK MBO market (CMBOR, 2001). While the transactions costs of larger MBOs are often argued by practitioners to be proportionately lower than for smaller MBOs, it is not clear whether the banks are devoting sufficient attention to understanding the value of the asset security, the stability of the cash flows and the complexities involved in the MBOs to whom they lend. This may be particularly problematical in MBOs that were formerly divisions of larger groups, the dominant source of UK MBOs, where detailed pre-MBO information is limited. This suggests that the banks may not be devoting sufficient specialist monitoring attention to MBOs. There is some evidence that the main clearing banks in the UK in particular pass the MBO company to a relationship manager in the branch network (Citron, et al., 1997). Further research is required to examine more directly the nature of the link between post-MBO monitoring and subsequent failure.

The apparent difference between the secured creditor recovery rates between the available UK and US studies cannot at this stage be taken as evidence of differences in the effectiveness of bankruptcy regimes in the two countries as the nature of the samples in the two sets of studies was quite distinct. Such comparative analysis was outside the scope of this paper. Further specifically designed comparative analysis of the effectiveness of different bankruptcy regimes is required.



## References

- Andrade, G. and S. Kaplan, 1998, How Costly is Financial (Not Economic) Distress? Evidence from Highly Leveraged Transactions That Became Distressed, *Journal of Finance*, LIII (5): 1443-1493.
- Bolton, P. and D. Scharfstein, 1996, Optimal Debt Structure and the Number of Creditors, *Journal of Political Economy*, 104(1): 1-25.
- Brown, D.T., C.M. James and R.M. Mooradian, 1994, Asset Sales by Financially Distressed Firms, *Journal of Corporate Finance*, 1: 233-257.
- Bruner, R. and K. Eades, 1992, The Crash of the REVCO LBO: The Hypothesis of Inadequate Capital, *Financial Management*, 21(1): 35-49.
- Campbell, S., 1996, Predicting Bankruptcy Reorganization for Closely Held Firms, *Accounting Horizons*, 10(3): 12-25.
- Citron, D., K. Robbie, and M. Wright, 1997, Loan Covenants and relationship banking in MBOs, *Accounting and Business Research*, 27(4): 277-296.
- Citron, D. and R.J. Taffler, 1999, Audit Report Disclosures of Going Concern Uncertainties: A Continuing Puzzle (ACCA Research Report No.60, Certified Accountants Educational Trust, London).

- CMBOR, 2001, Market Developments, *Management Buy-outs: Quarterly Review*, Centre for Management Buy-out Research, Autumn.
- Cook, G., N. Pandit, and D. Milman, 2001, Formal Rehabilitation Procedures and Insolvent Firms: Empirical Evidence on the British Company Voluntary Arrangement Procedure, *Small Business Economics*, 17 (4): 255-271.
- Cotter, J. and S. Peck, 2001, The Structure of Debt and Active Equity Investors: The Case of the Buyout Specialist, *Journal of Financial Economics*, 59: 101-147.
- Denis, D., 1994, Organizational Form and the Consequences of Highly Leveraged Transactions: Kroger's Recapitalization and Safeway's LBO, *Journal of Financial Economics*, 36:193-224.
- Department of Trade and Industry, 1999, A Review of Company Rescue and Business Reconstruction Mechanisms – Consultation Document, (London).
- Detragiache, E., 1995, Adverse Selection and the Costs of Financial Distress, *Journal of Corporate Finance*, 1: 347-365.
- Franks, J. and W.N. Torous, 1994, A Comparison of Financial Recontracting in Distressed Exchanges and Chapter 11 Reorganizations, *Journal of Financial Economics*, 35: 349-370.

- Franks, J., K.G. Nyborg, and W.N. Torous, 1996, A Comparison of US, UK, and German Insolvency Codes, *Financial Management*, 25(3):86-101.
- Franks, J. and O. Sussman, 2000, Resolving Financial Distress By Way of a Contract: An Empirical Study of Small UK Companies, (London Business School, mimeo).
- Gilson, S., K. John, and L. Lang, 1990, Troubled Debt Restructurings: An Empirical Study of Private Reorganizations of Firms in Default, *Journal of Financial Economics*, 27: 315-353.
- Jensen, M., 1986, Agency Costs of Free Cash Flow, Corporate Finance and Takeovers, *American Economic Review*, 76(2): 323-329.
- Kaplan, S. and J. Stein, 1993, The Evolution of Buy-out Pricing and Financial Structure in the 1980s, *Quarterly Journal of Economics*, CVIII(2):313-59.
- Kreuger, J., 1990, *Management Buy-outs*, (London: Butterworths).
- Lockett, A. and M. Wright, 2001, Structure, Management and Information in Syndicated Venture Capital Investments, (CMBOR Occasional Paper).
- LoPucki, L.M., 1983, The Debtor in Full Control – Systems Failure Under Chapter 11 of the Bankruptcy Code?, *American Bankruptcy Law Journal*, 57: 99-126.

- Pulvino, T., 1999, Effects of Bankruptcy Court Protection on Asset Sales, *Journal of Financial Economics*, 52(2):151-186.
- Shleifer, A. and R. Vishny, 1992, Liquidation Values and Debt Capacity, *Journal of Finance*, 47:1343-66.
- Smith, C. W., 1993, A Perspective on Accounting-based Debt Covenant Violations, *Accounting Review*, April: 289-303.
- Sterling, M. and M. Wright, 1990, *Management Buyouts and the Law*, (Oxford: Blackwell Law).
- Tashjian, E., R.C. Lease, and J.J. McConnell, 1996, Prepacks: An Empirical Analysis of Prepackaged Bankruptcies, *Journal of Financial Economics*, 40: 135-162.
- Weiss, L.A., 1990, Bankruptcy Resolution: Direct Costs and Violation of Priority Claims, *Journal of Financial Economics*, 27: 285-314.
- Wilkins, T. and I. Zimmer, 1996, Economic Consequences of Debt Covenant Violation: The Case of Inno-Pacific Holdings Limited, *British Accounting Review*, 28: 121-137.
- Wright, M., N. Wilson, K. Robbie, and C. Ennew, 1994, Restructuring and Failure in Buy-outs and Buy-ins, *Business Strategy Review*, 5(2):21-40.

Wright, M., S. Thompson, K. Robbie, and P. Wong, 1995, Management Buy-outs in the Short and Long Term, *Journal of Business Finance and Accounting*, 22(4): 461-483.

Wright, M., N. Wilson, K. Robbie, and C. Ennew, 1996, An Analysis of Management Buy-out Failure, *Managerial and Decision Economics*, 17(1):57-70.

Wright, M., J. Normand, and K. Robbie, 1990, *Touche Ross's Management Buy-outs*, (Cambridge: Woodhead-Faulkner).

Wruck, K., 1990, Financial Distress, Reorganization and Organizational Efficiency, *Journal of Financial Economics*, 27: 419-444.

**Table 1: Change in Status of all Buy-outs 1992-1995**

Year	Total	Float	Trade Sale	Second MBO	Receiver
1992	595	27	91	23	47
1993	492	23	71	10	55
1994	557	13	84	25	47
1995	597	19	69	15	53
Total	2241	82	315	73	202
Total (%)		3.66	14.06	3.26	9.01

Source: CMBOR/Barclays Private Equity/Deloitte & Touche

**Table 2: Cases Analysed by Year of MBO and Year of Receivership**

Year	MBO (no.)	Receivership (no.)
1991	1	0
1992	9	1
1993	11	3
1994	16	7
1995	5	7
1996	0	11
1997	0	6
1998	0	6
1999	0	1
Total	42	42

Source: CMBOR/Barclays Private Equity/Deloitte & Touche

**Table 3: MBOs in Receivership – Descriptive Statistics (n=42)**

	Mean	Median	Minimum	Maximum	Standard Deviation
Average Duration of MBO (months)	29.8	29.0	7.0	75.8	16.99
Amount of Secured Debt Due at Date of Receivership (£ thousands)	980.9	603.5	56.3	7419.6	1374.05
% of Secured Debt Repaid	61.7	64.9	5.9	100.0	31.90

**Table 4: Factors Affecting Creditor Recovery: Firm Characteristics**

This table provides univariate analysis of the variables affecting secured creditor recovery rates for the 42 MBOs in the sample. In Panel A, differences are tested between those MBOs where the cause of failure was managerial/other and those where cause of failure was operational/financial. In Panel B differences in MBO duration between percentage quartiles of repayment are tested. In Panel C differences in industrial sectors are tested.

Differences in industrial sectors are tested.						
Factor		No. Cases		Secured Debt Repaid (mean %)		
Panel A: Causes of Failure						
Operational		19		54		
Financial		6		55		
Managerial		7		71		
Other (“losses”)		5		83		
All		37		61*		
Panel B: Mean Duration of MBO (mths) <sup>1</sup>						
Secured Debt repaid (%)	Up to 25%	25.1-50	50.1-75	75.1-99.9	100	Total/Avg
Average duration (mths)	24	38	21	38	24	30
No. of cases	7	11	6	8	10	42
Panel C: Industrial Sector <sup>1</sup>						
Retail/ Wholesale		6		44		
Other		36		65		

**Note 1** - difference between groups not significant ; \* difference between groups significant at 0.05 level

**Table 5: Factors Affecting Creditor Recovery: Monitoring**

This table provides univariate analysis of the variables affecting secured creditor recovery rates for the 42 MBOs in the sample. In Panel A, differences are tested between those MBOs where there was a going concern modification to the audit report and where this was not the case. In Panel B, differences are tested between those MBOs having one secured creditor and those having more than one secured creditor.

Factor	No. Cases	Secured Debt Repaid (mean %)	Mean Amount of Secured Debt Due at Date of Receivership (£'000)
Panel A: Audit Report Going Concern Modification			
Yes	2	28	
No	21	62+	
Panel B: No. of Secured Creditors			
1	28	67	667.2
2	9	49	762.2
3	4	50	3,374.0
4	1	86	2,161.1
All	42	62+	980.9

Note + - differences between groups significant at 0.1 level



**Table 6: Factors Affecting Creditor Recovery: Effectiveness of Receivership Process**

This table provides univariate analysis of the variables affecting secured creditor recovery rates for the 42 MBOs in the sample. In Panel A, differences are tested between those MBOs where the Receivership firm was a Big Six accounting firm and where this was not the case. In Panel B, differences are tested between those MBOs sold as Going concern plus those sold through mixed methods and those sold piecemeal.

Factor	No. Cases	Secured Debt Repaid (mean %)
Panel A: Receivership Firm		
Big Six	21	63
Non-Big Six	21	61
Panel B: Mode of Sale		
Going Concern	8	64
Mixed	6	82
Piecemeal	28	57+
Panel C: Economic Timing		
MBO Pre 94	21	63.5
MBO Post 93	21	59.9
Receivership pre 96	18	65.2
Receivership post 95	24	59.0

Note +- difference between groups significant at 0.1 level

**Table 7: Multiple Regression of Variables Associated With Proportion of Secured Debt Repaid**

Dependent variable in all models is proportion of secured debt repaid. SECCREDCONT is the number of secured creditors; SECCREDBIN = 1 if more than one secured creditor; = 0 otherwise; SALMOD = 1 if going concern or mixed sale; = 0 otherwise; MBODUR = life of MBO in months; RECTYP = 1 if receiver not a Big Six firm; = 0 otherwise; FAILCAUS = 1 if managerial or other; = 0 if financial or operational; LOGSIZE = natural log of value of MBO at date it was established or, if this not available, of the balance sheet value of total assets minus current liabilities; IND = 1 if not retail/wholesale; = 0 otherwise; ECON = 1 if receiver appointed 1996 or later; = 0 otherwise; QUAL = 1 if audit report not modified for going concern uncertainties; = 0 otherwise; t-values are in parentheses

	Predicted	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
		(all variables)	(reduced)	(all variables)	(reduced)	(all variables)	(reduced)
Variable	Sign	Coefficient (p value)	Coefficient (p value)	Coefficient (p value)	Coefficient (p value)	Coefficient (p value)	Coefficient (p value)
Number of cases		31	31	20	20	20	20
Intercept	?	0.882 (0.031)	0.855 (0.002)	0.316 (0.437)	0.495 (0.076)	0.184 (0.657)	0.486 (0.066)
SECCREDCONT	-	0.064 (0.380)	0.062 (0.349)	-0.034 (0.718)	-0.013 (0.867)		
SECCREDBIN	-					-0.137 (0.324)	-0.075 (0.523)
SALMOD	+	0.226 (0.056)	0.215 (0.055)	0.251 (0.057)	0.253 (0.045)	0.237 (0.062)	0.243 (0.050)
MBODUR	-	-0.002 (0.579)	-0.0002 (0.938)				
RECTYP	-	-0.068 (0.539)	-0.059 (0.573)				
FAILCAUS	?	0.217 (0.093)	0.241 (0.053)	0.231 (0.125)	0.218 (0.121)	0.231 (0.113)	0.212 (0.127)
LOGSIZE	-	-0.083 (0.057)	-0.075 (0.036)	-0.089 (0.096)	-0.088 (0.040)	-0.082 (0.106)	-0.087 (0.039)
IND	?	0.013 (0.951)		0.086 (0.701)		0.151 (0.486)	
ECON	+	0.123 (0.362)		0.111 (0.450)		0.118 (0.406)	
QUAL	+			0.610 (0.016)	0.547 (0.016)	0.656 (0.010)	0.572 (0.012)
Adjusted R <sup>2</sup>		0.152	0.189	0.309	0.359	0.357	0.377
F		1.673	2.166	2.212	3.127	2.510	3.297
F (sig)		(0.162)	(0.082)	(0.109)	(0.042)	(0.077)	(0.036)

**Table 8: Logistic Regression of Variables Associated With Proportion of Secured Debt Repaid Relative to Median**

Dependent variable = 1 if percentage of secured debt repaid is greater than or equal to the median (64.9%); otherwise = 0. SECCREDCONT is the number of secured creditors; SECCREDBIN = 1 if more than one secured creditor; = 0 otherwise; SALMOD = 1 if going concern or mixed sale; = 0 otherwise; MBODUR = life of MBO in months; RECTYP = 1 if receiver not a Big Six firm; = 0 otherwise; FAILCAUS = 1 if managerial or other; = 0 if financial or operational; LOGSIZE = natural log of value of MBO at date it was established or, if this not available, of the balance sheet value of total assets minus current liabilities; IND = 1 if not retail/wholesale; = 0 otherwise; ECON = 1 if receiver appointed 1996 or later; = 0 otherwise; QUAL = 1 if audit report not modified for going concern uncertainties; = 0 otherwise; Wald statistic significance is for two-tailed test.

	Predicted	Model 7	Model 8	Model 8	Model 10
Variable	Sign	(all variables) Coefficient (sig. Wald stat.)	(reduced) Coefficient (sig. Wald stat.)	(all variables) Coefficient (sig. Wald stat.)	(reduced) Coefficient (sig. Wald stat.)
Number of cases		31	31	31	31
Intercept	?	3.488 (0.356)	4.816 (0.081)	2.073 (0.588)	4.434 (0.069)
SECCREDCONT	-	1.125 (0.183)	1.155 (0.159)		
SECCREDBIN	-			-0.425 (0.723)	-0.100 (0.927)
SALMOD	+	3.641 (0.035)	3.311 (0.034)	2.922 (0.032)	2.467 (0.036)
MBODUR	-	-0.076 (0.168)	-0.066 (0.184)	-0.033 (0.432)	-0.031 (0.365)
RECTYP	-	-1.122 (0.389)	-0.964 (0.428)	-0.930 (0.418)	-0.702 (0.511)
FAILCAUS	?	2.858 (0.079)	2.485 (0.078)	1.486 (0.250)	1.491 (0.224)
LOGSIZE	-	-1.000 (0.033)	-1.021 (0.017)	-0.641 (0.113)	-0.741 (0.035)
IND	?	1.326 (0.617)		2.007 (0.393)	
ECON	+	0.370 (0.795)		0.061 (0.966)	
Percentage of cases correctly classified		83.87%	83.87%	87.10%	80.65%
Model chi-square		16.442	15.983	14.713	13.812
Chi-square sig.		0.037	0.014	0.065	0.032

# Appendix: Summary Information on Sample of MBOs Entering Receivership 1992-1999

Company	Date of MBO	MBO value at set Receivership		% secured debt repaid
		Up (£ thousands)	date	
Alan Markovits	Mar-92	750	11.08.95	28%
Bickavon	Oct-93	750	26.06.96	39%
Biltons Tableware	Aug-95	4400	10.07.98	35%
Brookfield Farm	Dec-93	667	28.09.95	36%
C.I.S. Windows	Jun-95	5400	03.05.96	59%
Cartons Boulangeries	Apr-95	5	12.01.96	14%
Celtic Meat Company	Oct-94	150	01.01.96	100%
Challis Holdings	Jan-94	2700	16.01.97	29%
Christal Rapid Transport	Sep-93	1300	01.05.95	100%
City Windscreen & Body Glass	Jun-94	n/a	18.10.96	6%
Conrad & Essenhigh	Aug-92	400	14.12.93	21%
Coventry Binders	Nov-94	2000	20.06.96	86%
Devon Conversions	Mar-94	1400	27.11.96	76%
Edwin Trisk	Aug-93	2000	03.03.99	95%
Euro-Asia Trading Company	Mar-94	16315	22.07.97	36%
Galliard Printers	Mar-95	194	27.07.98	16%
Genesis Fast Food	Oct-94	10100	11.07.97	81%
GMS Computing	Feb-93	100	29.07.94	69%
HAT Property Services	Feb-94	3600	02.04.98	100%
Herebond	Mar-94	61	29.07.97	100%
HNB Systems	Mar-94	300	17.09.96	93%
Hoyle Butterworth	Mar-92	100	17.07.98	40%
J.L. Joinery (London)	Jun-93	n/a	26.05.94	100%
James Graham & Co (Timber)	Apr-92	n/a	13.11.92	68%
James Longley Joinery	Mar-94	489	18.10.96	62%
John Barnes	Dec-93	2500	23.02.98	59%
Ken Moore	Dec-93	33	30.11.95	37%
Marr Engineering	Mar-92	114	30.09.94	80%
Media Medica Publications	Apr-92	650	11.01.94	45%
Personality Profiles	Apr-95	2550	18.03.97	23%
Phillips Leeds	May-94	465	27.02.95	69%
Pollards Cornish Ice Cream	Apr-93	189	29.09.94	76%
Premier Footwear	Feb-94	n/a	03.01.95	100%
Pressed Sheet Products (Nottm)	Mar-92	111	17.01.96	100%
Realcraft Finishing Touches	Jan-93	n/a	01.12.93	100%
Redruth Brewery	Jul-91	700	21.07.94	37%
Riverside Foods	May-94	279	19.12.96	21%
Swan Industrial	Jun-92	7250	07.12.93	8%
Travellers Coach Company	Jan-94	3500	10.11.97	49%
Truck & Van	Sep-93	1500	06.10.95	100%
Vic-Tree (B'ham)	Apr-92	500	16.01.98	95%
Woodfield Machinery	Jan-94	n/a	27.10.94	100%