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# Determinants of financial covenants and pricing of debt in private debt contracts: the UK evidence

Lance Moir and Sudi Sudarsanam\*

**Abstract**—This paper presents details of financial covenants given by a sample drawn from the largest 200 non-financial quoted firms in the UK in private debt contracts and analyses these data to see whether there are relationships between the nature of the covenants given and firm characteristics. Data were obtained from 72 firms, of which 17 gave no financial covenants. Firm size was found to be the only significant factor influencing whether firms did or did not give covenants as well as the only factor which influenced the margin given on debt. Some types of covenants given were found to be different from those found in previous research. In particular, there is greater use of EBITDA as a base for both interest cover and gearing covenants. This shows the importance of cash flow based lending as opposed to asset based lending for general financing for large firms.

**Key words:** Debt contracts, debt pricing, financial covenants, costly contracting.

## 1. Introduction

Long-term committed loan agreements typically contain financial covenants. A financial covenant is an undertaking given by a borrower to its lender to maintain a minimum or maximum level of a financial measure such as gearing or net worth or interest cover. Borrowers may undertake to provide covenants from a variety of motives, e.g. to increase the availability of lending, to reduce the risk to the lender and thereby reduce the cost of borrowing. Lenders similarly may require covenants to reduce the risk of default, to facilitate monitoring and to lend at lower interest rates. The agreed covenants may reflect the borrower characteristics that, from the lender's point of view, have a bearing on the latter's risk exposure.

The giving as well as the receiving of financial covenants entails both costs and benefits to the borrowers and the lenders. The costs to the borrowers include the direct costs of writing the financial covenant contracts and the compliance costs such as maintaining the accounting information system. They also include indirect costs that result from the suboptimal investment and financ-

ing decisions the borrower is constrained to make by the financial covenants. For example, under the constraints of financial covenants a firm may follow an overly conservative investment policy thereby foregoing potentially value-enhancing investment opportunities. The benefits to the borrowers may include increased access to finance and lower borrowing costs.

The costs to the lender include the costs of writing financial covenant contracts, monitoring the borrower's compliance and enforcing the financial covenants in the event of default. The benefits consist of a lending opportunity, reduced risk exposure, better debt management through ongoing monitoring or providing an early warning signal that reduces the cost of default.

Financial covenants are written in the case of both public debt, e.g. bonds, and private bank debt. In the case of the former, the presence of a wide diversity of lenders and investors may lead to a certain degree of covenant standardisation (Iskandar-Datta and Emery, 1994). On the other hand, in private debt the range and type of covenants are negotiated directly between the lender and the borrower. Such private agreements may see a wide range of borrower company-specific covenants due to lower costs of renegotiation than in the case of public debt. They also provide the opportunity to tailor or customise covenants to suit the individual borrower's financial and other characteristics better (Dichev and Skinner, 2002). In contrast to several studies that have examined financial covenants in public debt, there are very few studies that have investigated the determinants of financial covenants in, and their impact on the

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pricing of, private debt. Given the greater diversity of covenants in private debt agreements for the above reasons, a study of financial covenants in private debt may provide more insights into their determinants than one based on public debt.

Much of the research into financial covenants has been based on US data on public debt (Smith and Warner, 1979) or on private debt contracts that are required to be filed, but based upon public precedents (Leftwich, 1983; Dichev and Skinner, 2002). Unlike in the US where researchers have relied on public filings of private loan agreements (Leftwich, 1983; Press and Weintrop, 1990), access to such data is difficult in the UK since companies are not obliged to disclose this information publicly. UK companies regard details of covenants as highly sensitive matters that should be kept confidential. Within the UK, Citron (1992a) has studied bank lending covenants. He has also examined financial covenants in public debt contracts (Citron, 1992b) and finds that many public debt contracts do not include financial covenants (Citron, 1995; Malitz, 1986). However, our knowledge of private debt covenants, their determinants and their impact on debt pricing is very limited. While Day and Taylor (1996b) report an interview-based study of corporate treasurers concerning the motivations and the consequences of financial covenants in private debt contracts, analysis of the determinants of private debt financial covenants and the pricing of that debt, based on objective and publicly available data, is still lacking.

In this study, we provide evidence of financial covenants associated with private debt for a sample of the largest UK corporate borrowers generated from a survey of the largest 200 non-financial UK firms in 1999. We examine whether the incidence, type and frequency of financial covenants in these private debt contracts are determined by borrower characteristics. We also examine whether borrower characteristics influence the cost of private debt that the sample borrower is contracted to pay.

For a sample of 55 covenanters and 17 non-covenanters, we find that covenanters are more healthy companies with a lower bankruptcy risk but they exhibit a higher level of systematic stock return risk. Neither difference is, however, significant. Larger firms are significantly less likely to offer financial covenants. There is little difference between covenanters and non-covenanters in terms of their profitability and cash flow in the year prior to the signing of the financial covenants. Covenanters, however, pay out a significantly smaller proportion of their earnings as dividends, perhaps reflecting the greater liquidity constraints on these firms. In a multivariate logistic model, however, firm size is the only determinant of the

decision to offer covenants with larger firms being able to avoid doing so. Borrower size also has a significant impact by lowering the price of debt. No other variable is able to explain the pricing.

This reliance on a single characteristic to the neglect of other indicators that have traditionally and empirically been associated with default risk, debt service capacity and risk premium raises intriguing issues about the models used by lenders to assess default risk and price their lending. We speculate on the reasons for lenders not to fine-tune the covenant requirements and margin on lending to borrower characteristics.

Our paper also sheds light on the way types of financial covenants given in private debt have changed in response to changes in accounting disclosure rules in the UK and the increasing interest in cash flow-based covenants. Our study

- fills a significant gap in our knowledge of financial covenants in private debt;
- empirically examines the characteristics of covenanters and non-covenanters in private debt contracts in the UK;
- provides insights into the borrower characteristics that determine the incidence, type and range of financial covenants given private debt contracts; and
- provides evidence on whether borrower characteristics influence the pricing of private debt contracts.

The paper is organised as follows. In Section 2 we review the literature and deduce some testable implications of the costly contracting and agency models for financial covenants, especially in private debt contracts. Section 3 describes how survey data for our analysis were generated. We also set out the methodology employed in the study. In Section 4 we present and discuss the empirical results and their implications for both theory and practice concerning debt contracts and financial covenants. The final section provides a summary and conclusions.

## 2. Review of the literature

### 2.1. *The purpose of financial covenants – costly contracting hypothesis*

Smith and Warner (1979) argue that the principal purpose of loan covenants is to manage the conflict between lenders and borrowers arising from the information asymmetry between them. Financial covenants enable lenders to control the risk that they accept for a pre-determined return. They may serve to limit a borrower's flexibility in future decision-making (Smith and Warner, 1979; Berlin and Mester, 1992 cited in Mather, 1999b). To the extent that they restrict the borrower from

making profitable investments, they may have a detrimental effect on firm value (Myers, 1977). Thus, entering into financial covenants may impose significant opportunity costs on borrowers.

Under the costly contracting hypothesis both the borrower and the lender enter into an optimal set of financial covenants that maximise their return-to-risk tradeoff. Since financial covenant contracting is costly, the benefits from entering into such contracts should, in equilibrium, at least equal the costs. Smith and Warner (1979) argue that since covenants are a persistent phenomenon, these provisions should be deemed efficient from the standpoint of the firm's owners. The costly contracting model implies that the type and range of financial covenants that a borrower has to provide to the lender are a matter of negotiation between the two.

The negotiation will be subject to a number of parameters that define the riskiness of the loan, need for a costly contract, and cost of formulating and enforcing the contract. These in turn are likely to depend on the borrower characteristics that will influence the lender's perception of the credit risk. Moreover, the lenders may calibrate the terms of lending including the type and range of financial covenants to suit the borrower's perceived risk.<sup>1</sup> If under the costly contracting hypothesis, financial covenants are a risk management tool for the lenders and an efficient mechanism for the borrower to minimise its borrowing costs, we can expect to find an association between the determinants of financial covenants and the pricing of debt.

## 2.2. *The purpose of financial covenants – the agency perspective*

A different, but related, perspective on financial covenants derives from the agency model of the firm. Managers are the lender's agents in the disposition of the borrowed funds (Jensen and Meckling, 1976). Thus lending entails agency monitoring. If the agency costs are too high, the managers run the risk of either not being able to borrow at all or borrowing at a high cost. To avoid or mitigate that risk, managers undertake to provide financial covenants that may reduce the agency monitoring cost to the lender. The costs borne by the borrower are thus in the nature of bonding costs. Again, borrower managers will optimise the use of financial covenants by trading off

their benefits to costs.

Under the agency model, the type and range of financial covenants demanded by the lender and proffered by the borrower depend on the scope for agency conflict between the two. This in turn depends on the borrower characteristics such as its free cash flow, its prior debt service record or whether the debt is secured. Lenders use financial covenants as instruments to manage and reduce the agency conflict. To the extent financial covenants mitigate agency costs to the lenders, the costs to the borrowers may fall.

## 2.3. *Review of prior empirical evidence on financial covenants*

### *The borrower's perspective*

In order for financial covenants to serve a borrower's economic purpose, the conceding of financial covenants should be reflected in lower loan pricing. The tighter the covenants the lower still should be the loan pricing. In particular Smith and Warner (1979) suggest there should be an optimal set of covenants in terms of number, type of covenant and tightness of such covenants that would maximise firm value. Several studies provide empirical evidence on tightness of covenants and loan pricing from both borrower's and lender's perspectives (see below).

Malitz (1986) similarly examines the role of bond covenants in agency conflicts and argues that 'for large firms, where information is readily available and reputation is both established and reviewed often, the cost of explicit covenants exceeds any possible benefits.' Citron (1992b) finds evidence that larger public companies are able to avoid covenants and attributes this to 'large companies having less need to use covenants to prevent lenders price-protecting themselves'.

### *The lender's perspective*

Covenants represent a means of controlling expected losses to the lender from the borrower's default. Bradley (2001), in commenting on the proposed changes to bank capital adequacy rules under Basel II, suggests 'there will be much more focus on credit quality overall and borrowers should be prepared for lenders to push harder for covenants that protect credit quality.'

Day and Taylor (1996a) observe a wider range of purposes that lenders seek to serve through covenants. Covenants in loans provide lenders with one or more of the following: an early warning signal or a renegotiation lever; control or comfort; the ability to restrict management discretion in financing and investment decisions; and a means to call the loan.

Day and Taylor observe a clear bias towards the first purpose. In particular the bankers cited in their study were clear that covenants 'crystallise

<sup>1</sup> Myers (1977) observes that the optimal situation would require no covenants and 'voluntary forbearance would be the simplest and best solution...[b]ut a reputation for honesty is acquired mainly by performance'. Mather (1999b) finds that the tightness of covenants is indeed linked to management reputation for debt servicing. Therefore, some well-established firms would not need to bear the costs of (tight) covenants and that banks would lend without covenants for the same return.

terms of the agreement at the outset' and also that 'covenants...ensure that the lender's position is no worse than the worst-case scenario.' The purpose of covenants is not only to manage the agency conflict, but also to limit the level of risk that the lending banker is willing to accept. Thus, although the costs of monitoring the covenants may be high, the presumed economic benefit is lower loss to lenders and hence lower cost to the borrower (see Dichev and Skinner, 2002 for similar arguments).

There is also evidence that lenders seek covenants as part of an overall credit – pricing equation. Iskandar-Datta and Emery (1994), in their study of indenture provisions in public bond contracts, find that restrictiveness of covenants significantly affects the rating of a new debt issue and thus, via bond pricing, the interest rate. McDaniel (1986) reports an instance of a rating agency being involved in determining the inclusion of covenants which could point to some customisation of covenants. Metzgen (2000) notes while discussing current market terms that, 'whereas some investors had simply relied on a corporate's unsecured credit rating or even its reputation, they are now demanding increased credit protection through covenants.' This argument also points to the inter-relationship among reputation, tightness of covenants and pricing.

#### *Are covenants customised to serve borrower and lender purposes?*

While both the costly contracting hypothesis and the agency model indicate that financial covenants are likely to be customised to the idiosyncratic characteristics of each borrower, whether they are indeed customised in actual loan agreements needs to be empirically established. According to Day and Taylor (1997), many UK treasurers do not believe that the financial covenants negotiated are effective from the lenders' point of view: '[T]oo often the covenants used by lenders were not sufficiently relevant to the fundamentals of the corporate borrowers' businesses.' This may be a perception on the part of the borrowers or it may be that, in the lenders' judgment, the incremental costs of customising covenants do not offer economic benefits that match or exceed those costs. Day and Taylor conclude that lenders' behaviour is driven by market norms and individual bank practice and so there will be a lag behind innovative practice in setting financial covenants.

In practice, the actual covenants are part of a process of negotiation, presumably based on market power and the skill of the negotiators (Day and Taylor, 1995). In focusing on the largest companies in our survey, we may presume that these companies employ the most skilled negotiators in this area. Thus we may assume that the observed pattern of covenants in our sample reflects the best set of covenants that could be achieved for the borrowers involved.

#### *Existence and variety of financial covenants in private loan contracts*

Previous research into financial covenants in private loan agreements has been limited. Researchers have little information access to the types of covenants in loan agreements that do not have to be disclosed publicly. Much of the literature on financial covenants has been based on public bond covenants in the United States (e.g. Smith and Warner, 1979). In the UK bond market, Citron (1995) finds that 30% of the 108 public bond agreements he examined contained accounting-based covenants, the majority of which relate to gearing. Among a few studies that have examined private loan agreements are Mohrman (1996) in the US, Citron (1992a) and Day and Taylor (1996a) in the UK and Mather (1999b) and Ramsay and Sidhu (1998) in Australia.

Our study focuses on private debt agreements in bank loans. Bank lending, as opposed to bonds, is reported to account for 89% of European lending as opposed to US practice where bonds represent 80% of corporate borrowing (*Treasury Today*, 2000). Therefore, in contrast to the predominantly bond-focused studies in the US, it is appropriate in the UK context to focus on bank covenants rather than bonds.

An important characteristic of the bond market is the provision of debt by many lenders without the ability easily to renegotiate loan terms. However, the private banking market affords an opportunity for ongoing dialogue with borrowers and the opportunity to revise terms in accordance with changing scenarios.<sup>2</sup> It is therefore logical that there should be debt contracts with specifically tailored covenants and renegotiation options (Mather, 1999b). Several studies establish that private loan covenants are more varied than those in bond agreements (Gopalkrishnan and Prakash, 1995; Mather, 1999a; Mohrman, 1996).

Do these varied loan covenants represent appropriate restrictions on borrower's investment and financing decisions or are they merely costless concessions, because they are so loose, that borrowers offer in order to enhance the comfort level to lending banks? In the latter case, the costly contracting hypothesis would not provide a complete rationale for the levels at which loan covenants are set or it might be that market participants (bankers

<sup>2</sup> Companies borrow either (i) from financial institutions in the money markets ('loans') either from banks individually or via groups of banks in club loans or by syndication or (ii) from a wide range of institutional investors in the capital markets ('bonds') (Cates, 1999). Short debt maturity also provides renegotiation options to alleviate the information asymmetry between lenders and borrowers and so public debt and bank lending provides different mechanisms for alleviating moral hazard from borrowers (Diamond, 1991a, 1991b)

and corporate financial managers) do not consider the setting of loan covenants in terms of strict economic trade-off as suggested by Day and Taylor (1996a). Equally, covenants might provide benefits of flexibility to borrowers in that they can retain the original terms if their credit deteriorates, provided the borrower does not breach the covenants. Therefore, our research has also gathered some views from companies on how effective they perceive the covenants to be in restricting their decisions. This is particularly appropriate when dealing with the largest companies about which information is widely available and also which are also more likely to have sophisticated financial managers able to negotiate effectively.

As Day and Taylor (1998) observe, in practice a certain type of debt contract may be treated as the norm without detailed consideration of whether the particular set of covenants has an economic basis. For example, much of the US-based literature talks of covenants that restrict dividend payments (Smith and Warner, 1979), yet UK and Australian literature do not find this restriction. Do private lenders choose standardised or 'boilerplate' covenants (Leftwich, 1983, Citron, 1992b) as occurs in the bond markets (Kahan and Klausner, 1997) or are they able to tailor covenants to each situation? Some of the previous studies have failed to address this question by concentrating upon standard documents such as the American Bar Foundation *Commentaries on Indentures* (Smith and Warner, 1979).

There have been three significant studies of private loan agreements in the UK. Citron (1992b), in his survey of 33 lending bankers, studies 'typical' (standardised lawyer's) loan agreements, focusing on the covenants that bankers would like to use rather than the covenants actually used by individual borrowers. Citron (1992a) in a separate study examines 25 actual loan contracts and 13 contract templates but focuses on accounting definitions rather than the relationship between covenants and individual borrower characteristics. Furthermore, we learn very little about the borrowers in these actual loan agreements.<sup>3</sup>

The widest ranging study of financial covenants in private loan agreements to date is by Day and Taylor (1996b) who interviewed 44 UK corporate treasurers. They report that the three most common covenants relate to balance-sheet gearing, interest cover and minimum tangible net worth. Balance-sheet gearing was the most common (39 responses). The occurrence of these forms of covenant confirms Citron's (1992a) earlier research into bank documents. Mather (1999a), from

interviews with bankers in Australia, establishes that the minimum interest cover and maximum debt or gearing ratio are the most frequently used covenants. Day and Taylor (1996b) also provide limited evidence of large companies being able to avoid financial covenants in private loan agreements completely. In their survey of 44 companies only two companies (both in the largest 20 by market capitalisation) did not give covenants.

None of these papers looks in detail at the tightness of the covenants or the nature of the covenants by type of borrower. Indeed, Day and Taylor (1997) state that 'relatively little is known about the variation in...the value of financial covenants with factors such as the borrower's industry, size...'. Citron (1992b) also suggests that his research could be 'extended by examining whether the ratios used...vary with the industry sector of the borrower.'

There is conflicting evidence on the existence of covenants relating to cash flow, despite their attraction to lenders whose concern is the availability of cash to repay loans. Day and Taylor (1996b) note their virtual absence, whereas Mather (1999a) identifies some awareness of cash flow covenants in his research of bankers in Australia. Dichev and Skinner (2002) also identify a range of cash flow covenants, including debt to cash flow as the most common in the specialist area of management buy-outs and buy-ins. However, Citron et al. (1997) find that covenants involving cash flows and dividend restrictions are almost universal.

This review of empirical studies suggests that, in private loan agreements, lenders still tend to use common covenants that are not significantly customised to the borrower profile in terms of industry, size, or cash flow. In this paper we provide evidence on whether this conclusion is still relevant to more recent private loan agreements in the UK than those analysed by Citron and Day and Taylor.

#### 2.4. Hypotheses tested

From our theoretical and empirical literature review, we derive the following null hypotheses:

- H1:** Firm specific characteristics of the borrowers are irrelevant to the decision of borrowers to offer financial covenants;
- H2:** The type of financial covenants given has no influence upon the pricing of private debt; and
- H3:** Pricing of private debt is independent of borrower characteristics.

Under the agency model, the alternative hypothesis to H1 is that firms with characteristics that reduce the agency conflict between managers and lenders will not offer financial covenants. Under

<sup>3</sup> Presumably because the loan agreement documents were obtained from lenders rather than borrowers and that the lenders would have been obliged to maintain confidentiality.

**Table 1**  
**Distribution by number and type of covenants given by each sample company**

Number of covenants given	Responses	Interest cover	Traditional covenants							New covenants		
			Debt: tangible net worth	Minimum net worth	Limit on secured borrowings	Minimum PBT	Limit on subsidiary borrowings	Minimum size of group assets	Interest, depreciation and amortisation cover	Debt: EBITDA	Minimum cash position	Debt: market capitalisation
0	17											
1	15	7	3						3	2		
2	23	13	14	4	3			2	2	7		1
3	12	10	8	10	2			3	1	2		
4	4	3	2	4	1			2	1	2		
5	0											
6	1	1	1	1	1	1					1	
<b>Total</b>	<b>72</b>	<b>34</b>	<b>28</b>	<b>19</b>	<b>7</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>7</b>	<b>13</b>	<b>1</b>	<b>1</b>

the costly contracting model, the alternative hypothesis to H2 is that more frequent use of covenants or more stringent covenants will lead to lower cost of debt. The alternative to H3 is that firm characteristics that reduce the chances of default and loan loss to the lender will reduce the cost of debt. In the next section we describe the data and methodology to test these hypotheses.

### 3. Data and methodology

#### 3.1. Survey of companies and data on financial covenants

To identify the covenants in current use in loan agreements we carried out a survey of large corporate borrowers in the UK during 1999. The focus of this survey is on borrowers rather than lenders. Accordingly, we sent out letters, seeking details of the financial covenants in loan agreements, to the finance director or senior member of the Treasury department of the largest 200 non-financial UK companies, defined by market capitalisation at the end of April 1999. An initial mailing was sent to members of the Association of Corporate Treasurers, which accounted for 70% of the 200 companies – data were obtained from some 50% of this group. In all other instances, a letter with

identical terms to the one sent to the first group was sent to the finance director of the company concerned – however, the response rate here was only a little over 30%, and within this response rate nearly half refused to provide the required information. The higher response rate from the first group may be attributed to three factors:

- The direct interest of corporate treasurers in the results of the research;
- Many respondents knew, or knew of, one of the researchers and were more prepared to respond; and
- The familiar reluctance of finance directors to respond to 'cold' research requests.

It may be that responding corporate treasurers are more likely to be involved in negotiating loan covenants and so the responses will be well informed. However, there is no ground for any presumption of bias in our sample arising from the responses from treasurers as opposed to the other respondents, given that we are looking for informed respondents. In the few cases in which the response has come from the finance director, six were from firms with no debt and in the responses from borrowers almost always came from another

**Table 2**  
**Borrower characteristics as explanatory variable – definitions**

<i>Variables</i>	<i>Definitions</i>
<b>Size</b>	
Sales	Annual turnover
<b>Profitability</b>	
EBIT/TA	Earnings before tax and interest divided by total assets
EBITDA/TA	Earnings before tax, interest, depreciation, and amortisation divided by total assets
<b>Risk</b>	
Beta	The sensitivity of the borrower share price to market wide share price movements
Z score	Weighted average of financial ratios that measures potential bankruptcy risk
<b>Liquidity</b>	
Dividend payout (DPR)	Equity dividend divided by net income
Free cash flow (FCF)	EBITDA minus capital expenditure and working capital movements divided by total assets
<b>Gearing</b>	
Total liabilities/total assets	Total liabilities including current liabilities/total assets

member of the finance department.

Financial companies were excluded due to their different capital structures compared with industrial companies and, therefore, potentially different ranges and types of covenants.<sup>4</sup> Copies of the actual pages of the loan agreements were requested, including definitions, interest margin on the loans and the terms of the agreement. Many respondents did not provide the pages of the loan agreement, but did summarise the information requested in the form of a letter or by providing copies of the internal documents used to monitor compliance with loan agreements. Given the broad understanding of the terms involved and the sophistication of the respondents, information provided in letters has been considered on the same basis as actual agreements. In two instances, information was obtained verbally from the head of the responding Treasury department and noted by one of the authors.

Replies were received from 106 companies (53%), of which 24 indicated that they did not wish to participate, some because they had entered into confidentiality undertakings, others because they did not respond to surveys on policy or resource grounds. This left 82 usable responses (41%). Of these, 10 companies stated that they had no debt, leaving an effective sample of 72 borrowing companies.

Table 1 indicates the number of financial covenants given by the respondents who borrowed and the type of covenants given. A large minority

of borrowing firms, 17 (24%), gave no covenants. More than half, 38 (53%) gave one or two covenants. The number of firms giving four or more covenants is very small, only 5 (7% of the sample). The sample indicates that large UK borrowers make parsimonious use of covenants.

### 3.2. Borrower characteristics

The explanatory variables are firm specific characteristics reflecting the need for, and scope, of lender monitoring of the borrowers through the instrument of covenants:

- borrower size as a measure of both the borrower resources to service debt and its bargaining power to negotiate, whether to sign financial covenants and what types of financial covenants to sign;
- prior profitability of the borrower, a measure of the borrower's ability to service debt;
- its liquidity, a measure of solvency of the borrower;
- its prior debt commitments, a measure of the risk to lender;
- its risk profile, a measure of risk to lender;
- the industry to which the borrower belongs.

Table 2 provides definitions of the accounting and stock market based proxies for firm characteristics. Financial data on each borrower's characteristics such as turnover, total debt and market capitalisation were also collected from the computerised databases, Company Analysis, FAME and Thomson Research and London Business School's Risk Measurement Service (RMS).

<sup>4</sup> Financial companies may be subject to prudential regulation. This may reduce the default risk to lenders and they may rely less on financial covenants or on a narrower range of financial covenants. Financial covenants may also be less tight than in the case of non-financial borrowers.



Beta is the systematic risk of the firm's equity shares and is taken from the London Business School Risk Measurement Service (RMS) as at 1 April 1999. The balance sheet and income statement variables are calculated from the last accounting period ending with the most recent annual report prior to the survey in April 1999. We regard dividend payout as a liquidity measure since a low payout allows the borrowing firms to retain more of their operating cash flows to finance their operations and investments.

The Z score is a measure of potential bankruptcy risk. Altman (1968) popularised the Z score as a measure of a firm's bankruptcy likelihood. In the UK, a popular Z score model used by banks and industrial firms is developed by Taffler (1983, 1984). Firms with a negative Z score are classified as potential failures, as their financial profiles resemble those of previously bankrupt firms. The model, developed using linear discriminant analysis techniques, takes the following form:

$$Z = c_0 + c_1 X_1 + c_2 X_2 + c_3 X_3 + c_4 X_4$$

where  $X_1 \dots X_4$  denote the financial ratios, and  $c_1 \dots c_4$  the coefficients that are proprietary. There are two versions. The first is used to analyse listed manufacturing and construction companies and has component ratios (with the Mosteller-Wallace percentage contribution measure in brackets): profit before tax/current liabilities (53%), current assets/total liabilities (13%), current liabilities/total assets (18%) and no-credit interval (16%).<sup>5</sup> The second variant is used to rate listed retail enterprises and has ratios: cash flow/total liabilities (34%), debt/quick assets (10%), current liabilities/total assets (44%) and no-credit interval (12%). In this paper, we employ the Z scores developed by Taffler to define distress.<sup>6</sup> The sample size is reduced from 72 to 66 by the non-availability of data on some of these variables such as BETA and Z score.

We also analyse the industry affiliation of a borrower as a relevant explanatory variable since industry related risk may influence private debt providers to demand financial covenants or the type of financial covenants they prefer. Moreover, industry practice may also have a similar impact (Citron, 1992b and Day and Taylor, 1997).

<sup>5</sup> No credit interval is the ratio of excess of quick assets over current liabilities to the projected daily operating expenditure (see Taffler, 1983 for elaboration of this definition).

<sup>6</sup> Taffler (1995) tracks the performance of this model from its development. Overall, it has had better than 98% success rate in classifying subsequently bankrupt companies as potentially insolvent ( $z < 0$ ) based on their last accounts prior to failure, and exhibits true *ex ante* predictive ability in statistical terms. We thank Professor Taffler and Dr Vineet Agarwal for supplying us with the z scores for our sample.

### 3.3. Methodology

The survey responses received were analysed by type of covenant in use (e.g. debt/ net worth), the level of the covenant was noted and the combinations were analysed. We examine the sample distribution of the covenants in terms of types of covenants and the levels of covenants for which we have numerical data. We carry out, first, a univariate analysis of the differences in borrower characteristics between covenanters i.e. borrower firms that give covenants and non-covenanters i.e. borrowers that do not give covenants.

Second, we perform a multivariate logistic regression with the giving or not giving of financial covenants as the dichotomous dependent variable and the borrower characteristics as the discriminating variables. This model allows us to estimate the probability of a borrower giving any covenant conditional upon its characteristic. This model allows us to test hypothesis H1 above.

Third, we test for differences in the pricing of debt among borrowers offering different types of covenants. Price is the interest rate payable to the lender and is measured by the margin over the London Inter Bank Offered Rate or LIBOR. This allows testing of hypothesis H2 above. Finally, we run a multiple regression to test our hypothesis H3 with this margin for the subsample of companies in the survey for which we have the margin data on financial covenants as dependent variable. The explanatory variables are bidder characteristics as well as the type of financial covenants given.

## 4. Results

### 4.1. Types of financial covenants

To explore whether covenants have changed since prior research, in particular, the use of covenants relating to cash flow and to revised accounting treatment of goodwill we examine the types of covenants in use by dividing the observed covenants into Traditional and New covenants. Table 1 analyses the particular financial covenants given and demonstrates the continuing prevalence of covenants relating to gearing, interest cover and minimum tangible net worth.

There are covenants relating to cash flow, but they do not refer to the cash flow statement under Financial Reporting Standard (FRS) 1 of the UK Accounting Standards Board (ASB, 1996). Three new covenants are identified:

(i) a covenant limiting the debt to a multiple of earnings before interest, tax, depreciation and amortisation ('EBITDA') is applied in 13 companies. The limits set fall in a range of 2.5 to 4.5 times EBITDA. This covenant may be regarded as a proxy for cash flow to provide capacity for debt repayment before fresh capital expenditure and is not based on asset cover measures derived from balance sheet values. One example of the definition of

earnings specifically excludes extraordinary and exceptional items ('as defined in FRS 3') and adds back amortisation of goodwill or other intangible assets 'whether pursuant to Urgent Issues Task Force<sup>7</sup> (UITF) Report 3 or FRS 10 or otherwise'. Thus the attempt is to arrive at normalised cash flow before working capital movements, payment of taxation or net capital expenditure.

While this does not take account of free cash flow from an economic point of view (Leftwich, 1983) it does represent a considerable change in practice. This financial covenant would appear to be current as one treasurer who was negotiating new debt during 1999 cited this covenant as one that many lenders were seeking. He resisted this covenant due to definition problems, especially those relating to calculating relevant earnings for businesses acquired mid-year which were funded by debt.<sup>8</sup> All of the instances of this covenant within the sample were included in debt contracts signed between 1997 and 1999. Another treasurer using this form of debt limit said: 'We have stopped using gearing as a covenant, viewing it as an unhelpful, meaningless measure.'

Interestingly, Debt/EBITDA, forming the basis of this new covenant, was identified by Beaver (1966) as the single best predictor of corporate bankruptcy. Thus, the covenant seems to be supported by empirical evidence of its efficacy.<sup>9</sup>

(ii) A variant on interest cover, but measuring the ratio of interest cost to earnings before interest and depreciation and amortisation is conceded by seven companies – again, this is a measure excluding non-cash items charged in the profit and loss account. Five of the seven instances of this covenant are set at a minimum multiple of three times EBITDA to interest cost.<sup>10</sup> This shows an approach based more on cash flow than on accounting profit.

(iii) There was a single instance of a covenant limiting the level of debt to a proportion of market capitalisation. This covenant is set at 50% of, in effect, 75% of the market capitalisation of the company.<sup>11</sup> The treasurer of this borrower explained that the assets of this business were largely intangible with considerable goodwill write-off. Therefore a traditional gearing covenant was inappropriate. The treasurer also expected to replace this covenant with a traditional covenant now that 'accounting changes make goodwill written-off more visible and easier to add back'. This borrower also conceded a traditional interest cover covenant.

(iv) One company alone had given a covenant relating explicitly to a minimum cash position. A former finance director of this company explained that this company had approached financial distress and therefore this instance, together with the specific characteristics of the company's business,

was designed for the specific situation. Cash, in this instance, was defined by reference to the actual cash balance at any given time. This company also provided the largest number of covenants, six, which the former finance director again explained as a desire to obtain financing by providing 'whatever reasonable covenants the banks wanted'.

It seems that UK loan agreements are still predominantly based on traditional, accrual-based accounting covenants although there is some recognition of cash flow measures. There is some indication that borrower's specific financial position influences the type and number of covenants.

#### 4.2. The level at which covenants are set

Given the frequency of the gearing covenant (defined as debt to shareholders funds) and the interest covenant, we are able to examine the levels at which they are set. Chart 1 sets out the levels at which interest cover covenants are set, typically in the range of two to three times:

Chart 2 sets out the levels at which gearing covenants are set, frequently in excess of 100%

Certainly, for UK quoted borrowers, the gearing covenant replicates a limitation on the level of borrowings typically included in the Articles of Association (one company in the sample actually took the precise definitions used in its Articles, but agreed the bank covenant at a lower level).

#### 4.3 Non-covenanters

To explore the question of whether large companies are able to avoid giving financial covenants altogether, we examine the number and nature of companies that do not give financial covenants. Of the companies with debt, 17 gave no covenants. The size rank distribution of the covenanters and non-covenanters, among the 200 largest UK companies that we sample from is as follows:

Size rank	Covenanters (%)	Non-covenanters (%)
1–50	12 (22)	10 (59)
51–100	20 (36)	5 (29)
101–150	13 (24)	2 (21)
150–200	10 (18)	0 (0)
<b>Total</b>	<b>55</b>	<b>17</b>

<sup>7</sup> The Urgent Issues Task Force of the UK Accounting Standards Board issues consensus accounting treatments to be adopted where unsatisfactory or conflicting interpretations of standards or the UK companies act have developed. Compliance with UITF abstracts is necessary in accounts that claim to give a true and fair view.

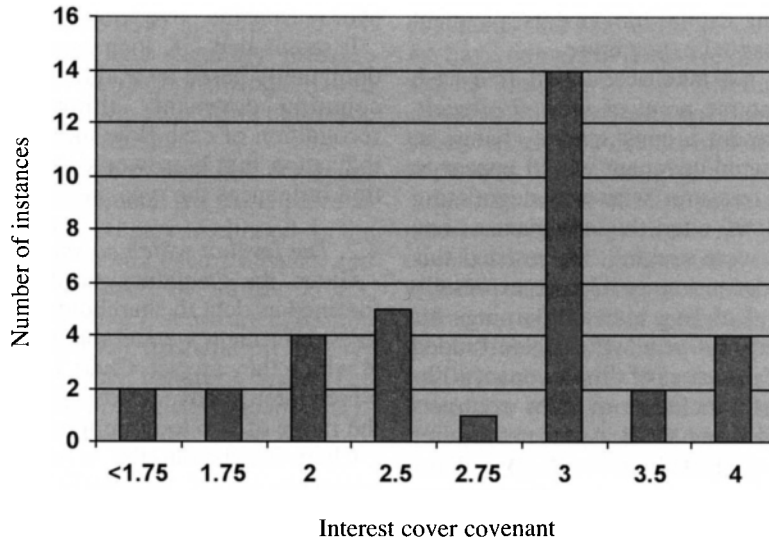
<sup>8</sup> This definition of Debt/EBITDA included all debt but only part of the post-acquisition earnings.

<sup>9</sup> We thank one of the anonymous referees for drawing our attention to this empirical evidence.

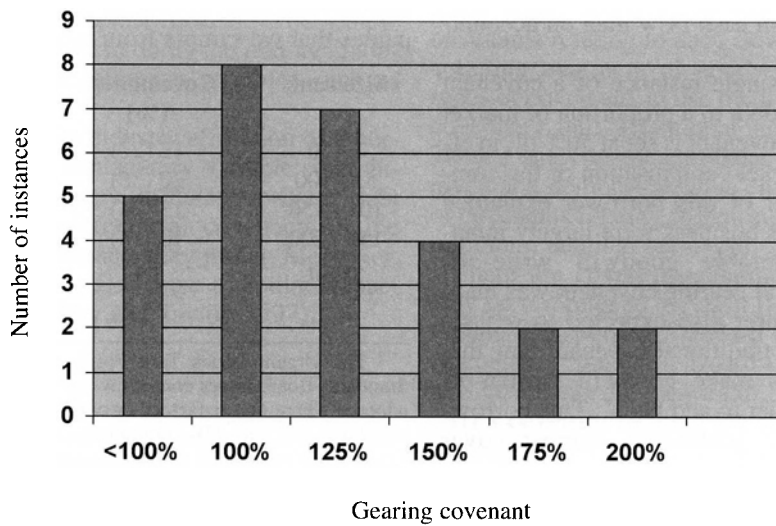
<sup>10</sup> The others were at 3.5 and 4.5 times

<sup>11</sup> The 75% was explained by the treasurer of this company as a way of allowing for share price volatility.

**Chart 1**  
**The frequency of levels of interest cover covenants (PBIT/ interest cost)**



**Chart 2**  
**The frequency of levels of gearing covenant (debt/ shareholders funds)**



**Table 3**  
**Descriptive statistics for explanatory variables**

	<i>Non-Cov Mean</i>	<i>Cov Mean</i>	<i>Difference T-statistics</i>	<i>Non-Cov Median</i>	<i>Cov Median</i>	<i>Difference Z-statistics</i>
Beta	0.91	0.93	-0.39	0.90	0.94	0.68
Z score	1.23	1.35	-0.10	0.76	1.07	0.17
DPR	0.73	0.38	1.44	0.42	0.33	1.76*
GEARING	0.29	0.32	-0.03	0.32	0.30	0.02
LNSALES	15.46	14.20	3.74***	15.36	14.23	3.56***
EBIT/TA	0.13	0.13	-0.07	0.10	0.11	0.10
EBITDA/TA	0.18	0.17	0.63	0.15	0.15	0.29
FCF/TA	0.10	0.09	0.33	0.06	0.09	0.23

For variable definitions see Table 2. SALES is natural log transformed to minimize impact of outliers. Accounting data are from the most recent accounting year ending prior to April 1999, the survey date. Beta is taken from the London Business School Risk Measurement Service as at the most recent date prior to April 1999. T is statistic for test of difference in means and Z is statistic for test of difference in medians. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10% levels respectively. Non-Cov = Non-covenanters; Cov = Covenanters. The sample size varies between 72 and 66 for different variables because of data non-availability.

Clearly, there is a size bias in this distribution with big firms tending to avoid covenants, a result confirmed in later analysis presented below. Whereas covenanters are distributed fairly evenly across the size bands, non-covenanters are clustered in the top bands. Companies giving no covenants were asked why they gave no covenants. Three companies that did not give financial covenants did not respond to this question. In other cases, multiple reasons were given. The dominant reason for not giving covenants was cited as 'policy not to give covenants', although four companies gave as the reason that they only used institutional (i.e. bond) markets, where covenants are less prevalent.

#### 4.4. Industry characteristics of covenanters and non-covenanters

As noted in Section 2, industry affiliation of the borrower may influence the pattern of financial covenants. Both covenanters and non-covenanters in our sample are drawn from a wide range of industries identified by the two-digit industry classification of the London Stock Exchange. More than 22 industries are represented in our sample. To examine the industry influence on financial covenants we aggregate these industries into five larger categories that are likely to have broadly similar characteristics, such as liquidity, risk and profitability: We then test whether this larger industry affiliation differentiates between covenanters and non-covenanters. The industry groups (and the number of respondents falling into each

by covenanter and non-covenanters) are as follows: manufacturing (12, 5); high technology (14,8); wholesale and retail (4,3); utility (13, 1); and service (12, 0). A chi-square statistical test of difference in these distributions across industries shows that there is no significant difference between them. Nevertheless, the extent of covenanters and non-covenanters points to differences worthy of further examination. Notably, the typically high level of debt in utilities still attracts covenants.

We need to be cautious in interpreting the results because of the small sample sizes of the two groups. The test statistic for the difference in the distribution of our two subgroups of firms is not significant. Thus, industry seems not to influence the decision of the borrowers to sign or not sign covenants.<sup>12</sup>

#### 4.5. Descriptive statistics on explanatory variables

Table 3 presents the descriptive statistics for the firm-specific characteristics of both covenanters and non-covenanters. The group mean and median are shown in the table. The table also provides the test statistics for the difference in means and medians of each of these variables between the two groups of borrowers. These univariate tests show that there is little difference between covenanters and non-covenanters in most of these firm characteristics. These two groups do not differ in terms of their systematic risk. Covenanters are also much more financially healthy than non-covenanters. The covenanters' mean (median) Z score is 1.35 (1.07) whereas non-covenanters have a much lower Z score, 1.23 (0.76). The differences are, however, not significant.

The strongest differentiator between covenanters and non-covenanters is firm size. In Table 3 this is measured by total sales log-transformed to

<sup>12</sup> The non-significance of industry affiliation is also borne out when it is included in our multivariate logistic regression models. We therefore exclude them from the models reported in Section 4.5 below.

**Table 4**  
**Logistic regressions of the covenant decision**

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<i>Coeff.</i>	<i>Sig.</i>	<i>Coeff.</i>	<i>Sig.</i>	<i>Coeff.</i>	<i>Sig.</i>
<i>Sample Size: 66</i>						
BETA	1.25	0.24	1.12	0.27	1.23	0.24
Z SCORE	-0.03	0.33	-0.03	0.33	-0.03	0.34
DPR	-0.17	0.28	-0.23	0.22	-0.18	0.27
GEARING	-1.11	0.27	-0.59	0.36	-1.05	0.26
LNSALES	-1.26***	0.00	-1.27***	0.00	-1.26***	0.00
EBIT/TA	0.35	0.47				
EBITDA/TA			-3.54	0.20		
FCF/TA					-0.10	0.49
Constant	18.99	0.00	19.90	0.00	19.03	0.00
Correct Classification%	83.30%		83.30%		83.30%	
Chi-square	16.39**	0.01	17.08***	0.01	16.39**	0.01
Nagelkerke R <sup>2</sup>	0.323		0.335		0.323	

The decision to give or not give covenants is codified as a dichotomous variable with covenantor = 1; non-covenantor = 0. Explanatory variables are as in Table 2. Sample size is reduced for want of data on Z score. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10% levels respectively. Significance level is based on a one-tail test for explanatory variables while two-tail test for constant.

minimise the effect of outliers. Firms agreeing to sign financial covenants are smaller firms.

#### 4.6. Multivariate analysis of the determinants of financial covenants

Table 4 presents the results of the multivariate logistic regression. The dependent variable is dichotomised and coded as 1 for covenantors and 0 for non-covenantors. Not all the variables from Table 3 are included in the analysis reported in Table 4 to avoid multicollinearity. Where the pairwise correlation is high (>0.30) only one of the collinear variables is included at a time.<sup>13</sup>

Firm size is the only, and strongly significant, variable in the model and it maintains its significant impact even when industry variables are dropped. Large firms are significantly less likely to sign up to covenants than relatively small firms. This result confirms the conclusion based on the univariate analysis reported above. The ability of

the larger firms to avoid giving financial covenants may be a reflection of their lower risk, greater liquidity or higher reputation. Larger firms may also be able to use their bargaining power to force private debt providers not to make lending conditions too onerous. This size impact prevails even when we control for other firm characteristics that may, a priori, influence the decision to demand or provide financial covenants. In unreported analysis of the size ranking of the sample firms, we find that out of the 55 covenantors, 43 are between 51 and 200 whereas only seven of the 17 non-covenantors fall into those ranks.

The impact of accounting profitability and free cash flow measures is insignificant. Similarly, the firm's risk profile, whether measured by financial leverage or by stock market-based systematic risk, has little influence over the decision to provide covenants. Overall the conclusion is size matters and little else does.<sup>14</sup>

How big is the impact of size? The logistic model provides an estimate of this. When the borrower's sales revenue, our proxy for size, doubles from the sample median SALES (LNSALES) of £1.95bn (14.48) to £3.90bn (15.18), the probability of the borrower giving financial covenants decreases by 20.2%. If the size trebles to £5.85bn (15.58), the probability is further diminished by 32.1%. On the other hand, if the firm size halves from the median level the probability increases by 20%. These probability changes are consistent

<sup>13</sup> Given that size is the only significant variable in our logistic model, we also re-estimate the model with only size. Our conclusions and estimate of the impact of size on the probability of giving covenants are unchanged (see below) and therefore robust to the presence or absence of other variables in the logistic model.

<sup>14</sup> In Models 1 to 3 in Table 4 some other variables (e.g. DPR, EBITDA/TA and BETA) have large coefficients that suggest that their economic impact may be large. However, the small sample size may have caused that impact to be statistically insignificant.

**Table 5**  
Multiple regression of margin on explanatory variables

Variable	Coeff.	t-statistic	Sig.	No. of Obs.	Adj. R <sup>2</sup>
<b>Model 1</b>				37	-0.04
(Constant)	1.178	1.72	0.09		
BETA	0.156	0.74	0.23		
Z score	-0.001	-0.18	0.43		
DPR	-0.003	-0.05	0.48		
GEARING	-0.182	-0.85	0.20		
LNSALES	-0.067*	-1.40	0.09		
EBIT/TA	0.476	0.78	0.22		
<b>Model 2</b>				37	-0.06
(Constant)	1.246	1.73	0.09		
BETA	0.137	0.63	0.27		
Z score	-0.001	-0.16	0.44		
DPR	-0.002	-0.04	0.49		
GEARING	-0.151	-0.78	0.22		
LNSALES	-0.070*	-1.43	0.08		
EBITDA/TA	0.256	0.44	0.33		
<b>Model 3</b>				37	-0.06
(Constant)	1.365	1.96	0.06		
BETA	0.148	0.66	0.26		
Z score	-0.003	-0.39	0.35		
DPR	-0.002	-0.03	0.49		
GEARING	-0.121	-0.75	0.23		
LNSALES	-0.077*	-1.63	0.06		
FCF/TA	0.110	0.58	0.28		
<b>Model 4</b>				40	0.04
(Constant)	1.203	2.35	0.02		
LNSALES	-0.059*	-1.62	0.06		

For definitions of explanatory variables see Table 2. Margin is in percentage. 't' is Student t test statistic. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10% levels respectively. White's (1980) heteroscedasticity adjusted t-statistics are reported. Sig. = Significance level is based on a one-tail test for explanatory variables while two-tail test for constant. In all models the variance inflation factor (VIF) is less than two for any variable, well below the acceptable level of 10 for multicollinearity (Gujarati, 2003).

across the three models in Table 4 and when LNSALES is the only explanatory variable.

The foregoing results show that our hypothesis H1, i.e. *firm specific characteristics of the borrowers are irrelevant to the decision of borrowers to offer financial covenants*, is not supported. We find that borrower size is a significant determinant of this decision.

#### 4.7. Do financial covenants influence debt-pricing?

We have only limited data on the margins over LIBOR made available by the survey firms. Among the 55 covenanters in our sample, 40 firms reported margin data. The mean (median) margin is 37.5 basis points (35.0 basis points). Among the covenanters, 37 give traditional covenants, five give new covenants and 13 give covenants of both

types. Among those for which we have margin data, we find that the differences among these three groups of covenanters in margins over LIBOR are not statistically significant. However, the small size of the new covenant group and the overlap between groups caused by firms giving both old and new types of covenants may have considerably weakened our tests. Nevertheless, in our sample, covenant type has no influence on the pricing of debt. Therefore, our hypothesis H2, i.e. *the type of financial covenants given has no influence upon the pricing of private debt*, is not refuted.

In Table 5 we present the results of the multiple regression of the margin on borrowing on a number of other variables that are expected to influence the pricing of debt. These are the same variables as those we used in modelling the

covenant-giving decision since they are expected to influence both that decision and the related issue of pricing debt.<sup>15</sup> The sample size for this regression is reduced to 37 for want of data on some of the explanatory variables e.g. BETA and Z score.

Once again, the only variable that has a significant impact is borrower firm size. We then re-ran the regression with LNSALES as the only explanatory variable (see Model 4 in Table 5). This model shows that the variable is significant at the 6% level. Larger firms are able to reduce the margin they pay significantly.<sup>16</sup> With this model, we estimate that, when the borrower size, i.e. sales, doubles from the sample median of £1.95bn to £3.90bn, the margin on borrowing falls from about 35.5 basis points to 31.2 points.<sup>17</sup> Overall, our analysis, perhaps owing to the small sample size, sheds only limited light on how borrowers and lenders reach a pricing agreement.

#### 4.8. Robustness tests

In the analysis so far, data on our explanatory variables are for only one year from the financial statements immediately preceding the time of survey i.e. April 1999. Since one year's data may not reflect the stable characteristics of the borrowing firms, we also re-run our models in Tables 4 and 5 with the accounting data averaged over the three accounting years preceding April 1999. The sample size is reduced by data non-availability for some firms over all three years to 56 for the logistic model and to 32 for the margin model. As regards the logistic model, we still find that borrower size is the only significant variable (significant at 1%) and larger firms are less likely to give covenants. For the margin model, we find that

the size coefficient is negative but insignificant. However, when we run the margin model with only LNSALES as an explanatory variable, the regression coefficient is  $-0.063$  and significant at the 6% level, similar to Model 4 in Table 5. The sample size remains unchanged at 40. This increases our confidence that sampling variation or the length of time over which the explanatory variables are estimated does not affect the basic result that borrower size has a significant, though weak, negative impact on loan margins but a much stronger negative impact on the covenant giving decision.

From these various analyses, we conclude that borrower size is the most important and, on our evidence, the only variable that significantly influences both whether the borrower gives covenants and at what price. None of the other firm characteristics has any influence on either aspect of the covenant problem. Our hypothesis, H3, i.e. *pricing of private debt is independent of borrower characteristics*, is not supported. Borrower size does have a significant impact on pricing. The margin-reducing impact of borrower size is consistent with the finding of Beatty et al. (2002).<sup>18</sup>

#### 4.9. Overview of empirical results and future potential research

Our empirical results suggest that the decision to give covenants is not determined by the idiosyncratic characteristics of the borrower apart from its size. There is little variation in these covenants across different borrower industries. Overall our results point to covenants not being sufficiently customised to match borrower characteristics. It appears that banks use covenants as a way of monitoring relatively small borrowers. UK banks seem to rely on size as a proxy for the financial strength and reputation of borrowers to reduce their agency problem with the latter. The large borrower size then substitutes for covenants as a monitoring tool for lenders. These results are consistent with the agency model of financial covenants.

There is also little variation in debt pricing irrespective of the type of covenant given. Only borrower size has a weak and negative influence on debt pricing. Thus we find only limited evidence for the implication of the costly contracting hypothesis that debt pricing reflects the special characteristics of the borrowers.

The sole reliance of lenders on the borrower size to determine both the obligation to offer financial covenants and the amount of the borrowing margin raises some intriguing issues. Lenders seem to be ignoring the information content of variables traditionally and empirically associated with firm risk, debt service capacity and financial distress. These are inadequately proxied by firm size alone.<sup>19</sup> While financial distress risk is known to fall with

<sup>15</sup> As with the Table 4 models, we consider the pairwise correlations among explanatory variables in Table 5 OLS models and exclude highly collinear variables. In our test for collinearity, the variance inflation factor (VIF) statistics show that none of the remaining variables poses a collinearity problem with a maximum VIF of only 1.57. On this test, see Gujarati (2003:362–363).

<sup>16</sup> We apply a one-tail test since our expectation of the direction of impact of the explanatory variables is a priori clear. Moreover, a one-tail test has also more power to reject the null hypothesis of no impact when it is not true.

<sup>17</sup> As with the covenant models in Table 4, we find that some variables like BETA, GEARING and EBITDA/TA have large coefficients that suggest their economic impact may be large though the small sample size may have caused their statistical insignificance.

<sup>18</sup> Beatty et al (2002) investigate the determinants of margin (called spread in their paper) in terms of loan specific characteristics rather than borrower specific characteristics except for borrower size. They report mean borrower size (natural log of sales in \$) of 5.64 compared to about 15 (in £) in our study (see Table 3 above). Thus our sample consists of much larger firms.

<sup>19</sup> Sample Pearson correlations show that LNSALES has a significant correlation only with DPR (0.18) and GEARING ( $-0.25$ ). Pearson correlations are of a similar magnitude. These correlations are not large, albeit significant. With all the other variables the correlations are insignificant.

firm size, in negotiating the covenant decision and the margin for borrowing, the lenders and borrowers seem to use a blunt instrument rather than fine-tune their decision to the more elaborate, but nevertheless relevant, borrower characteristics. This calls into question the purpose and efficacy of various covenants from the borrower's point of view.

The reasons for lenders not to fine tune the covenant requirements and margin on lending to borrower characteristics must remain speculative at this stage. It is possible that lenders do not employ elaborate models of risk assessment which incorporate the variables upon which the covenants are based e.g. EBITDA/ total assets. The cost of modelling may be high enough not to warrant such sophisticated models. Alternatively, there may be other information that lenders use as effective proxies for the explanatory variables in our models. In other words, our models may suffer from a missing variable problem. It is also possible that the cost of tailoring specific covenants to borrower characteristics is too costly for the lenders to undertake. Basing the covenant and pricing decisions on a single variable certainly has the virtue of simplicity and may therefore be cost effective. It is also possible that our small sample from one particular time period provides only a cross-sectional snapshot of the covenant and pricing decisions and does not capture the full complexity of the decision and negotiation processes. From the borrower's perspective, it is not clear why some large firms are able to avoid covenants and yet others concede them. It may be that the borrowers who do concede the covenants do not regard them as costly contracts in that they might not provide meaningful constraints and equally that bankers find it easier to lend with covenants as a form of lending that is regarded as legitimate within the bank.

To confirm these speculations, two forms of research would be valuable: first, a systematic, qualitative survey of lenders and borrowers to establish the attitudes to tightness of covenants and towards the determinants of margins and how they are negotiated and, secondly, a longitudinal study comparing levels of bank borrowing, tightness of covenants and levels of economic activity. The latter is likely to provide an insight into how covenants and pricing decisions evolve over time, taking into account the lenders' and borrowers' prior learning experience from their past interaction and from relationship banking.

## 5. Summary and conclusions

In this paper, we examine financial covenants in private loan agreements within the frameworks of the agency model and costly contracting model. We focus on private loan agreements rather than

public debt agreements since the costs of specifying financial covenants to match the borrower profile may be less in private contracts. Since loan agreements are individually negotiated between private lenders and corporate borrowers they may allow for customising the financial covenants rather than the use of 'boiler-plate' financial covenants, more common among public debt agreements.

We test the proposition that the decision of borrowers to provide covenants will be determined by their firm-related characteristics such as size, reputation, risk, or liquidity. Using survey data from borrowers among the largest UK corporations we model this decision. We find that the only variable that significantly influences the decision is the borrower size. Although we find that covenanters are more healthy companies with a lower bankruptcy risk and that they exhibit a higher level of systematic stock return risk, neither difference is significant. This suggests that private lenders are still not fine-tuning financial covenants to suit their client profiles. It appears that financial covenants have a limited and broad purpose rather than one geared to close and specific monitoring of borrowers.

We also test whether borrower characteristics influence the pricing of private debt. We find that none of the borrower characteristics has any impact on the cost of borrowing to corporate borrowers except borrower size. We observe that financial covenants are still predominantly accrual accounting-based although there is some small trend towards using cash flow-based measures. Thus in spite of advances in cash flow based reporting, accrual accounting still holds sway. Our results are much more consistent with the agency model of financial covenants as a monitoring tool than with the costly contracting hypothesis that lenders customise financial covenants to match different borrower characteristics in order to influence the pricing of their lending.

Many of the borrower characteristics that, a priori, are expected to influence the giving of covenants and the pricing of private bank debt are found to have little influence. Our data sample was drawn from a single year and covered only 72 debt contracts. Future research of a longitudinal nature with larger samples may explain whether our results are due to a limited sample size and timing. Such research may also include other borrower and lender characteristics not examined in this study. Our research has been restricted to non-financial firms because of the special characteristics of financial firms' accounting numbers and capital structures. Future research may focus on the latter firms to examine the types and range of financial covenants they offer to their lenders and how their debt is priced. Further, our results are specific to the large UK firms and future research can extend



the sampling to medium and small firms to see whether factors other than size are also relevant.

Use and tightness of financial covenants may also depend on the strength of the banking relationship, the stage in the economic cycle (Hall, 2002) and loan-specific characteristics (Beatty et al., 2002). These likely determinants may be examined in future research.

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