THE EFFECT OF CORPORATE BOARD CHARACTERISTICS ON LOAN MONITORING DECISIONS

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Abstract

Motivated by a paucity of research into the impact of corporate governance from a debtholder perspective, we examine the impact of corporate governance on loan monitoring decisions. The active and close involvement of a major UK bank facilitated the development of extremely realistic experimental scenarios with a great deal of accurate institutional detail. The results show that the likelihood of loan officers increasing the level of monitoring in the context of a debt covenant breach is associated with board independence, director financial expertise and the presence of a blockholder. A two-way interaction between financial expertise and board independence is also documented. Since likelihood of debt covenant breaches continues to be an important variable in studies of accounting choice and corporate finance the paper provides insights into associated debt contracting costs and their determinants. Apart from extending the academic literature, this study provides additional evidence on the efficacy of good corporate governance in reducing debt contracting costs that should also be of interest to regulators and practitioners. ****

Keywords: Corporate Governance; Loan Monitoring; Debt Covenants

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1. Introduction

Corporate governance has been defined as "the mechanisms that have evolved to mitigate incentive problems created by the separation of management and financing of business entities" (Sloan, 2001, p. 336). This agency approach to corporate governance considers it to be a series of contractual and control mechanisms to monitor and control management behaviour when ownership and control are separated. Recent instances of corporate failures and accounting and other scandals ensure that corporate governance remains the subject of much debate. Associated with this is a growing body of empirical research in accounting and corporate finance examining the relationship between corporate governance and a range of issues including firm performance, valuation, cost of equity, earnings quality, earnings management and incidence of fraud (for surveys see, Bushman and Smith, 2001; Gillan, 2006).

Most of the literature, empirical and theoretical, on corporate governance takes a shareholder perspective despite creditors being important stakeholders in the firm and debt contracting and corporate governance both being concerned with monitoring management to mitigate agency costs. Research into the role of debtholders in corporate governance is limited as are examinations of the impact of quality of borrowers' corporate governance on various lending decisions. Two theoretical papers (Day and Taylor, 1998; Baird and Rasmussen, 2005) highlight the nexus between corporate governance and debt contracting, arguing that creditors, especially banks, play an important governance role by establishing contractual sanctions through debt covenants, regular covenant monitoring, and responses to covenant breaches. Some empirical research has examined the impact of corporate governance on bond yields and cost of debt (Bhojraj and Sengupta, 2003; Anderson et al., 2004; Schauten and Blom, 2008), credit ratings (Ashbaugh-Skaife, et al. 2006) and initial lending decisions (Holder-Webb and Sharma, 2010). We extend this limited literature by examining associations between aspects of quality of a borrower's corporate governance and lenders' decisions relating to the monitoring and management of debt covenant breaches using an

experimental study based in a major lender operating in the UK private debt market.

We focus on private debt for several reasons. First, although prior research on the impact of corporate governance on debt has concentrated on public debt markets, private debt markets are significantly larger than public debt markets in terms of both volume and value, a characteristic of corporate lending in most countries.1 Second, while restrictive covenants, debt contract monitoring, and post-covenant violation renegotiation are integral to alleviating potential conflicts between debtholders and shareholders (Smith and Warner; 1979), theory and empirical research has shown covenants and renegotiation to be more important in private debt than in public debt. For debt covenants to be effective periodic monitoring is necessary. Private lenders have comparative advantage (including economies of scale) over holders of public debt or their agents, in producing and evaluating information on borrower risk for monitoring purposes and in facilitating renegotiation (Boyd and Prescott, 1986; Diamond, 1984) and hence tend to offer debt contracts with both restrictive covenants and renegotiation options. The development of performance pricing covenants shows private lenders to be innovative in managing renegotiation in the presence of agency costs (Asquith *et. al.*; 2005).2 Incentives to maintain a reputation for reasonableness in renegotiation may give private lenders an advantage over holders of public debt in offering contracts that facilitate renegotiation. Private lenders may have stronger incentives to consider granting covenant waivers or the option of a closely monitored "work out" than an individual investor.3 Holders of public debt, who may not expect to make regular loans in the future, may perceive little benefit in granting waivers and/or may not have the skills to monitor problem loans, whereas established private lenders may profit from a reputation for being flexible in a constructive manner (Leftwich, 1983).4

A third reason for our focus on UK private lenders' decisions relating to monitoring and management of debt covenant breaches relates to the balance of prior research. There exists a large body of literature showing the importance of accounting in debt contracting which emphasises the role of accounting numbers and measurement in bonding and monitoring and hence in triggering the contractual rights of lenders in cases of technical default (see for example, Beneish and Press, 1995a; Ball et al 2008). This literature is motivated by the assumption that technical default on covenants is costly and that lenders and borrowers will react rationally to those costs. Although there is a significant literature on lenders' reactions to technical default (for example Chen and Wei, 1993; Smith, 1993; and Beneish and Press; 1995a) it is largely US in origin with little reported research into monitoring and technical default on covenants in UK private debt contracts.5 In the UK, unlike the US, there has been little publicly available information on technical default and information on private debt contracts has been. Our research provides timely insights into these issues for the UK.

Fourthly, the accounting-based literature on technical default has tended to consider reaction to technical default from a borrower perspective. Hence, researchers have examined the propensity of management of indebted firms to manipulate accounting numbers opportunistically to avoid technical covenant violations and associated contracting costs (see DeFond and Jiambalvo, 1994; DeAngelo et al 1994; Sweeney, 1994; Beneish and Press; 1995a and 1995b; Al-Jifri and Taylor, 2002; Beneish *et al.*; 2012). In addition to observing some evidence of opportunistic accounting adjustment, researchers have noted the moderating influence of aspects of borrower's governance context on such behaviour (eg auditor changes and management changes in violating companies). Indirect of the relevance of corporate governance characteristics is provided by the finding of Beneish *et al.* (2012) who conclude *inter alia* that upwardly managed accruals can be successful in avoiding technical default and provide evidence that insider trading by managers of financially distressed firms can benefit them and that such insider trading is informative about firms' expected costs of default. One implication of this may be that corporate governance in indebted firms may be of relevance to lenders as an indicator of

[1] Indicative data supports this assertion: gross corporate bond issues in the UK in January 2010 totalled £29.9 billion compared with financial institutions' lending to UK business organisations of £290 billion (Bank of England Bankstats, tables E3.1 and C1.2 respectively).

[2] Performance pricing in private debt contracts is a recent innovaton to monitoring and renegotiation allowing *ex ante* contract terms trigger automatic changes in interest rate as borrower credit quality changes in advance of covenant breaches. Asquith *et al.* (2005) conclude that performance pricing responds to adverse selection arising from asymmetric information between lender and borrower which has caused misclassification of credit risk, and also deals with adverse selection and moral hazard associated with *ex post* settling up and negotiation.

[3] Whilst a trustee acts on behalf of the individual investors in public debt individual investors have to approve any course of action ensuing from a technical breach. Unanimity or majority rules for approval together with other sources of transactions costs, may make waivers or work-outs less likely in public markets than private.

[4] Leftwich (1983) pointed out that whilst there is a potential bilateral monopoly problem when private debt contracts are renegotiated, "Lenders who exercise this monopoly power risk the value of their reputation".

[5] For an exception see Citron *et al.*(1999).

potential management behaviour towards both accruals management and insider trading.

Researchers have also noted the presence of differential consequences to technical default. Beneish and Press (1993, 1995a) observed some instances of default being waived at no cost with no stock market consequences and other cases of costly renegotiation, adverse stock market effects, and subsequent more serious financial distress. Sweeney (1994) also found varying costs of default, with only 52% of her sample of violating firms making concessions to lenders after covenant violation. Dichev and Skinner (2002) found the consequences of violation to vary considerably in their sample with outcome depending on borrowers' economic circumstances. This shows clearly the variability of lenders reactions to technical default and although the influence of other aspects of borrower characteristics on the outcome of technical default has also been considered (see Hassan, 2006) there remains scope to explore further influences on technical default. Thus, we argue that a broadening of the consideration of the corporate governance context in which covenant violation takes place and is evaluated by lenders is helpful in understanding technical default *per se,* and by extension is important to accounting researchers.

The present research reports the results of two experiments which were developed to test for causal association between certain borrower corporate governance mechanisms and lender loan monitoring decisions. The research was conducted in close collaboration with a major UK bank as part of a long term research relationship. The bank provided direct access to senior managers for advice and discussion of the research, as well as sample credit papers and other material. The close involvement of this institution allowed us to develop extremely realistic case material for the two experimental tasks thereby enhancing internal validity. In addition the bank provided access to a sample of loan officers to whom the experiments were applied.

The results of the first experiment support the proposition that loan officers expect independent directors and boards with strong financial expertise to help protect their interests in the context of financial distress. The two-way interaction between financial expertise and board independence is also significant and shows that the likelihood of loan officers increasing the level of monitoring when financial expertise is low is more pronounced when board independence is high. The results of the second experiment suggest that lenders are more likely to increase the level of monitoring in the presence of a blockholder on the borrower's board. This is consistent with lenders perceiving that, in the context of potential financial distress, blockholders will share incentives with managers and other shareholders that may conflict with those of debtholders.

We contribute to the academic literature in several ways. First, we extend the very limited empirical research into the impact of corporate governance on debt by demonstrating a relation between some borrowers' board characteristics and lenders' decisions relating to the monitoring and management of loans in breach of debt covenants in the private debt market. Second, researchers point out that there is an endogeneity problem inherent in conventional archival analysis of corporate governance data that makes establishing and explaining causal links difficult.6 The experimental methodology circumvents this problem and also allows triangulation and comparisons with findings of related research into corporate governance and debt from a new perspective. Third, the active and close involvement of the cooperating bank has facilitated the development of extremely realistic experimental scenarios with a great deal of accurate institutional detail which has enhanced the internal validity of the experiments. Thus, this research reflects actual bank documentation and monitoring processes and was conducted with loan officers who were used to such material and processes. Fourth, we argue that the research is broadly representative of practice in UK bank lending. The cooperating bank has a national branch network and is represented in lending to all business sectors in the UK. Interviews with bank staff at various seniority levels on several research projects over an extended period, some involving other comparable banks, indicates that although in-house terminology and detailed operating practices naturally vary, the bank is broadly representative of practice in major UK banks (Day and Taylor, 1996, and 2011). Additional research at other banks is of course necessary to validate our findings.

The remainder of the paper is structured as follows. Section 2 reviews prior research whilst section 3 develops several hypotheses to be tested. Section 4 provides some institutional detail about the UK bank's loan management processes and discusses the research method used to test these hypotheses. The results of the experiments are analysed in section 5 and the final section draws conclusions and discusses limitations.

[6] See Larcker and Rusticus (2010) and Brown, Beekes and Verhoeven (2011) for a discussion of endogeneity issues in the context of corporate governance and the accounting literature.

2. Prior Research and the Institutional Context

2.1 Corporate governance and debtholders

In contrast with research on corporate governance from a shareholder perspective, research into the impact of corporate governance on debtholders is very limited and largely confined to publicly traded debt. In an early study, Bhojraj and Sengupta (2003) hypothesise that institutional ownership and outside directors lower default risk by reducing information asymmetry and agency problems and in turn reduces bond yields and increases credit ratings. Their results were consistent with these propositions.

Similarly, Ashbaugh-Skaife, et al. (2006), examine the effects of a range of governance mechanisms on firms' credit ratings. They find that credit ratings are positively affected by board independence, ownership, expertise, takeover defences as a proxy for weaker shareholder rights, and by the quality of financial transparency. They also find that credit ratings are negatively related to the number of block holders and CEO duality.

Anderson et al., (2004) and Schauten and Blom (2008) investigate the effect of corporate governance on the cost of debt. Anderson et al., (2004) argue that debtholders value the board characteristics that enhance the integrity and credibility of financial reports. Consistent with this argument, they report that board and audit committee independence as well as board size are inversely related to the cost of debt. Schauten and Blom (2008) use the Deminor rating to examine the overall corporate governance quality of a sample of European firms and show that corporate governance performance and the cost of debt are inversely related.

The one prior study conducted in an experimental setting examines Singaporean lenders' assessment of board strength on initial lending decisions and the reliability of financial reports (Holder-Webb and Sharma, 2010). They find that potential borrowers with strong financial performance were more likely to have loans sanctioned when governance was strong but governance made no difference when financial performance was poor. They also find that the perceived reliability of financial reports is a factor in lending decisions.

The foregoing research suggests that lenders may view borrower corporate governance characteristics as signals of management's likely actions in certain circumstances relevant to lenders and that lenders may adjust their decisions accordingly with economic consequences to borrowers. In light of the empirical evidence on the variability of lenders reactions to technical default and the paucity of research evidence on the influence of aspects of borrower characteristics on the outcome of technical default it is appropriate to seek evidence on the factors considered relevant to lenders' decisions in cases of technical default. Hence, in this paper we test whether lenders may react similarly to signals of corporate governance quality likely management actions by adjusting their reactions after covenant violations.

3. Hypothesis Development

The hypotheses relate to loan officers' decisions on whether or not to change the monitoring status of loans following technical default on financial covenants in bank loan contracts and borrower-specific corporate governance characteristics which may influence these decisions.

A technical default would result in lenders re-evaluating borrower risk with a view to changing the loan status and exercising one or more options available to protect their position. Even where borrower risk has increased, lenders have a trade-off to make. On the one hand they would wish to protect their position against further deterioration. However, they would also need to trade this off against the associated costs. Such costs could range from loan losses through precipitous action, the loss of a client and a potential medium to long term profitable lending relationship, as well as the loss of reputation for reasonableness in private debt markets. This reputation for reasonableness is of particular importance to lenders in private as opposed to public debt markets. As such, it is argued that, in the event of technical default, lenders in private debt markets will give serious consideration to increased monitoring rather than intervention. We examine four dimensions of borrower corporate governance in relation to decisions to increase monitoring as follows.

3.1 Board independence

The board of directors is the apex of the internal governance system and assists in reducing agency problems (Fama and Jensen, 1983). Boards play a critical role in corporate governance through the monitoring of top management and establishing various other mechanisms that mitigate the incentives for managers to act opportunistically (Fama and Jensen, 1983). Primary responsibility for monitoring falls on independent directors, who are in a position to use their appointments to advance shareholder interests. Independent directors act as monitoring experts and signal their expertise to the labour market by acting in shareholders' interests (Coulton and Taylor, 2004). There is considerable evidence supporting these propositions in the academic literature to illustrate that independent directors protect shareholders when there are

agency problems (see for example, Weisbach 1988; Byrd and Hickman, 1992; Xie et al, 2003; Peasnell et al, 2005). Potential reputation effects in the managerial labour market are shown by Gilson (1990) who finds that directors who leave distressed firms tend to hold fewer directorships in the future. Additionally, Johnson et al., (1993) argue that independent directors may play a major role in board involvement in strategic actions, particularly actions to restructure the firm.

Regulators appear to value board independence also. The UK Financial Reporting Council Combined Code on Corporate Governance l (2010), as with other regulators' pronouncements, identifies an important governance role for independent directors by recommending that for large listed companies at least half the board, excluding the chairman, should comprise independent non-executive directors, with the responsibility to " ... constructively challenge and help develop proposals on strategy ... [and] ... scrutinise the performance of management ...".

Moreover, Anderson et al., (2004) argue that debtholders value board independence and report that board and audit committee independence are inversely related to the cost of debt. Similarly, Standard and Poor's (2006) stresses the importance of corporate governance in credit assessments.

In sum, it is argued that independent directors have incentives to build a reputation as expert monitors, as performing poorly in this area would diminish the value of their human capital. It is therefore expected that loan officers will expect independent directors to help constrain any managerial opportunism.

Accordingly, the following hypothesis is proposed:

Hypothesis 1: *Ceteris paribus,* loan officers will be less likely to increase the level of monitoring in response to a covenant breach when the board of the borrower is independent.

3.2 Financial expertise

Anderson *et al* (2004) argue that as monitoring expertise increases, managerial opportunism decreases thereby increasing the value of the firm. Related to this, there is a growing body of corporate governance literature reporting a positive association between director financial expertise and various financial reporting attributes. For example, it has been found that that the presence of financial experts on the boards reduces the likelihood of accounting restatements (Agrawal and Chandha, 2005). Similarly, Dhaliwal, Naiker, and Navissi (2010) show that increased financial expertise on audit committees' is associated with higher earnings quality.

We argue that, in a debt contracting context, a board's ability to manage potential financial distress following technical default on covenants and monitor effectively will be enhanced by strong financial expertise on the board. Thus, if boards comprise directors with financial expertise, debt holders are expected to benefit through a reduction in opportunistic wealth expropriation as well as being better able to financially restructure in order to deal with financial distress.

Accordingly, the following hypothesis is proposed:

Hypothesis 2: *Ceteris paribus,* loan officers will be less likely to increase the level of monitoring in response to a covenant breach when the board of the borrower has strong financial expertise.

3.3 Managerial Share Ownership (MSO)

Seminal theory suggests that a manager who owns a fraction of a firm's shares bears the consequences of managerial actions, thus aligning their incentives with other shareholders (Jensen and Meckling, 1976). However, relatively high levels of MSO may result in managers becoming entrenched (Demsetz, 1983). The argument is that the extra voting power enables managers to secure their position in the firm, thereby insulating them from certain disciplining mechanisms such as the managerial labour market which in turn is likely to have an adverse effect on firm performance. Hence the initial theory developed in an ownership-performance context would suggest a non-monotonic relation; more specifically, a positive relation between MSO and performance consistent with incentive alignment up to some turning point followed by a negative relation when the costs associated with entrenchment exceed the incentive benefits of managerial ownership (see for example, Morck et al., 1988; McConnell and Servaes, 1990).

MSO often represents a sizeable proportion of the managers' wealth that is inherently undiversified. It may be argued that, *ceteris paribus,* rational managers should prefer to hold a diversified portfolio of assets but as MSO increases they become increasingly exposed to firm-specific risk. Such high MSO is likely to make a manager more risk averse as their decisions will impact on a relatively high proportion of their personal wealth (Demsetz, 1983). *Prima facie,* it would appear that such risk-aversion would be congruent with the goals of debtholders. However, in a debt contracting context, incentive alignment between management and shareholders may have a detrimental effect on debt holders through shared incentives to engage in opportunistic behaviour such as under-or over investing. Managers risk aversion may only partially mitigate the aforementioned under-and over investment problems (Begley and Feltham, 1999).

Some empirical support is provided by Bagnani et al (1994) who find that the association between bond returns and MSO is non-monotonic. Specifically, they find a positive association at lower levels of MSO and a negative association at higher levels of MSO. Similarly, Begley and Feltham (1999) show that debt covenant utilisation is positively associated with CEO share ownership.

Accordingly, the following hypothesis is proposed:

Hypothesis 3: *Ceteris paribus,* loan officers will be less likely to increase the level of monitoring in response to a covenant breach when the level of MSO is low.

3.4 Blockholders

It has been argued that outside blockholders on the board play a significant monitoring role that mitigates agency problems relating to equity as their large investments provide incentives to monitor management (Jensen, 1993). There is empirical evidence to support this contention. For example, Chung et al (2002) demonstrate that institutional investors with significant shareholdings monitor managers' accounting choices and assist in reducing earnings management. Koh (2003), however, draws an important distinction, illustrating that short-term institutional investors create incentives for managers to engage in earnings management, whereas long-term institutional investors actively participate in their firm's corporate governance and limit managers' discretion to engage in earnings management. If blockholders reduce managerial opportunism by performing the role of disciplining management, then all stakeholders including debtholders will benefit.

A competing argument is that outside blockholders may exacerbate debtholder-shareholder conflicts by influencing management to secure wealth transfers in their favour at the expense of debtholders and other shareholders (Shleifer and Vishny, 1997). Ashbaugh-Skaife et al (2006) test both the "management disciplining" and "wealth redistribution" hypotheses and find that, consistent with the wealth redistribution hypothesis, borrower credit ratings are negatively associated with the number of blockholders. We argue that, particularly in the context of potential financial distress, blockholders will share the incentives managers and other shareholders may have to engage in ex-post opportunism such as asset substitution at the expense of debtholders and this will be anticipated by lenders.

Accordingly, the following hypothesis is proposed:

Hypothesis 4: *Ceteris paribus,* loan officers will be less likely to change the level of monitoring in response to a covenant breach when the board of the borrower has no block holder representation.

4. Methodology

As noted above, two experiments were conducted with a sample of loan officers from a major UK bank using case material developed with the close cooperation of the bank to ensure consistency with the bank's loan management processes and forms of monitoring information familiar to the loan officers. A mixed factorial design was used in both the experiments. Prior studies of loan officers' behaviour have used such mixed designs (see, for example, Mather, 1999 and Holder-Webb and Sharma, 2010).

4.1 Subjects

Thirty-four loan officers from a business unit of a major UK bank participated in the study. The subjects were very experienced with 88% having over 10 years lending experience, 9% had 5-10 years lending experience and 3% had 2-5 years lending experience. In addition, 89% of the subjects indicated that they typically dealt with facilities between £3-30 million and 11% with facilities greater than £30 million. Accordingly, the subjects are appropriate for the experimental tasks involving a loan facility of £22 million.

4.2 The bank's loan management processes

The bank has a standardised reporting and monitoring structure. A key feature of this system involves a database referred to as Facility Manager (FM) on which details of all lending cases are routinely entered. This system provides a common database, encourages uniform collection and recording of data and it enables standardised monitoring. The bank had a fairly typical hierarchical loan approval process with clear ceilings on amounts different levels of management and credit committees could sanction. As part of approval (at whatever level), monitoring frequencies would be specified and information provision covenants inserted accordingly into loan documentation. Also, regular reviews of the borrower's general condition and performance would be scheduled.

The bank had a tiered approach to monitoring. Cases which were graded 'uncriticised' would continue to be monitored at their regular frequency by the relationship manager, subject to satisfactory completion and sign-off of the routine FM reports. In the event of a problem, the bank's process involved the setting of what was known as an 'alert level' (AL). Three levels were used: AL1, AL2 and AL3, with AL1 the preliminary (less serious)

grade. The process of determining this setting was essentially subjective and took into consideration the overall impact of any new data contained in the latest FM report. However another interpretation of it could be that decisions had already been taken about action on the case, and that these were then reflected in the AL grade assigned. The grade indicates the future frequency of monitoring that would apply to the case, and also where/by whom such monitoring would take place. Once a case had been put on AL1 the frequency of FM reports would be increased, and informal (i.e., uncovenanted) monitoring triggers might be notified to the relationship manager. These triggers tend to depend on the nature of the problem that had led to an AL grading. The next stage would be reached with a decision to take the case out of the hands of the relationship manager and transfer its control to a regional Customer Advisory Unit (CAU). CAU staff dealt only with these cases and their role is to exercise a combination of skills to advise and monitor customers. The final stage would be to transfer a 'failed' loan to one of the regional units responsible for recovering as much as possible of the bank's exposure through receiverships or liquidations, as appropriate.

4.3 Research Instruments

The research instruments comprised the various cases which included background information describing the borrowing company, management, the industry, markets, products, suppliers and distributors. Experiments I and II were set within the pharmaceutical and retail industries, respectively. The original loan facility, debt servicing, the current covenant breach (which had placed the company at AL1) and details of an independent due diligence review were also provided. The task was to review the current AL1 status following a breach of the interest cover covenant and indicate the likelihood of the status being changed to AL2. A summary of the information contained in the instruments is set out in appendix I. An example of the contextual information surrounding the breach of covenant and details of the independent due diligence review is set out in appendix II.

All information was presented in the form and sequence of the bank's internal credit papers as set out in the loan facility management system. This was facilitated by confidential access to the credit papers relating to six actual facilities that had previously been monitored by the bank as they were experiencing the sorts of potential debt service issues simulated in the instruments. Several preliminary versions of the research instruments were reviewed by the head of the business unit and another senior lender at the bank who provided considerable technical and other input to enhance the realism and representativeness of the instruments and task. They specifically confirmed that the corporate governance variables being tested are appropriate for the medium sized borrowers developed in the case material.7 The instruments were also pilot tested on several loan officers.

The final instruments were administered as an internet-based experiment in March 2007. The order in which the two experiments, and the cases within each experiment, were presented to the subjects was randomised. The primary concern with an internet-based experiment is the potential for browser compatibility issues resulting in visual and other variations in the way the information is viewed (Bryant, Hunton and Stone, 2004). Whilst we paid particular attention to these issues when developing the experiments and during the pilot study, the potential problems were minimised by the fact that all subjects use the same web browser.

4.4 Dependent Variables

In both experiments the subjects were asked to indicate the likelihood of recommending that the account status is changed from AL1 to AL2. A 11-point Likert scale was used ranging from 1 (definitely no change) to 11 (definitely change to AL2).

4.5 Independent Variables

The borrower specific characteristics manipulated as factors in experiment I were board independence and financial expertise of the board directors. Similarly, MSO and a blockholder were the factors manipulated in experiment II. The two factors in each experiment were manipulated in a 2 x 2 fully crossed factorial design.

4.6 Between-Subjects Factor

Independence and MSO were analysed between-subjects in experiments I and II, respectively. Analysing this factor between subjects halved the number of cases that the subjects had to process. Subject variables (for example, personal differences and biases) are not controlled in a between-subjects design.8 This meant that these factors were given the greatest possible chance of being insignificant in both experiments.

[7] They also advised that, while there was increasing awareness about corporate governance among the loan officers in this unit, training and manuals focussed on the more traditional "quality of management" rather than corporate governance issues.

[8] Unlike a within-subjects design where subjects act as their own controls in the comparison among treatment effects.

4.7 Within-Subjects Factors

Financial expertise and blockholder were analysed within-subjects in experiments I and II, respectively resulting in an 'efficient' use of subjects. However, a potential problem associated with a within-subjects design is that the sequential appearance of the treatments may induce demand effects (Harsha and Knapp, 1990). Prior research suggests that a necessary condition for a demand effect to occur is the subject's willingness to cooperate with the researcher so that the experimental data support the latter's hypotheses (Harsha and Knapp, 1990). As the subjects were senior loan officers, with strong personal views on most technical issues, this was considered to be less likely to occur than say in an experiment involving student surrogates. The potential for order and practice effects was recognised (Keppel, 1991) hence the order in which the experiments and the cases were presented to the subjects was randomised.

4.8 Factor Levels

4.8.1 Independence - Experiment I

Two levels of the independence factor (high and low) were used in the instruments. The chair of both boards was a former CEO of the firm who had retired over 10 years ago and was a non-executive director. Three of the remaining six members of the more independent board were non-executive directors with no discernible doubts as to their independence whilst one of the remaining six members of the less independent board was non-executive.

4.8.2 Financial Expertise - Experiment I

Two levels of the financial expertise factor were used in the instruments. The biographical details of directors in the high (low) level indicated that four (one) of the seven directors had a relatively strong financial background such as professional accounting training and/or experience as a CFO.

4.8.3 MSO - Experiment II

Two levels of the MSO factor were used in the instruments. The chairmen and the executive directors owned 45% (5%) of the shares in the borrowing company representing the high (low) level of this factor. Empirical studies of MSO would classify MSO levels of 45% and 5% as high and low, respectively (see for example, McConnell and Servaes, 1990; Bagnani et al,1994).

4.8.4 Blockholder-Experiment II

The presence or absence of a blockholder was the factor used in the instruments. The block holder was portrayed as a private equity firm that owned 22% of the shares of the borrowing company which was a medium term investment in the company. This stake was said to have been acquired by purchasing shares from several shareholders and retired directors and an executive of the private equity firm has been on the board of the borrowing company since that date.

Apart from the block holder and the manipulation of the MSO factor referred to in section 4.8.3, the remaining shares were said to be divided approximately equally amongst ten individual shareholders and their families who played no active role in the operations or management of the business.

Several senior loan officers were able to satisfactorily discriminate between the levels of these factors during the pre-pilot and pilot stages of the study.

5. Results

5.1 Statistical Techniques and Tests of Assumptions

The analysis of variance (ANOVA) technique was used to analyse and test the data. Some descriptive statistics in respect of experiment I are set out in table 1 and the means represent likelihood of a change to the loan status with a range from 1 (definitely no change) to 11 (definitely change to AL 2) As table 1 indicates the means for the factors in experiment I are in the hypothesised direction. It also appears that loan officers are least likely to change the status of the loan when board independence and financial expertise are both high (5.06) and they are most likely to change the status to AL2 when both board independence and financial expertise are low (10.41).

Table 1. Experiment I: Factor Means and Standard Deviations

Factors and factor levels	Board Independence Low			Board Independence High		
	N	Mean	Std Dev	N	Mean	Std Dev
Financial Expertise						
i Low	17	10.41	0.51	17	9.41	1.00
ii High	17	8.18	1.51	17	5.06	1.71

Notes: (1) The Likert scale ranged from 1 (definitely no change) to 11 (definitely change to AL 2.)

The descriptive statistics in respect of experiment II are set out in table 2 and once again the means represent likelihood of a change to the loan status with a range from 1 (definitely no change) to 11 (definitely change to AL 2.) Whilst there is only a slight difference in means for the MSO factor (the high levels are greater) in experiment II, there are markedly higher means for the blockholder factor. This suggests the presence or absence of a blockholder influences the loan officers' decisions to change the status of the loan whilst MSO does not. It also appears that loan officers are least likely to change the status of the loan in the absence of a blockholder when MSO is low (5.06) and they are most likely to change the status to AL2 in the presence of a blockholder and MSO is high (10.00).

Table 2. Experiment II: Factor Means and Standard Deviations

Factors and factor levels	MSO (Low)			MSO (High)		
	N	Mean	Std Dev	N	Mean	Std Dev
Block Holder						
i No	16	5.06	2.54	17	6.00	2.81
ii Yes	16	9.81	1.05	17	10.00	1.17

Notes: (1) The Likert scale ranged from 1 (definitely no change) to 11 (definitely change to AL 2.)

Notwithstanding the fact that the model, especially with a balanced design, is considered to be robust to violations of the assumptions of normality and homogeneity of variance, the validity of these assumptions were examined. We reviewed standardised indices of skewness and kurtosis and the Levene's test was used to test the homogeneity of variances. The only problem noted was an outlier in the presence of a blockholder factor in experiment II that resulted in the distribution being negatively skewed (Manipulation checks were also carried out on both factors in each experiment. All subjects correctly classified all factors with the exception of the aforementioned outlier (a blockholder factor). Whilst removal of the outlier results in the assumptions of normality and homogeneity of variance being satisfied, all subsequent ANOVA was run with and without this outlier with no qualitative difference to the results.

5.2 Financial Experience and Board Independence (Experiment I)

The overall ANOVA summary is presented in table 3.

Hypotheses 1 and 2 proposed that, in response to a covenant breach, loan officers will be less likely to change the loan status to AL2 when the board of the borrower was more independent and had greater financial expertise, respectively. Table 3 shows that the main effect for board independence is significant (p=.000). Thus, the results support the proposition that loan officers expect independent directors to help constrain any managerial opportunism and add value in the context of financial distress. Table 3 also shows that the main effect for financial expertise is also significant (p=.000) supporting hypothesis 2. This is consistent with the proposition that lenders perceive that a board's ability to manage potential financial distress and monitor effectively will be enhanced by strong financial expertise on the board.

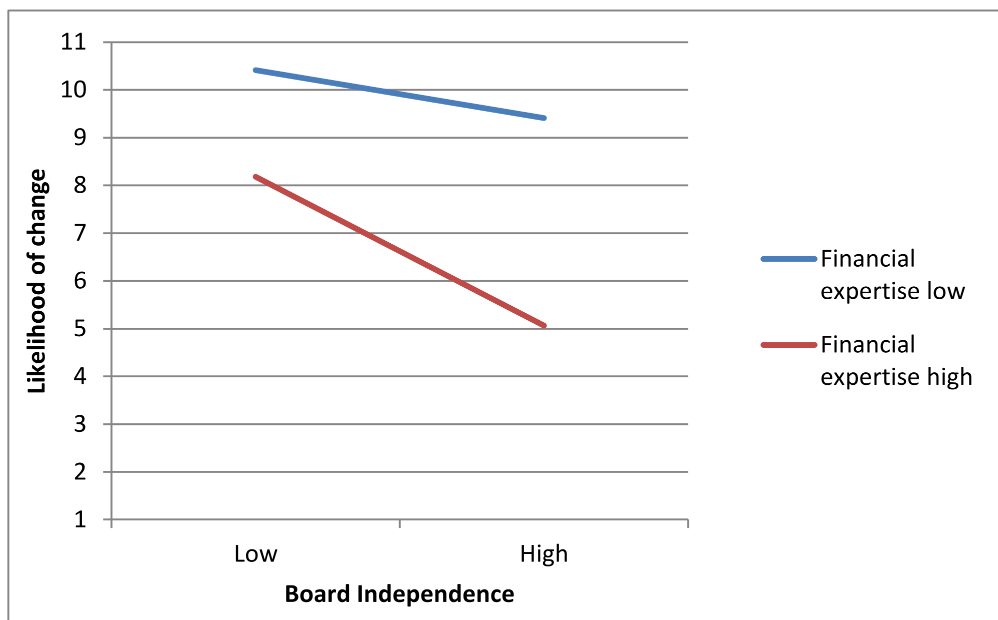
Table 3. Experiment I - Analysis of Variance Summary: Financial Expertise and Board Independence on Loan Monitoring Decisions

Source	**df**	**MS**	**F**	**Significance**	$\eta 2$
Main effects					
Financial Expertise (FE)	1,32	368.94	153.44	.000	.83
Board Independence (BI)	1,32	36.03	35.38	.000	.53
Two-way interaction					
FE × BI	1,32	38.12	15.85	.000	.33
Simple Main effects					
FE within BI (low)	1,32	42.46	35.33	.000	.53
FE within BI (high)	1,32	161.03	133.97	.000	.81
BI within FE (low)	1,32	8.50	13.44	.001	.30
BI within FE (high)	1,32	82.62	31.70	.000	.50

Interactions are specifically concerned with the joint effects of two or more independent variables and are unique to the factorial design. The two-way interaction between financial expertise and board independence is also significant. The relevant interaction means are plotted in figure 1. It is apparent from figure 1 that the difference in factor means for the financial expertise condition is greater when board independence is high as opposed to low. Whilst all the simple main effects in table 3 are significant, the F value as well as the effect size (partial eta squared) is greatest when the two levels of financial expertise is tested within the high board independence condition.

This analysis shows that the financial expertise effect is driven by borrowers with high board independence. In other words, the likelihood of loan officers increasing the level of monitoring when financial expertise is low is more pronounced when board independence is high. This appears rational as the cell means suggest that the likelihood of increasing the level of monitoring when board independence is low is high notwithstanding the level of financial expertise on the board. Accordingly, the main effect for financial expertise discussed earlier requires some qualification to recognise this interaction with board independence.

Figure 1. Experiment I – Interaction means for loan officers' assessments of the likelihood of increased monitoring: Interaction of Financial Expertise and Board Independence



5.3 Block holder and Managerial Share Ownership (Experiment II)

The overall ANOVA summary is presented in table 4.

Table 4. Experiment II – Analysis of Variance Summary: Managerial Share Holding and Blockholder on Loan Monitoring Decisions

Source	**df**	**MS**	**F**	**Significance**	$\eta 2$
Main effects					
Block Holder (BH)	1,31	631.06	74.95	.000	.71
MSO	1,31	2.61	1.24	.275	.04
Two-way interaction					
BH × MSO	1,31	4.64	.55	.464	.02

Hypotheses 3 and 4 proposed that, in response to a covenant breach, loan officers will be less likely to change the loan status to AL2 when there is a no block holder on the board and MSO is low, respectively. Table 4 shows that the main effect for the block holder factor is significant (p=.000)

showing that lenders are less inclined to change the loan status to increase monitoring in the absence, rather than presence, of a blockholder. This is consistent with lenders perceiving that in the context of potential financial distress, blockholders will share the incentives managers and other shareholders may have to engage in ex-post opportunism such as asset substitution at the expense of debtholders. Neither the main effect for MSO nor the interaction between the blockholder and MSO factor was significant.

6. Conclusions

This is the first study to examine the impact of corporate governance on loan monitoring decisions. Access to senior lenders and credit papers at a major UK bank facilitated the design of realistic research instruments and two context specific behavioural experiments.

In experiment I, the main effects for the factors board independence and financial expertise were significant. Thus, the results support the proposition that loan officers will expect independent directors and boards with strong financial expertise to help constrain any managerial opportunism and add value in the context of financial distress. The two-way interaction between financial expertise and board independence is also significant and shows the likelihood of loan officers increasing the level of monitoring when financial expertise is low is more pronounced when board independence is high.

In experiment II, the main effect for the blockholder factor was also significant suggesting that lenders are more likely to increase the level of monitoring in the presence of a blockholder on the borrower's board. This is consistent with lenders perceiving that, in the context of potential financial distress, blockholders will share incentives with managers and other shareholders that may conflict with those of debtholders.

As is the case with most experiments, one has to be cautious in generalising these results beyond the subjects or the specific context of the study. There are two limitations specific to this research. Direct access to senior managers at the bank as well as sample credit papers allowed us to develop very realistic instruments and experimental scenarios with a great deal of detail specific to the institution. As a result, however, we were limited to 34 subjects in the one bank. Nevertheless the effect size (partial eta squared) associated with all of the significant main effects reported in the ANOVA summaries suggest the power of the tests was strong. Second, we studied loan officers' behaviour over a specific period in time: more specifically, when the debt market was quite competitive and during a period of economic growth. There is anecdotal evidence to suggest that such behaviour may vary. For example, a relatively inflexible attitude towards technical default is likely during times of high debt service default. Similarly, the choice of corporate governance variables tested was necessarily limited. Accordingly, replication and/or longitudinal studies are desirable to support the generalisability, or otherwise, of these results.

This study adds to the very limited research into the impact of corporate governance in debt markets and the experimental method helps circumvent the endogeneity problem inherent in conventional archival analysis of corporate governance data. The research also has implications for regulators and practitioners. Corporate governance regulations such as the Sarbanes-Oxley Act (2002) in the US and the Combined Code on Corporate Governance (FRC, 2010) in the UK impose non-trivial compliance costs on companies. This study provides further evidence on the efficacy of good corporate governance in reducing debt contracting costs that should be of interest to regulators. Moreover, the evidence on the importance of a number of corporate governance variables in the default risk assessment of distressed/criticised loans has implications for practitioners.

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Appendix 1. Summary of the Information Given to Subjects

All information was presented in the form and sequence of the bank's internal credit papers as set out in the loan facility management system. In summary:
a) Background information about the borrower including industry, markets, suppliers and distributors;
b) Information about the facility that was originally approved and subsequent debt servicing;
c) The contextual information surrounding the breach of covenant and details of the independent due diligence reviews;
d) Standard historic and forecast financial information;
d) Information about the borrower's board of directors and senior management;
e) SWOT Analysis; and,
f) Task questionnaire including manipulation checks and demographics.

Appendix 2. An example of the contextual information surrounding the breach of covenant and details of the independent due diligence reviews-Experiment I

"Purpose of Application

Review of current A.L. 1 status following latest breach of the interest cover covenant.

Amcal is a major contract producer of over-the-counter codeine based pharmaceuticals for Joe's Pharmaceuticals (Joes's). In January 2005, Joe's did not renew its contract with Amcal. This was a result of a major strategic repositioning of Joe's business and not as a result of any problems with Amcal. The net result is a loss of approximately 25% of Amcal's annual sales and a significant decline in profitability. The bulk of Amcal's codeine based products were retailed through Joe's chain of pharmacies in the West Country. To date, Amcal has been unable to forge a similar arrangement with another group of pharmacies to replace the business lost. As a result of the decline in profitability, the first breach occurred in the June 2005 quarter and subsequent breaches in September 2005 as well as the year ended 31 December 2005. Following a review in July 2005, the bank agreed to reschedule repayments of the loan principal during 2005-2007 (2005-interest only, 2006-£1 million + interest, 2007-£1.25 million + interest). The revised repayments are being made on schedule.

Due Diligence Review

Following the latest covenant breach and as a precursor to the present review, PricewaterhouseCoopers (PwC) conducted a due diligence review of Amcal (at the bank's request). PwC were of the opinion that the remaining (ie. excluding Joe's) customer base and levels of contract production and sales were extremely stable but significant growth, over the next 3-4 years, was likely to be quite difficult. Accordingly, in order to get profitability and cash flows to the pre-2005 levels, overheads and related costs need to be reduced significantly. PwC, in close consultation with the board of Amcal, has developed a plan to rationalise the firm's operations and cut costs. The plan includes the discontinuation of the codeine based product line as well as closing down a warehouse and related distribution infrastructure in Devon. In the opinion of PwC adherence to this plan is likely to result in the bank's debt servicing and covenant requirements being met. However, they indicate that this would require rigorous operational and financial control on the part of management.

The table below sets out the company's current position together with the planned position in two years time as anticipated in the due diligence report prepared by PwC.

	Current Position	Anticipated Position (2007) – Due Diligence Report produced by PwC
Sales (£ pa)	£49.7m	Most Likely: £52.6m Low: £ 48.9m High: £58.8m
PBIT	£1.9m	Most Likely: £5.3m Low: £2.1m High: £6.5m
Net Income after interest and tax	£0.25m	Most Likely: £2.3m Low: £0.3m High: £2.9m
Active Markets	• Home Counties • Somerset • Devon	Ceased operating in Devon. Slight expansion in other areas. Growth potential in OTC pharmaceuticals is limited as the market is fairly saturated.
Product Range (based on active chemical)	• Psuedo-ephedrine • Paracetemol • Codeine	Codeine based product line discontinued. Other OTC lines to continue with a slight expansion of the psuedo-ephedrine based products.

The most likely scenario assumes a 5%-6% increase in sales in all but the now discontinued range of codeine based products and that all remaining strategic partnerships remain in place. A set of detailed assumptions underlying the forecast sales and profits are set out in appendix A of the PwC report."