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**POSITIVE ACCOUNTING THEORY AND
THE STUDY OF CORPORATE CONTROL:
THE ROLE OF LOAN COVENANTS
AND THE GOING CONCERN QUALIFICATION**

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**Thesis submitted for the degree of PhD
at City University, London**

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TABLE OF CONTENTS

DEDICATION

ACKNOWLEDGEMENTS

ABSTRACT

- 1. OBJECTIVES OF THE ESSAY AND SUMMARY OF ORIGINAL CONTRIBUTIONS OF THE SUBMITTED PAPERS**
 - 1.1 Objectives of the essay
 - 1.2 The original contributions of the Papers
 - 1.2.1 The loan covenant papers
 - 1.2.2 The going concern qualification (GCQ) paper
- 2. CORPORATE CONTROL AND CORPORATE GOVERNANCE**
 - 2.1 The importance of a system of corporate governance
 - 2.2 Corporate control issues addressed in the Papers
- 3. POSITIVE ACCOUNTING THEORY**
 - 3.1 The positive accounting theory framework
 - 3.2 Positive accounting theory and corporate control mechanisms in the context of corporate governance
 - 3.3 Positive accounting theory and research into loan covenants and the audit going concern qualification
 - 3.3.1 The focus on conflict between interacting parties
 - 3.3.2 The focus on the parties' economic incentives
 - 3.4 The methodology of positive accounting theory
- 4. LOAN COVENANTS**
 - 4.1 Efficient contracting and managerial opportunism
 - 4.2 Efficient contracting issues addressed in the loan covenant papers
 - 4.2.1 Summary of contribution to the literature
 - 4.2.2 Discussion of main findings
 - (a) The role of institutional factors in explaining differences in the structure of loan agreements between the UK and the US - gearing; term to maturity; seniority.
 - (b) Previously unresearched key factors used in the structuring of debt agreements - convertibility; form of security.
 - 4.2.3 Methodological issues
 - (a) Choosing among competing hypotheses: role of the investment opportunity set
 - (b) The conservative bias of positive accounting theory
 - (c) Positive accounting theory and accounting as 'useful information'

- 4.3 'Ex post' issues addressed in the loan covenant papers
 - 4.3.1 Summary of contribution to the literature
 - 4.3.2 Discussion of main findings
 - (a) The cost of breaching loan covenants
 - (b) Contract renegotiation subsequent to covenant breach
 - (c) Bankers' reaction to managerial opportunism
- 5. THE GOING CONCERN QUALIFICATION
 - 5.1 Summary of contribution to the literature
 - 5.2 Discussion of main findings
 - (a) The low rate of GCQ among failed firms
 - (b) Self-fulfilling prophecy argument not supported
 - (c) GCQ firms have a higher rate of auditor switching
 - (d) Large audit firms exhibit the same rate of GCQ as smaller audit firms
- 6. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

BIBLIOGRAPHY

APPENDICES - THE PUBLISHED PAPERS AND ATTACHMENTS

- APPENDIX A1 Citron, D.B. (1992a), 'Financial Ratio Covenants In UK Bank Loan Contracts And Accounting Policy Choice', *Accounting and Business Research*, Vol 22, No 88, pp.322-335.
- APPENDIX A2 Questionnaire used in Citron (1992a).
- APPENDIX B Citron, D.B. (1992b), 'Accounting Measurement Rules In UK Bank Loan Contracts', *Accounting and Business Research*, Vol 23, No 89, pp.21-30.
- APPENDIX C Citron, D.B. (1995), 'The Incidence Of Accounting-Based Covenants In UK Public Debt Contracts: An Empirical Analysis', *Accounting and Business Research*, Vol 25, No 99, pp.139-150.
- APPENDIX D1 Citron, D.B. and Taffler, R.J. (1992), 'The Audit Report Under Going Concern Uncertainties: An Empirical Analysis', *Accounting and Business Research*, Vol 22, No 88, pp.337-345.
- APPENDIX D2 Letter relating to the Going Concern paper.

DEDICATION

This work is dedicated to my mother with all my love

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ABSTRACT

This thesis comprises four published papers (the Papers) - three on accounting-based loan covenants and one on the going concern qualification (GCQ) - plus a linking essay. The essay focuses on the Papers' common subject matter of corporate control and on their common research methodology, positive accounting theory.

The essay shows how the agency literature is closely bound up with problems of corporate control. It goes on to argue that certain features of positive accounting theory - its recognition of conflict and of institutional influences, and its focus on economic incentives - render it a particularly useful framework for research into loan covenants and the GCQ.

The loan covenant papers address both the structuring of loan agreements ('ex ante' issues) and the subsequent functioning of such agreements, in particular breaches of covenant ('ex post' issues). Their chief contribution to the 'ex ante' literature is the first evidence they provide on the extent and incidence of covenants in the UK; their UK/US comparison, drawing on institutional differences to explain why accounting-based covenants in the UK, unlike the US, have a positive association with term but no association with gearing; and their analysis of the incidence of accounting-based covenants in convertible and secured debt agreements. The Papers' findings on 'ex post' matters contain early evidence on the costliness of covenant breaches, on the effectiveness of managerial opportunism in avoiding covenant violations and on the costliness of mandatory accounting changes.

In the context of loan covenants the essay also provides a methodological critique of positive accounting theory, which it sees as a developing research programme. This is reflected both in the ambiguous relation between accounting-based covenants and the investment opportunity set (which is resolved in this research for a UK setting), and in the 'ad hoc' nature of many arguments put forward by the theory's proponents to explain existing practice. Finally, the essay argues that the positive accounting theory and the decision-usefulness views of accounting have more in common than is sometimes supposed.

The going concern paper addresses important issues of independence and disclosure. The essay discusses several possible explanations for the low GCQ rate among failed companies, adducing evidence from more recent research. The GCQ paper itself shows that, although the self-fulfilling prophecy argument and differential audit firm size do not appear to prejudice independence, auditor switching may pose such a threat.

The essay concludes by pointing at directions for future research, in particular in areas with public policy implications, and by suggesting that greater use of a case study methodology could deepen our understanding of these issues.

**POSITIVE ACCOUNTING THEORY AND
THE STUDY OF CORPORATE CONTROL:
AN OVERVIEW ESSAY OF RESEARCH INTO LOAN COVENANTS
AND THE GOING CONCERN QUALIFICATION**

**1. OBJECTIVES OF THE ESSAY AND SUMMARY OF ORIGINAL
CONTRIBUTIONS OF THE SUBMITTED PAPERS**

1.1 *Objectives of the essay*

This essay has three main aims:

- i) To explore the links between the attached published papers (the Papers). This is done on two levels:

Showing their common subject matter, in that they all examine mechanisms of corporate monitoring and control.

Evaluating their common research methodology, the positive accounting theory framework.

- ii) To highlight the original contributions of the Papers. For ease of reference, these are summarised in section 1.2 below.

- iii) To relate the Papers to research published either contemporaneously or subsequently.
It is not the objective of the essay to summarise earlier literature relating to the topics examined in the Papers, as this is done in the Papers themselves.

1.2 *The original contributions of the Papers*

1.2.1 *The loan covenant papers*

These Papers constitute the first research:

- i) To provide evidence on the extent and incidence of use of accounting-based covenants in the UK (see section 4.2.1 (i)).
- ii) That (a) explores international differences in the structure of public debt agreements as between the UK and the US, and (b) that draws on institutional factors to explain these differences (see section 4.2.2(a)).
- iii) To examine the relation between accounting-based covenants and convertibility and security, two key dimensions used in the structuring of debt agreements (see section 4.2.2(b)).

- iv) To provide evidence on the costliness of covenant breaches and the nature of contract renegotiations following on a breach, and to relate these to the cause of the breach (see section 4.3.2(a) and (b)).
- v) To explicitly investigate whether the costs of covenant breaches can indeed be avoided by income-increasing accounting policy changes (see section 4.3.2(c)).
- vi) To investigate whether lenders themselves would expect to impose costs on borrowers put in breach of accounting-based covenants by new accounting standards (see section 4.3.2(a)).

1.2.2 *The going concern qualification (GCQ) paper.*

The original contributions of this Paper are:

- i) The evidence it provides on the high degree of likelihood of failure required before a GCQ is given (see section 5.2(a)).
- ii) The first research to investigate the threat to auditor independence posed by the self-fulfilling prophecy argument (see section 5.2(b)).
- iii) Its original approach to examining auditor switching by looking at matched groups of GCQ and non-GCQ companies (see section 5.2(c)).

- iv) The first UK evidence it provides on the association between GCQs and audit firm size (see section 5.2(d)).

The rest of this essay is organised as follows. The next section shows the relevance of the four Papers to issues of corporate monitoring and control set in the wider context of the corporate governance debate and Section 3 examines the positive accounting theory framework that has been adopted. Section 4 looks in more detail at the three loan covenant Papers, focusing on their contribution to the literature and on methodological issues. In Section 5 the same is done for the going concern qualification Paper. The final section looks at directions for future research.

2. CORPORATE CONTROL AND CORPORATE GOVERNANCE

2.1 *The importance of a system of corporate governance*

Tricker (1984) makes a clear distinction between management and governance. While the former is concerned with running the business the latter entails 'overseeing and controlling the executive actions of management and satisfying legitimate expectations for accountability and regulation by interests beyond the corporate boundaries' (pp. 6-7).

In the classical joint-stock company the governance process was made effective through a system of checks and balances. The owners or shareholders of the company had the right to nominate and appoint the directors. These in turn would report periodically to the shareholders on their stewardship of the shareholders' funds. In addition the shareholders had the right to appoint independent auditors to report on whether the directors' accounts showed a true and fair view.

Tricker argues that this original simple model of the joint-stock company has now changed in a number of significant ways (1984, pp. 14-15):

- i) Shareholders are often widely dispersed and may not all have the same interests as one another.
- ii) As a result the power of the board of directors is often very significant.

- iii) Furthermore, shareholders are no longer viewed as the only party to whom management should be accountable. Rather they are one of a number of stakeholder interest groups which also include other providers of finance such as lenders, suppliers, customers, and employees.
- iv) The increased power of the board of directors has led some to question the independence of the auditors from management.
- v) Auditors may have a wider responsibility towards all those who might rely on published accounts rather than only towards the shareholders. Recently the audit profession itself has shown formal awareness of such a responsibility in the Auditing Practices Board's paper *The Audit Agenda* (1994b). The paper supports the view that auditors should report to and give assurance to stakeholders apart from the shareholders. Also it recognises that while all stakeholders have a common interest in the survival of the entity, conflicts of interest between stakeholders may arise.

Some of these problems, in particular those that address corporate control mechanisms, are fundamental to the Papers reviewed in this essay. Thus the Loan Covenants papers highlight the controls that one important stakeholder, the lender, exerts over corporate behaviour. They focus on potential conflicts between lenders and shareholders, and abstract from shareholder/management conflict. The Going Concern paper investigates the value of the audit report and tackles the problem of auditor independence in a situation when the survival of the

firm is in doubt. It therefore addresses issues of conflict between the auditor and management in a situation where the interests of management and shareholders may well coincide (see Goldman and Barlev, 1974, who also characterise the threat to auditor independence as a 'self-interest vs professional standards conflict').

2.2 *Corporate control issues addressed in the Papers*

Loan covenants and the audit going concern qualification enable outside parties to monitor corporate behaviour, as explained below.

Covenants play a key role in the relationship between company management (representing shareholders) and one of the wider group of stakeholders identified above - the provider of debt finance. Covenants are undertakings given by a borrower as part of a term loan agreement and they serve a number of functions. These can be seen as addressing both the adverse selection and the moral hazard problems that arise in lender/borrower relations, and can be summarised as follows:

- i) To serve as a screening device to help lenders identify the credit-worthiness of borrowers (the adverse selection problem). It is likely that the typical package of covenants offered by any particular lender is known to potential borrowers and this will predetermine the credit-worthiness of the borrowers who are prepared to request a loan from that source. Thus a bank which is known for requiring a comprehensive

package of tight covenants will attract applications only from relatively credit-worthy borrowers.¹

- ii) Once the loan has been granted, covenants act as control devices to prevent the borrower acting against the lender's best interests in ways not intended when the loan was originally made (the moral hazard problem). Covenants achieve this by:
 - a) Controlling gearing levels, so helping prevent financial distress;
 - b) Providing the lender with an early warning mechanism if financial problems do develop, and requiring the borrower to discuss the resolution of these problems together with the lender;
 - c) Limiting the likelihood that a borrower in distress will act contrary to the lender's interests, for example by paying out excessive dividends or embarking on highly risky projects (see more detail on this in section 3.2 below);
 - d) If necessary, triggering default on a loan.

Covenants can be accounting-based which means that they require the company to adhere to certain financial performance measures, e.g. its ratio of debt to capital and reserves should not

¹ See Stiglitz and Weiss (1981) who discuss the screening role of interest rates and security in the context of capital rationing; also Strong and Walker (1987, Ch.7).

exceed a certain percentage. Other covenants are not accounting-based but impose a more direct form of control such as restricting acquisition activity or the granting of prior security on new debt. Finally covenants can specify bonding activities by the firm (Smith and Warner, 1979), such as those which require the submission of audited accounts by a certain date.

Covenants are clearly a means by which term lenders can exert some form of control over borrowers. Furthermore they give rise to a demand for audited financial statements so that compliance with accounting-based covenants can be reliably monitored.

Turning to the going concern qualification, it is a requirement of the Companies Act 1985, paragraph 10 to Schedule 4, (based on the earlier formulation of the concept in SSAP2 *Disclosure of Accounting Policies* which came into effect in 1972) that accounts should normally be drawn up on the presumption that a company is a going concern. This presumption may be disregarded, however, if the resulting financial statements would not provide a true and fair view (see Auditing Practices Board, 1994a, Appendix 1). In this context, the auditors are required to consider the entity's ability to continue as a going concern and the adequacy of related disclosures and, if necessary, may have to qualify² their audit report in this respect. The going concern principle is, therefore, an integral component of the audited accounts that are made available to shareholders and creditors.

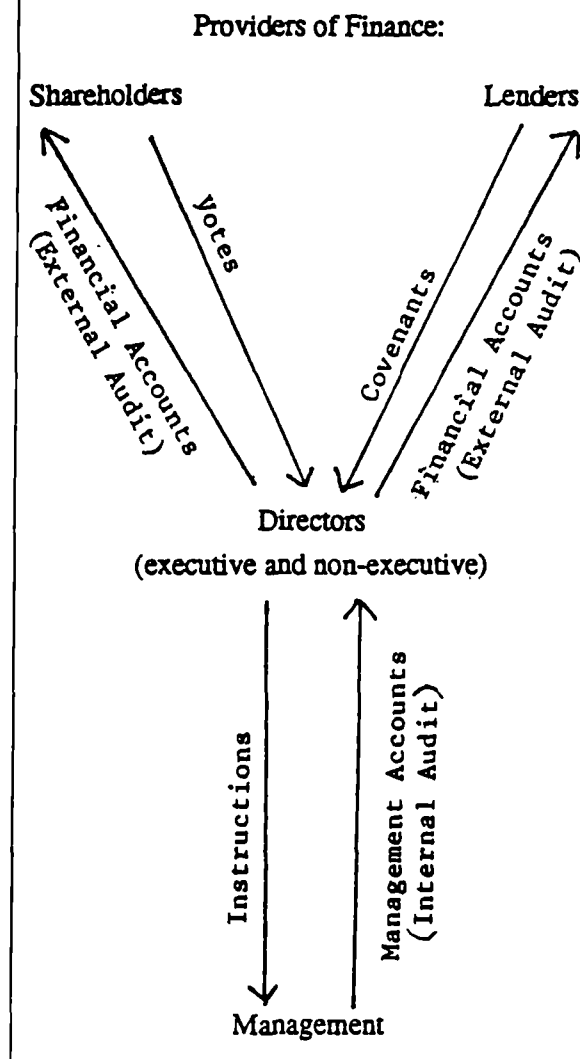
² SAS600 *Auditors' Reports on Financial Statements* replaces the 'subject to' qualification with a Fundamental Uncertainty modification paragraph, provided disclosures of going concern uncertainties are adequate. SAS600 is effective for accounting periods ending on or after 30 September 1993. Since Citron and Taffler (1992) covers a period well before SAS600 came into effect, this essay refers to the going concern qualification.

The central role of both covenants and audited accounts in the wider UK corporate governance process is highlighted by Whittington's (1993) schematic presentation of this system which is reproduced in Figure 1. Not only that, but these topics also have a bearing on the recent debate surrounding the effectiveness of the corporate governance system (see Keasey and Wright, 1993, and the other papers in *Accounting and Business Research*, Vol.23, No.91A for a comprehensive treatment of these issues).

FIGURE 1 HERE

In particular, a number of recent prominent but surprising business failures has prompted questions about the role of the auditor in signalling corporate failure to account users (Whittington, 1993, p.312) and the effectiveness of covenants as timely signals of distress for lenders. In addition, one of the main contributory factors to the audit expectations gap appears to be differing perceptions regarding the auditor's role in evaluating and making disclosures about the future viability of the audited company (see Humphrey et al., 1993, Table 3b; Porter, 1993). This itself is probably a reflection of wider concerns about the degree of auditor independence (Humphrey et al., 1993). Furthermore the effectiveness of accounting-based covenants as monitors of company performance will diminish to the extent that excessive latitude is permitted in corporate financial reporting practice. This in turn depends on two factors - firstly the effectiveness of the regulatory framework for financial reporting and, secondly, the extent to which the individual auditors ensure a consistent and not too liberal an interpretation of generally accepted accounting principles.

Figure 1
A schematic view of the UK system of corporate governance



Source: Whittington (1993, p.312).

3. POSITIVE ACCOUNTING THEORY

3.1 *The positive accounting theory framework*

Positive accounting theory is based on the well-established distinction between positive and normative propositions. While normative propositions are prescriptive, positive propositions are concerned with how the world works.

More specifically, the positive accounting theory school of research seeks 'to explain and predict accounting practice' (Watts and Zimmerman, 1986, p.2). According to Watts and Zimmerman such theories are important because many parties want to know how alternative accounting or auditing procedures will affect their welfare.

In the context of loan covenants, for example, the following positive propositions are of interest:

How costly is it for a firm to breach its loan covenants? Do lenders impose costs when an accounting-based covenant is breached solely because of the introduction of a new accounting standard? Are loan contracts drawn up in such a way that a firm could avoid breach of covenant simply by adopting a different method of accounting?

Research into these issues could be of relevance to normative questions such as:

Should corporate management lobby against the introduction of a new accounting standard? How should lending bankers define accounting-based covenants in their lending agreements?

3.2 *Positive accounting theory and corporate control mechanisms in the context of corporate governance systems*

The fundamental axiom that drives positive accounting theory-based research is that the parties act as rational economic agents (Holthausen and Leftwich, 1983, p.79). This approach has been most clearly formulated by Watts and Zimmerman: 'The economic approach we and many others use applies a simple proposition: To predict and explain individual behaviour, people (including accountants, regulators and researchers) consider the private costs and benefits (broadly defined) of an action and choose the action if the benefits exceed the costs' (1990, p.147).

Some of the early literature that adopts this approach seeks to explain the emergence of corporate governance structures in rational economic terms. Thus Jensen and Meckling's (1976) development of the theory of agency costs in effect addresses major corporate control issues which are themselves an integral part of what we now call the system of corporate governance. Jensen and Meckling define an agency relationship as 'a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent' (p.35). The central problem is that the agent (the corporate

manager), acting in his own best interests, will not always act in the principal's (shareholder's) best interests. The principal will therefore be motivated to incur monitoring costs, such as auditing, to control the agent's behaviour.

This agency cost framework also applies to the relationship between management (acting on behalf of the shareholders) and lenders. In fact Jensen and Meckling define 'agency costs' in the broadest possible terms as arising 'in any situation involving co-operative effort ... by two or more people even though there is no clear-cut principal-agency relationship' (p.86). They argue that when firms raise debt finance, management will have incentives to adopt policies that will transfer wealth from the lenders to the shareholders. These policies are classified by Smith and Warner (1979) under the following headings:

- (a) Dividend payment: management pays shareholders a higher rate of dividend than was anticipated at the time the debt was raised.
- (b) Claim dilution: management issues new debt with the same or even higher priority.
- (c) Asset substitution: management engages in riskier investment projects than were anticipated at the time of the original loan.
- (d) Underinvestment: management rejects positive net present value projects if they expect that the return will accrue solely to the lenders.

The fact that management may be motivated to act against the interests of lenders in this way gives rise to the need for lenders to monitor management actions.³

Jensen and Meckling's agency cost framework does not merely restate the corporate governance problem from a different perspective but also provides some new insights:

- (a) They argue that one way of more closely aligning the interests of principal and agent is via the use of incentive contracts. This provides financial reporting with a wider role as being not limited to *ex post* reporting but also contributing to the design of incentives. In the context of the agency costs of debt, for example, lenders will be concerned that shareholders may be paid higher dividends than were anticipated at the time the loan was made. An accounting-based covenant that requires dividends to be some positive function of accounting earnings would mitigate this problem. Thus Healy and Palepu (1990) show that when firms are close to breaching such dividend covenants they typically respond by cutting their dividends rather than, for example, by using new accounting methods to increase

³ These arguments are based on the view that it may pay shareholders to maximise their own wealth at the expense of that of debtholders even if the result reduces the value of the firm as a whole (i.e. the value of equity plus debt). In this view, contracts can increase total firm value. Fama (1978), however, argues that such behaviour is inconsistent with stable equilibrium. In his view, under appropriate assumptions, the market pricing mechanism (e.g. via the the pressure of potential takeovers) ensures that firm maximising behaviour is the only one consistent with stable equilibrium. Dybvig and Zender (1991) extend Fama, showing that even in the presence of asymmetric information firm maximisation policies remain optimal provided appropriate management incentive schemes are in place.

reported earnings. In this instance accounting numbers are being used to control dividend policy rather than merely report after the event.

- (b) Jensen and Meckling also show that it is not only the principal who has an interest in controlling and monitoring the agent's behaviour. The agent himself will sometimes deem it worthwhile both to guarantee to the principal that he will not act against the principal's interests and to incur 'bonding costs' by offering to be monitored in this respect. This is because, if the agent does not act in this way, the principal can in any case protect himself in advance via the pricing mechanism. Thus, in the case of debt, the lender could require a higher interest rate to compensate for possible wealth transfers from the lender to shareholders. It may therefore pay the shareholders to covenant in advance not to engage in such activities and so obtain cheaper debt finance. In the case of owner/management conflicts, the owner could price-protect himself in advance against self-serving behaviour on the part of management by paying the manager a lower wage. A manager could avoid this however, by being prepared to undergo periodical audit.

3.3 *Positive accounting theory and research into loan covenants and the audit going concern qualification*

The purpose of this section is to discuss two related features of the positive accounting theory approach that makes it particularly appropriate for research into the topics examined

in the papers - its focus on conflict between interacting parties and its reliance on the parties' economic incentives in its method of analysis.

3.3.1 *The focus on conflict between interacting parties*

Both loan covenants and going concern qualifications become especially relevant issues at times of conflict between the parties concerned.

Loan covenants aim to control the extent to which shareholders can appropriate wealth at the expense of lenders (see section 3.2 above). Regarding the going concern qualification, the possibility that an auditor may make such a qualification is likely to cause conflicts between that auditor and the firm's management if management believe that the qualification may damage the creditworthiness of the firm.

Research in these areas therefore benefits from a methodology which unambiguously recognises such conflict.

Jensen and Meckling (1976, p.88) raise this matter explicitly when they say: **'The firm is not an individual.** It is a legal fiction which serves as a focus for a complex process in which the conflicting objectives of individuals (some of whom may 'represent' other organisations) are brought into equilibrium within a framework of contractual relations.' This perspective is particularly relevant to loan covenants research as such covenants are often important components of lending contracts.

It should be recognised, however, that positive accounting theorists have been criticised for ignoring the reality of the firm as a distinct entity. Chambers, in particular, prefers to view the firm as an entity in its own right (1993, p.14). This view certainly accords with the legal reality, in the case of corporations at any rate, that managers are the agents of the firm, not of the shareholders, and that the firm itself is a party to contracts.

One way of resolving this issue is by Jensen's pragmatic argument (borrowed from Simon) that 'the elementary unit of analysis in science is not a matter of 'right' or 'wrong' but rather one of usefulness. Whether one chooses the 'black box' or 'nexus of contracts' definition of an organisation depends on the question at hand' (1983, p328).

The 'nexus of contracts' perspective has certainly directed our attention to the importance of accounting numbers in a wide range of commercial contracts. Furthermore, because of this focus on contracts, it has encouraged research to take a closer look at the legal and institutional settings within which accounting numbers are used (see discussion of Citron (1995) in section 4.2.1(a) below for an example of this).

3.3.2 The focus on the parties' economic incentives

In their extensive review of positive accounting theory, Boland and Gordon (1992) argue that critiques of its economics-based orientation are the most telling. They state: 'The Watts and Zimmerman methodology is entirely invested in limiting accounting research to only

questions for which neoclassical economics can be applied' (p.162). Citing Demski (1988), Boland and Gordon emphasise that positive accounting theory therefore relies on the underlying assumptions of neoclassical economics, including the existence of perfect markets which enable fully informed personal utility maximisers to correctly calculate all costs and benefits.

Not only that, but by assuming that everyone is a personal utility maximiser, motivations that entail a concern with social consequences are effectively ignored. Neu (1992) provides an extensive critique of positive accounting theory from this perspective. He constructs a statistically significant model of the voluntary disclosure of earnings forecasts incorporating variables that aim to measure the impact of social variables. However, in some cases the same results could be obtained using economic motivation as the explanatory variable. Thus Neu expects an industry norm of no forecasts among firms in the resource sector because such firms lack a track record and because exploration is inherently difficult to forecast, making it unlikely that investors would trust any such forecasts. A positive accounting theorist would no doubt concur with this expectation, arguing that the costs of producing a reliable forecast for a resource firm would be so high that it would outweigh the benefits.

From a pragmatic point of view Boland and Gordon agree that 'it is easier to build models that assume personal utility maximisation than to build models in which the individuals have a concern for the social consequences of their actions' (1992, p.163). The 'rational economic agent' view adopted by positive accounting theory is particularly helpful when researching areas that may otherwise seem intractable, in this case the issue of auditor

independence. As argued above, financial reports play an important motivating and monitoring role in controlling conflict both between managers and shareholders and between the firm and those lending to it. Jensen and Meckling (1976, p.115-116) show that, rather than the shareholders and lenders attempting to produce their own financial reports, it will be cost-effective for management (the party being monitored) to produce them and have them independently audited.

This audit will be of value, however, only if the auditors can be relied upon to report any breaches of contract that may have occurred, and it is this condition that highlights the importance of auditor independence. As put by Watts and Zimmerman: 'The probability that the auditors will report a discovered breach is effectively the auditing profession's definition of independence' (1983, p.615).

Independence, however, is not easily susceptible to analysis. As Moizer (1991) points out, independence could be analysed from an ethical viewpoint as well as from the above-mentioned economic interest viewpoint. According to Moizer, two alternative approaches could be taken by the 'ethical' auditor. As a consequentialist, he could weigh up the likely consequences of providing a truthful opinion and may, in all honesty, deem non-disclosure the preferred route. Alternatively, adopting a deontological approach, he would opt for complete and honest disclosure under all circumstances.

In this connection, The Guide to Professional Ethics (ICAEW, 1992) states that 'A member's objectivity must be beyond question if he or she is to report as an auditor. That

objectivity can only be assured if the member is, and is seen to be, independent' (Section A, para. 1.0). Regarding objectivity the Guide also states, as one of its Fundamental Principles, that: 'Objectivity is **the state of mind** which has regard to all considerations relevant to the task in hand **but no other**' (my emphases). By requiring the auditor to exclude all extraneous considerations, the ICAEW is adopting the deontological approach described above. It is not clear, however, whether this adequately describes the way in which auditors actually behave. In addition, from a research perspective, it would appear difficult to investigate the concept of independence if its end-product, objectivity, is a state of mind.

Gwilliam (1987) points out that, as a result of this problem, research into auditor independence has followed one of two paths. What he calls the 'pragmatic' approach has focused on investigating interested parties' perceptions of auditor independence, while the 'theoretical' approach 'has attempted to explain what aspects of an auditor's work make him more or less likely to be independent, and has viewed auditor behaviour in terms of conflict between the auditor and company management.' (Gwilliam, 1987, p.91).

This latter approach is typified in Watts and Zimmerman's (1983) historical analysis of the emergence of the independent audit. They cite mechanisms such as the fear of loss of reputation and the performance of audits by committees rather than by individuals as promoting auditor independence as early as in the Middle Ages.

Bearing in mind Boland and Gordon's underlying reservations cited above, the going concern paper included here has also adopted Gwilliam's 'theoretical' approach as a fruitful way of exploring auditor independence.

3.4 *The methodology of positive accounting theory*

Consistent with its assumption of rational economic behaviour, the bulk of positive accounting theory research to date explores hypotheses of the sort that are amenable to statistical tests using reasonably large numbers of observations. Indeed Watts (1994) cites the increased availability of computers and machine-readable databases as important factors contributing to the growth of positive accounting research. The Papers included in the appendices, in particular those on loan covenants, were motivated by the dearth of positive accounting research in the UK and the desire to apply and extend the methodology of US research in a UK context. They have therefore adopted the hypothesis-testing approach in the main, analysing formal outcomes such as the presence of and definitions of accounting-based covenants and the qualification status of audit reports (although the questionnaire-based paper (Citron, 1992a) is able to explore lenders' perceptions).

However the 'nexus of contracts' view draws our attention to the fact that contracts are part of a wider relationship which will comprise informal as well as formal undertakings and expectations. Therefore, to gain an understanding of the more commonly researched formal outcomes (e.g. contractual conditions; audit report qualifications) the researcher should also explore the lender/borrower or auditor/client relationship in its wider context.

Questions that reflect this wider perspective include: What factors determine the package of covenants that emerge from lender/borrower negotiations? How does the particular package of covenants affect the on-going lender/borrower relationship? How do lenders become aware of possible financial distress and how is it resolved? Why do some companies in clear financial distress not receive qualified audit reports? How does belief in the self-fulfilling prophecy influence qualification decisions?

Statistical hypothesis testing is unlikely to be an appropriate methodology for studying questions such as these. An exploratory case study approach is likely to be a more fruitful way of gaining an understanding of the processes involved and of generating new hypotheses for subsequent testing. Moreover, some issues could benefit from drawing on specific frameworks that have been developed in other contexts. Murnighan and Bazerman's (1990) application of the negotiation strategy and bargaining power literature to accounting, for example, employs models not reliant on purely rational modes of behaviour.

There is no need to view research methodologies such as these as antithetical to positive accounting research. Indeed Watts (1994) calls for case study work to provide new links between theory and empirical testing. A shift towards case studies would, however, mark a departure from the methodology typically adopted in positive accounting research hitherto.

4. LOAN COVENANTS

4.1 *Efficient contracting and managerial opportunism*

It has been shown above (sections 3.2 and 3.3.1) that one of the functions of loan covenants is to control borrower/lender conflict. Since these covenants are often accounting-based, this has opened up areas of research for those interested in accounting policy choice issues.

The covenants in a lending contract will be drawn up with a view to controlling the managerial actions set out in section 3.2 above. However it will be both undesirable and impossible for them to be defined so tightly that all managerial discretion is entirely removed (Watts and Zimmerman, 1990, p.135). It will be undesirable because excessively tight restrictions on investment behaviour, for example, may result in the foregoing of genuinely profitable opportunities. These lost profits could outweigh the benefits derived from controlling the underinvestment and asset substitution problems (see Laber, 1992, for a case study illustrating this point). And regarding accounting-based covenants, it may in fact be impossible to define accounting items such as 'profit' and 'debt' so precisely as to prevent management using their discretion over accounting policy choice to avoid breach of covenant.

These considerations of the costs and benefits of contractual restrictions give rise to two related perspectives on contracting theory:

- (a) The 'efficient contracting' or *ex ante* perspective (see for example Watts and Zimmerman, 1990, p.136 and Holthausen, 1990, p.207). According to this view, the terms of contracts, including the permitted accounting methods, are determined with a view to minimising agency costs and so maximising the value of the firm.

Efficient contracting addresses such issues as: Which types of loan contracts are likely to include covenants and what type of covenants? (see, for example, Malitz, 1986; El-Gazzar and Pastena, 1990; Begley, 1993). What accounting definitions are likely to be used in accounting-based covenants? (see Leftwich, 1983; Whittred and Zimmer, 1986). And, taking a broader perspective, what explains changes in generally accepted accounting principles over time or the cross-sectional variation in accounting policies as between different industry sectors? (see Zimmer, 1986; Whittred, 1987; Mian and Smith, 1989).

- (b) The 'opportunistic behaviour' or *ex post* perspective; i.e. given that the covenants in place allow some managerial discretion, management may adopt policies that will distribute wealth in their favour at the expense of lenders or shareholders. It should be pointed out that the agency literature distinguishes between expected and unexpected managerial opportunism (see Watts and Zimmerman, 1990, p.136; and Christie and Zimmerman, 1994, p.541, for the most extensive exposition of this distinction). Expected opportunism arises because perfect monitoring is inefficient, i.e. water-tight monitoring of all managerial behaviour is not cost-effective.

However, once some managerial discretion is permitted, 'inefficient' opportunism is likely to arise, resulting in the above-mentioned wealth transfers to management from other parties.

Researchers adopting this perspective in the loan contracting area have largely focused on the question as to whether managerial choice of accounting policies can be explained in terms of avoiding violation of accounting-based covenants (much of this literature is summarised in Watts and Zimmerman, 1986, chapters 9 and 11).

The loan covenant papers included here examine both efficient contracting and managerial opportunism issues, as will be shown in the following sections.

4.2 *Efficient contracting issues addressed in the loan covenant papers*

Citron (1992b) and Citron (1995) are entirely devoted to efficient contracting issues, while there is also some reference to them in Citron (1992a). This section looks firstly at the contributions these papers make to the literature (sections 4.2.1 and 4.2.2) and then at problematical methodological issues that they raise (section 4.2.3).

4.2.1 *Summary of contribution to the literature*

The papers examine firstly the characteristics of borrowing firms and of loans that are associated with the use of accounting-based covenants in both private (Citron 1992a) and

public debt contracts (Citron, 1995); and secondly, given the presence of such covenants, how the accounting items are defined (Citron 1992b). They use a variety of research methods - survey questionnaire; text analysis of lending agreements; and statistical modelling.

The original contributions of these papers to the literature are:

- i) They constitute the first published research to provide evidence on the extent and incidence of use of accounting-based covenants in the UK. This is of particular interest because company disclosure of loan covenant information is virtually non-existent in the UK. This stands in contrast to the SEC disclosure requirements in the US (see Press and Weintrop, 1991).
- ii) The use of institutional factors to explain international differences in the structure of public loan agreements as between the UK and the US. Previous work has focused on individual markets and has not examined the influence of institutional factors such as insolvency procedures on the structure of debt contracts. Citron (1995) adduces such factors to explain why, in the UK, accounting-based covenants are positively associated with term to maturity but have no association with gearing, findings which stand in contrast with those in the US.
- iii) The examination of two key factors, convertibility and security, both widely used in the structuring of debt agreements but whose association with accounting-based

covenants was hitherto unresearched. The Papers show accounting-based covenants to be rare in convertible debt while their relation with security depends on the nature of that security.

Some of these points are now discussed in greater detail below.

4.2.2 Discussion of main findings

- (a) *The role of institutional factors in explaining differences in the structure of loan agreements between the UK and the US - gearing; term to maturity; seniority.*

Citron's (1992a) survey of UK private bank lending confirms the findings of a large body of earlier US research (see, for example, Watts and Zimmerman, 1990, p. 139) that highly geared firms are more likely to provide covenants to their lenders. However Citron's (1995) analysis of UK public debt contracts finds no such association. This is ascribed to the fact that the public debt market is a more important source of corporate funds in the US than in the UK where it is accessed only by relatively few and relatively high quality firms. Although the gearing of UK firms raising public debt will vary as between firms, it is unlikely to deviate far from its optimal level for each firm as indicated, say, by the firm's investment opportunity set (Smith, 1993). There is therefore no gearing-induced demand for covenants in the UK public debt market, although in the widely used private debt market the conventional relationship holds (this discussion is returned to in section 4.2.3(a) below).

Regarding term to maturity, while the findings of US research are not conclusive, Citron (1995) finds a strong positive association between term and the presence of accounting-based covenants in unsecured debt. This is explained in terms of the following institutional influences - the relative advantage that UK insolvency procedures give to the secured lender, including their strict adherence to priority rules; the absence of sinking funds in the UK; and the above-mentioned relatively high quality of firms at the time they access the public debt market.

Only Begley (1993) examines the association between seniority and accounting-based covenants, finding few covenants in subordinated debt agreements. This she ascribes to the financial weakness of the firms concerned, concluding that restrictive covenants would be too costly for firms requiring the maximum of flexibility merely to survive. Citron (1995) also finds that subordinated debt rarely includes covenants but, in contrast to Begley's population, the firms in question are not at risk. He explains the UK result in terms of the interests of junior lenders being aligned with those of shareholders and the ineffectiveness of covenants for such lenders in an environment in which strict priority of claims is always adhered to.

- (b) *Previously unresearched key factors used in the structuring of debt agreements - convertibility; form of security.*

Citron (1995) cites previous research into the features of debt that are most likely to be associated with the presence of accounting-based covenants. These studies exclude convertible and secured debt from their populations. In accordance with the view that the role of covenants is to reduce conflict between lenders and shareholders (section 3.2 above), Citron finds accounting-based covenants to be rare among convertible debt. This is because convertibility itself promotes the alignment of lenders' interests with those of shareholders.

Citron also finds that the effect of security depends on its nature. Floating charge security requires a timely default trigger for the charge to crystallise in the lender's favour, a function performed by accounting-based covenants. The value of fixed charge security, however, depends solely on the value of the specific asset in question, so that general accounting-based covenants are of little value to the lender in these circumstances.

4.2.3 *Methodological issues*

(a) *Choosing among competing hypotheses: role of the investment opportunity set*

Much of the literature in this area in the 1980s explained accounting method choice in terms of managerial opportunism. The hypothesis was that, as firms approach their covenant limits, they will adopt income increasing accounting policies in order to avoid breaching these covenants (the 'covenant-based hypothesis'). However, researchers testing this hypothesis did not observe firms' closeness to their covenant limits directly. Instead

they used the more easily observable measure of the firm's debt/equity ratio as a proxy (the 'debt/equity hypothesis'). Their findings confirmed that high gearing ratios are indeed associated with the adoption of income increasing accounting policies. This hypothesis is illustrated in Figure 2a.

FIGURE 2 HERE

As early as 1986, however, Watts and Zimmerman (pp. 360-361) proposed an alternative explanation based not on opportunism but on efficient contracting. They suggested that gearing levels, contract structures and accounting policy choices could be all jointly determined by a third factor, specifically the firm's investment opportunity set.

Figure 2

Alternative Explanations of the Positive Association Between High Gearing and Income-Increasing Accounting Policies.

Figure 2a

A Managerial Opportunism Explanation: The Debt/Equity Hypothesis

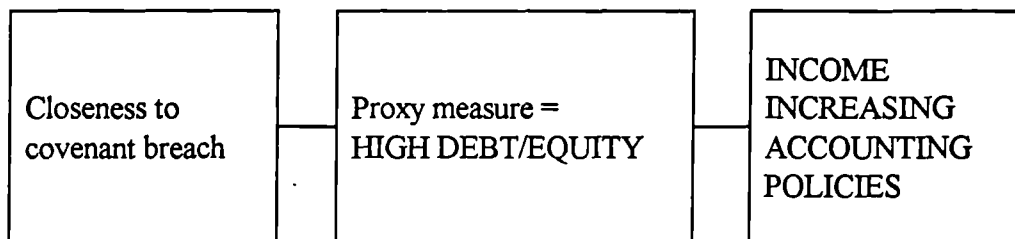
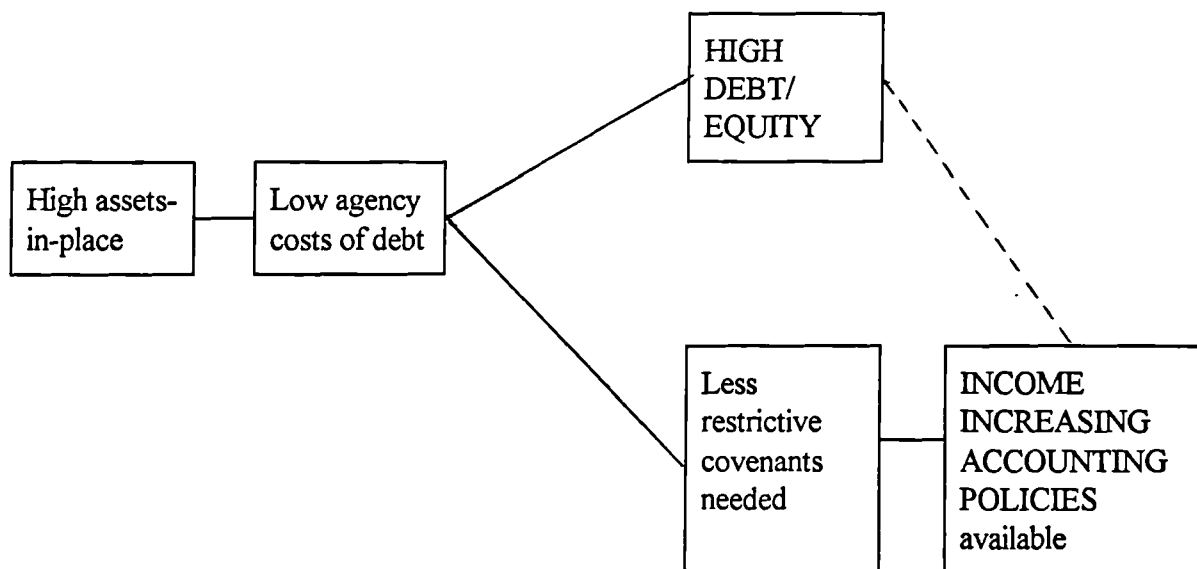


Figure 2b

An efficient Contracting Explanation: Influence of the Investment Opportunity Set



The investment opportunity set concept was first utilised by Miller and Modigliani (1961) when they observed that part of a firm's value derives from opportunities that the firm has for making additional investments in positive net present value projects over and above those physical assets currently held. Miller and Modigliani identified such opportunities with the concept of 'goodwill'.

Myers' (1977), using the idea to examine capital structure, places more emphasis on the discretionary nature of future investment opportunities. He distinguishes between firms whose value derives mainly from 'assets-in-place' (i.e. assets whose ultimate value does not depend on further discretionary investment) as opposed to those where it is based primarily on 'growth opportunities' (i.e. assets whose value depends more on future discretionary investment by the firm, such as plant maintenance, marketing, or research and development). The managers of firms with more growth opportunities have more discretion over future investment decisions. These firms, therefore, have higher agency costs of debt because the underinvestment and dividend payment problems (see section 3.2 above) are more acute.

Building on this distinction, Watts and Zimmerman suggest that because the agency costs of debt are lower for firms with more assets in place, such firms will have both (i) higher gearing ratios (based on Myers, 1977) and (ii) fewer and less restrictive covenants. These firms will therefore be more at liberty to adopt income increasing accounting policies. This line of reasoning, which is illustrated in Figure 2b, could therefore explain the association between high gearing levels and income increasing accounting policies.

It is only more recently that researchers have taken up Watts and Zimmerman's pointer and investigated the association between the investment opportunity set and debt covenants empirically. It seems fair to conclude, however, that this empirical work has itself only served to highlight the ambiguity in the underlying theory. Begley (1993), focusing on agency costs and lenders' demand for protection, finds the use of covenants (including accounting-based covenants) associated with both higher gearing and less assets-in-place (see Table 1 for a comparison of these findings with those summarised in the following paragraphs).

TABLE 1 HERE

Skinner (1993), however, differs from Begley in seeing assets-in-place as the driver and also by giving more weight to how costly it is for the firm to agree to covenants. In his view (confirmed by his findings) firms with more assets-in-place will have more accounting-based covenants for three reasons: (i) they have higher gearing; (ii) accounting numbers provide more accurate performance measures for such firms; (iii) since the value of these firms is less dependent on discretionary future investment, it will be less costly for them to agree to restrictive covenants. The chief contrast with Begley, both theoretical and empirical, is that the association between assets-in-place and accounting-based covenants is negative for Begley but positive for Skinner.

Table 1

The Relationship Between Covenants, Assets-in-Place and Gearing: A Comparison Of Recent Findings

	<u>Increased Use Of Accounting-Based Covenants</u>		
	Begley (1993)	Skinner (1993)	Citron (1995)
Assets-in-place	Low	High	High
Gearing	High	High	No association

However, Skinner's argument that higher assets-in-place permit higher gearing, which in turn results in more covenants, is unclear. This line of reasoning seems to ignore Smith's (1993, p.294) observation that a high level of gearing in itself will not necessarily require greater covenant protection provided it occurs in a firm with a relatively high amount of assets-in-place. This is because more assets-in-place provide the capacity for higher levels of debt without a concomitant increase in risk.

Citron's (1995) study of UK public debt contracts provides a synthesis of Skinner's and Smith's views, showing how a problematical research issue can be clarified by turning the investigation to an environment which differs institutionally from those examined hitherto. It confirms Skinner's findings of positive associations between assets-in-place and both the presence of accounting-based covenants and gearing levels. However, contrary to both Skinner and Begley, it finds no association between covenants and gearing. This latter finding is consistent with Smith, whose argument is particularly pertinent to the UK public debt market which, unlike that in the US, tends to be restricted to relatively few low credit risk firms (Thomson, 1988). Thus, among UK firms issuing public debt, while higher assets-in-place are associated with higher gearing levels, this gearing does not appear to exceed 'acceptable' levels (given the amount of assets-in-place), and therefore does not generate a demand for covenant protection.

From this discussion it would appear that, while the positive accounting theory approach is successful in revealing empirical regularities, it is still at an early stage in developing the underlying theory. The matters that it is trying to explain are very complex. Phenomena such as gearing, contract structures and sometimes even industry sector are determined jointly rather than having an independent/dependent variable relationship. Institutional factors may be the only truly exogenous variables, and these can prove difficult to model.

Further, there is the empirical problem that hypotheses based on investment opportunity set arguments are difficult to test because unambiguous measures of growth opportunities have yet to be developed. Myers himself recognised this when he stated that 'a general measure of this concept is difficult to derive from accounting data' (1977, p.170). However it is noteworthy that papers whose research focus is the investment opportunity set itself have tackled this problem by using multiple measures, finding their results not to be sensitive to the measure used (see Smith and Watts, 1992; Gaver and Gaver, 1993; Skinner, 1993).

(b) *The conservative bias of positive accounting theory*

Watts and Zimmerman criticise those who argue that particular accounting procedures (e.g. current cost accounting) are 'better' than certain alternative procedures (e.g. historical cost accounting) when those same writers fail to explain why the supposedly 'better' procedures are rarely adopted in practice. In contrast, the positive accounting theory approach 'takes as given the proposition that the accepted set (of accounting procedures) maximises the wealth of contracting parties and then seeks to understand how wealth is affected by

specific accounting methods' (Watts and Zimmerman, 1990, p.150). In this view, accounting choices are not made in the name of some vague objective such as 'better measurement', but can be explained in terms of individuals maximising their wealth.

Critics of positive accounting theory point out the conservative bias inherent in this view. According to Chambers, for example, positive accounting theory assumes that 'the survival of what is is taken to demonstrate that it is best' (1993, p.1). Similarly Walker (1987) observes that positive accounting theory fails to provide any framework for investigating accounting methods other than those currently in use.

Christenson (1983) takes this criticism a step further. He states that the proponents of positive accounting theory measure the success of a theory only in terms of whether it yields correct predictions; the fact that the assumptions underlying the theory may be untestable, they deem to be irrelevant. Christenson refers to Zimmerman himself in this context: '... developing testable implications in accounting requires the researcher to make simplifying assumptions regarding (unobservable) *relative costs* ... The accounting researcher, who cannot observe the costs but only the outcome of the manager's decision process, must make assumptions about the *relative costs* of the various purposes in order to derive testable implications ... At times these assumptions appear arbitrary and ex post' (Zimmerman, 1980, p122). Christenson's view is that this 'tactic' of introducing *ad hoc* arguments to explain unexpected findings 'is a violation of the norms which, according to Popper, ... must be followed if a system of propositions is to be considered "scientific" '(1983, p.20).

The various explanations adduced in section 4.2.2(a) above for the negative association between subordinated debt and accounting-based covenants for weak firms in the US (Begley, 1993) but for healthy firms in the UK (Citron, 1995) illustrate this criticism of positive accounting theory. In this case, however, the seemingly *ad hoc* nature of the explanations advanced could, in principle, be tested by further research, e.g. into the convertible loan agreements prevalent in other countries similar to the US or the UK.

Citron (1992b) also contains a finding which exemplifies this problem. This analysis of the accounting definitions used in bank loan contracts confirms the findings of earlier research (e.g. Leftwich, 1983) that negotiated accounting rules tend to depart from GAAP in order to produce more conservative and more objective accounting measures. This is to reduce the scope for managerial opportunism. The loose definition of Operating Profit in Interest Cover covenants is a crucial exception to this rule, however. A positive accounting theory-based explanation of this is that Operating Profit is so difficult a figure to define exactly that the costs of negotiating and monitoring a tight definition would outweigh the benefits.

In short, the absence of a conservative, objective Operating Profit definition is not seen as being inconsistent with positive accounting theory. On the contrary, the fact that this is the way contracts actually do define Profit is taken to mean that certain unobservable costs must exist which justify such a definition on wealth maximising grounds.

Christenson (1983) and Chambers (1993) find this unacceptable. Chambers, for example, observes that 'the positive accounting literature is, in fact, barren of a single example of a contract specifying fully the methods of accounting to be used ... the whole contracting monitoring edifice ... collapses for lack or looseness of contracts (1993, p.14).

How are these demanding research standards to be reconciled with those successes that positive accounting theory has had in deriving certain empirical regularities? Belkaoui (1992) provides a refreshingly non-ideological approach. In his view most accounting hypotheses, including those based on positive accounting theory, can only lead to loosely specified statistical relationships, but this should not invalidate them. The accumulation of 'repeated testimony and new evidence' (Belkaoui, 1992, p.518) will contribute towards the refutation or confirmation of competing theories.

Mouck (1990) similarly provides scientific respectability to positive accounting theory. He argues that the theory does not have to meet Popper's severe falsification criteria as set out by Christenson, but rather can be seen as a 'scientific research programme' as developed in Lakatos' philosophy of science. Central to Lakatos' view is the concept of a "problemshift" which is 'a series of theories ... where each subsequent theory results from adding auxiliary clauses to ... the previous theory in order to accommodate some anomaly' (Lakatos, 1970, quoted by Mouck, p.233). Mouck cites the focus on positive contracting costs as a "progressive problemshift" in the positive accounting theory research programme, i.e. one which has produced novel predictions and empirical findings. Recognition of the importance of the investment opportunity set (see section (a) immediately above) and the

move towards studying efficient contracting (see particularly section (c) following) are possible examples of more recent "problemshifts". However in the light of the discussions of these issues in sections (a) and (c), it seems premature at present to conclude that these are unquestionably "progressive problemshifts".

(c) *Positive accounting theory and accounting as 'useful information'*

Positive accounting theory distinguishes itself from *a priori* normative approaches which seek to prescribe an ideal way of measuring income that contains relevant and reliable information for users of accounts (see Belkaoui, 1992, Ch. 17). Whittington (1987 p.335) points out that this is an unfortunate distinction to emphasise since debt covenants are intended to provide lenders with timely signals of impending distress. Therefore these covenants should in some way be measuring the firm's future cash flow earning potential or the risk attached thereto, i.e. they should be providing relevant and reliable information.

In fact an early paper by Watts (1977) refers to this potential overlap between the positive accounting theory and the decision-usefulness approaches. While accepting that '... information for monitoring bonding covenants is useful information to investors' (p.63), he goes on to emphasise the difference between the two. Information for monitoring is a freely contracted management control mechanism which provides management with the benefit of cheaper debt. In contrast, information for investors is intended to help them make rational investment decisions and, in Watts' view, managers have little incentive to disclose any such information.

More recent papers, however, explore the information value of accounting information in a positive accounting framework. Malmquist (1990), in his study of oil and gas industry accounting, argues that managers choose those accounting methods that provide the most accurate measures of underlying performance. This is because inaccurate measures would result in unnecessary loan defaults and costly renegotiations. On this basis Malmquist hypothesises that oil and gas firms with higher debt/equity ratios are more likely to adopt full cost accounting than successful efforts accounting. This is because the higher the debt/equity ratio, the more will the variance in this ratio be exaggerated by successful efforts accounting; and the greater this variance, the more likely is an unnecessary, costly default to occur. Although Malmquist's results confirm this hypothesis, both he and Holthausen (1990) show that the alternative hypothesis of managerial opportunism could equally well explain the result (cf. section 4.2.3(a) above). This is because the managers of firms with high debt/equity ratios, being closer to default, will choose accounting methods such as full cost that are less likely to put them in covenant breach.

The above paper by Malmquist investigates management incentives to select accounting policies that best portray underlying performance, given the presence of accounting-based debt covenants. Other papers (Smith and Watts, 1992; Skinner, 1993; Citron, 1995) examine whether cross-sectional differences in the use of accounting-based covenants can be explained by differences in the extent to which accounting numbers accurately measure company performance. These studies are all based on the premise that accounting numbers provide poorer measures of performance for firms with relatively more growth

opportunities. This is because, given the conservative nature of accounting, financial statements are less likely to fully reflect asset values and income flows that are dependent on uncertain future events. Although the statistical strength of their findings differ, these papers provide overall support for the view that firms with more assets-in-place are indeed more likely to have accounting-based debt covenants.

This line of investigation, recently adopted by researchers drawing on the positive accounting theory framework, is still in its early stages. In particular, as Holthausen (1990, p.211) points out: '... we know relatively little about how the choice of a particular accounting method will more accurately signal financial distress, managerial performance, or some other attribute that a contract is attempting to monitor'. However, research of this nature could provide a useful meeting-point between positive and normative accounting theorists.

3 *'Ex post' issues addressed in the loan covenant papers*

4.3.1 *Summary of contribution to the literature*

Citron (1992a) primarily addresses a number of *ex post* issues. This paper makes the following original contributions to the literature:

- i) It provides the first evidence in the literature on the costliness of covenant breaches.
A large body of previous research had investigated management's accounting policy

choices and their reaction to proposed accounting standards merely on the assumption that covenant breaches were costly. A key new finding of Citron (1992a) is that the cost of a covenant breach depends on the cause of that breach.

- ii) It is the first research to explicitly investigate whether an income-increasing accounting policy change would indeed be effective in avoiding the costs of a loan covenant breach.
- iii) It is the first research to examine the views of lenders as to whether a breach of covenant brought about by a new accounting standard would be costly to borrowers.

4.3.2 Discussion of main findings

(a) The cost of breaching loan covenants

The proposition that managerial opportunism, whose purpose is avoiding the breach of loan covenants, is a determinant of accounting policy choice depends on the assumption that such breaches are costly. Since covenant breaches are strictly events of default, it would seem likely that such breaches are costly to the borrower. Practising bankers (Zinbarg, 1975; Donaldson and Donaldson, 1982) however, tend to de-emphasise the banker's right to accelerate loan repayment under these circumstances, preferring to focus on their willingness in most cases to accede to reasonable requests to modify covenants.

Watts and Zimmerman (1990), in their review of the achievements of positive accounting theory, highlighted this as an area requiring future empirical research. They stated that 'to date, researchers have been unable to document the magnitude of the costs imposed by a technical violation of a debt covenant or the magnitude of renegotiation costs' (p.151).

Citron (1992a) provides the first evidence in the literature on the costliness of covenant breaches, albeit not quantified financially. The findings are based on a survey of lending bankers. A questionnaire survey was chosen as the appropriate research instrument because the outcome of a covenant breach is the result of vigorous negotiation between banker and customer. Therefore a study of the views of one of the parties to these negotiations (viz: the lending banker) is of value.

The research elicited a variety of possible banker responses to breach of covenant, ranging from immediate loan recall (the most costly) to unconditional waiver with no contract renegotiation (the least costly). The option chosen by the lending banker varies with the cause of the breach. The most costly options are likely if the breach is caused by a real deterioration in company performance with no prior warning given to the banker, while the least costly reactions result from breaches brought about by new accounting standards.

Subsequent US research also investigates these issues. Chen and Wei (1993) analyse the features that distinguish those firms that obtain waivers from those that do not. They find that firms obtaining waivers have a lower estimated likelihood of eventually being wound

up, lower gearing, secured loans and smaller loans. Beneish and Press (1993) quantify the refinancing and restructuring costs associated with covenant breach as averaging between 1.2% and 2% of market capitalisation.

Findings are inconclusive regarding the impact of new accounting standards on loan covenant compliance. Most other research into this issue has investigated aggregate share price reactions. Frost and Bernard's (1989) study of oil and gas company accounting and Gopalakrishnan and Sugrue's (1992) research into pension accounting find no share price effect. Mohrman's (1993) study of oil and gas companies, however, does find a proposed change in GAAP having a negative share price impact.

Finally, Gopalakrishnan and Parkash's (1995) survey of lenders and borrowers confirms Citron's findings regarding the relatively high likelihood of waiver, the costliness of such waivers but the low cost of covenant violations brought about by new accounting standards.

(b) *Contract renegotiation subsequent to covenant breach*

As part of the research into the cost of covenant breach, Citron (1992a) documents bankers' views on likely contract renegotiations under various circumstances. Most new contractual conditions, such as additional security or increased interest charges, are costly to the firm. However it is also possible that a firm's accounting-based covenant limits may be relaxed, particularly where the breach is caused by an acquisition which may so change

the firm's financial and asset structure that the old covenant limits are no longer relevant. Subsequent papers by Beneish and Press (1993) and Sweeney (1994) tabulate similar contract renegotiations based on information reported by firms in breach of their covenants. In a subsequent paper Beneish and Press (1995) find that announcements of accounting-based covenant breaches are associated with significant negative share price returns, and that these are due mainly to the incremental finance costs and the additional covenants imposed by lenders. Concomitant announcements of audit qualifications make little contribution to the share price decline however.

This line of investigation is in keeping with Smith's (1993, p.301) view that future research in this area needs to understand breach of covenant as part of an on-going lending process, rather than merely as a one-off event which may influence accounting policy choice. This in turn raises the fundamental question as to whether the distinction, made in section 4.1 above, between *ex ante* efficient contracting and *ex post* managerial opportunism is valid. Management may adopt accounting policies that reduce reported gearing so that, even if a covenant is breached, waiver and renegotiation are more likely outcomes than loan repayment. Renegotiation is likely to result in a new set of covenants being drawn up. Thus management's *ex post* behaviour may affect 'efficient contracting' at the next round of negotiations.

(c) *Bankers' reaction to managerial opportunism*

The hypothesis that managers select accounting policies in order to avoid covenant violations is based on the further assumption that bankers are unable, by some means or other, to negate the effects of such actions. Citron (1992a) is the first piece of research to investigate this issue. He finds an overall likelihood of just under 60%, in the view of respondents, that in the event of a disclosed accounting policy change the lending banker either could not or would not take any action. This means that in these cases the new accounting policy would succeed in achieving management's objective of moving the company away from its covenant limits. Subsequent US-based research (Sweeney, 1994) finds, among companies that eventually breached their covenants, that accounting changes had successfully delayed the breach only in those cases where the required change in income was very small.

Citron (1992a) opens up the possibility that opportunistic accounting behaviour by borrowers could appear to succeed for at least three reasons: (a) the lender is 'fooled'; (b) the lender is aware of the borrower's accounting policies but is contractually unable to threaten default; (c) the lender is able to threaten default but chooses, for some reason, not to do so. The analysis in Citron (1992b) indicates where management has the potential to exploit loose accounting definitions. These observations raise important issues surrounding opportunistic accounting behaviour. For example, what distinguishes those firms that choose to behave opportunistically from those that do not? How easily are lending bankers 'fooled' by accounting policy changes? Under what circumstances (if any) do bankers decide they are able to 'live with' borrowers' income-increasing accounting changes? It is likely that the most appropriate way of pursuing these issues could be via research into

actual lending cases, drawing on the lending contracts themselves and the recall of key parties such as the bankers and finance directors involved.

Placing the above issues in a corporate governance context, Whittington (1993) queries whether auditors are adequately fulfilling their monitoring role if firms are able to manipulate their reported results so as to avoid covenant breaches. A recent paper by DeFond and Jambalvo (1994) probes this question. In their study of firms that breached debt covenants, they only find evidence of income-increasing accounting policies in the year of violation when firms either receiving going concern qualifications or experiencing management changes are omitted from the sample. It seems that firms in either of these two categories are subject to pressures to report conservative rather than inflated income figures. In the case of firms with going concern qualifications, DeFond and Jambalvo suggest that the auditors increase their monitoring of management's accounting choices for fear of subsequent litigation.

THE GOING CONCERN QUALIFICATION

As shown in earlier parts of this essay, a competent and independent audit is a crucial link in the corporate governance process. Citron and Taffler (1992) investigate the influence of auditor competence and independence in the particular context of the GCQ decision. However it is important to emphasise that the GCQ decision is only one of many contexts in which the broad issues of competence and independence can be investigated. Those features peculiar to the market for audit services which make competence and independence particularly sensitive issues include the problematic nature of evaluating the quality of an audit and the fact that, for all practical purposes, auditors are appointed and dismissed by client management, the very parties on whom they are reporting (Moizer, 1992). The length of time for which the auditor has had a client, the extent to which the auditor earns fees from non-audit services, the size of an audit fee relative to total fee income and the likelihood of auditor switching are additional factors which may jeopardise auditor independence.

Citron and Taffler (1992), however, focus on a specific area in which auditor competence and independence are severely tested, the GCQ decision. They adopt what Gwilliam calls the 'theoretical' approach to examining auditor independence (see section 3.3.2 above) by focusing on the cost motivators influencing the auditor to behave in either a more independent or less independent fashion.

Summary of contribution to the literature

The original contributions of this paper are as follows:

- i) For the first time, the paper provides extensive empirical evidence throwing into question a key link in the corporate governance process, viz the extent to which auditors disclose going concern uncertainties in the last accounts issued prior to failure. It shows that subsequent events can explain non-qualification in only a small minority of cases.
- ii) It uses the GCQ situation as a context for investigating potential threats to auditor independence. Of particular importance it studies the hitherto unresearched self-fulfilling prophecy argument. By use of a matched group methodology, the paper shows that there appears to be no objective foundation to the fear that the GCQ itself precipitates failure.
- iii) The paper also examines auditor switching as an independence-related issue. While auditor switching has been widely researched, no other paper has taken the approach adopted here of focusing on matched groups of financially weak companies distinguished only by the presence or absence of a GCQ. The paper finds evidence for an association between a GCQ and subsequent auditor switching.
- iv) The paper provides the first UK analysis of the relation between audit firm size and rates of GCQ.

The research in this area raises few new fundamental methodological issues. Therefore this chapter focuses on the key findings of the paper and discusses them in the light of contemporaneous and subsequent research.

Discussion of main findings

(a) The low GCQ rate among failed firms

Citron and Taffler (1992) find a low rate of GCQ (26%) among failed listed firms during the years 1977-1986 (see Table 1 of that paper). Preliminary results from more recent research by Citron and Taffler (1995) show an even lower 17% rate of qualification for the period 1987-1994. There are five possible explanations for this type of finding:

(i) Incompetence, i.e. auditors are poor at recognising going concern problems. The paper cites earlier research which discounts this possibility. Subsequent research provides further support for auditor competence. Biggs et al. (1993) construct a complex model of the audit going concern decision, finding in particular that auditors' in-depth client knowledge plays a critical role in this judgement. Similarly Goodman et al. find that non-financial variables that proxy for auditor assessment of client management capability are crucial in discriminating between qualified and non-qualified distressed firms.

(ii) Threats to auditor independence. These are discussed in sections (b) to (d) below. However it should be noted that issues of independence and competence can be difficult to disentangle from one another (Moizer, 1991). Thus, it may be impossible to ascertain whether an auditor's failure to disclose is due to incompetence or to the deliberate avoidance of a potentially troublesome issue.

(iii) The duties imposed on the auditor regarding going concern judgements do not entail a one-to-one relationship between firm failure and receipt of a GCQ, i.e. it is not the auditor's role, in making the GCQ decision, to predict business failure. As formulated in the 1985 Auditing Guideline, the auditor is merely required to make a judgement about the appropriateness of the going concern basis for the preparation of the financial statements (Auditing Practices Committee (APC), 1985, para. 6). The more recent SAS130 similarly emphasises that it applies to going concern purely as an accounting concept (APB, 1994a, paras. 5-8). However the 1985 Guideline hinted at a wider responsibility when it says: 'Where there is significant uncertainty about the enterprise's ability to continue in business, this fact should be stated in the financial statements even where there is no likely impact on the carrying value and classification of assets and liabilities. Where this is not stated in the financial statements, the auditor should refer to it in his report' (APC, 1985, para. 31).

However Mutchler's (1984) interviews of US auditors reveal a wide variety of views among auditors themselves regarding the auditor's role in the presence of going concern uncertainties. If indeed there is no consensus within the profession, it is not surprising that the views of users and auditors should differ in this respect.

(iv) However effective the auditor may be, a clean audit report can never be a cast-iron guarantee of survival. As SAS130 argues: 'Any judgement made, whether by directors or auditors, although reasonable at the time, can be valid only at that time and can be overturned by subsequent events' (APB, 1994a, para. 12). As shown in Citron and Taffler (1992), however, this argument does not explain the low rate of qualification. This paper addresses the issue by examining the subsequent events befalling 79 non-qualified failed companies, finding that such events could explain non-qualification in only 11% of cases. Moreover, Porter's survey research (1993) shows that non-auditors are quite able to distinguish between the auditor's existing duty to 'express doubts in the audit report about the company's continued existence' and a hypothetical duty to 'guarantee the auditee company is solvent'. While finding that poor performance in the former duty is a major contributor to perceptions of auditors' deficient performance, Porter's respondents accept that the latter duty is one that could not reasonably be expected of auditors.

(v) The influence of loan default. This factor is the focus of the study by Chen and Church (1992) and is of particular interest in this essay as it provides a link between the loan covenants papers discussed in this essay and the GCQ paper. Chen and Church's key findings are first that 99% of firms in loan default also received a GCQ; secondly that, of all qualified firms in default, 84% remained viable in the following year; and thirdly that, of failing firms, 95% of those that were qualified were also in default while 94% of those not qualified were also not in default. Their central contribution is that while default is strongly

associated with GCQ it does not appear to be related to failure, in the short-term at any rate. This provides a possible explanation of the low GCQ rate among failed firms.

Chen and Church ascribe the association between default and GCQ to the fact that US audit going concern standards specify debt default and restructuring as potential indicators of going concern problems. It should be noted that in the UK, both the 1985 Guideline (para. 10) and SAS130 (1994, para. 31) contain similar references. While Chen and Church's conclusion does imply that auditors are relying mechanistically on default status to guide their going concern judgements, this may be rational behaviour in an increasingly litigious environment. The auditing guidelines do provide auditors with many other indicators of going concern problems, although most of these are not as objective as being in loan default.

Furthermore default is a poor indicator of failure, according to Chen and Church, either because it is often successfully resolved through negotiation or, even if unsuccessful, the process can be so lengthy that failure can be avoided for an extended period (1992, p.33). This could mean that forcing a firm into negotiation with its bankers due to loan default may actually contribute towards its ultimate survival, a proposition worthy of future research (see also Jensen, 1989).

(b) Self-fulfilling prophecy argument not supported

This is a vital and complex issue but one which has not hitherto been the subject of academic research. An auditor has an economic interest in his client's survival. The fear that a GCQ may itself trigger failure is a cost factor motivating against qualification in circumstances that would otherwise warrant it. Therefore, belief in the self-fulfilling prophecy argument operates against auditor independence. A recent statement of this belief is to be found in the *Report of the Committee on the Financial Aspects of Corporate Governance* (1992), the Cadbury Committee, which states that 'there must be a risk that any qualification about the company's financial viability, however it is expressed, will precipitate the company's collapse' (p.42). However Citron and Taffler (1992) find that qualified companies are no more likely to fail than a matched group of unqualified companies, thus lending no support to the objective reality of the self-fulfilling prophecy argument.

As mentioned above, despite the importance of this issue, it does not appear to have been studied empirically elsewhere. Chen and Church (1992) provide evidence of an 82% survival rate among qualified firms. Furthermore, 76% of these surviving firms were in loan default (their Table 7A). Although Chen and Church do not refer to the self-fulfilling prophecy argument, their data also appear to invalidate it, especially as so many of their surviving yet qualified firms were actually in negotiation with their bankers.

(c) *GCQ firms have a higher rate of auditor switching*

Humphrey et al. conclude from their interviews with prominent individuals in the business and auditing community that 'a willingness to qualify indicates a willingness to challenge management' (1992, p.39). This is consistent with the view that the desire of clients to avoid qualified opinions and to shop for more acceptable opinions constitutes a threat to auditor independence.

Citron and Taffler (1992) find some support that auditor switching is indeed linked to the receipt of a GCQ. Haskins and Williams (1990), however, question the association between qualified audit reports and auditor switching. They report that a wide range of economically motivated factors such as firm distress, size and growth are more important than audit opinions in explaining auditor changes. If this is the case, then auditor switching may not be indicative of a threat to independence. However it may be that a model that explains auditor switching in general may not provide insight into switches following specifically upon receipt of a GCQ.

Krishnan (1994) finds that switches occur not due to qualifications themselves but because firms receive more serious qualifications than they deserve. Thus for all firms deserving an asset realisation qualification, the switching rate will be higher among those that actually receive the more serious going concern qualification (1994, p.208). Krishnan suggests that such behaviour may result from negative private information discovered by the auditor during the audit. If this is the case, opinion shopping is unlikely to be worthwhile, since no firm will precommit itself to a more acceptable audit opinion.

Whether auditor switching is associated with threats to auditor independence remains an open question and one that is important enough to merit further research.

(d) *Large audit firms exhibit the same rate of GCQ as smaller audit firms*

Citron and Taffler (1992) argue that smaller audit firms are more subject to anti-independence pressures than large firms. Smaller firms, for example, have a relatively larger economic interest in any one client. However their finding of similar rates of GCQ among the two sizes of firm does not support this hypothesis. A possible explanation lies in Mutchler and Williams' (1990) conclusion that GCQ rates could themselves be a function of the riskiness of the firm's client base which is itself related to the firm's audit methodology. In their study of Big Eight firms, they find that the more structured the audit approach, the riskier the client base and, hence, the higher the GCQ rate. They do not examine, however, why firms differ as between audit methodologies and client bases, or indeed which determines which.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

The Papers reviewed in this essay address issues which are of public concern and which attract continuing attention from researchers.

Much of the debate surrounding positive accounting theory has been polarised, largely because of the exclusivity Watts and Zimmerman have often claimed for their approach (see, for example, Watts and Zimmerman, 1990, p.132). This essay has aimed to demonstrate that the approach does indeed have a valuable contribution to make provided its underlying assumptions are understood. This is at one with the balanced view adopted by writers such as Eisenhardt who concludes that 'agency theory presents a partial view of the world that, although it is valid, also ignores a good bit of the complexity of organisations' (1989, p.71).

In this spirit, an important direction for future loan covenants research would be to incorporate a broader view of the lending process as a whole (see Smith, 1993; and section 3.4 above). Holthausen (1990) indicates that prior research into opportunistic behaviour ignores the implications of a multiperiod horizon. Research which more realistically does recognise a multiperiod horizon could draw on Holland's studies of customer/banker relations (1993 and 1994). Holland casts his case studies in an agency theory framework but extends this to incorporate notions such as informal contracts in which there is a mutual expectation of a supply of and demand for services over time.

Furthermore all the Papers reviewed here deepen our understanding of companies in distress. A case study approach may be an effective way of extending this research by integrating the subject matter of all the Papers (loan covenants and the GCQ) into a wider view of firms in distress.

Such an approach may be an effective way of analysing, for example, how companies enter loan default and the extent to which the process succeeds in preserving going concern value. It may be that an appropriate package of loan covenants can contribute to company survival by ensuring timely banker intervention (see the discussion of Chen and Church's (1992) research in section 5.2(a) above). Jensen's (1989) view that lender monitoring of highly geared firms promotes successful reorganisation rather than liquidation would provide theoretical support for such a study. At the same time it is relevant to investigate the extent to which GCQs provide lenders with new information, or whether alternatively they are merely confirmatory or possibly whether the lenders themselves play a role in the GCQ decision.

Case studies of the functioning of loan covenants are likely to be especially fruitful in those situations where covenants have a particularly important role to play. In MBOs and refinancings, for example, covenant packages are usually designed with care and are not included just as a matter of form. Research into the functioning of loan covenants in these contexts could act as test cases for their use in more conventional situations.

A related issue, which further addresses the role of loan covenants in the corporate control process, is the question of how effective the most common accounting-based covenants are as signals of impending distress. Chambers alludes to this issue when he criticises positive accounting theory's attachment to the term 'accounting numbers'. This phrase he perceptively sees as 'implicitly severing the association of the products of accounting from the observables they are expected to depict' (1993, p.4). Traditionally, positive accounting theory grants a role to accounting numbers provided they are contained in a contract. But do these numbers provide information about economic reality, e.g. about the financial strength of the firm? This question could be probed by examining how effective accounting-based covenants are at providing timely signals of distress and whether their effectiveness varies as between firms or with different accounting definitions (see section 4.2.3(c)).

The impact of new accounting standards on companies' compliance with accounting-based covenants is an important public policy issue on which the research evidence cited above (section 4.3.2(a)) is mixed. Practitioners present an equally confusing picture. Thus a statement from the British Bankers' Association (1992) suggests that lending bankers unconditionally waive breaches caused by new accounting standards in the great majority of cases. A practising lawyer, however, expresses the view that companies should not be complacent in such matters when negotiating their loan agreements (Beaumont, 1993). This is, therefore, an area that merits further research, especially in the light of the radical changes in financial reporting standards currently being implemented in the UK.

Citron (1995) refers to the high credit quality of firms entering the UK public debt market. This raises wider capital structure issues regarding what distinguishes those 'elite' firms which choose to borrow in this market from those that do not. While this could be investigated using conventional statistics-based empirical research, a deeper understanding of what motivates a firm to enter this market could be obtained by a case study approach including interviews with key parties such as finance directors, institutional investors and merchant bankers. It would be particularly useful to include studies of outlier cases which have entered the public debt market, e.g. very small firms and small debt issues.

More generally, recent research is beginning to probe the working assumption that underlies research into the agency cost of debt that we are dealing with an owner-manager. Indeed Jensen and Meckling conclude their 1976 paper by conceding that it does not fully spell out the application to the very large modern corporation whose managers own little or no equity. Garvey and Swan (1994), summarising recent literature on management turnover in distressed firms, question the assumption that managers are always willing to act against the interests of lenders even when it means courting financial distress. The contribution of loan monitoring to modern-day corporate governance therefore requires a better understanding of how this monitoring function differs among firms with different ownership structures.

There are also a number of issues related to the GCQ that have public policy ramifications and which merit further research. Citron and Taffler are currently extending their research beyond the 1977-1986 period so as to examine these matters.

In the UK institutional context it is of interest to examine the influence of more recent professional guidance. Firstly an Auditing Guideline was issued towards the very end of the period covered by the original research in 1985 (APC, 1985). While this Guideline should have provided a more structured approach to the going concern qualification decision, there is an alternative view that it merely formalised the passive approach to auditing going concern uncertainties (Sikka, 1992). Secondly SAS130 (APB, 1994a) and SAS600 (APB, 1993) have recently specified a more active audit approach and a new style of disclosure, effectively replacing the going concern 'qualification' with a going concern 'modification'.

Furthermore, the self-fulfilling prophecy and auditor switching arguments have important implications for auditor independence.

The self-fulfilling prophecy is an under-researched problem. Citron and Taffler (1992) provide evidence that it does not appear to have any objective basis. However, if auditors, managers and regulators believe that it operates then it will continue to influence the qualification decision. Therefore more research is called for in this area, particularly into the perceptions of the various parties involved.

Citron and Taffler (1992) provide evidence that auditor independence may be prejudiced in a GCQ situation due to threats of auditor switching. This important issue needs further investigation, both by using a larger sample size and by attempting to separate out the qualified audit report from other potential causes of auditor switching.

In connection with disclosure, it could be relevant to investigate the extent of voluntary disclosure of going concern problems currently found in interim reports. This is especially important as the last set of financial statements issued by a failing company is just as likely to be its interim report as its audited annual report.⁴ The results of such research could have policy implications regarding the role of interim reports and their audit.

Research into GCQ rates among private companies could throw further light on the paper included here, in particular whether the expected impact of a GCQ on share price and the higher public profile of listed companies influence the qualification decision. On the one hand an auditor may be more likely to qualify a private company than a listed one to the extent that the value of the auditor's economic interests in a private company client is likely to be lower. On the other hand the cost to the auditor of not qualifying a company that subsequently fails may be lower in the case of a private company, since the auditor's loss of reputation will be less and the likelihood of a third party lawsuit may be lower.

Finally, Chen and Church (1992) find that most qualified firms were also in loan default. However 23% of their qualified firms were not in default and it would be of interest to explore what distinguishes these types of firms from those without a GCQ.

⁴ Citron and Taffler (1995) identify interims as the last set of accounts to be published in 50% of the 108 cases of non-qualified listed and USM companies failing between 1987 and 1994.

In conclusion, it is hoped that this essay's critical review of recent research into the contributions of loan covenants and the going concern qualification to the processes of corporate monitoring and control will provide a springboard for future research in these important areas.

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APPENDIX A1

Financial Ratio Covenants in UK Bank Loan Contracts and Accounting Policy Choice

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Abstract—The attitudes of lending bankers to the use of restrictive ratio covenants in loan contracts are of importance to both corporate management and accounting policy makers. Such attitudes also underly research linking costly contracting with accounting policy choices. This paper reports a survey of 33 UK lending bankers. It analyses their views on (a) the extent of ratio covenants in UK bank loan contracts and factors with which their presence is most likely to be associated; (b) costs that may be imposed on borrowers violating such covenants or expecting to do so; and (c) the ability of borrowers to avoid such costs by appropriate choice of accounting methods. Respondents indicated that ratio covenants are widely used, particularly for loans in excess of £1 million and with companies that are relatively highly geared. 'High cost' penalties such as loan acceleration are most likely to be adopted where no prior warning has been given of a covenant breach. Where prior warning has been given, or where a breach is due to an acquisition, waivers and contract renegotiation are more likely responses. Breaches caused by new SSAPs cause few real costs to borrowers, while just under 60% of respondents indicate they may take no action in response to a voluntary accounting method change.

Introduction

The use of financial ratio covenants (FRCs) in debt contracts is an important example of the economic significance of accounting numbers. The presence of such covenants may affect the financing methods and/or the accounting policies adopted by borrowers. However, the influence of FRCs will depend, in part, on management's expectations of lenders' reactions to covenant violations or near violations.

Research investigating the relationship between the presence of FRCs and issues such as accounting method choice and the impact of mandated policy switches has rested on the assumption that covenant breaches are indeed costly (Duke and Hunt, 1990, p. 47; Watts and Zimmerman, 1990, p. 151). However, this raises questions such as whether default, or indeed contract renegotiation, is always costly; what factors affect this likelihood; and what form such costs take. This study addresses these matters by soliciting the views of those who would typically impose such costs, namely lending bankers.

The paper investigates the use of FRCs in private lending agreements (i.e. bank loan contracts) in the UK. It documents, for the first time, the extent of FRC use in UK bank loan agree-

ments. Systematic evidence is provided of UK bankers' perceptions of the costs imposed on customers in various cases of FRC breach. Of particular importance, bankers' views are sought on the likely effectiveness of a voluntary change in accounting method as a means of avoiding default.

Literature review

A major section of the literature to date has drawn on the contracting theory framework to explore relationships between the presence of restrictive debt covenants and issues of accounting method choice. Two areas of special concern are the impact of a change in generally accepted accounting principles on firms with such covenants (e.g. Leftwich, 1981; Lys, 1984) and the nature of voluntary accounting method choice among firms with debt covenants (e.g. Dhaliwal, 1980; Holthausen, 1981; Bowen *et al.*, 1981; Lilien and Pastena, 1982; Daley and Vigeland, 1983). While the strength of their findings varies, these studies demonstrate that a higher debt/equity ratio is associated with the adoption of income increasing accounting methods. Christie's (1990) meta-study analyses the results of a number of previously published papers on an aggregate basis. He concludes that leverage, interest cover and dividend constraints have significant explanatory power with regard to accounting method choice.

The above studies are taken to confirm 'the covenant-based hypothesis' (Watts and Zimmer-

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man, 1986), namely that the closer a company is to a specific restrictive covenant, the more likely it is to use accounting methods that will help prevent it breaching that covenant. Watts and Zimmerman point out, however, that actually testing such a hypothesis entails extracting details of companies' specific restrictive covenants. As this is often not feasible, the 'simple debt equity hypothesis' is substituted, namely that the larger a company's debt/equity ratio the more likely it is to adopt income increasing accounting methods. In effect, a high debt/equity ratio is used as a proxy for being close to breaching a covenant. Thus the studies cited above have, either exclusively or predominantly, tested the proxy hypothesis.¹ This proxy hypothesis, however, may not always represent a good substitute for the covenant-based hypothesis.²

Recent research has gone some way towards addressing the assumptions underlying the 'simple debt equity hypothesis' by investigating the extent to which high levels of leverage proxy for the presence of FRCs and for closeness to violating their restrictions. However, the assumption that covenant violations are costly, which also underlies the above mentioned research, does not appear to have received the same attention.

FRCs are found to be widespread, although not universal, in public debt agreements (Duke and Hunt, 1990) and both private and public debt agreements (Frost and Bernard, 1989; Press and Weintrop, 1990).³ The Duke and Hunt and the Press and Weintrop studies also find that leverage proxies for the presence and the restrictiveness of some but not all FRCs. Malitz (1986), seeking to test the 'costly contracting hypothesis' that financial contracts can increase a company's value (see Smith and Warner, 1979), finds positive associations between the presence of certain accounts based covenants and both high financial leverage and smaller firm size. McDaniel (1986) finds that only one third of Fortune 100 companies have dividend restrictions in their public debt indentures and that the trend is to include them less frequently.

All these studies examine actual FRCs but do not provide details of how accounting items such as leverage are defined. However, Smith and

Warner (1979) in the US, and Whittred and Zimmer (1986) and Stokes and Leong (1988) in Australia analyse detailed accounting definitions as used in public debt agreements, as do Leftwich (1983) and El-Gazzar *et al.* (1989) for private US debt agreements. Of particular interest in the context of mandated accounting method changes, both Leftwich, and Whittred and Zimmer find that, as a general principle, contracts tend to incorporate the accounting methods in force at the date of monitoring ('rolling GAAP') rather than those that were in force at the date the contract was instigated ('frozen GAAP'). As a result, Leftwich concludes that 'the expected costs of an inadvertent contract breach when GAAP is changed are lower than the monitoring and record-keeping costs associated with frozen GAAP' (p. 36).

There has been little investigation of FRC usage in term loan contracts outside the US. The degree of attention devoted to ratio covenants in standard UK legal texts (e.g. Wood, 1989; Penn *et al.*, 1987; Lingard, 1988) does provide indirect evidence of widespread FRC use. However, there is only a cursory reference to FRCs in *The Encyclopedia of Forms and Precedents* (Walton, 1986; see Vol 4, paragraph 167).

With regard to the other fundamental issue underlying the 'simple debt equity hypothesis', viz. that of the costliness of covenant violation, perhaps the most comprehensive insights are to be found in the descriptive/prescriptive writings of practitioners. In the US, Zinbarg (1975) describes negative covenants as 'checkpoints that permit the lender to review proposed actions by the borrower'. A similar philosophy has been expressed in the UK by Donaldson (1988), and by Donaldson and Donaldson (1982). In Zinbarg's experience, at least 95% of requests to modify negative covenants are granted with no *quid pro quo*. With specific regard to the effect of changes in accounting principles, Fogleson (1978) distinguishes between public and private debt agreements. While in the former case 'the results can be disastrous', in the latter case, defaults are, in his view, waived with relative ease.

Research into the costliness of covenant breaches adopting the 'simple debt equity hypothesis' has only sought to test the hypothesis that breach of a public debt agreement is costlier than breach of a private agreement,⁴ but with inconclusive results. Among other research into this issue, Abdel-Khalik (1981), in his study of lease accounting, finds somewhat differing perceptions as to

¹Holthausen (1981) did include some results relating to companies deviating from specific leverage constraints, and Bowen *et al.* (1981), Daley and Vigeland (1983) and Lys (1984) introduced firms' levels of unrestricted retained earnings as a variable.

²Thus Zimmer (1986) finds a relationship between interest capitalisation and leverage among Australian real estate developers in the absence of bond covenants due to the nature of cost plus pricing contracts.

³Deakin (1989) notes that changes in accounting method could have an impact on firms with no accounts based covenants as they may be concerned about the costs of raising capital in the future.

⁴The rationale for this hypothesis is that public debt issues will involve a greater number of parties and renegotiation of such contracts may be subject to regulatory requirements. In this respect, syndicated bank loans, which may involve a large number of banks from a variety of countries, bear some resemblance to public debt issues.

whether it would be costly for lessees to seek waivers of covenant violations resulting from lease capitalisations. While auditors and user groups, including bank loan officers, thought that such waivers would not be costly, preparers were unsure (p. 276). MacArthur (1988) in his analysis of corporate comments on UK Exposure Drafts finds mixed expectations on the part of borrowers as to whether the proposals in ED 29 (Accounting for Leases and Hire Purchase Contracts) would affect them adversely due to loan agreement covenants.

Regarding the issue of voluntary accounting method choice, neither lenders' nor borrowers' perceptions of the feasibility of avoiding FRC breaches by appropriate accounting method choices appear to have been addressed in the literature to date. El-Gazzar *et al.* (1989) find that, while the accounting definitions used in a sample of private debt agreements give management the latitude to avoid default through use of off-balance sheet finance, non-accounting-based covenants specified in the loan agreement provide a more effective restriction of such activity.

This research seeks to extend the insights obtained from the above mentioned works by carrying out a systematic survey of lending bankers' views on the likely costs they would impose for covenant breaches and the scope for avoiding such costs through appropriate accounting method choice.

Research instrument

Both the extent to which FRCs are included in loan contracts and the manner in which a banker deals with covenant violation are issues which are subject to strenuous negotiation between banker and customer (Slater, 1982; Donaldson and Donaldson, 1982).

Earlier studies of the impact of changes in generally accepted accounting principles have been market based and those examining voluntary accounting method choice have tested for association with various features of the companies concerned, such as financial structure and size. Both these approaches have examined for regularities at an aggregate level and hence were not designed to shed light on the complex nature of the banker-customer relationship alluded to above.

In this study a predominantly structured postal questionnaire was used as being most appropriate for eliciting views on the use of FRCs of one party to this negotiation process, viz. those of the lending banker (Kerlinger, 1973, p. 411). A preliminary questionnaire was piloted with four senior bankers, a banking lawyer and a senior technical partner in a Big Eight accounting firm in the latter part of 1988. Follow-up in-depth interviews were then held with these respondents to clarify the issues to be

investigated, draw out new issues and ensure use of correct terminology. The survey was conducted in Autumn 1989. Its objective was to explore lending bankers' perceptions of the situations in which FRCs are more likely to be used, their attitudes to various instances of covenant violation, and their views on the likely effectiveness of changes in accounting method as a means of avoiding covenant breach. It is acknowledged that the findings do not therefore provide direct evidence on the actual cases in which FRCs would be used nor necessarily on how bankers would actually react to a situation of breached covenants.⁵

Respondents

The potential respondent population was identified as consisting of those banks most likely to be actively engaged in corporate term lending and having experience of the use of FRCs. Fifty banks were identified⁶ and telephone contact made with each to seek agreement to participate, confirm the relevance of the questionnaire to their lending activity and locate the most appropriate person in the organisation to ensure that questionnaire responses would capture organisational policy. Fifty-three questionnaires were despatched. With the exception of the largest institutions only one questionnaire response could validly be obtained from any one organisation. This is because overall institutional policy predominates in key decisions relating to covenant breaches. Four large lending institutions did, however, provide two responses each since the two respondents in each case dealt with corporate customers of very different sizes. Non-response was followed up initially by telephone and then, if necessary, by writing. Thirty-three usable questionnaires were returned.

Table 1, Panel A provides an analysis of response rate, showing that the effective response

⁵See the Appendix to this paper for a summary of the questionnaire. A copy of the questionnaire is available from the author on request. The final form of the questionnaire defined its scope to respondents as not relating to specialised forms of lending such as project loans, or lending to specialised sectors such as shipping, property, aerospace or energy. The reason for this was that the special factors that are often relevant to these forms of lending could not be accommodated into the generalised questionnaire being used. The findings reported here therefore do not relate to these areas of lending.

⁶These comprised: (i) all eight members of the Committee of London and Scottish Bankers plus two other British clearers engaged in corporate term loans; (ii) all four members of the Northern Ireland Bankers' Association; (iii) nine of the sixteen UK merchant banks that comprised the Accepting Houses Committee as at December 1988 plus one other leading merchant bank; (iv) the 26 US, Canadian, Australian, French, German and Swiss banks listed in *The Banker* (November, 1988) as having over 200 UK employees (this being used as the only available indicator of size).

Table 1
Sample Composition

Panel A: Questionnaire Response Analysis			
	<i>No. of Questionnaires</i>		<i>No. of Institutions Represented</i>
Total sample population of lending institutions			50
Not prepared to participate			1
Questionnaires despatched	53		49
Non-response*	19		19
Questionnaires returned	34		30
Not usable	1		1
Usable questionnaires	33		29
Response rate (institutions providing usable responses as a percentage of the total sample population)			58%
*Reasons for non-response:			
Confidentiality	3		
Level of relevant lending too low	2		
Lending only secured	1		
Lending too specialised	1		
No reasons given	12		
	19		
Panel B: Respondents by Type of Institution			
	<i>Respondents</i>		<i>Institutions Represented</i>
	<i>No.</i>	<i>%</i>	<i>No.</i>
UK and Irish clearers	17	52	13
UK merchant bankers	6	18	6
US banks	7	21	7
Other overseas banks	3	9	3
	33	100	29

rate was 58% of the 50 institutions identified.⁷ Panel B analyses the respondents by type of organisation. UK and Irish clearers and merchant banks contributed 70% of the respondents, with overseas banks making up the remainder.⁸

Empirical results

Prevalence of FRCs in Bank Loan Contracts

In the US details of individual companies' public and private debt contracts are disclosed in reports filed at the Securities and Exchange Commission and in Moody's Industrial Manual, although details may be costly to extract. No such systematic disclosures are made in the UK. The purpose of this section, therefore, is to analyse bankers' views on the extent of use of FRCs in UK bank loan contracts and on the types of companies and loans with which their presence is more likely to be associated.

The questionnaire was designed to investigate factors related to wealth transfer to owners and asymmetric information. The likelihood that FRCs are used to limit the risk of wealth transfer from lenders to owners is captured in the questionnaire by the following four proxies:

- size of loan;
- borrower's financial leverage;
- term of loan;
- presence of security.

The first three factors are hypothesised to be positively related with the presence of FRCs. The larger a loan, the greater the potential wealth transfer that can occur. The higher is the leverage and the longer the term of the loan, the greater is the likelihood of financial distress prior to repayment. The presence of security is expected to be negatively related to the use of FRCs since security limits owners' wealth transfer gains.

The use of covenants to compensate for the asymmetry of information between owners and lenders is proxied by:

- company size;
- public company status.

⁷The response rate among the UK institutions was 79.2% and among US banks 63.6%.

⁸Six respondents (18%) designated themselves as director, 16 (48%) as manager and six as vice-president.

Table 2
Percentage of Loan Agreements which Typically
Contain FRCs According to the Size of the Loan

Size of Loan	Secured Loans	Unsecured Loans
	Mean	
Under £250,000	28% (n = 12)	42% (n = 10)
£250,000– £1 million	53% (n = 18)	62% (n = 16)
Over £1 million	67% (n = 32)	73% (n = 30)

The differences between the smallest (under £250,000) and largest (over £1 million) size categories are significant using the Mann-Whitney U-test, one-tailed:

For secured loans at the 0.5% level
 For unsecured loans at the 2.5% level

Notes:

1. One respondent did not answer this question. $n < 32$ in certain loan categories due to some respondents not lending in those categories. Thus the results for each loan category are based only on the responses of lenders actually lending in that category.

2. Respondents were asked, for each type of loan, to indicate the percentage of agreements containing FRCs by specifying one of six response categories, viz. 0–5%, 6–35%, 36–65%, 66–95%, 96–100% or 'not involved in loans of this size'. The mean percentages in the Table have been calculated by reference to the mid-points of the various response categories.

Both these factors are hypothesised to be negatively associated with the use of FRCs, since larger companies and public companies are assumed to have higher levels of disclosure and therefore asymmetric information is less of a problem.

Loan Size and Security

Respondents were asked to indicate what percentage of both secured and unsecured loan agreements with which they were involved contain FRCs. Table 2 reports the results. For both secured and unsecured loan agreements there is a statistically significant difference in the expected direction, using the Mann-Whitney U test, between the stated median likelihood of a loan under £250,000 containing FRC as compared with a loan of over £1 million. However, while the mean likelihoods of FRCs being used were higher, as expected, for unsecured as compared with secured loans in all three size categories, the null hypothesis of no difference in the use of FRCs between secured and unsecured loans could not be rejected.⁹

⁹Only three respondents stated that they used FRCs more frequently when lending secured than when unsecured.

Leverage and Term

Respondents were asked whether they were more likely to include FRCs in a loan contract when a customer's gearing was high ('about 75% of comparable companies having a lower debt/equity ratio'), low ('about 75% of comparable companies having a higher debt/equity ratio') or if gearing made no difference. Twenty of the 33 respondents (61%) stated that they were more likely to include FRCs for a company in the top gearing quartile, indicating an association in the expected direction between gearing and the presence of FRCs.¹⁰ This result has implications for the 'simple debt/equity hypothesis'. This is because, in the context of UK experience, the 'simple' hypothesis may be upheld not because a high debt/equity ratio proxies for closeness to breaching a covenant but rather because the higher a company's debt/equity ratio the more likely are FRCs to be incorporated in its loan contracts in the first place.¹¹

Regarding term of loan, the questionnaire asked respondents whether FRCs were more likely to be used for shorter term loans (1–5 years), longer term loans (over 5 years) or whether term of loan was not a factor taken into account. Twenty-four of 32 respondents¹² (75%) stated that the term of a loan is not a factor affecting the likely presence of FRCs. A sizeable minority of respondents (25%), however, stated that they would be more likely to include FRCs in loan contracts where the term of the loan exceeds five years. As expected, no respondent would be more likely to include FRCs for a shorter than a longer term loan.

Company Size and Public vs. Private Status

To test the hypothesis that bankers use FRCs to compensate for information asymmetry between owners and lenders, respondents were asked whether FRCs were more likely to be used if the borrower were a large public company ('sales of about £1 billion'), a small public company ('sales of about £100 million') or whether size made no difference. Twenty of 30 respondents¹³ (67%) stated that company size, as measured above, is not a factor. However, as for term of loan, a substantial minority (30%, 9 respondents) stated that they are, as expected, more likely to include FRCs when

¹⁰The 95% confidence interval for this response lies between 44% and 78%, suggestive of the likelihood that high gearing is relevant for the inclusion of FRCs, for a substantial proportion of bankers. No respondents stated that FRCs were more likely when gearing is low.

¹¹Duke and Hunt (1990) conclude that, while high leverage is related to both the existence of and closeness to violating retained earnings restrictions, it is only related to the existence of working capital and net tangible asset covenants but not to their restrictiveness.

¹²One respondent did not answer this question as it only dealt with loans over five years.

¹³Three respondents did not deal with companies in both size categories.

the borrower is 'small'. Of these nine, five cited the fact that borrowers as a rule dislike FRCs, and the larger the company, the more able it is to avoid their inclusion. In terms of contracting theory, this can be seen as large companies having less need to use covenants to prevent lenders price-protecting themselves.¹⁴ The information asymmetry hypothesis was further tested by asking respondents whether FRCs were more likely to be used in the case of a public company with sales of about £100 million, with a similarly sized private company or whether this distinction made no difference. In 93% of responses,¹⁵ company status was stated not to be a relevant factor, indicating that this may be a poor proxy for the degree of information availability as far as lending bankers are concerned.¹⁶

Costs to borrowers of covenant violations

Bankers use FRCs as checkpoints that enable them, as providers of term debt, to review the borrower's situation and take appropriate action should there be a change in the nature of the underlying risk. The questionnaire was designed to explore four key scenarios in which a banker could be called upon to reassess his relationship with his customer in this way.

Figure 1 contains the descriptions of each of these scenarios as contained in the questionnaire. The 'prior warning of breach' scenario is included because term lenders generally expect their customers to warn them in advance of expected ratio covenant violations.¹⁷ The 'breach due to acquisition' scenario takes account of the fact that proposed takeovers are a frequent cause of expected FRC breaches and these would clearly be situations in which bankers would need to re-evaluate the underlying risk.¹⁸ The case where violation is caused by a change in generally ac-

cepted accounting principles is encompassed in the 'breach due to new accounting standard' scenario. Finally, 'breach shown by accounts' is included as a base case for comparison purposes.

In all cases of covenant violation, or expected violation, a variety of options is available to the lender. The ultimate value of covenants to the banker lies in the fact that their breach normally constitutes an event of default.¹⁹ However, whilst this is a clear statement of the lender's legal rights, Donaldson and Donaldson (1982, ch. 7) argue that often the immediate effect should not be so extreme. Where appropriate, FRCs should enable the lender to assist a customer in difficulties in a timely and positive way and should open up a two-way flow of information between the bank and customer. The range of options, not necessarily mutually exclusive, available to the lender, can be summarised under four main headings as follows:

(a) *Demand immediate repayment*

To demand immediate repayment of the loan, or to reserve the bank's right to recall the loan at any time which has the effect of converting the loan to being repayable on demand. These options are clearly high-cost from the borrower's viewpoint.

(b) *Renegotiate*

To renegotiate key terms in the loan contract. Thus, to protect its position, the bank may impose costly restrictions upon the borrower such as requiring additional security or imposing capital spending limits. However, it should be noted that non-costly contract renegotiations could also take place such as the relaxation of FRC levels.

(c) *Waive*

To waive the breach, either temporarily or unconditionally.

(d) *Require additional information*

To impose additional information requirements upon the borrower.

The questionnaire was designed to explore bankers' views on the issues raised in the four scenarios of Figure 1. For each scenario, respondents were asked to state the likelihood of their adopting various alternative lines of action. The results therefore indicate the perceived likelihood that any particular option may be adopted rather than the actual likelihood that it would. Furthermore, because it is not known how many cases of covenant violation respondents had dealt with in practice, their responses are best understood as

¹⁴ Alternative research frameworks, such as those based on negotiation strategies and bargaining power (see for example Murnighan and Bazerman, 1990) may shed additional light on this issue.

¹⁵ $n = 30$ as three respondents did not deal with both types of company.

¹⁶ As a further point of interest, 25 of the 33 respondents (76%) stated that they are currently (i.e. in 1989) using FRCs to a greater extent than they did five years ago.

¹⁷ This point is confirmed by Donaldson and Donaldson who, in their discussion of events of default, state: 'Lenders should not find out that a ratio covenant has been broken from a study of the company's annual report: having been warned in advance of the possibility, they should be notified as soon as the breach becomes inevitable and invited to discuss the actions to be taken. A bank is much more likely to be willing to extend its facilities if it feels that the borrower has a grasp on the situation and that it can rely on its forecasts.' (1982, pp. 163-4).

¹⁸ The pilot survey confirmed the importance of these two scenarios.

¹⁹ 'Financial covenants are given "teeth" by linking them to an event of default clause, which is intended to enable the lender to demand repayment as early as possible whilst there is still some prospect of the borrower being able to meet the demand.' (Penn *et al.*, 1987, p. 109).

Figure 1
Description of scenarios in questionnaire

- (i) **Breach shown by accounts**
'... the case of a customer whose accounts actually show a material non-technical breach of a FRC, e.g. due to a real deterioration in the company's balance sheet.'
- (ii) **Prior warning of breach**
'... the case of a company whose financial director contacts you two months before the company's financial year-end. He informs you that there is a high probability that the accounts for the current year will show his company to be materially in breach of a FRC, due to a deterioration in the company's performance. The management accounts for the first nine months show the company to be close to its FRCs but not yet in breach.'
- (iii) **Breach due to acquisition**
'... the case of a customer who is finalising arrangements for an acquisition. Existing loan agreements contain no restriction on such acquisition activity. However, the financial director informs you that this acquisition will result in a large increase in goodwill on the consolidated balance sheet and hence the customer will find itself materially in breach of a number of its existing FRCs. Owing to a planned programme of asset disposals, however, the company expects to restore its financial ratios to their current safe levels within the next three years.'
- (iv) **Breach due to new accounting standard**
'... the case of a customer involved in a material technical breach of a FRC caused solely by the issuing of a new accounting standard (SSAP). The new standard has required the customer to change its methods of accounting so that reported profits are now lower than they would otherwise have been.'

reflecting a combination of their experience together with their judgment as to how they would expect to react in the types of situation given, rather than representing their banks' actual record in dealing with covenant violations. Where options are mutually exclusive, respondents were asked to allocate 100 points among them (see Appendix).²⁰ The first three scenarios in Figure 1 are discussed together, while the fourth is analysed separately.

Scenarios (i)–(iii)

Table 3 sets out the reactions of respondents to the mutually exclusive alternatives.

The views of practising bankers (see footnote 17) suggest that they are more likely to adopt 'high cost' (to the borrower) options when a breach of covenant is revealed in the accounts as compared with when the company has given them prior warning of an imminent breach. Combining the 'immediate repayment' and 'reserve rights' options into one 'high cost' category, there is a 45% perceived likelihood of respondents adopting such a high cost line of action in the 'breach shown by accounts' scenario as compared with only 21% in the 'prior warning' scenario. The difference between the two sets of responses is statistically

significant at the 0.05% level (one-tailed).²¹ In fact, 30 of the 33 respondents (91%) stated that they would adopt these 'high cost' alternatives more frequently in the 'breach shown by accounts' scenario as compared with that of 'prior notification'. Conversely, in the latter case of 'prior warning', contract renegotiation is perceived to occur with a 37% likelihood in contrast with only 22% if the FRC breach has already occurred. The difference is statistically significant at the 0.05% level (one-tailed). These findings provide empirical evidence to support the views of those who argue that an important role of covenants is to open up clearer

²⁰This form of rating scale was used by Egginton (1977) in his survey of UK lending bankers.

²¹This and all subsequent significance tests are based on the Wilcoxon matched-pairs signed-ranks test. This non-parametric test assesses whether paired samples are significantly different, giving more weight to a pair with a large difference between the two observations than to a pair with a small difference (see Siegel, 1956, pp. 75ff). In this case, for example, a paired set of observations consists of the likelihood that a given respondent will adopt a high cost option in the 'breach shown by accounts' scenario and the likelihood that the same respondent will adopt the same option in the 'prior warning' scenario. The procedure requires the differences between the pairs of observations to be ranked by magnitude, ignoring their signs, and the sums of these ranks to be calculated separately for the positive and the negative differences. The probability of particular values of summed ranks occurring, given the number of pairs, can then be determined. In this case, for example, since only one respondent indicated a higher likelihood of adopting a high cost alternative in the 'prior warning' scenario than in the 'breach shown by accounts' situation, the difference between the two sets of responses is highly significant.

Table 3
Frequency of Alternative Options Adopted by Lenders in Dealing with Breach/Imminent Breach Scenarios

	<i>Breach Shown by Accounts Mean %</i>	<i>Prior Warning of Imminent Breach Mean %</i>	<i>Acquisition Mean %</i>
Recall loan immediately	8	N/A	N/A
Reserve rights to recall loan at any time, i.e. convert to on demand	37	21	10
Total 'high cost'	45*	21*■	10■
Waive breach and renegotiate terms of contract	22○	37○▲	52▲
Waive breach for a limited time in expectation of improvement in customer's position	26	32	29
Waive breach unconditionally with no change in terms of contract/no action taken	3	2	2
Other options (supplied by individual respondents)	4	8	7
	<u>100</u>	<u>100</u>	<u>100</u>

n = 33

Significant differences between pairs of observations are identified using the Wilcoxon matched-pairs signed-ranks test. This test evaluates differences between two related samples at a time. Where two separate test results are reported against a single observation, this is because this observation is being compared, in turn, with two other observations, i.e. column 2 is compared with column 1 and with column 3 (see also footnote 21).

*at better than .05% level (one-tailed).

■ at better than .05% level (two-tailed).

○ at .05% level (one-tailed).

▲ at 1% level (two-tailed).

N/A = not applicable.

The percentages are the means of the actual percentages stated by respondents.

channels of communication between banker and customer.

The scenario of a customer giving warning of an imminent breach can be compared with that of a forthcoming breach due to the goodwill arising on a forthcoming acquisition. In both cases the bank receives advance warning, and so no prior expectations are hypothesised. However, in the case of the acquisition there is an even higher perceived likelihood of contract renegotiation (52%). The difference is statistically significant at the 1% level (two-tailed). Seventeen of the 33 respondents (52%) stated that they would never convert a term loan to an on-demand loan in such a case. The overall average perceived likelihood of this 'high cost' line of action was only 10% in the case of an acquisition compared with 21% for the 'prior warning' scenario, a set of responses that are significantly different at the 0.05% level (two-tailed). Nevertheless, it should be noted that even a 10% stated likelihood of a term loan being converted to on-demand may be perceived by the borrower as sufficiently risky to warrant, for example, an accounting method change.

The questionnaire further investigated the likelihood of various contract modifications being required assuming that the contract was, in fact,

being renegotiated.²² Table 4 summarises the results.

In both the 'breach shown by accounts' and 'prior warning' scenarios respondents stated they were more likely to impose certain costly contract modifications, such as additional security and dividend and capital spending restrictions, than to permit relaxation of existing covenant constraints. Thus, in the case where a breach is shown by the accounts, there is a 15% overall stated likelihood that, for example, additional security will be required compared with a 12% likelihood that covenants will be relaxed. The difference between the two sets of responses is statistically significant at the 2.5% level (two-tailed). Where the customer gives prior warning of an imminent breach, there

²² Respondents used the same response categories as detailed in Table 2 (i.e. 0-5%, 6-35%, etc). The mean percentages shown in Table 4 were calculated by

$$\frac{\sum_{i=1}^n p_i x_i}{n}$$

where p_i is the stated likelihood that respondent i would renegotiate the contract under a particular scenario (as summarised in Table 3); x_i is the stated likelihood that respondent i would require a particular modification (using the mid-points of the above response categories); and $n = 33$.

Table 4
Frequencies of Lender-Instigated Modifications to Loan Contracts in Response to Imminent/Actual FRC Breaches

	<i>Breach Shown by Accounts Mean %</i>	<i>Prior Warning of Imminent Breach Mean %</i>	<i>Acquisition Mean %</i>
Additional security	15▲	22■	25
Dividend restrictions	14	20	24
Capital spending restrictions	13	19	24
Increased interest rate	11	14	18
FRCs relaxed	12*▲	17*○■	31○

n = 33

Significant differences between pairs of observations are indicated using the Wilcoxon matched-pairs signed-ranks test (see Table 3 and footnote 21).

* at 5% (2 tailed).

○ at 0.5% level (2 tailed).

▲ at 2.5% level (2 tailed).

■ at 5% level (2 tailed).

is a greater stated likelihood (as was shown in Table 3) that contract renegotiation will occur in the first place. Within the context of such renegotiations, however, there is still a significantly higher stated likelihood (at the 5% level, two-tailed) that additional security will be required than that covenants will be relaxed. This reflects the extent to which the use of FRCs and the taking of security can complement one another. In the eyes of respondent bankers FRCs are being used as a trigger to enable them not only to realise but also to obtain security in a timely fashion.

Increased interest rates appear to be generally the least frequent modification cited. It may be, however, that this is likely to be required frequently enough to be a matter of significance from the borrower's viewpoint.

The likelihood that FRCs will be relaxed is also relatively low in the cases of an actual breach and forewarning of a breach due to deteriorating performance. However, in the case of a breach caused by goodwill arising from an acquisition, the relaxation of FRCs becomes the most likely stated modification to be adopted.²³ This provides further evidence of the pragmatic use of FRCs and the willingness of banks to countenance adapting them to new situations.²⁴

²³ The difference between relaxation of FRCs and additional security is not statistically significant at the 5% level (two-tailed), however.

²⁴ Evidence from loan contract definitions supplied by respondents indicates that it is not uncommon for the goodwill relating to specific acquisitions to be included on an exceptional basis, as part of net worth for FRC calculation purposes. One respondent commented that a breach of FRC due to an acquisition may not be entirely bad for the bank. Provided the bank is happy with the new underlying situation, a customer growing by acquisition can clearly be a source of increased business.

Apart from the costs of loan acceleration and contract renegotiation analysed above, the questionnaire was also designed to ascertain whether, in addition, increased information requirements were likely to be imposed in the different scenarios. Table 5 shows the results to be similar across all three cases. Respondents stated that both more frequent and more in-depth information would be required in approximately three-quarters of cases, indicating the high probability that borrowers in such situations would have to face the associated costs.

Scenario (iv): Breach Caused by New SSAP

The previous section discussed scenarios that represented real deterioration in the customer's underlying risk. This section looks at the extent to which costs are perceived likely to be imposed on customers violating covenants solely due to a change in generally accepted accounting principles. Table 6 summarises the results.

In the overwhelming majority of cases (83%) respondents stated that they thought that no real penalty would be imposed on the borrower (leaving aside the possibility of information costs), but rather some form of recalculation would take place in order to restore comparability between the company's reported results and the FRC levels specified in the contract. Twenty-six respondents (79%) indicated a zero likelihood that a 'high cost' alternative would be pursued.

Respondents were asked whether they would be using 'rolling GAAP' or 'frozen GAAP' in such a situation as that of scenario (iv). In 69% of all cases respondents indicated that they would amend the FRCs in the contract to accord with the new

Table 5
Frequency with which Additional Information is Required by Lenders in Response to Actual/Imminent FRC Breaches

	<i>Breach Shown by Accounts¹ Mean %</i>	<i>Prior Warning of Imminent Breach¹ Mean %</i>	<i>Acquisition² Mean %</i>
More in-depth information than hitherto	77	79	75
More frequent information than hitherto	77	80	72

¹n = 33

²n = 32 (one respondent did not answer this question).

The mean percentages have been calculated by reference to the mid-points of the various response categories (0-5, 6-35%, etc.).

Table 6
Lender Responses to FRC Breaches Caused by New SSAP Reducing Borrower's Reported Profit

<i>Alternative Options Adopted by Lenders</i>	<i>Mean %</i>
Recall loan immediately	0
Reserve rights to recall loan at any time, i.e. convert to on demand	$\frac{3}{3}$
Total 'high cost'	$\frac{3}{3}$
Waive breach, amend FRCs in contract to accord with new SSAP and renegotiate other terms of contract	14
Waive breach unconditionally and amend FRCs in contract to accord with new SSAP	55
Recalculate reported ratios using 'old' method of accounting consistent with original contract	$\frac{28}{100}$
<i>Frequencies of Modifications to Loan Contracts</i>	<i>Mean %</i>
Additional security	4
Dividend restrictions	5
Capital spending restrictions	4
Increased interest rate	3
<i>Frequency with which Additional Information Required</i>	<i>Mean %</i>
More in-depth information than hitherto	39
More frequent information than hitherto	37
n = 33	

SSAP.²⁵ In only 28% of cases did the bankers state they would recalculate the company's reported results using the method of accounting prevailing at the time the contract was drawn up and before the SSAP in question came into force.

Real penalties are rarely imposed for 'GAAP induced' breaches and there is a preference for amending the contract definition rather than companies' annual results. These findings provide support for Leftwich's (1983) conclusion, which was based on an analysis of private loan agreements, that 'rolling GAAP' tends to predominate.

In an average of only 14% of cases did respondents state that they thought they would take the

opportunity also to renegotiate other terms of the contract. Fourteen respondents (42%) indicated a zero likelihood of any such renegotiation. Moreover, as the various costly contract modifications listed in Table 6 would each be imposed in only a

Figure 2
Wording of Accounting Policy Change Question

'A company voluntarily makes a material income-boosting change in its accounting methods. Prior to making this change the company was close to its FRC limits but not in breach. The change relates to an accounting method which is not specifically referred to in the loan contract. However, the change is disclosed and is made with the concurrence of the company's auditors.'

²⁵In 14% of cases this would be done together with the renegotiation of other contract terms and in 55% of cases with no such renegotiation.

Table 7
Lender Responses to a Scenario where Borrowers Make a Material Income-Boosting Accounting Method Change
Mean %

Contractually unable to take any action (i.e. must compare ratios as reported with levels set in contract)	51
Contractually able to take some action to allow for change in accounting method:	
No action actually taken	6
Tighten contractual FRC levels	16
Recalculate reported ratios using 'old' method of accounting consistent with original contract	27
	<u>49</u>
	<u>100</u>

n = 30.

Three respondents did not reply to this question, two of these on the grounds that they could pre-empt the described situation from ever arising by means of a tightly defined contract. If these 2 respondents are included as being able to take action 100% of the time, the means for n = 32 become 48% unable to take any action and 52% able to do so.

Note: The mean percentages are the means of the actual percentages stated by the respondents.

minority of these 14% of cases, the overall perceived likelihood of each of them actually occurring is 5% or less. This further indicates respondents' extreme reluctance to take any action that would impose real costs in such instances. In most cases the banker would in effect merely be using the opportunity to ensure that there had been no adverse change in the underlying risk.

Finally, in contrast to scenarios (i) to (iii) discussed earlier, Table 6 shows that a breach caused by a new SSAP is expected to result in additional information costs in less than 40% of instances on average. It follows from these findings that, in so far as the effect of covenants contained in bank loan contracts is concerned, there is no reason to expect mandated accounting method changes to affect share prices in the UK context.

Voluntary Accounting Policy Change

The previous sections have established the extent of use of FRCs and the frequencies of various options that bankers believe they would adopt when such covenants are breached. But can borrowers avoid such costs by voluntary accounting policy changes? The questionnaire explored this issue by asking lenders how they would react to such a move on the part of a customer. Specifically, a hypothetical situation was presented where a company, close to its FRC limits, voluntarily makes and discloses a material income-boosting accounting policy change relating to an accounting method not referred to in the contract. Figure 2 provides the actual wording of the question.

In this case the options open to the banker have to be viewed as part of a two-stage process. Firstly, in the scenario presented in Figure 2, the customer is not yet, nor is necessarily expecting to be, in

actual breach of a covenant. Hence it has to be established whether the banker feels contractually entitled to take any action at all. Secondly, in those instances where action is believed possible, the relative frequency of the various options can be examined.

Table 7 indicates that, on average, respondents expressed a virtually even split as to whether they believed they would, under the terms of a contract, be able to take compensatory action. Respondents indicated a mean 51% likelihood that no action could be taken under such circumstances and that they would therefore have to compare ratios as reported with the levels as set in the contract, with the customer in effect reaping the benefit of the accounting policy change. The range of opinion in this scenario would seem to reflect the underlying complexity of the situation. This is because the ability of a banker to take action to mitigate the impact of disclosed accounting policy changes may depend, in any particular case, on at least the following three factors:

- (i) The presence of some 'sweep up' clause in the contract that could be relied upon by the banker to cover the situation.²⁶

²⁶The main examples of such clauses are firstly those that require accounting principles to be consistently applied and, secondly, the material adverse change clause which makes it an event of default if such a change occurs in the borrower's situation. The presence or absence of a material adverse change clause is itself a matter for negotiation. Donaldson and Donaldson express the opinion that FRCs themselves constitute a more effective trigger mechanism than the material adverse change clause and that, as a result, 'where a company has negotiated a meaningful set of covenants, it can legitimately refuse to accept a continuing material adverse change clause' (1982, p. 148).

- (ii) The precise wording of the above clauses, e.g. whether or not the bank has sole discretion to decide upon materiality.
- (iii) The extent to which the bank could rely on such clauses should litigation result.

Given an approximately 50% likelihood that some action appears contractually possible, what options do bankers believe they would adopt in such circumstances? Table 7 shows that respondents expressed an approximately 1 in 8 likelihood that in fact no action would be taken, despite a perceived contractual ability to do so. There is thus an overall likelihood of a little under 60% that, in the event of a disclosed accounting policy change, no action would in fact be taken.

In the remaining cases, the banker would restore the original comparability between the reported ratios and those defined in the contract. In contrast to the case of a new SSAP, however, the majority of such adjustments would be to the reported ratios rather than to the FRC levels in the contract.^{27,28}

The findings reported in this section indicate that, for UK companies with FRCs in their bank loan agreements, opportunistic management behaviour may be a significant explanatory variable in the choice of accounting methods.

Summary and conclusions

This study has sought to establish the extent of use of FRCs in UK term bank loan contracts and the factors with which bankers perceive their use to be associated; the costs imposed on borrowers in cases of breach or near breach of FRCs; and the likely impact on the borrower's standing with the bank of changes in accounting method, whether required by changes in standard practice or purely voluntary.

The findings are based on bankers' perceptions of these issues as elicited by a survey questionnaire. They therefore may not represent the actual extent to which FRCs are used and how bankers react to particular situations in practice. However, these issues are all subject to careful negotiation by the contracting parties and the findings of this study are of value in providing an analysis of the views of one of the parties to such negotiations.

In addition, the results relate to private bank loan agreements and should not be extended to

public debt contracts. However, private debt is a relatively more important source of corporate finance in the UK than in the US. This is also true of Australia where several researchers have investigated the role of lending agreements in accounting method choice.

FRCs were stated to be in widespread use in respondents' organisations, being used in at least two-thirds of loans in excess of £1 million. The sampling frame adopted, comprising as it did organisations which used FRCs sufficiently for the questionnaire to be appropriate, may be said to have biased the results upwards. However, it can be argued that the population of respondents does, in fact, represent institutions responsible for the majority of term lending in the UK.

These lenders suggest that the presence of FRCs in term loan contracts is associated with size of loan and high financial gearing. Other, albeit less significant, factors include smaller company size (i.e., sales of about £100 million rather than of about £1 billion), longer term of loan (i.e., in excess of five years) and, to some extent, the absence of security. Some evidence was obtained indicating that there is a degree of opposition among UK companies to the use of FRCs and that larger companies are sometimes able to resist their inclusion in loan contracts.

A number of clear patterns emerge regarding the ways in which respondents believe they would react to cases of FRC breach or potential breach. Imposition of 'high cost' penalties on borrowers such as immediate repayment of the loan or its conversion into an on-demand loan are, taken together, the single most likely alternatives that bankers may adopt in cases of straight FRC breach. However, where the customer maintains open channels of communication with the bank or where a breach would be caused by an impending acquisition, contract renegotiation or temporary waiver of the breach become more likely responses.

In cases of breach shown by the accounts or imminent breach notified in advance the most likely contract renegotiations would either help secure the lender's position (additional security) or ensure the retention of funds within the company (dividend and capital spending restrictions). Where the breach is caused by goodwill from an acquisition, however, the relaxation of FRCs is the most frequent contract adjustment, which is indicative of bankers' prime interest being in the nature of the underlying risk.

Technical breaches caused by a new SSAP were found to be likely to cause very few real costs to borrowers. It was also found that in just under 60% of cases, lenders said they would take no action in response to a disclosed voluntary accounting policy change, whether due to contractual limitations or for other reasons.

²⁷The differences between responses in the two cases (new SSAP and voluntary accounting change) regarding both recalculation of reported ratios and amending contractual FRC levels are significant at the 1% level using the two-tailed Wilcoxon matched-pairs signed-ranks test.

²⁸It should be noted that the above analysis relates to disclosed accounting policy changes. Apart from these there may well be accounting policy changes which a company and its auditors would be comfortable about not disclosing, which would severely limit a lender's room for manoeuvre.

The extent of use of FRCs in UK bank loan contracts raises questions as to which ratios are generally used for this purpose and how effective they are, if at all, in signalling financial distress or changes in lenders' underlying risk. Furthermore, research into those FRCs that are widely used and how the accounting numbers are defined could help direct the attention of accounting standard setters to those accounting issues which can potentially have significant economic consequences in this context.

In addition, the extent of use of FRCs in UK bank loan contracts indicates that contract theory based research should prove fruitful in a UK environment. The findings suggest that tests of the 'debt/equity hypothesis' in accounting method choice research should not treat all companies with a high debt/equity ratio as members of a homogeneous population. Those companies whose gearing has increased due to an acquisition programme need to be distinguished from those experiencing an organic deterioration in performance. Accounting issues may be of less importance to the former group, since such companies are less likely to suffer high cost alternatives in cases of covenant violation.

The issue of when a lender opts for a high cost reaction to covenant breach as compared with relaxing FRC limits requires further investigation. It may be linked with the way in which FRC limits are set when the contract is drawn up and the problem of arriving at appropriate ratio levels. Where limits are too tight, FRC violation may happen prematurely and relaxation of limits will be the appropriate response. Where they are too loose, however, FRC breach may occur too late to save the company and recall of the loan may be the only alternative.

It would appear that standard setters need not be overly concerned with the potential negative economic impacts of new accounting standards attributed to bank loan covenants. Naturally this does not extend to other possible economic consequences of a new standard such as direct cash flow implications and/or the disclosure of new information that may alter perceptions of a company's risk or impose proprietary costs. However, even though it may be unlikely that high cost penalties will be imposed in certain circumstances, if corporate management perceive a possibility that they could be imposed, this may be enough to influence their accounting choices. This is an area that may warrant further investigation.

It would also be of interest to extend our understanding of the circumstances that lead bankers to say that they can or cannot take appropriate action in response to an accounting policy change. Furthermore, the likely efficacy of accounting method changes in avoiding FRC breaches reinforces the earlier conclusion that con-

tract theory based research has the potential to extend our understanding of the factors that govern accounting method choice in a UK context.

In conclusion, the widespread use of FRCs indicates that this subject area carries implications for accounting standard setters. This research shows that the costs to borrowers of covenant violations resulting from changes in accounting standards appear to be relatively low. It also shows that voluntary accounting method changes by borrowers may often be an effective means of avoiding covenant violation. Further investigation is needed to ascertain, firstly, to what extent accounting standard setters can in fact safely ignore the issue of the effect of new standards on technical covenant breaches and, secondly, how far the standard setting programme should focus on those accounting matters which have the greatest effect on the ratios most widely used in loan covenants.

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Appendix

Summary and Questionnaire

- Q.1. State job title.
- Q.2. For each of the three loan size categories (under £250,000, £250,000–£1 million and over £1 million) indicate the approximate percentage of:
- loan agreements that are secured;
 - secured loan agreements which contain financial ratio covenants;
 - unsecured loan agreements which contain financial ratio covenants.
- Q.3. For each of the following circumstances indicate under what circumstances you are more likely to include FRCs in the loan contract:
- Term of loan is 1–5 years; over 5 years: makes no difference;
 - Borrower is a plc with sales of about £1 billion; sales of about £100 million: size makes no difference;
 - Borrower is a plc with sales of about £100 million; a private company with sales of about £100 million: makes no difference whether public or private.
 - Company's total debt/equity ratio is high (i.e. about 75% of comparable companies have a lower debt/equity ratio); is low; makes no difference.
- Q.4. Indicate whether your bank uses FRCs to a greater or lesser extent today than it did five years ago.
- Q.5–Q.8. These questions deal in turn with the four scenarios detailed in Exhibit 1.
- Indicate the frequency with which you would require the customer to supply accounting information additional to that provided hitherto:
 - More in-depth information
 - More frequent information
 - Indicate the likelihood of your adopting each of the following options by allocating 100 points among them (the following reproduces the options for scenarios (ii) and (iii); those for scenarios (i) and (iv) varied with the circumstances):
 - Convert into an on-demand loan
 - Retain as a term loan but renegotiate the terms of the contract
 - Waive FRC restrictions temporarily in expectation of an improvement in the company's situation
 - No other action taken
 - Other (please specify)
 - In those instances when you would renegotiate the terms of the contract in the situation described, indicate the likely frequency of each of the following modifications:
 - Increased interest rate
 - Additional security
 - Dividend restrictions imposed
 - Capital spending restrictions imposed
 - FRCs relaxed
 - Other (please specify)
- Q.9. This question deals with the scenario detailed in Figure 2.
- Indicate the likely frequency with which the following options are contractually open to you by allocating 100 points among them:
 - Bank able to take action to allow for the change in accounting method
 - Bank not able to take any action
 - In those cases where the bank is entitled contractually to allow for a change in accounting methods, indicate the actual likelihood of each of the following options by allocating 100 points among them:
 - Tighten the levels at which the FRCs are set in the contract
 - Recalculate the company's reported financial ratios using the "old" method of accounting that was used before the change
 - No actual action taken
 - Other (please specify)

APPENDIX A2

FINANCIAL RATIO COVENANTS QUESTIONNAIRE

1. Subject Matter

This questionnaire is about the use of accounting data in term loan contract agreements with companies. The data may be absolute amounts (e.g. net worth) or accounting ratios (e.g. borrowings to net worth). In this questionnaire all such items are referred to as Financial Ratio Covenants.

2. Scope

The questionnaire does not relate to specialised forms of lending such as project loans, or lending to specialised sectors such as shipping, property, aerospace or energy. In your answers, therefore, please ignore these areas of lending.

3. Point of Contact

Should you have any queries regarding the completion of this questionnaire, please contact:

David Citron
City University Business School
Frobisher Crescent
Barbican Centre
London EC2Y 8HB

Tel: 01-920 0111

PLEASE
LEAVE
BLANK

Q.1 Please state your present job title:

1 ☐

2 ☐

Q.2 This question relates to term loan agreements currently in force with which you have been involved.

(a) For each of the three loan size categories shown below, please indicate the approximate percentage of loan agreements that are secured. Tick one box on each line.

<u>% of Loan contracts secured</u>						Not involved in loans of this size	
Size Category of loan	0-5%	6-35%	36-65%	66-95%	96-100%		
Under £250,000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3 <input type="checkbox"/>
£250,000 - £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4 <input type="checkbox"/>
Over £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

- (b) For each loan size category, please indicate the approximate percentage of Secured loan agreements which contain financial ratio covenants. Tick one box on each line.

% of secured loan contracts with
financial ratio covenants

Size Category of loan	0-5%	6-35%	36-65%	66-95%	96-100%	Not involved in loans of this size	
Under £250,000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6 <input type="checkbox"/>
£250,000 - £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7 <input type="checkbox"/>
Over £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8 <input type="checkbox"/>

- (c) For each loan size category, please indicate the approximate percentage of unsecured loan agreements which contain financial ratio covenants. Tick one box on each line.

% of unsecured loan contracts
with financial ratio covenants

Size Category of loan	0-5%	6-35%	36-65%	66-95%	96-100%	Not involved in loans of this size	
Under £250,000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9 <input type="checkbox"/>
£250,000 - £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10 <input type="checkbox"/>
Over £1 million	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

Q.3 For each of the following situations (a) to (e), please indicate under what circumstances you are more likely to include financial ratio covenants in the loan contract.

Tick one box in each case.

Financial ratio covenants are more likely to be included when:

- (a) Term of loan is 1 to 5 years ☐
- Term of loan is over 5 years ☐
- Term of loan makes no difference ☐
- Unable to answer as only 1-5 year
or only over 5 year loans dealt with ☐

12 ☐

If term of loan is a determining factor, please explain why:

13 ☐

14 ☐

- (b) Loan is sterling ☐
- Loan is in foreign currency ☐
- Currency of loan makes no difference ☐
- Unable to answer as only sterling or
only foreign currency loans dealt with ☐

15 ☐

If currency of loan is a determining factor, please explain why:

16 ☐

17 ☐

PLEASE
LEAVE
BLANK

(c) Borrower is a plc with sales of about £1 billion ("large")

☐

Borrower is a plc with sales of about £100 million ("small")

☐

Size of plc makes no difference

☐

Unable to answer as only "large" or only "small" plc's dealt with.

☐

18 ☐

If size of plc is a determining factor, please explain why:

19 ☐

20 ☐

(d) Borrower is a plc with sales of about £100 million.

☐

Borrower is a private company with sales of about £100 million.

☐

Makes no difference whether company public or private.

☐

Unable to answer as only public or only private companies dealt with.

☐

21 ☐

If being a public or a private company is a determining factor, please explain why:

22 ☐

23 ☐

PLEASE
LEAVE
BLANK

- (e) Company's total debt/equity ratio is high, i.e. about 75% of comparable companies have a lower debt/equity (total debt = this loan + all previously existing debt) ☐

Company's total debt/equity ratio is low, i.e. about 75% of comparable companies have a higher debt/equity ratio ☐

Total debt/equity ratio makes no difference ☐

24 ☐

If debt/equity ratio is a determining factor, please explain why:

25 ☐

26 ☐

- Q.4 (a) Would you say that your bank currently uses financial ratio covenants to a greater or lesser extent today than it did five years ago? Please tick the appropriate box.

To a much greater extent than five years ago ☐

To a somewhat greater extent than five years ago ☐

No change from five years ago ☐

To a somewhat lesser extent than five years ago ☐

To a much lesser extent than five years ago. ☐

27 ☐

- (b) What are the main reasons for this change if there has been any?

28 ☐

29 ☐

PLEASE
LEAVE
BLANK

Q.5 This question deals with the case of a company whose financial director contacts you two months before the company's financial year-end. He informs you that there is a high probability that the accounts for the current year will show his company to be materially in breach of a financial ratio covenant, due to a deterioration in the company's performance. The management accounts for the first nine months show the company to be close to its financial ratio covenants but not yet in breach.

(a) Please indicate the frequency with which you would require the customer to supply accounting information additional to that which had been provided by them hitherto. **Tick one box on each line.**

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
More in-depth information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 <input type="checkbox"/>
More frequent information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2 <input type="checkbox"/>

(b) Apart from requiring the supply of additional information in this situation, certain other options are open to you as well. **Please indicate the likelihood of your adopting each of the following options by allocating 100 points among them.**

(i) Convert the loan into an on-demand loan	_____	3 <input type="checkbox"/>
(ii) Retain as a term loan but renegotiate the terms of the contract.	_____	4 <input type="checkbox"/>
(iii) Waive financial ratio covenant restrictions temporarily in expectation of an improvement in the company's situation	_____	5 <input type="checkbox"/>
(iv) No other action taken	_____	6 <input type="checkbox"/>
(v) Other (please specify):	_____	7 <input type="checkbox"/>
_____	_____	8 <input type="checkbox"/>
_____	_____	9 <input type="checkbox"/>
	100	

If you have allocated any points to option (ii) above, indicating that renegotiation of the contract is an option you might adopt, please answer question (c) on page 8. Otherwise proceed to question 6 on page 9.

PLEASE
LEAVE
BLANK

- (c) In those instances when you would renegotiate the terms of the contract in the situation described please indicate the likely frequency of each of the following modifications. Tick one box on each line.

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
Increased interest rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10 <input type="checkbox"/>
Additional security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11 <input type="checkbox"/>
Dividend restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 <input type="checkbox"/>
Capital spending restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13 <input type="checkbox"/>
Financial ratio covenants relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14 <input type="checkbox"/>
Other (please specify)						
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

Q.6 This question deals with the case of a customer who is finalising arrangements for an acquisition. Existing loan agreements contain no restrictions on such acquisition activity. However, the financial director informs you that this acquisition will result in a large increase in goodwill on the consolidated balance sheet and hence the customer will find itself materially in breach of a number of its existing financial ratio covenants. Owing to a planned programme of asset disposals, however, the company expects to restore its financial ratios to their current safe levels within the next three years.

(a) Please indicate the frequency with which you would require the customer to supply accounting information additional to that which had been provided by them hitherto. **Tick one box on each line.**

Almost always 96-100%	Usually 65-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%
-----------------------------	-------------------	---------------------	-----------------	------------------------

More in-depth information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18	<input type="checkbox"/>
---------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	----	--------------------------

More frequent information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19	<input type="checkbox"/>
---------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	----	--------------------------

(b) Apart from requiring the supply of additional information in this situation, certain other options are open to you as well. Please **indicate the likelihood of your adopting each of the following options by allocating 100 points among them.**

(i) Convert the loan into an on-demand loan	_____	20	<input type="checkbox"/>
---	-------	----	--------------------------

(ii) Retain as a term loan but renegotiate the terms of the contract.	_____	21	<input type="checkbox"/>
---	-------	----	--------------------------

(iii) Waive financial ratio covenants temporarily in expectation of an improvement in the company's situation.	_____	22	<input type="checkbox"/>
--	-------	----	--------------------------

(iv) No other action taken	_____	23	<input type="checkbox"/>
----------------------------	-------	----	--------------------------

(v) Other (please specify):	_____	24	<input type="checkbox"/>
-----------------------------	-------	----	--------------------------

_____	_____	25	<input type="checkbox"/>
-------	-------	----	--------------------------

_____	_____	26	<input type="checkbox"/>
-------	-------	----	--------------------------

_____	_____	100	
-------	-------	-----	--

If you have allocated any points to option (ii) above, indicating that renegotiation of the contract is an option you might adopt, please answer question (c) on page 10. Otherwise proceed to question 7 on page 11.

PLEASE
LEAVE
BLANK

(c) In those instances when you would renegotiate the terms of the contract in the situation described please indicate the likely frequency of each of the following modifications. **Tick one box on each line.**

	Almost always 96-100%	Usually 65-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
Increased interest rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	27 <input type="checkbox"/>
Additional security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28 <input type="checkbox"/>
Dividend restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	29 <input type="checkbox"/>
Capital spending restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	30 <input type="checkbox"/>
Financial ratio covenants relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	31 <input type="checkbox"/>
Other (please specify)						
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	32 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	33 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	34 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

Q.7 This question deals with the case of a customer whose accounts actually show a material non-technical breach of a financial ratio covenant, e.g. due to a real deterioration in the company's balance sheet.

(a) In such a case a number of options are open to you. Please indicate the likelihood of your adopting each of the following options by allocating 100 points among them.

- | | | | |
|--|-------|-----|--------------------------|
| (i) Recall the loan immediately | _____ | 35 | <input type="checkbox"/> |
| (ii) Reserve your rights to recall the loan at any time,
i.e. convert it into an on-demand loan. | _____ | 36 | <input type="checkbox"/> |
| (iii) Waive the breach for a limited time in the
expectation of an improvement in the customer's
position. | _____ | 37 | <input type="checkbox"/> |
| (iv) Waive the breach and renegotiate the terms of the
contract. | _____ | 38 | <input type="checkbox"/> |
| (v) Waive the breach unconditionally with no change in
the terms of the contract | _____ | 39 | <input type="checkbox"/> |
| (vi) Other (please specify): | | | |
| _____ | _____ | 40 | <input type="checkbox"/> |
| _____ | _____ | 41 | <input type="checkbox"/> |
| _____ | _____ | 42 | <input type="checkbox"/> |
| _____ | _____ | 100 | |

If you have allocated any points to option (iv) above, indicating that renegotiation of the contract is an option you might adopt, please answer question (b) on page 12. Otherwise proceed to question (c) also on page 12.

PLEASE
LEAVE
BLANK

(b) In those instances when you would renegotiate the terms of the contract, please indicate the likely frequency of each of the following modifications. **Tick one box on each line.**

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
Increased interest rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	43 <input type="checkbox"/>
Additional security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	44 <input type="checkbox"/>
Dividend restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	45 <input type="checkbox"/>
Capital spending restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	46 <input type="checkbox"/>
Financial ratio covenants relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	47 <input type="checkbox"/>
Other (please specify)						
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	49 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50 <input type="checkbox"/>

(c) In such a case of a material non-technical breach, please indicate the frequency with which you would require the customer to supply accounting information additional to that which had been provided by them hitherto. **Tick one box on each line.**

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
More in-depth information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	51 <input type="checkbox"/>
More frequent information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	52 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

Q.8 This question deals with the case of a customer involved in a material technical breach of a financial ratio covenant caused solely by the issuing of a new accounting standard (SSAP). The new standard has required the customer to change its methods of accounting so that reported profits are now lower than they would otherwise have been.

(a) Of the options which are open to you, please indicate the likelihood of your adopting each one by allocating 100 points among the following alternative.

(i) Recall the loan immediately _____ 53 ☐

(ii) Reserve your rights to recall the loan at any time, i.e. convert it into an on-demand loan. _____ 54 ☐

(iii) Waive the breach unconditionally and amend the levels at which the financial ratio covenants have been set in the contract to accord with the new accounting method. _____ 55 ☐

(iv) Waive the breach and amend the levels of the financial ratio covenants to accord with the new accounting method but also renegotiate other terms of the contract _____ 56 ☐

(v) Recalculate the company's financial ratios using the "old" method of accounting so as to be consistent with the original contract. _____ 57 ☐

(vi) Other (please specify): _____ 58 ☐

_____ 59 ☐

_____ 60 ☐

100

If you have allocated any points to option (iv) above, indicating the renegotiation of the contract (other than technical amendments to the financial ratio covenants to allow for the new accounting method) is an option you might adopt, please answer question (b) on page 14. Otherwise proceed to question (c) also on page 14.

PLEASE
LEAVE
BLANK

(b) In those instances where you would renegotiate the terms of the contract, please indicate the likely frequency of each of the following modifications. Tick one box on each line.

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
Increased interest rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	61 <input type="checkbox"/>
Additional security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	62 <input type="checkbox"/>
Dividend restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	63 <input type="checkbox"/>
Capital spending restrictions imposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	64 <input type="checkbox"/>
Other (please specify)						
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	65 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	66 <input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67 <input type="checkbox"/>

(c) In such a case of a technical breach, please indicate the frequency with which you would require the customer to supply accounting information additional to that which had been provided by them hitherto. Tick one box on each line.

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
More in-depth information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	68 <input type="checkbox"/>
More frequent information required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	69 <input type="checkbox"/>

PLEASE
LEAVE
BLANK

Q.9 A company voluntarily makes a material income-boosting change in its accounting methods. Prior to making this change the company was close to its financial ratio covenant limits but not in breach. The change relates to an accounting method which is not specifically referred to in the loan contract. However, the change is disclosed and is made with the concurrence of the company's auditors.

(a) Please indicate the likely frequency with which the following options are contractually open to you by allocating 100 points among them:

(i) Bank is able take some action to allow for the change in the accounting method.

1 ☐

(ii) Bank not able to take any action to allow for the change in accounting method, i.e. it must calculate the company's ratios as reported and compare them with the original levels set in the contract.

2 ☐

100

If you have allocated any points to option (i) above, please answer question (b) below. Otherwise proceed to question 10 on page 16.

(b) In those cases where the bank is entitled contractually to allow for a change in accounting methods, please indicate the actual likelihood of each of the following options by allocating 100 points among them:

(i) Tighten the levels at which the financial ratio covenants are set in the contract

3 ☐

(ii) Recalculate the company's reported financial ratios using the "old" method of accounting that was used before the change.

4 ☐

(iii) No actual action taken, i.e. ratios calculated as reported and compared with the original levels set in the contract.

5 ☐

(iv) Other (please specify):

6 ☐

7 ☐

8 ☐

100

PLEASE
LEAVE
BLANK

Q.10 Tangible net worth is widely used in financial ratio covenant calculations. Please indicate how frequently you permit customers to include the following assets as part of their net worth.
Tick one box on each line.

	Almost always 96-100%	Usually 66-95%	Sometimes 36-65%	Seldom 6-35%	Hardly ever 0-5%	
Patents and trade marks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9 <input type="checkbox"/>
Publishing rights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10 <input type="checkbox"/>
Brand names that have been purchased	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11 <input type="checkbox"/>
Brand names developed by the company itself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12 <input type="checkbox"/>
Goodwill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13 <input type="checkbox"/>
Development expenditure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14 <input type="checkbox"/>

Thank you very much for your time and help in completing this questionnaire.

APPENDIX B

Accounting Measurement Rules in UK Bank Loan Contracts

David B. Citron*

Abstract—This paper examines the financial ratio covenants found in a sample of 25 UK bank loan contracts and 13 contract templates. Minimum net worth, interest cover and gearing are the most widely occurring ratios. GAAP are used as the basis for all definitions. The definitions of net worth, borrowings and interest are frequently modified in a conservative direction, drawing on information both from the notes to published accounts and from outside those accounts. The definitions of profit, current assets and current liabilities, however, rarely deviate from GAAP. Thus some definitions restrict corporate management's scope to avoid covenant violation through appropriate accounting method choice while other definitions appear to permit it. Furthermore the widespread use of 'rolling' GAAP means that standard setters need to bear in mind that new standards can cause covenant violations. The findings of this study are consistent with those of previous research in the US and Australia.

Introduction

Financial ratio covenants (FRCs) are widely used in UK bank loan (private debt) contracts. The violation of loan covenants normally gives the lender the right to accelerate repayment of the loan. While such acceleration will not usually be required immediately (Donaldson and Donaldson, 1982), the possibility always exists that this will occur.¹ Moreover, even if the lender does not adopt this ultimate sanction, it may still impose substantial costs on the defaulting borrower, restricting permitted activities and charging higher interest rates.

The borrower/lender relationship is not the only one in which FRCs can play a key role. In contested takeover battles the likelihood of a bidder breaching its FRCs at an early date has been cited by a competing bidder or a defending target on a number of occasions.²

*The author is lecturer in accounting at the City University Business School. He acknowledges the helpful comments of two anonymous referees on earlier drafts of this paper.

¹An example of this occurs in Magnet Group plc's buy-out document of 19 January 1990 in which the directors state 'that it is not unlikely that an Event of Default will occur in the course of the next three years... the directors are of the view that the lenders to the buy-out Vehicle are likely to continue to act commercially and realistically and not to demand immediate repayment on non-material or merely technical Events of Default'.

²For example, refer to Dee Corporation's defence against Barker & Dobson's bid in 1988. It was due to the claim of insufficient disclosure of the conditions attached to Barker & Dobson's borrowings that The City Code on Takeovers and Mergers was expanded to require that 'in a highly-leveraged offer, the Panel will normally require that the offer document contains a description of the financing arrangements' (Rule 24, 2(c)). Examples of other offers in which FRCs have played a role are the 1989 bids of BDDP for Boase Massimi Pollitt plc and of Isosceles plc for the Gateway Corporation plc.

The above instances suggest that there is a strong motivation for borrowers to avoid violating FRCs. One way of achieving this may be by appropriate choice of accounting methods and hence the accounting definitions used in FRCs are a matter of considerable importance.

Contracting theory suggests that the ratios actually in use and their definitions are those that maximise the wealth of the contracting parties (Watts and Zimmerman, 1990). According to theory, this set of ratios and their definitions result from a trade-off between the benefits that contracting provides by regulating shareholder/lender conflict against the costs of that contracting, such as bonding, monitoring and renegotiation costs.

Research to date into the nature of the accounting ratios used in debt contracts has been conducted predominantly in the US, the first in-depth study in this area being Leftwich's analysis of private debt contracts (1983). Leftwich finds that, while generally accepted accounting principles (GAAP) are widely used, systematic modifications also occur. He also finds that definitions tend to use GAAP current at the date of the calculation ('rolling' GAAP) rather than those in force when the contract was drawn up ('frozen' GAAP); that modifications tend to be conservative, with the effect of reducing management's ability to avoid covenant violation by choice of income- or asset-inflating accounting procedures; and that these modifications tend to consist of straightforward adjustments to the GAAP figures, thus reducing monitoring costs. Smith and Warner (1979) find that, in public debt issues, accounting definitions usually accord with unmodified GAAP. In their studies of Australian public debt issues, however, Whittred and Zimmer (1986) and

Stokes and Leong (1988) find a modified GAAP approach.

El-Gazzar, Lilien and Pastena's (1989) research into US lessees' private lending agreements finds little attempt to modify accounting definitions to include off-balance sheet finance. However, El-Gazzar and Pastena's (1990) study of US private lending agreements finds that tailoring often aims to adapt GAAP to a cash flow basis or to focus on legal borrowing entities, thus facilitating the monitoring of borrowers' ability to repay.

This paper uses the contracting theory framework to investigate the accounting measurement rules used in those FRCs most widely found in UK bank loan contracts. It thus provides, for the first time, empirical evidence on the identity and definitions of the FRCs generally found in private debt contracts in the UK.

These issues are of relevance to future research seeking to understand the determinants of accounting method choice in the UK. This is because the likelihood that managers will choose a particular accounting method in order to avoid breach of a FRC depends, in part, on exactly how the accounting numbers are contractually defined (Whittred and Zimmer, 1986, p. 20).

As far as accounting regulators are concerned, the extent to which GAAP are used and the way in which contracts accommodate changes in GAAP are important as indicating the impact that new accounting standards could have on the contractual relationship between banker and customer.³ Furthermore, the extent to which modifications draw on disclosures in the notes to the accounts as opposed to relying on the presentation in the main financial statements should throw some light on the disclosure vs. presentation debate.

Data sources

The data for this paper are derived from extracts from bank loan contracts obtained from 22 separate sources. A relatively wide range of supplying institutions was deliberately sought in preference to obtaining a large number of contracts from a small number of institutions. This was to minimise the problem of duplication that would be likely to arise if too many contracts from any one insti-

tution were included in the analysis. This is because each lending institution tends to use its own template as the starting point for negotiating actual contract conditions.

Three different sources for loan contracts were identified: term lending institutions, law firms and published offer documents. Fifty major term lending institutions were contacted,⁴ of whom 13 (26%) agreed to provide loan contract details. While 57% of the UK clearers and 30% of the UK merchant banks that were contacted provided contracts, only 8% of the overseas banks (two US banks) did so. The findings, therefore, reflect a bias towards the practice of the UK clearers, although this is acceptable in view of their predominance in the UK loan market.

Contracts were also obtained from five of the eight law firms listed in *The Hambro Company Guide* (August 1988) as having 50 or more public company clients. The companies likely to have published covenant details as required by the City Code on Takeovers and Mergers (see footnote 2) were located by examining *Acquisitions and Mergers International*, February 1989 to October 1990, for contested cash and/or loan note bids in excess of £20 million and from well-known buy-out cases.

Table 1 gives details of the 25 contracts studied. These contracts were drawn up predominantly in 1988 or 1989. As the Table shows, 13 templates, which are used as a basis for drafting and negotiating actual agreements, were also obtained.⁵

The sections of contracts that have been obtained are those specifying the financial covenants and the accounting item definitions. Since the focus of the study is on the nature of accounting measurement rules, relevant financial ratio covenants are defined as those derived from companies' financial statements. Therefore covenants such as direct restrictions on share redemptions or asset disposals have been omitted from the analysis. Virtually every contract was anonymous to safeguard banker confidentiality.

Ratio covenants used

Of the 22 contracts for which there was a complete listing of the FRCs included, 19 (86%) contained between three and five FRCs. Five is the maximum

³MacArthur (1988), in his study of corporate comments on Exposure Drafts numbers 1 to 31, reports that ED 29 (Accounting for Leases and Hire Purchase Contracts) and ED 30 (Accounting for Goodwill) specifically requested comment on the likelihood that their proposals would cause or hasten loan defaults. However a review of Exposure Drafts numbers 32 to 55, published subsequent to MacArthur's study, reveals no further instances when this issue has been raised. While the majority of these Exposure Drafts had little bearing on contract definitions, a small number could have influenced reported ratio levels (e.g. ED40, Stocks and Long-Term Contracts; ED42, Accounting for Special Purpose Transactions).

⁴These comprised: (i) all eight members of the Committee of London and Scottish Bankers plus two other British clearers engaged in corporate term loans; (ii) all four members of the Northern Ireland Bankers' Association; (iii) nine of the sixteen UK merchant banks that comprised the Accepting Houses Committee as at December 1988 plus one other leading merchant bank; (iv) the 26 US, Canadian, Australian, French, German and Swiss banks listed in *The Banker* (November 1988) as having over 200 UK employees (this being used as the only indicator available of size).

⁵Not all of the 38 contract extracts contained full details of all financial covenants plus detailed accounting definitions. Where a subset of the 38 has been used this is indicated.

Table 1
Analysis of Loan Contract Extracts Used

	<i>Number of contracts</i>			<i>No. of separate sources</i>
	<i>Actual contracts</i>	<i>Standard contract forms</i>	<i>Total</i>	
From banks	10	9	19	13
From law firms	10	4	14	5
From offer documents	5	—	5	4*
	25	13	38	22

*These are: Isosceles plc's offer for The Gateway Corporation plc; The Boots Company plc for Ward White Group plc; and Magnet Group plc's buy-out (original offer and new financing terms).

Table 2
Financial Ratio Covenants Most Frequently Occurring

	<i>Number of occurrences</i>		
	<i>In actual contracts (n = 22)</i>	<i>In standard contract forms (n = 12)</i>	<i>Total (n = 34)</i>
Minimum net worth	18	11	29
Interest cover	17	10	27
Gearing (= % of borrowings)	16	11	27
Current ratio	6	7	13
Asset disposals/net worth	4	—	4
Leverage (= % of liabilities)	3	3	6
Cash flow/relevant expenditures	3	2	5
Minimum profit before interest and taxation	2	1	3
Dividend cover	1	3	4

15 other ratios were found, none occurring more than twice in total.

number found in any one contract.⁶ Minimum net worth, interest cover and gearing (the ratio of borrowings to net worth)⁷ are the three most frequently occurring covenants, both in actual contracts and in the standard forms (see Table 2). Nineteen (86%) of the 22 actual contracts contain at least two of these three FRCs, and eleven (50%) contain all three of them. In nine of these eleven contracts these three FRCs are supplemented by additional FRCs.

The frequency with which various FRCs occur in the private debt contracts analysed here is compared in Table 3 with the findings of two US studies of predominantly private debt contracts and two papers on Australian public debt issues. In contrast to the UK contracts, the US agreements make greater use of dividend restrictions and the

minimum working capital covenant, but far less use of interest cover. The Australian public debt agreements appear to rely, in the main, on only two leverage ratios. Further research would be needed to ascertain whether this is typical of public debt agreements in other countries.

All the FRCs are maintenance covenants, i.e. they are in force over the life of the contract, as opposed to applying only if additional debt is to be issued.⁸ In some contracts the FRC levels vary over time, with gearing expected to fall and net worth and interest cover to rise.⁹ Smith and Warner (1979)

⁶Contrast with Whittred and Zimmer (1986) who find leverage to be a maintenance covenant but the interest cover restriction to apply only if a further debt issue is proposed.

⁹Of the 19 actual contract extracts which stated a gearing covenant level, eight were in the 75%–100% range, nine were between 101% and 150% and two were 200%. Of the 17 interest cover covenants, three were 2.0 or less, 11 were between 2.1 and 3.0, and three were 4.0 or above. Of the six current ratios, four were 1.25:1 and two were above this level. Where the FRC level changed over the life of the contract, the levels quoted above are the last ones specified.

⁶Three standard contract forms contained more than five FRCs, but not all of these may remain in the finally negotiated agreement.

⁷This definition of gearing is in contrast to that of leverage which, in the few contracts where it occurs, is the ratio of total liabilities to net worth.

Table 3
FRCs Ranked by Frequency of Occurrence: a Comparison with Previous Studies

	<i>Citron UK Private (n = 22)</i>	<i>Castle (1980) US Private (n = 37)</i>	<i>Press/Weintrop (1990) US Private & public (n = 83)</i>	<i>Whittred/Zimmer (1986) Australia Public (n = 41)</i>	<i>Stokes/Leong (1988) Australia Public (n = 58)</i>
Minimum net worth	1 (82%)	4 (27%)	3 (46%)		
Interest cover	2 (77%)			4 (15%)	
Gearing (= % of borrowings)	3 (73%)		2 (49%)		
Current ratio	4 (27%)	3 (38%)	5 (22%)		
Asset disposals/net worth	5 (18%)				
Leverage (= % of liabilities)				1 (93%)	1 (95%)
Dividend restriction		2 (62%)	1 (61%)		
Minimum working capital		1 (76%)	4 (45%)		
Prior charge cover				3 (37%)	
Secured liabilities to tangible assets				2 (90%)	2 (86%)

Note:

1. This table ranks the five most frequently occurring ratios found in each study, provided their frequency was at least 15%.
2. n represents the number of contracts analysed in each study. The percentages indicate the frequency with which each covenant occurred among the contracts studied.
3. There is some overlap in the trust deeds covered by Whittred/Zimmer (1986), who analyse debentures and notes including convertibles, and Stokes/Leong (1988) who look only at convertible notes.

suggest a framework which groups covenants under four headings: production/investment covenants, dividend covenants, financing covenants and bonding covenants. UK bank loan contracts appear to use the frequently occurring interest cover and gearing covenants to restrict companies' financing policies, while minimum net worth and gearing are the most widely used FRCs for constraining excessive dividend payments. Regarding production/investment policies, Smith and Warner point out that it may not be feasible to use covenants to deal with lender/owner conflicts such as the underinvestment problem, since it will be excessively costly to monitor which projects a borrower has failed to undertake. Dividend and financing covenants, such as the maintenance of a minimum net worth, may be indirect yet effective ways of dealing with this issue. A minimum current ratio, which is found in over one quarter of actual contracts studied, may also be helpful in requiring a company to maintain a certain level of assets.¹⁰

Reporting covenants

Accounts-related reporting covenants specify which financial statements are to be supplied and

which accounting techniques are to be used. Twenty-two of the contract extracts studied contained sections dealing with these provisions in general (detailed accounting definitions are analysed in subsequent sections).

All of these contracts require the latest audited accounts to be submitted. The most frequently occurring additional requirement is for management accounts, specified in ten (45%) of the 22 contracts (see Table 4). These are required with various degrees of frequency, e.g. monthly, quarterly or at 'reasonable' intervals, and are usually to be drawn up on the same basis as the annual accounts. This requirement to supply management accounts in just under one half of the contracts studied indicates a certain level of demand for financial information on a more frequent than six monthly basis. Often an officer of the company may be required to certify that the results in the management accounts comply with the financial covenants.

The great majority of actual contracts specify the use of 'rolling' GAAP, i.e. those generally accepted accounting principles in use in the UK at the date of the calculation (see Table 4).¹¹ This conforms with Leftwich's finding relating to private lending agreements in the US, cited above.

¹⁰Common non-accounts based restrictive covenants occurring in the contracts studied are similar to those found in other surveys, viz: restrictions on additional borrowings or the granting of prior security (relating to financing policy); restrictions on asset disposals, mergers and acquisitions and on capital expenditure (all relating to production/investment policies); and restrictions on share redemptions (equivalent to a dividend covenant).

¹¹In those contracts where GAAP are specified as the basis for calculations and no further details are provided for dealing with changes in GAAP, then 'rolling' GAAP has been assumed in Table 4.

Table 4
Reporting Covenants

	Number of occurrences		
	In actual contracts (n = 12)	In standard contract forms (n = 10)	Total (n = 22)
<i>Reports required in addition to latest audited accounts:</i>			
Unaudited interims	3	2	5
Management accounts	5	5	10
Forecast accounts	1	2	3
	<u>9</u>	<u>9</u>	<u>18</u>
<i>Procedure specified for dealing with changes in GAAP</i>			
'Rolling' GAAP	8	3	11
'Rolling' GAAP but original method applies until appropriate revisions incorporated in contract	—	1	1
Predominantly 'rolling' GAAP with elements of 'frozen' GAAP	1	1	2
'Rolling' GAAP but lender can require accounts to be redrafted according to original method	—	2	2
'Rolling' GAAP but borrower must also supply data according to original method	1	—	1
'Frozen' GAAP, but subject to negotiation where differences are material	1	—	1
'Frozen' GAAP subject to the interpretation of the facility agent	—	1	1
'Frozen' GAAP	—	1	1
Information not available	1	1	2
	<u>12</u>	<u>10</u>	<u>22</u>

One quarter of the actual contracts and one half of the standard ones adopt various combinations of 'rolling' and 'frozen' GAAP. The tendency to favour 'rolling' GAAP, particularly in the actual contracts, lends some support to the view that the costs of redrafting accounts to accord with 'frozen' GAAP are considered to exceed the costs of technical default caused solely by changes in GAAP. However, the use of 'rolling' GAAP does mean that new accounting standards can cause covenant breaches.

Accounting definitions

This section analyses the nature of the accounting definitions specified for the four most frequently used FRCs shown in Table 2: net worth, borrowings, profit, interest, current assets and current liabilities.

Net Worth

Typical net worth covenants read:

The company shall ensure that Consolidated Tangible Net Worth shall at all times be not less than £x.

The company will ensure that, for each of the periods set out below, the financial condition of the Group shall be such that Consolidated Tangible Net Worth is not less than the amount set out against that period.

The definitions of net worth used in the minimum net worth covenants studied always exclude

at least some intangible assets¹² (see Table 5).¹³ Some specific goodwill items may be permitted to remain in loan contracts for the financing of acquisitions or buy-outs. In 11 (73%) of the 15 actual net worth definitions, all intangibles are excluded (see Panel 5a). Furthermore the revaluation reserve is generally only included up until a specified date and/or if arrived at by an independent valuation (see Panel 5c). Adjustments to take account of post-balance sheet events are also common.

The limitations on the inclusion of intangible assets and the revaluation reserve, as well as the occasional specific underlining of the requirement for accounting consistency, promote both the objectivity and conservativeness of the figures used, thus reducing management's scope for manoeuvre to use accounting treatments to avoid covenant violation. The exclusion of intangibles also has the effect of ignoring those assets which would be unlikely to realise cash for the lenders (see El-Gazzar and Pastena, 1990).

The main constituent of net worth not subject to careful definition is the Profit and Loss Account balance, nor is this dealt with in any more detail

¹²Leftwich's (1983) analysis of US private loan agreements and Whittred and Zimmer's (1986) study of Australian public debt deeds also find that goodwill and intangibles are frequently excluded from the borrower's asset base.

¹³Tables 5 to 7 detail all the accounting measurement definitions that occurred more than once in the contracts studied.

Table 5
Net Worth Definitions

	<i>Number of occurrences</i>		
	<i>In actual contracts (n = 15)</i>	<i>In standard contract forms (n = 10)</i>	<i>Total (n = 25)</i>
<i>Net worth includes:</i>			
Paid up issued share capital	15	10	25
Proposed share issues already underwritten	2	—	2
<i>Specific reserves detailed:</i>			
Share premium account	10	5	15
Capital redemption reserve	8	5	13
Profit and loss account	11	8	19
Capital and revenue reserves	11	10	21
Specified loan accounts	4	—	4
<i>Net worth excludes (entirely or in part):</i>			
Intangible assets (see Panel 5a)	15	10	25
Taxation provisions (see Panel 5b)	11	9	20
Revaluation reserves (see Panel 5c)	11	8	19
<i>Post-balance sheet date adjustments to incorporate:</i>			
Alterations in group structure	3	4	7
Proposed distributions not provided for in last accounts	6	6	12
<i>Changes in capital and reserves:</i>			
Other than profit and loss account changes	2	2	4
Any such changes as appropriate	—	3	3
Fixed asset acquisitions/disposals	2	—	2
<i>Adjustments for accounting consistency</i>			
Specifically included in net worth definition	4	4	8
<i>Note: Twelve additional amendments to the net worth definition were found, each occurring only once.</i>			
<i>Panel 5a</i>			
<i>Intangible Asset Exclusions</i>			
Entirely excluded	11	9	20
All excluded except specific goodwill items	4	1	5
	<u>15</u>	<u>10</u>	<u>25</u>
<i>Panel 5b</i>			
<i>Taxation Provision Exclusions</i>			
All tax provisions explicitly excluded	4	4	8
Deferred tax provisions explicitly excluded	7	5	12
	<u>11</u>	<u>9</u>	<u>20</u>
<i>Panel 5c</i>			
<i>Revaluation Reserve Exclusions</i>			
Entirely excluded	2	—	2
Excluded if subsequent to a certain date unless independently valued	5	1	6
Excluded if subsequent to a stated date	2	7	9
Excluded unless independently valued	2	—	2
	<u>11</u>	<u>8</u>	<u>19</u>

elsewhere in the definitions of other items related to profits, such as interest cover.

The inclusion of specific loan accounts, e.g. subordinated debt or a specific inter-company loan, as part of net worth in four of the 15 definitions indicates a willingness to take a view of the economic substance of a situation rather than necessarily to adhere to conventional accounting usage.

Interest Cover

Typical interest cover covenants read as follows:

The Borrower shall ensure that the ratio of Profits Before Interest and Tax to Interest Charges shall not at any time during each financial period specified below, fall below the ratio set out opposite such period, provided that

the ratio shall be calculated as at the last day of each month by reference to the immediately preceding period of twelve months.

The Company shall ensure that Consolidated Profits before Interest and Tax in respect of any financial year shall at all times exceed x% of Consolidated Net Finance Charges for such financial year.

The most widely used definition of interest cover is the ratio of profit from ordinary or operating activities (calculated before interest, taxation and extraordinary items) to gross finance charges (see Table 6). These items are almost universally calculated on a group basis as shown in the consolidated accounts.

There is a strong preference for the 'cover' covenant to be some measure of accounting profit

Table 6
Interest Cover Definitions

	<i>In actual contracts (n = 12)</i>	<i>Number of occurrences In standard contracts forms (n = 9)</i>	<i>Total (n = 21)</i>
<i>Basic definition:</i>			
Profit to gross interest	9	8	17
Profit to net interest	3	1	4
	<u>12</u>	<u>9</u>	<u>21</u>
<i>Profit</i>			
General designation:			
Profit	2	5	7
Profit from ordinary activities	4	1	5
Operating profit	2	2	4
Trading profit	2	1	3
Other (each occurring once)	2	—	2
	<u>12</u>	<u>9</u>	<u>21</u>
Calculated before deducting/crediting:			
Interest	8	8	16
Net interest	3	1	4
Taxation	11	9	20
Extraordinary items	8	6	14
Exceptional items	2	2	4
Fixed asset disposal gains/losses	—	2	2
Goodwill amortisation	1	1	2
Other exclusions (each occurring once)	—	5	5
Calculated after deducting/crediting:			
Detailed listing of expenses	1	1	2
Exceptional items	1	1	2
Other inclusions (each occurring once)	3	1	4
<i>Interest</i>			
Includes:			
Interest (stated explicitly)	11	8	19
Lease and HP finance (see Panel 6a)	7	4	11
Financing costs, charges and expenses	6	4	10
Commissions	6	3	9
Discounts	3	3	6
Capitalised interest	2	3	5
Arrangement fees	2	2	4
Commitment commission	2	2	4
Other inclusions (each occurring once)	—	2	2
<i>Panel 6a</i>			
<i>Lease and HP Finance Inclusions</i>			
Interest element in leasing and HP payments included	4	2	6
Interest elements of finance lease and HP payments included	1	1	2
Interest component of rentals under finance leases included	2	1	3
	<u>7</u>	<u>4</u>	<u>11</u>

to interest as opposed to a measure of cash flow to 'relevant payments' (e.g. interest plus loan repayments). Thus, interest cover appears in 17 out of 22 actual contracts (77%) while a cash flow cover measure only appears in three contracts (14%) (see Table 2). Furthermore each of these three contracts also contains an interest cover covenant.

There is little evidence that contracts attempt to adjust for accounting procedures that are particularly susceptible to management discretion. Profit before interest and taxation is usually taken as presented in the accounts. No case was found, for example, where a lender reserved the right to reclassify items classified by the borrower as extraordinary. Since definitions of Net Worth also do not contain any restrictions as to how the Profit and Loss Account balance should be measured, the only protection that the lender has with respect to these items appears to come from the universal requirements in contracts for accounting consistency and for the use of audited accounts.¹⁴

As shown in Table 6, interest is generally more closely defined, capturing the entire range of financing charges whatever they may be called.¹⁵ However, issues which have engaged accounting policy makers are not widely addressed in the contracts analysed. Thus, the interest element in leasing and HP payments is explicitly included in only just over one half of contracts studied (see Panel 6a), while capitalised interest is rarely included explicitly.

There does appear to be an imbalance in the definition of the Interest Cover ratio, as a result of which the close definition of the denominator (interest) could be rendered ineffectual with relative ease due to the loose definition of the numerator (profit).

Gearing

Gearing covenants typically read as follows:

The ratio of Total Borrowings to Tangible Net Worth shall not exceed...

The ratio of Consolidated Total Net Borrowings to Consolidated Tangible Net Worth shall not exceed, during each of the periods set out below, the ratio set opposite such period.

The maximum gearing level that borrowers are permitted is defined as the ratio of either gross or net borrowings to net worth (see Table 7).

While a small number of the contracts contain a brief, one-line definition of borrowings (e.g. 'aggregate indebtedness for borrowed monies'), the

majority (85% of the 20 definitions studied) contain a detailed listing of the items that constitute borrowings.

To what extent do these detailed definitions deal with the issue of off-balance sheet finance? This is a particularly important issue since it is often argued that it is the very presence of restrictive debt covenants that motivates companies, seeking to extend their borrowing powers, to engage in off-balance sheet finance schemes (Peasnell and Yaansah, 1988). In the contracts studied, all ratio calculations are based on consolidated accounts drawn up according to generally accepted accounting principles. While a small number of contracts (four 'standard' and one 'actual') also specify the borrowing entity in broader terms, e.g. 'XYZ plc and its subsidiaries', which may be taken to include, for example, unconsolidated subsidiaries, the ultimate reliance even in these contracts on the consolidated accounts would appear to give scope for the use of off-balance sheet finance. Only two actual contracts take the even narrower approach of relying on the consolidated balance sheet, as opposed to the consolidated accounts, an approach which is more likely to exclude the debt of unconsolidated subsidiaries disclosed in the notes to the accounts.

However, some specific off-balance items are often explicitly included. The main examples are contingent liabilities under acceptance credits and discounted bills, guarantees in respect of third-party indebtedness or against financial loss (see Panel 7a), and lease finance (see Panel 7b). The majority of references to lease finance, however, relate specifically to finance leases, thus leaving management the opportunity of using operating leases to keep debt off-balance sheet. The inclusion of guarantees for third-party indebtedness, however, would appear to be an effective way of taking account of a parent company's obligation in respect of the debt of off-balance sheet vehicles.¹⁶

The widespread inclusion of certain contingent liabilities and guarantees is a clear example of contract definitions that reduce management's scope for the use of opportunistic accounting methods and that produce a more conservative result than that shown by generally accepted accounting principles.¹⁷ Some additional amendments of this nature, however, (e.g. the inclusion of premiums payable on redemption and of debts sold to third parties with recourse) are found to occur

¹⁴El-Gazzar and Pastena (1990) find that only 21% of the US bank loan agreements they studied tailor income definitions, while 58% tailor liabilities and 62% equity.

¹⁵One of the key issues at dispute in BDDP's contested offer for Boase Massimi Pollitt was the definition of 'fees' for the purpose of interest and cash flow cover.

¹⁶Mian and Smith (1990), in their study of finance subsidiaries in the US exploring the relationship between financial interdependence and consolidation policy, find that when parents give direct guarantees of this sort the subsidiary tends to be fully consolidated, whereas unconsolidated finance subsidiaries tend to be associated with indirect parent guarantees.

¹⁷Leftwich (1983) and Whittred and Zimmer (1986) also note the widespread inclusion of such contingent liabilities in US and Australian loan contracts respectively.

Table 7
Gearing Ratio Definitions

	<i>Number of occurrences</i>		
	<i>In actual contracts (n = 12)</i>	<i>In standard contract forms (n = 8)</i>	<i>Total (n = 20)</i>
<i>Basic definition:</i>			
Gross borrowings to net worth	7	7	14
Borrowings net of cash to net worth	5	1	6
	<u>12</u>	<u>8</u>	<u>20</u>
<i>Manner in which borrowings defined:</i>			
General 'one line' definition	3	—	3
Detailed listing of components	9	8	17
	<u>12</u>	<u>8</u>	<u>20</u>
<i>General definitions of borrowings:</i>			
Aggregate indebtedness for borrowed monies	2	—	2
All obligations, whether contingent or otherwise, in respect of financial indebtedness	1	—	1
	<u>3</u>	<u>—</u>	<u>3</u>
<i>Detailed definitions of borrowings include:</i>			
All monies borrowed or raised	9	8	17
Guarantees (see Panel 7a)	9	7	16
Liabilities, including contingent liabilities, under acceptance credits and bill discounting	8	8	16
Debentures, bonds, notes, loan stock	8	7	15
Lease finance (see Panel 7b)	8	6	14
Premium payable on final debt repayment	2	6	8
Specified procedure for translation of non-sterling debt	2	4	6
Deferred purchase price of assets or services	2	3	5
Debts sold to third parties with recourse	1	4	5
Other inclusions (each occurring once)	5	2	7
<i>Detailed definitions of borrowings exclude:</i>			
Intra-group borrowings	2	5	7
Guarantees in respect of borrowings by subsidiaries	3	2	5
Specific loans	3	—	3
Proportions of subsidiary's debt corresponding to outside shareholdings, provided amount exceeds subsidiary's loans to rest of group	1	2	3
Other exclusions (each occurring once)	3	—	3
<i>Panel 7a</i>			
<i>Guarantees Included</i>			
Against performance of contracts or financial loss	3	2	5
In respect of indebtedness	6	5	11
	<u>9</u>	<u>7</u>	<u>16</u>
<i>Panel 7b</i>			
<i>Lease Finance Included</i>			
All amounts payable under lease or hire agreements for moveable assets	1	2	3
Payments under HP, instalment sale and finance lease agreements that are primarily methods of finance	1	2	3
Indebtedness under finance leases	3	1	4
Amounts payable under HP and finance lease agreements whether or not included in audited balance sheet	1	—	1
Capitalised HP and finance lease agreements per applicable accounting standards	2	1	3
	<u>8</u>	<u>6</u>	<u>14</u>

more frequently in standard contract forms than in actual contracts, which may be indicative of changes that take place in the course of contract negotiation.

Current Ratio

A typical current ratio covenant reads as follows:

The company will ensure that, at all times, the ratio of Current Assets to Current Liabilities exceeds . . .

Of the nine contracts (six standard and three actual) containing definitions of the current ratio, four had a general one-line definition while five listed the various elements in greater detail.

A typical general definition refers to 'all items on a consolidated basis which would be classified as current in accordance with generally accepted accounting principles consistently applied'.

All the detailed definitions referred to stock, good trade debtors, cash and current creditors or liabilities. Marketable securities and borrowings were almost always specified explicitly as well. Other definitions of interest from an accounting viewpoint, all occurring more than once, stated that stock should be at the lower of cost and net realisable value; that stocks should be excluded if subject to reservation of title; that stocks should be excluded if obsolete or slow moving; and that debtors due beyond one year should be excluded. The inclusion of contingent current liabilities was only specified in one case. It can be concluded, with regard to the current ratio definitions studied, that even those standard contract forms containing detailed definitions do not stray far from the figures reported for current assets and current liabilities on the face of the consolidated balance sheet.

Summary and conclusions

This paper provides for the first time evidence on the FRCs included in UK bank loan contracts and an analysis of the main accounting definitions used. These findings are based on an examination of the relevant sections of 25 UK bank loan contracts and 13 templates. The need for confidentiality restricted the availability of contracts and certain details relating to borrowers and loans. However, the general uniformity of the results indicates that it is unlikely that the relatively small size of the sample of contracts has biased the findings.

The main results are that all accounting definitions rely, in the first instance, on GAAP; that definitions are frequently tailored to limit the scope for management discretion; but that some items are accepted as presented in the accounts, thus leaving some scope for manoeuvre through choice

of appropriate accounting methods. These results replicate for the UK the findings of studies in the US (Leftwich, 1983) and Australia (Whittred and Zimmer, 1986; and Stokes and Leong, 1988).

The results of this paper are preliminary in nature and they raise a number of issues which merit further research. Regarding the identity of the most frequently used FRCs, it would be of interest to investigate their effectiveness as indicators of impending financial distress, and also to try to account for differences in the popularity of FRCs such as dividend payout restrictions in the US as compared with the UK. The research could also be extended by examining whether the ratios used and their definitions vary with the industry sector of the borrower and the characteristics of the loan and of the lending institution(s). Light could be shed on the loan negotiation process by investigating the extent to which the final versions of covenants found in actual contracts vary from those contained in the banks' standard templates. Finally it would be of interest to investigate to what extent the apparently loose definition of items such as profit enables corporate management to avoid covenant violation through appropriate choice of accounting methods.

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APPENDIX C

The Incidence of Accounting-based Covenants in UK Public Debt Contracts: An Empirical Analysis

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Abstract—Accounting-based covenants are of particular interest to accounting researchers in view of their potential to influence management's accounting policy choices and their attitudes to new accounting standards. This exploratory paper provides evidence on the incidence of accounting-based covenants in 108 UK public debt contracts for the period 1987-1990. Thirty percent of the agreements contain such covenants, the majority of which are affirmative gearing covenants. Focusing on the institutional differences between the UK and the US, the paper examines relationships between the presence of accounting-based covenants and (a) characteristics of the issuing firm, and (b) other control mechanisms included in the debt agreement. UK firms raising public debt are of good credit quality and UK insolvency procedures afford unambiguous protection to secured creditors. As a result, accounting-based covenants are associated with long-term unsecured debt and with firms having high values for assets-in-place but, in contrast with US findings, are unrelated to gearing. Convertibility appears to reduce the need for accounting-based covenants, especially when the debt is also subordinated. The relationship between accounting-based covenants and security depends on the nature of the security (fixed or floating). Longer term non-convertible debt agreements are, therefore, particularly likely to contain covenants that could influence management's accounting behaviour. This paper provides a starting point for further research into these issues.

Introduction

Long-term debt agreements contain covenants placing restrictions on borrowers with a view to controlling the conflicts that can arise between debtholders and shareholders (Smith and Warner, 1979). Those covenants that are accounting-based are of particular interest to accounting researchers. This is because there is a large body of evidence that firms adopt income-increasing accounting policies in the years prior to breaching accounting-based covenants (Watts and Zimmerman, 1986, Ch. 11; Beneish and Press, 1993; DeFond and Jiambalvo, 1994). Furthermore, since accounting-based covenants are largely based on those generally accepted accounting principles (GAAP) in force at the time compliance is being monitored, it has been hypothesised that new income-decreasing accounting standards could bring about default. This hypothesis has been largely investigated by testing for a negative share price effect among firms most likely to be

adversely affected by a new standard. Research, on balance, finds no evidence for an adverse price impact (see, for example, Frost and Bernard, 1989; Gopalakrishnan and Sugrue, 1992), but this conclusion is not unanimous (Mohrman, 1993).

In view of the relevance of accounting-based covenants to accounting research, this paper examines the incidence of such covenants in a sample of UK public debt agreements. It extends previous work in this area in a number of ways. First, it looks at an institutional environment which differs from that in the US both in terms of the general quality of the firms accessing the public debt market and in terms of the two countries' contrasting insolvency procedures. Second, unlike other research into the structure of public debt agreements (Malitz, 1986; Begley, 1993), it includes convertible debt issues. Finally, the analysis of security explicitly distinguishes between fixed and floating charges.

The next two sections review previous research and highlight the key features of the UK environment for public debt instruments. The following two sections suggest hypotheses as to how firm characteristics (investment opportunity set and gearing) and other features of the debt agreement itself (security, term to maturity, convertibility and seniority) are likely to influence the incidence of accounting-based covenants. The subsequent sections describe the data and research design, report results and draw conclusions.

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Prior research

Previous research into the incidence of accounting-based covenants has focused on the US, Canadian and Australian markets. The small volume of UK research has looked only at private debt agreements. Basing itself on Smith and Warner's costly contracting hypothesis (1979), this body of research examines whether accounting-based covenants are associated with: (a) characteristics of the issuing firm (leverage, investment opportunity set); and (b) other features of the debt instrument itself (seniority, collateral, term).

There is general agreement on a positive association between the use of accounting-based covenants and leverage (for the US see Malitz, 1986; Duke and Hunt, 1990; Press and Weintrop, 1990; El-Gazzar and Pastena, 1991; Skinner, 1993; and for the UK, Citron, 1992; Day and Taylor, forthcoming). The relation with assets-in-place is inconclusive, however, with Begley (1993) finding a negative association, while Skinner (1993) shows a positive relationship. Studies into the related area of accounting-based executive compensation contracts also have mixed results. While Smith and Watts (1992) find a positive association between the use of such contracts and assets-in-place, Gaver and Gaver (1993) report no association.

As far as the inter-relations between the terms of the debt instrument are concerned, accounting-based covenants are found to be uncommon in both subordinated debt agreements (Begley, 1993) and when collateral is present (El-Gazzar and Pastena, 1991). The relationship with term to maturity is unclear, however, with El-Gazzar and Pastena finding a positive association, Begley a negative one and Francis (1989) showing mixed results.

This paper seeks to shed some light on the conflicting findings outlined above. It examines these issues in the context of the UK public debt market, the relevant features of which are set out in the next section.

The UK public debt market

There are a number of important institutional differences between the UK and the US that can help clarify our understanding of the use of accounting-based covenants in UK public debt instruments. These are:

1. The UK corporate public debt market is relatively small compared with that in the US (Blake, 1990)¹ and access to this market is generally

¹Of the total sources of funds of UK commercial and industrial firms during 1987-90 only 4.6% came from market issues of loan capital and preference stock (Central Statistical Office, 1992) while in the US bonds and mortgages provided 17.1% of corporate funds (US Department of Commerce, 1993). In the UK, 27.1% of funds came from bank borrowings compared with 10.6% from loans and short-term paper in the US.

obtained only by high quality firms (Rutterford, 1992; Thomson, 1988). Connected with this is the absence of sinking funds in the UK (Rutterford, 1992, p. 142), in contrast to the US where sinking funds are common in debt with maturity of 15 years or more (Francis, 1989).

2. The focus of US insolvency law is on debtor protection while in the UK it is on the preservation of value for the firm's creditors, particularly secured creditors. Thus in Chapter 11 proceedings in the US the debtor generally remains in control of the business, while in the UK a receiver is appointed by a secured creditor and his duty towards that creditor takes precedence over that to any unsecured creditors (Franks and Torous, 1993).
3. In the UK contractually agreed priorities of claims are strictly adhered to in liquidation, whereas in the US deviations from absolute priority are common: '... the majority of Chapter 11 reorganisations provide for deviations from absolute priority in favour of shareholders and, in some cases, junior or unsecured creditors' (Franks and Torous, 1993, p. 102; see also Franks and Torous, 1989).

Characteristics of the firm and accounting-based covenants

Investment Opportunity Set

According to Myers (1977), firm value is made up from assets that are already in place plus future discretionary investments (or growth options). Myers (1977) and Smith and Warner (1979) argue that the agency costs of debt are more severe for firms whose investment opportunity set consists more of growth opportunities than assets-in-place. It follows that there should be a greater demand for such firms to provide covenants. For example, an accounting-based covenant, such as a ratio of debt to tangible net worth, could limit these agency problems by requiring the firm to maintain adequate tangible asset levels.

On the other hand, recent North American research suggests a number of reasons why a low value for assets-in-place should be associated with a lesser use of accounting-based covenants:

1. Begley (1993) argues that supply-side considerations counteract the above demand-side influences. Thus firms with more growth opportunities will have a greater need for future debt finance to fund such investments. They will, therefore, be less prepared to provide gearing covenants that would restrict future financing options.
2. Related to the above point, Skinner (1993) argues that firms with less assets-in-place will currently only be able to support low levels of gearing and hence will have fewer covenants.

3. Recent theoretical work by Feltham and Ohlson (1993) and Ohlson (1993) views the excess of market value over book value in growth firms as a function of their goodwill, i.e. their ability to earn profits in excess of the risk-free rate of return. The performance of such firms, whose value is derived more from their ability to earn 'super-profits' (for example, due to monopoly power) rather than from their assets-in-place, is less easily captured by GAAP-based accounting measures. Hence these firms are less likely to include accounting-based covenants in their loan contracts (see also Smith and Watts, 1992, p. 276; Skinner, 1993, p. 412).
4. Related to point (3), a relatively low ratio of book value to market value may arise from the use of conservative accounting policies (Feltham and Ohlson, 1993). For example, the practice of writing off research and development expenditure is likely to result in the book value of such an investment falling below its economic value. If, however, firms that adopt conservative accounting practices instil greater confidence in lenders, there may be less demand for such firms to acquiesce to the control imposed by accounting-based covenants.²

The relatively high quality of firms accessing the UK public debt market suggests that, for such firms, the agency costs of debt will carry less weight than the above four factors in determining the use of accounting-based covenants.

Gearing

The agency costs of debt are greater the higher is gearing. This is because highly geared firms are more likely to become financially distressed and in such cases shareholders have stronger incentives to engage in activities such as underinvestment and dividend payouts that would transfer wealth from debtholders to themselves. Therefore, in line with previous research, we would expect highly geared firms to be more likely to provide accounting-based covenants that will limit such activities in advance by requiring them to maintain asset levels.³

Other features of the debt agreements and accounting-based covenants

Firms can incorporate a variety of mechanisms (such as security, seniority and term to maturity)

in their loan contracts to control shareholder/debtholder conflict. Smith and Warner (1979, p. 154) and Begley (1993) discuss the difficulties involved in analysing the interrelationships between accounting-based covenants and these other control mechanisms. The problem arises because all these features of the loan agreement are determined jointly as part of an all-inclusive 'package'. However, since the focus of this paper is on accounting-based covenants, it adopts the approach of treating these covenants as the dependent variable and other features of the loan contract as independent variables.

As a result the sign of the predicted relationship between accounting-based covenants and variables such as seniority or term to maturity is unclear. This is because it is not known whether these control mechanisms are likely to act as substitutes or as complements for one another. The following paragraphs try to elucidate these issues in the context of the institutional features of the UK public debt market.

Security

Where debt is secured, the scope for debtholder/shareholder conflict is reduced since the lender's claim over specific assets limits the likelihood of asset substitution and claim dilution (Smith and Warner, 1979, p. 127). It is also the function of accounting-based covenants, such as a gearing constraint, to limit the issuing of additional debt and asset substitution. We would expect that, when debt is secured, such covenants are redundant and are therefore less likely to be used.

Debt secured by a fixed charge does, however, require a timely trigger to ensure that the asset subject to the charge is still of value. In such cases, however, covenants are not expected to be accounting-based (i.e. ratios based primarily on numbers found in the financial statements) but to be more specifically related to the value of the secured assets themselves and the income that they alone generate.

However, this argument only applies where the debt is secured by a fixed rather than a floating charge.⁴ Two distinctions between fixed and floating charges are of interest here. First, because the floating charge permits the borrower to deal in the assets in question, it provides no protection against asset substitution. Second, as a general rule, a fixed charge creditor has priority over a floating charge

²I am grateful to a referee for the arguments developed in points (3) and (4).

³Thornton's (1992) study of the Canadian lease capitalisation standard shows that firms more vulnerable to potential changes in GAAP are less likely to include accounting-based covenants in their loan agreements. This paper assumes, therefore, that all firms in the sample are equally vulnerable to possible changes in GAAP during the terms of their debt instruments.

⁴A fixed charge provides the lender with security in the form of specific identifiable assets that cannot be disposed of by the borrower without the lender's permission. With a floating charge, however, the borrower can, within certain limits, deal in the assets under the charge unless an event of default occurs. If this happens the floating charge crystallises and becomes a fixed charge over the assets that are available at that time.

creditor.⁵ It follows that a lender's priority is less well protected by a floating charge than by a fixed charge.

Thus, for a floating charge to provide adequate security, the debtholder must be able to trigger an event of default early enough for the security to realise sufficient funds. Financial covenants provide notice of impending financial distress. We would expect, therefore, that accounting-based covenants will be found in debt secured by only a floating charge, since this security is of little value if there is no trigger to crystallise it.

Term to Maturity

The expected relation between the presence of covenants and term to maturity is ambivalent. Myers (1977) and Barnea et al. (1980) argue that the agency costs of debt are reduced by shortening debt maturity. One way of reducing the greater degree of shareholder/debtholder conflict likely to arise with long-term debt would be to include more accounting-based covenants in the contract.

However, this view assumes that duration and the presence of covenants are substitutes for one another. An alternative view is that a debt issue with particularly severe agency problems, for example, may both be short-term and include covenants so as to provide additional control.

As shown above, US research findings in this area are inconclusive to date. In the UK, however, we would expect that public debt with a short term to maturity is unlikely to require accounting-based covenants because of the relatively low credit risk of firms raising debt on this market. Long-term debt agreements, however, are more likely to include such covenants as there is always the risk of a deterioration in a company's credit rating over a 20 or 30-year period. In addition, the focus of UK insolvency law on protection of secured creditors makes it all the more important for long-term unsecured creditors to protect themselves with timely default triggers in the form of accounting-based covenants. This expectation is further reinforced by the strict adherence to priority of claims in UK insolvencies. As a result, in contrast to the US, long-term unsecured creditors in the UK can entertain no expectation of being repaid in priority to secured creditors in liquidation.

Convertibility and Seniority

In the US most convertible debt is also subordinated (Van Horne, 1989, p. 618) whereas in the UK both unsubordinated and subordinated convertible debt issues are common. This allows the

effects of convertibility and seniority to be disentangled from one another.

The expected relationship between convertibility and accounting-based covenants is not clear. Jensen and Meckling (1976) argue that convertibility produces a greater alignment of interests between shareholders and debtholders, so reducing the need for protective covenants.⁶ Smith and Warner (1979, p. 141) point out, however, that the underinvestment problem is more severe when convertible debt is present, which would suggest a positive association between convertibility and covenants.⁷

The effect of subordination is also unclear *prima facie*. Arguably, agency problems are relatively more severe for subordinated debt due to the fact that it ranks behind senior creditors and is therefore in greater need of protection against shareholder activities that transfer wealth away from debtholders. On the other hand it could be argued that, by having agreed to lend on a subordinated basis, these debtholders are aligning their interests more closely with those of the shareholders. The fact that the subordinated bonds studied here are all also convertible lends support to this latter view. Furthermore, in the UK, where strict priority of claims is adhered to, it is unlikely that subordinated creditors will benefit much from accounting-based covenants. This is because, even when default is triggered, the great majority of the firm's creditors have to be fully paid before the subordinated creditors can receive anything.

Data and research design

Public debt issues are identified from the 'Bond, Debenture and Loan Stock Issues' section of Exel Financial's *Record of Takeovers, Offers and New Issues* for the four years 1987-1990. Building societies, banks, water companies, subsidiaries of overseas companies and Unlisted Securities Market companies are excluded from the analysis in order to reduce the diversity of the population.

The sample includes secured debt, convertible debt and bonds—the term 'bonds' being used to designate all unsecured, non-convertible issues. A total of 145 debt issues are identified as meeting these criteria.

Where a firm has made more than one debt issue during the period, all issues are retained in the

⁵This priority is further strengthened by various provisions of the UK insolvency law (see Lingard, 1989, pp. 93 and 159).

⁶Stokes and Whincop (1993) provide empirical support for this view with their finding that Australian preference share issues generally place less reliance on covenants if they are convertible.

⁷Whittred and Zimmer (1986) and Stokes and Leong (1988) find borrowing limitations to be universal among Australian convertibles. However, such covenants are a requirement of the Companies Acts and the Australian Associated Stock Exchanges.

analysis only if the types of debt are significantly different. This is to avoid double-counting virtually identical debt agreements where a firm has multiple issues of the same type of debt.⁸ Where such multiple issues take place, only the latest is selected for inclusion. This process eliminates 29 of the original 145 debt issues, leaving 116 cases.

Details of the covenants are obtainable from the offering circular, prospectus or Extel card containing the listing particulars. The results of this study are based on data for the 108 cases (93% of the 116) for which these documents and share prices are available. Owing to the inclusion of different types of debt issues by individual companies, these 108 debt instruments were issued by 90 different companies.

A covenant is counted as 'accounting-based' provided at least the numerator or the denominator is based on numbers derivable from the main financial statements. Thus covenants found in debt agreements secured by a fixed charge, such as those requiring the value of the secured properties to be not less than a certain multiple of the secured loan, are not included as accounting-based covenants.

Debt secured by a fixed charge is classified as 'fixed' even if it has a floating charge as well. It is classified as 'floating' only if there is no fixed charge.

Following Myers' (1977) observation that book values refer to assets already in place, the relative size of assets-in-place is measured by the ratio of book value of equity to market value of equity (see also Gaver and Gaver, 1993).

Gearing is calculated as the ratio of the book value of gross debt (both short and long-term) to market value of the firm's equity. Since lenders will be interested in the firm's gearing after the new issue has taken place, the book values of debt are taken from the section of the debt issue document detailing group capitalisation. In many cases this figure includes the new issue itself and, in these cases, this is the amount used. Where the capitalisation total does not include the new issue its value has been added in, except where the stated purpose of the issue is refinancing where there is a zero net effect on total debt.

A problem with the gearing measure is that where firms have off-balance sheet finance their gearing ratios will be understated. Where possible,

this is taken into account. Some debt issue documents contain details of liabilities such as guarantees for third party debt, debt of off-balance sheet subsidiaries and non-capitalised finance leases. Where such amounts are disclosed they are included in the debt figure. While undisclosed off-balance sheet debt cannot be included, Duke and Hunt (1990), Press and Weintrop (1990) and Skinner (1993) all find a significant relationship between balance sheet-based gearing measures and accounting-based covenants.

For the measure of term to maturity, optional earlier redemption by the firm itself is ignored since this will not necessarily be exercised and therefore does not reduce the risk to the bondholders. In some convertible bond issues, however, the bondholders have an option to require redemption before the conversion/maturity date (a put option).⁹

Results

Descriptive Statistics

Table 1 shows that, of the 108 debt issues analysed, 42 (39%) took place in 1987. Convertible issues are particularly numerous in that year, while unsecured non-convertible bonds and notes predominate in 1988 and 1989. Convertible issues return into fashion in 1990 in the form of convertible capital bonds.

The industry sector breakdown of the sample appears in Table 2. Firms in the industrial materials/construction, multiple stores and property sectors account for 46% of the issues.

Of the 108 debt agreements, 32 contain accounting-based covenants, 47% of these being by firms in the brewery and property sectors (see Table 2). The amounts issued range from £5 m to £320 m, with a mean value of £85.1 m. The mean value of the 32 issues with accounting-based covenants of £84.1 m is very similar to the mean of £85.5 m for the 76 issues without. While public debt issues account for only a small part of all companies' sources of funds in the UK (see footnote 1), for those companies that do enter this market, public debt is a significant source. For the 108 debt issues studied here, the mean ratio of the amount of debt issued to the company's total debt is 0.26, and the mean ratio of the amount issued to book capital employed (debt plus book capital and reserves) is 0.11.

⁸Debt issues are treated as significantly different either if they are of different types, i.e. secured, convertible or bonds; or, in one case, where the debt is of the same type but the terms to maturity are significantly different (seven and 25 years). In order to verify that the inclusion of more than one issue of the same type of debt by the same firm would result in duplication of contract provisions, the documents of nine 'additional' debt issues by eight different firms were checked. One of these issues contained accounting-based covenants and eight did not. In all cases the information on covenants was identical to that in the debt issues actually included in the sample.

⁹For example, Slough Estates plc's £150 m 6% convertible bond issued in April 1988 has a final redemption date of May 2003. However, a further condition states: 'The holder of each Bond will have the option to require the Company to redeem such Bond ... on 20 May in any year from 1993 to 1998 (inclusive) at its principal amount together with supplementary interest ...'

Table 1
Number of Public Debt Issues by Type of Debt: 1987-1990

Type of debt:	1987	1988	1989	1990	Total
Secured fixed	7	2	5	2	16
Secured floating	1	—	3	1	5
Convertible:					
Subordinated:					
Capital bonds	—	—	1	8	9
Other	7	1	2	—	10
Unsubordinated	16	2	1	3	22
Bonds	<u>11</u>	<u>12</u>	<u>18</u>	<u>5</u>	<u>46</u>
	<u>42</u>	<u>17</u>	<u>30</u>	<u>19</u>	<u>108</u>

Table 2
Summary of Industry Sector Classification of Firms Making the 108 Debt Issues

Industry description and group number*	No. of issues with covenants	No. of issues without covenants	Total
Industrial materials (11); bricks (12); cement and concrete (15); contracting and construction (18); electrical (19)	2	10	12
Aerospace (21)	1	1	2
Radio and TV (36)	1	1	2
Motor components (41); motor distributors (42)	1	1	2
Breweries (45)	4	1	5
Hotels and caterers (47); leisure (48)	—	4	4
Food manufacturing (49)	—	5	5
Food retailers (51)	3	6	9
Newspapers and periodicals (52)	1	2	3
Packaging and paper (54)	—	4	4
Multiple stores (58)	1	10	11
Health and household products (67); general chemicals (68)	—	4	4
Oil and gas (70)	1	5	6
Transport and freight (72)	1	2	3
Industrial conglomerates (73)	2	—	2
Property (86)	11	16	27
Miscellaneous financial (87); mining finance (92); overseas trade (97)	3	3	6
Telephone networks (88)	—	1	1
	<u>32</u>	<u>76</u>	<u>108</u>

*Stock Exchange Actuaries Security Group Numbers.

Accounting-based Covenants

Table 3 shows the small variation in the types of accounting-based covenants found in these public debt documents. Of the 32 documents containing such covenants, 29 (91%) include a gearing covenant, and 18 (56%) include a restriction on the amount of secured and/or other priority debt to

capital and reserves. A third covenant, asset disposals/assets, also appears in 18 (56%) of the 32 documents, but no other accounting ratio is included in more than a small minority of cases.

The majority of the various gearing covenants are affirmative, i.e. they apply at all times while the debt is outstanding (see Table 3). However, five of

Table 3
Types of Accounting-based Covenant: Frequency of Occurrence ($n = 108$ Debt Agreements)

	<i>Affirmative covenants</i>	<i>Negative covenants</i>	<i>Total number of occurrences</i>
Borrowings/capital and reserves	29	—	29
Secured and/or priority borrowings/capital and reserves	13	5	18
Asset disposals/assets	—	18	18
Interest cover	1	5	6
Fixed assets/secured debt	—	2	2
Assets acquired/capital and reserves	—	2	2
	<u>43</u>	<u>32</u>	<u>75</u>
	57%	43%	100%

Five other accounting-based covenants occurred, once each.

Table 4
Incidence of Accounting-based Covenants by Type of Debt

<i>Type of debt:</i>	<i>Predicted sign</i>	<i>No. of issues with covenants</i>	<i>No. of issues without covenants</i>	<i>Total</i>
Secured fixed	—	—	16	16
Secured floating	+	5	—	5
Convertible:				
Subordinated:	+/-			
With put option		—	3	3
No put option		—	16	16
Unsubordinated	+/-			
With put option		1	12	13
No put option		4	5	9
Bonds		<u>22</u>	<u>24</u>	<u>46</u>
		<u>32</u>	<u>76</u>	<u>108</u>

the limitations on secured/priority debt, as well as virtually all of the other covenants, are negative.¹⁰ Negative covenants effectively proscribe certain actions, such as the raising of additional debt or making asset disposals, unless the specified financial ratios are complied with. The five negative secured/priority debt covenants all appear in the loans secured by a floating charge. The asset disposal and asset acquisition limitations are classified here as negative covenants by definition, since they only apply if the firm makes the said disposals or acquisitions.

These findings are in marked contrast to those of Begley (1993, p. 20) who finds that accounting-

based covenants in US public debt agreements are almost universally negative. The majority of accounting-based covenants in Australian public debt agreements are affirmative, however (Whitred and Zimmer, 1986, p. 25).

The tightest borrowings/capital and reserves covenant is 1.25 and the loosest 3. Of the 29 such covenants, 14 (48%) are set at 1.75, seven (24%) at 1.5 and four (14%) at 2. No other values occur more than once.

Univariate Analysis—Secured Debt and Convertible Subordinated Debt

An examination of the relationship between security and accounting-based covenants shows, as expected, that none of the 16 debt agreements secured by a fixed charge contains such covenants whereas all five secured by a floating charge do so (see Table 4). Applying the Fisher exact test (Siegel

¹⁰The distinction between affirmative and negative covenants is an important one, albeit more so in the context of private debt agreements, as default in these contracts is more frequently caused by violations of affirmative covenants (Beneish and Press, 1993).

and Castellan, 1988) to the 21 secured issues, this difference between fixed and floating charge debt is highly significant ($p = 0.001$, one-tailed). In place of accounting-based covenants, however, 15 of the 16 agreements with fixed charges contain a covenant requiring the value of the secured assets not to fall below a stated multiple of the debt so secured, and 10 of the agreements also require the income from the secured assets not to fall below a given multiple of the interest on the debt in question.

Table 4 also shows that 36 (88%) of the 41 convertible debt issues do not have accounting-based covenants, supportive of Jensen and Meckling's argument that convertibility reduces debtholder/shareholder conflict.¹¹ Furthermore, none of the 19 subordinated convertible issues contains such covenants. These 19 documents were checked further to see if, in place of their own covenants, they are protected by reference to existing covenants in senior debt issues (see Thornton and Bryant, 1986, p. 45). No explicit reference to such covenants was found in any of the documents. Fourteen of the 19 have cross default clauses, meaning that a default on other debt would also constitute default on the subordinated debt. However, cross default clauses are virtually universal among the unsubordinated debt issues as well. These findings, therefore, further support the view that the alignment with equity interests brought about by convertibility is strengthened by the subordination feature.

At first sight, the absence of accounting-based covenants among the subordinated convertibles seems to corroborate the finding in Begley's (1993) US study of non-convertible debt that subordinated debt contracts contain fewer covenants. However, the underlying rationales appear to be different. Begley finds that the firms issuing the subordinated debt are both significantly smaller and financially weaker. Therefore the loss of flexibility that covenants would bring about for these firms would be too costly for them. In contrast, the firms with the 19 subordinated convertibles in this study are, on average, somewhat larger than the remaining 89 cases in the total sample.¹² Furthermore their mean gearing at 0.41 is significantly lower than the 0.65 of the other 89 cases.¹³ This suggests that covenants are absent from subordinated debt issues in this sample because they are less risky and therefore there is no demand for them.

In summary, in the cases of the 21 secured debt and the 19 subordinated convertibles the presence or absence of accounting-based covenants appears to be entirely accounted for by the type of debt. It is only in the cases of the 22 unsubordinated convertibles and the 46 bonds that some issues contain such covenants and some do not. The remaining univariate results and the multivariate results will, therefore, relate only to these 68 issues.

Univariate Analysis—Bonds and Convertible Unsubordinated Debt

Of these 68 agreements, 27 (40%) contain accounting-based covenants (see Table 4). Table 5 shows that firms issuing debt with accounting-based covenants have a significantly higher mean value for assets-in-place. They also have higher gearing, although the difference here is not statistically significant, contrary to the significant results found in US studies. The positive association with assets-in-place is consistent with Skinner (1993). However, the weak relationship with gearing suggests that Skinner's reasoning, that firms with more assets-in-place have more accounting-based covenants because they are more highly geared, may not be at work in the UK public debt market. This issue is examined further in the multivariate analysis below.

Table 5 also shows, as expected, that debt agreements with a longer term to maturity are more likely to contain accounting-based covenants. Those issues with accounting-based covenants have a significantly longer mean term to maturity (19.7 versus 10.1 years). This relation is strengthened when, for the 16 convertible issues with put options, the earliest date when the put can be exercised is substituted for the date of conversion/final redemption.¹⁴

This positive association between term and the use of accounting-based covenants is contrary to Begley's (1993) US findings. However, the typical term to maturity in Begley's sample is 15 to 30 years, while in this sample it ranges from two to 44 years, including 29 issues due in under 15 years. In order to improve comparability with Begley's data set, the analysis is repeated omitting these 29 shorter-term issues. This leaves 39 cases in this sample with a term of 15 years or more. Twenty of these 39 contain accounting-based covenants and they have a mean term to maturity of 24.1 years, significantly higher¹⁵ than the 15.5 years of the 19 issues without accounting-based covenants. Thus

¹¹The 88% result is significantly different from the null hypothesis that convertible debt is equally as likely to include accounting-based covenants as not ($z = 4.84$).

¹²The 19 firms issuing subordinated convertibles have a mean size (book value of total debt plus market value of equity) of £2.4 bn compared with £1.9 bn for the other 89 cases. The difference is not statistically significant.

¹³t-value = 3.47, significant at the 1% level, two-tailed.

¹⁴The put options are exercisable at terms ranging from four-and-a-half to six years, while the terms to maturity of these 16 issues are all 15 years.

¹⁵t-value = 5.72, a difference significant at the 0.1% level, one-tailed.

Table 5
Features of Unsecured and Convertible Unsubordinated Debt Issues With and Without Accounting-based Covenants ($n = 68$ Except Where Indicated)

	<i>Predicted sign</i>	<i>Means</i>		<i>t- values</i>
		<i>With covenants ($n = 27$)</i>	<i>Without covenants ($n = 41$)</i>	
Assets-in-place	+	0.87	0.63	-2.36**
Gearing	+	0.68	0.57	-0.91
Term:				
Ignoring put options	+	19.7	10.1	-4.78*
With put option dates ($n = 71$)	+	19.3	7.1	-6.10*

*Significant at the 0.1% level (one-tail test).

**Significant at the 5% level (one-tail test).

Table 6
Logit Analysis of the Relation Between Explanatory Variables and the Presence of Accounting-based Covenants for Unsecured and Convertible Unsubordinated Debt Issues ($n = 68$)^a

<i>Explanatory variables</i>	<i>Predicted sign</i>	<i>Coefficient</i>	<i>Wald statistic^c</i>	<i>Significance of Wald statistic</i>
TERM	+	0.233	15.214	0.0001
CONUNSUB	+/-	-1.972	5.995	0.0143
INVOPP	+	2.712	6.194	0.0128
GEAR	+	-1.113	1.587	0.2078
Model chi-square		38.85	(4 d.f., $p = 0.0000$)	
% correctly classified		83.82		

^aDependent variable = 1 if accounting-based covenant(s) present ($n = 27$), = 0 if none present ($n = 41$).

^bTERM = term to maturity in years ignoring put options

CONUNSUB = 1 if a convertible unsubordinated issue ($n = 22$), = 0 if not ($n = 46$)

INVOPP = book value of equity/market value of equity

GEAR = book value of debt/market value of equity

^cThe Wald statistic is the square of the ratio of the coefficient to its standard error (SPSS Inc 1990, p. B-42).

the contrast with Begley's findings stands, the association between accounting-based covenants and term being negative in the US but positive in the UK.¹⁶

¹⁶All 108 agreements were further analysed for an association between the stated reason for the issue and the presence of accounting-based covenants. The stated reasons were classified, in descending order of risk, as 'expansion' (35% of cases), 'general corporate purposes' (41%) or 'refinancing' (24%). No association was found, presumably due to the irrelevance of these stated reasons relative to the long duration of the debt.

Multivariate Analysis—Bonds and Convertible Unsubordinated Debt

Logit analysis is used to explore the significance of each explanatory variable in the presence of the other explanatory variables. The analysis confirms the expectation that accounting-based covenants are significantly associated with longer term to maturity (see Table 6). Thus, in the UK public debt market, accounting-based covenants and term to maturity appear to be used as substitute control mechanisms,

while in the US they complement one another (Begley, 1993, p. 24).¹⁷

Table 6 also shows that convertibility reduces the need for accounting-based covenants even when the debt is unsubordinated. Furthermore, as expected, a high value of assets-in-place is associated with the presence of accounting-based covenants although, in contrast with previous research, there is no significant relationship with the level of gearing. These findings are consistent with the view that, among firms entering the UK public debt market, low values for assets-in-place and high levels of gearing are not proxying for high agency costs. Moreover, the findings lend support to Smith's (1993, p. 294) observation that a high level of gearing in itself will not necessarily require greater covenant protection provided it occurs in a firm with a relatively high value for assets-in-place.

This being the case, accounting-based explanations for the use of such covenants in firms with high assets-in-place may well be predominating in the market studied here. Thus, a high value for assets-in-place may result from insufficiently conservative accounting which in turn gives rise to a demand for monitoring. Alternatively, GAAP-based accounting numbers arguably provide more accurate measures of financial position in firms with higher values for assets-in-place, so increasing their use of accounting-based covenants.

Finally, while this analysis relates to unsecured debt instruments, it is relevant that some of the firms involved will also be borrowing on a secured basis. We would expect the unsecured debt of such firms to be protected by accounting-based covenants. This is because these covenants will provide an alternative source of protection for the unsecured lenders of these firms in the light of their other borrowings being protected by security.¹⁸ To the extent that a high value for assets-in-place proxies for the presence of borrowing on a secured basis, this will result in a positive association between assets-in-place and the use of accounting-based covenants. This expectation is examined by analysing the industry membership of firms that borrowed on a secured basis in the current sample. The 21 cases of secured debt shown in Table 4 were issued by firms in only six industry sectors.¹⁹ The

sub-sample of 68 debt instruments which excludes secured debt includes 23 debt issues by firms from these six industry sectors. Using membership of one of these sectors as a proxy for the likelihood of having previously issued secured debt, the value of the assets-in-place ratio for the firms making these 23 debt issues is 1.13, significantly higher than the 0.52 for firms in other sectors.²⁰ This lends support to the view that the positive association between assets-in-place and accounting-based covenants reflects the demand for protection by unsecured lenders to firms that have previously borrowed on a secured basis.

Conclusions

This paper examines the incidence of accounting-based covenants in UK public debt issued during the period 1987–1990. Many of these instruments will still be outstanding well into the 21st century. Thirty percent of the debt agreements contain accounting-based covenants, 57% of which are affirmative. This is in contrast to the US where public debt covenants are almost universally negative. This suggests that accounting-based covenants contained in UK public debt agreements have more potential for influencing management's accounting policy choices than those in US public debt agreements and, as a result, their study is especially relevant to accounting policy research.

Again, in contrast to the US, the presence of accounting-based covenants in unsecured debt is positively associated with term to maturity. It is suggested that the more frequent use of accounting-based covenants in longer term debt in the UK reflects the relatively high credit quality of firms raising funds on the UK public debt market, with credit risk being related to long terms to maturity. This need for unsecured longer-term debt to be protected by accounting-based covenants is reinforced by UK insolvency law which, unlike the US Chapter 11 procedure, favours secured creditors and adheres to strict priority of claims.

Unlike the US, again, there is no association with gearing. It appears that, once the level of assets-in-place is controlled for, the gearing of firms accessing the UK public debt market is at an acceptable enough level such that it does not affect the demand for accounting-based covenants. However, the fact that the gearing measure used is unable to take account of all off-balance sheet finance may be a confounding factor.

This paper also adds to earlier research by looking at convertible debt issues. Convertibility appears to reduce the need for accounting-based covenants. None of the subordinated convertible agreements examined includes accounting-based

¹⁷The complementary nature of term to maturity and use of covenants in Begley's (1993, p. 24) data set is supported by her finding of a significant negative association between duration and gearing, while in the sample studied here these two variables are uncorrelated.

¹⁸As Stultz and Johnson (1985, p. 513) point out, while the presence of secured debt may reduce a firm's opportunities for asset substitution or cash payouts, it does not reduce the incentive for these actions if there is also unsecured debt outstanding.

¹⁹Property (13 cases), breweries (four cases), and one each from hotels, contracting and construction, oil and gas, and cement and concrete.

²⁰t-value = 7.39, p = 0.000, one-tail.

covenants, indicative of the strong alignment of these debtholders' interests with those of the shareholders. The small number of unsubordinated convertibles with accounting-based covenants reinforces this argument.

This paper is essentially exploratory in nature. Further testing of the various hypotheses is required, in particular whether these preliminary findings are driven by the way in which the UK institutional framework differs from that in the US. For example, an institutional factor not researched here is the question of whether public debt ownership is more concentrated in one country compared with the other. Public debt agreements can be expected to have more in common with private debt agreements where the holdings are more concentrated.

Another caveat of this study is that it uses the non-accounting-based provisions of debt agreements to help explain the incidence of accounting-based covenants, whereas all these provisions (both accounting-based and non-accounting-based) are co-determined as part of an all-inclusive package. However, it is beyond the scope of this paper to specify a complete model explaining why a particular combination of control mechanisms emerges from lender/borrower negotiations.

A final reservation is that the analysis does not take account of the possible relationship between covenants and the price of debt. If lenders trade off price against the degree of monitoring provided by covenants, then there would be a negative association. If, however, covenants proxy for the perceived risk of the debt, then the expected association would be positive since the cost of debt would be higher for riskier firms.

However, the paper does provide evidence that the factors driving the incidence of accounting-based covenants in UK public debt agreements are different to those that operating in the US public debt market. Another issue of importance to accounting researchers is that the prevalence of affirmative accounting-based covenants in longer term debt means that such agreements could influence UK corporate management's accounting policy choice for many years in the future.

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APPENDIX D1

The Audit Report under Going Concern Uncertainties: An Empirical Analysis

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Abstract—This study explores the value of the audit report in the context of the going concern qualification (GCQ) decision along the joint dimensions of auditor competence and independence. Likelihood of company failure, auditor switch rates, the self-fulfilling prophecy argument and audit firm size are analysed as variables potentially affecting the value of the audit report in a GCQ situation. This study focuses on the outcomes of such decisions: the presence or absence of a GCQ, for a large sample of UK quoted companies over the decade 1977-86. Our results suggest that, unless the likelihood of failure is very high, the probability of a GCQ is very low. We find some evidence in support of an association between the presence of a GCQ and auditor switching but no support for the self-fulfilling prophecy argument. In addition, smaller UK audit firms do not appear to exhibit lower GCQ rates than do large firms. There is some evidence that the issues of auditor competence and independence may be a cause for concern in this context in the UK.

Introduction

The UK audit environment provides low rates of qualification on a going concern basis of the accounts of companies prior to bankruptcy.¹ This paper examines the value of the audit report in situations of going concern uncertainty, where 'value' is taken to be a function of both auditor competence and auditor independence.

In his review of the going concern decision literature, Asare (1990) points to the mixed results of research into the importance of the going concern report. In this study we focus explicitly on the end result of the decision process: the presence or absence of a qualification, which is the central concern of the financial statement user. We investigate whether the presence or absence of a going concern qualification (GCQ) is associated with the likelihood of company failure, auditor switch rates, the self-fulfilling prophecy argument and audit firm size.

For the audit to be of value to the consumer of audit services, the auditor must be perceived as being both technically competent and independent (Watts and Zimmerman, 1981; De Angelo, 1981a and 1981b). Mautz and Sharaf (1961) argue that the professional auditor is indeed widely perceived as being competent, and regarding the potential going concern qualification there is experimental evidence to support this contention (Kida, 1980; Campisi and Trotman, 1985; Barnes and Hooi, 1989).² With respect to independence, however,

Mautz and Sharaf (1961, p. 210) are less sanguine: '... because auditing suffers from what may be described as "built-in anti-independence factors".'

Research that explores auditor independence within an economic framework focuses on the cost factors influencing the independence of the auditor in various situations (Watts and Zimmerman, 1981; De Angelo, 1981a and 1981c). De Angelo (1981b and 1981c) uses this framework to argue that larger firms will be more strongly motivated to act independently. Farmer *et al.* (1987) find that auditors are indeed more likely to accept clients' controversial accounting treatments when the risk of client loss is high and that of litigation low.

In the case of the GCQ, the literature (e.g. Kida, 1980; Altman, 1982; and Moizer, 1985) highlights a number of cost factors that may reduce independence. These can be summarised as follows:

- (i) The value of the auditor's economic interest in the client;
- (ii) The likelihood that this economic interest will be lost either due to the client switching auditors or failure brought about by the GCQ itself (self-fulfilling prophecy);
- (iii) The likelihood that the client will sue if the report is qualified and the client does not fail.

Cost factors helping promote independence encompass:

- (i) The loss of future revenues due to loss of reputation should the auditor not qualify and the client fail;³
- (ii) The likelihood of lawsuits by third parties if there is no GCQ and the client fails.

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See Table 1.

²Koh and Killough (1990) and Koh (1991), however, provide a dissenting view.

³Wilson and Grmlund (1990) provide evidence that damaged audit firm reputation is indeed associated with real adverse economic consequences.

The strength of these factors in the GCQ situation makes it an appropriate context in which to study independence (Kida, 1980). However, the limited evidence available on the relationship between audit report qualifications and auditor switching appears contradictory. Chow and Rice (1982), Mutchler (1984) and Craswell (1988) find a relationship between qualified audit reports and auditor switching, although this is not supported by Schwartz and Menon (1985).

Studies of the opinions of lending bankers (Firth, 1980) and accountants (Mutchler, 1984; Holt and Moizer, 1990) lend some credence to the fear that a GCQ will itself lead to a company's failure: the self-fulfilling prophecy argument. The UK Auditing Guideline instruction to ignore such considerations (APC, 1985, para. 32) is itself *prima facie* evidence that such perceptions do exist.

The extant research tends to deal with the issues of auditor competence and independence separately. However, in the complexities of real life, these two factors may not only be difficult to separate out but may be interdependent (De Angelo, 1981a; Pearson, 1987). This study views auditor independence and technical competence as inseparable dimensions of the audit process. Only if the requirements of both are met will the audit report be of value.

Hypotheses

We test primarily for the joint presence of competence and independence, although in some instances (where competence is not at issue) the focus is more specifically upon independence.

Our first three hypotheses relate to the association between the likelihood of client failure and the GCQ rate. Regarding auditor competence, the higher the likelihood of failure the more straightforward will be the judgment as to whether a client is suffering going concern problems. Also, from the viewpoint of independence, the greater the likelihood of client failure, the higher will be the auditor's perceived probability of losing that client. As a result, the auditor's future economic interest in the client will be lower, thus reducing the costs militating against giving a GCQ. In addition, the higher the failure probability, the lower the likelihood of damage to the auditor's reputation from giving a GCQ.

The point of interest is how great must the likelihood of failure be for the auditor to reach the conclusion that a going concern uncertainty does indeed exist and, having reached that conclusion, for the independence of the auditor not be called into question. In the absence of direct measures of the objective likelihood of failure, we use as proxies the time lag between publication of accounts and failure, and the financial status of the client prior to failure. We seek to test the following hypotheses:

Hypothesis 1: The shorter the time between

audit report signature and failure the greater the propensity for qualification.

Hypothesis 2: The weaker the financial position of the failing company at the balance sheet date, the more likely it is to have received a going concern qualification.

Hypothesis 3: The more imminent failure is at the date of accounts publication and the more precarious the financial position, the more the pressures on the auditor to qualify are compounded leading to an increased probability that the failing company receives a going concern qualification.

Following Altman (1982), the risk of bankruptcy is measured using the z-score approach which provides an unbiased statistical measure of company solvency (Taffler, 1983; 1984).

The next two hypotheses examine ways in which a GCQ may itself increase the probability that the audit firm will lose the client: auditor switching (Hypothesis 4), and the self-fulfilling prophecy (Hypothesis 5). To the extent that there is an association between a GCQ and the auditor's perception of the likelihood of auditor change and/or failure induced by the GCQ itself, the presence of going concern uncertainty is a situation inherently threatening to independence.

In the case of the auditor switch argument, auditor perception of the likelihood of client loss cannot be measured directly. Following Schwartz and Menon (1985), we therefore test for a relationship between the actual presence of such a qualification and a subsequent auditor switch:

Hypothesis 4: There will be a higher frequency of auditor switching among companies that have received a going concern qualification.⁴

The research cited above provides some evidence on the self-fulfilling prophecy argument. However, the proposition that GCQs actually precipitate failure in cases where it would not otherwise have occurred is difficult to test, since it is not possible to ascertain what would have happened in the absence of a GCQ. To explore this issue further, an indirect approach is taken by comparing the failure rate of qualified companies with that of a matched group of non-qualified companies. Our prior expectation, consistent with the self-fulfilling prophecy argument, is:

Hypothesis 5: Qualified companies will exhibit a higher rate of subsequent failure than a matched group of non-qualified companies.

⁴We recognise that a change in auditors could be due to the auditors' resigning their position as opposed to their being removed by the company. However, even if it were the audit firm that formally initiated the termination of the relationship, this may be partially in response to a perceived threat of dismissal. Auditor resignation in a potential GCQ situation must cast some doubts on whether such auditors are carrying out their duties towards shareholders fully independently.

Hypothesis 6 analyses the relationship between audit firm size and GCQ rates. In the GCQ context, the larger the audit firm the less will be the potential loss relative to the value of the firm's total client portfolio should, for example, the client switch auditors. Similarly, the larger the audit firm the greater will be the potential loss of future revenues due to loss of reputation if a GCQ is not provided where appropriate. Moreover, in terms of technical competence, the larger firm may be more experienced in the audit of fully quoted companies, to which the results of this paper relate:

Hypothesis 6: Failed companies which are audited by larger firms should experience a higher qualification rate than those audited by small firms.

Data

Population and Sample Selection Criteria

Our results relate to fully quoted, independent UK companies in manufacturing, construction, wholesale and retail activities. Failure is defined as being placed in receivership, creditors' voluntary liquidation or being compulsorily wound up. An audit report is defined as being qualified on a going concern basis provided explicit reference is made in it to the company's 'going concern' status.⁵

The data source used is the EXSTAT database of company financial information provided by Extel Financial Ltd. The data on failed companies relate to the decade 1977–1986. Failed industrial companies were identified from Extel Financial Ltd's book *CGT Capital Losses: Securities of Negligible Value*, which provides a complete list of such concerns.

Results for continuing (i.e. non-failed) companies are used in testing Hypotheses 4 and 5; the data for these firms are for the period 1979–1986. Hypothesis 4 (auditor switching) compares a sample of continuing qualified companies with a matched control group of continuing non-qualified companies over this period. Hypothesis 5 (self-fulfilling prophecy) compares all qualified companies (both failed and non-failed) over these years with a matched group of non-qualified firms.

Non-failed companies with going concern qualifications were identified by reading the audit

reports for all poorer performing companies in the database.⁶

Schwartz and Menon (1985) stress the importance of matching control groups of companies by industry and size. In this study we match by a third factor as well: financial status. This is because the financial strength of a company may also affect its tendency to switch auditors.⁷

Each qualified company is thus matched with an unqualified company according to the following criteria:

- (i) by year;
- (ii) by industry sector using the Financial Times/Actuaries Classification;
- (iii) by size based on turnover; and
- (iv) by financial status. This is done using companies' PAS (performance analysis scores), which are the percentile rankings of their z-scores for the year in question (Taffler, 1984).

Extent of GCQ among Failed and Non-Failed Companies

Table 1 shows that, of the 107 quoted companies that failed during the ten-year period 1977–86, only 28 (26.2%) had their accounts qualified on a going concern basis in the period immediately prior to failure. Thus, in the remaining cases, the audit report did not draw attention to the fact that the company might not 'continue in operational existence in the foreseeable future' (SSAP 2, ASC 1971). The Table also indicates that 27 of the 28 qualified companies incurred historical cost losses before taxation in their last set of accounts.⁸ By contrast, only 52 (65.8%) of the 79 not qualified companies incurred pre-tax losses. It would thus appear that a pre-tax loss is a necessary, although not a sufficient, condition for the auditor to issue a going concern qualification.^{9,10}

⁵Such companies were defined as those with z-scores indicative of potential insolvency problems, i.e. z-score < 0 (Taffler, 1983).

⁷In his related research into the costs to auditors of providing a qualified audit opinion, Wilkerson (1987) emphasises the importance of matching as closely as possible the underlying economic uncertainty facing both the experimental and the control groups of companies.

⁸The one such company apparently reporting profits showed a stated pre-tax profit of £1.7 m on turnover of £24 m but had wrongly capitalised £4.6 m of losses. Thus it was, in fact, heavily loss making.

⁹The difference between qualified and non-qualified companies is, not surprisingly, significant at better than $\alpha = 0.01$ using the χ^2 -test.

¹⁰In their study of the relationship between audit reports with consistency exceptions and bankruptcy, Hopwood *et al.* (1989) suggest that auditors may insist more strongly on the application of good accounting principles when they perceive the likelihood of failure to be high, so as to reduce any potential liability. This may provide an alternative explanation for the virtual uniform presence of reported losses among companies with GCQs.

⁶This explicit criterion is used to avoid subjectivity. A small number of cases were observed where audit reports were (i) qualified on a 'subject to' basis due to uncertainty surrounding the company's financial position but with the term 'going concern' not used, or (ii) where the going concern basis used for drawing up the company's accounts and the surrounding uncertainties are referred to not in the audit report itself but in the directors' report or notes to the accounts. These cases were not counted as going concern qualifications due to the (deliberate?) ambiguity.

Table 1
GCQ Rates among Companies that Failed During 1977–1986

	Total	Reported Pre-tax Historical Cost Loss
Qualified on going concern basis:		
Obvious problems	20	
Not obvious	8	
	28	26.2%
Not qualified on going concern basis:	79	73.8%
	107	100.0%
		27 (96.4%)
		52 (65.8%)
		79 (73.8%)

To ascertain whether the imminent failure of the 28 qualified companies was public knowledge prior to their receiving the qualification, financial press reports were examined. In at least 20 (71%) out of the 28 cases, the weak financial status of the company was either public knowledge prior to the issuing of the audit report or the company's financial situation was so critical that the auditors would have been negligent to an exceptional extent had they not issued such a qualification.

A low going concern qualification rate among failed companies, however, may be explained by failure being caused by factors that could not have been reasonably foreseen at the time the accounts were signed. The histories of the 79 non-qualified companies subsequent to the date of publication of their last accounts were studied using financial press reports. Such potential causes of failure could be identified in only nine (11.4%) of the 79 cases.¹¹ Thus, 70 (65.4%) of the 107 failed companies had not been qualified on a going concern basis nor could we discover from publicly available information any event that might have explained their downfall.

The GCQ rate for non-failed but 'at risk' companies in the population was analysed to provide a benchmark for comparison with the GCQ rate among failed firms.¹² For companies failing in the eight-year period 1979–1986, for which data on non-failed firms were available, the GCQ rate was 25.3%. However, only 5.9% of non-failed 'at risk'

companies were so qualified, a difference significant at better than the 0.1% level.^{13,14}

It is often argued that it is not the auditor's role to predict business failure (e.g. Altman, 1982). However, there is little evidence as to how auditors actually perceive their responsibilities in this connection. The UK Auditing Guideline requires a statement in the financial statements or a reference in the audit report if there is significant uncertainty about a company's going concern status, even if, for some reason, this would have no impact on the recoverability or classification of balance sheet items (APC, 1985, para. 31). In a similar vein, SAS No. 59 (AICPA, 1988) requires auditors to report on going concern uncertainties even where asset recoverability and liability classification are not affected.

Adopting the view that the audit report should be signalling any significant uncertainty about a company's going concern status, one would expect a preponderance of failed companies to receive a going concern qualification in the reporting period prior to failure. This, however, is demonstrably not supported by the evidence.^{15,16} Nonetheless, the GCQ rate for failed firms is significantly higher than for 'at risk' non-failed firms.

¹¹Any such analysis has a subjective element. Thus, we included not only major events but also those which would not normally have brought about the failure of a reasonably healthy enterprise but may arguably have provided the 'straw that broke the camel's back' for a company that was already financially vulnerable.

¹²A set of accounts is deemed to relate to a non-failed company if that company published a subsequent set of accounts. A company is considered 'at risk' if it shows a negative z-score (Taffler, 1983).

¹³Twenty-one out of 83 failed firms were given GCQs, as were 65 out of the 1107 sets of accounts of non-failed firms with negative z-scores. $\chi^2_{calc} = 43.5$ with 1 degree of freedom, $\chi^2_{crit} (\alpha = 0.001) = 10.81$.

¹⁴The equivalent population GCQ rate for all non-failed firms was 0.9%.

¹⁵The US going concern qualification rate among 65 failed companies (compiled from Altman, 1982, Tables 3 and 5) of 48% for the 1977–1982 period is statistically significantly higher (at $\alpha = 0.01$ using the χ^2 test) than the 24% rate ($n = 79$) in this study for the same period in the UK. Menon and Schwartz (1986) report a GC qualification rate of 43% for the period 1974–1983 in the US, similar to that of Altman. Whereas the bankruptcy procedures differ to some extent between the two countries, an additional explanation for these results may reside in features of the regulatory and legal environment in the US that provide a stronger system of support for auditor independence.

¹⁶Hopwood *et al.* (1989) find that the GCQ still has significant explanatory power in distinguishing between bankrupt and non-bankrupt companies and might therefore serve as an early-warning signal for corporate failure. They point out that due to the relative infrequencies of the bankruptcy and GCQ events, this potential predictive power is not inconsistent with the majority of failed companies not receiving GCQs.

Table 2
Time between Date of Publication of Last Accounts and Failure by Audit Report Status

	<i>Less than 6 months</i>	<i>More than 6 months</i>	<i>Total</i>
Qualified on going concern basis	18	10	28
Not so qualified	24	55	79
	<u>42</u>	<u>65</u>	<u>107</u>
% of failing companies qualified	43	15	26

Tests of hypotheses

Hypothesis 1. Time Lag between Publication of Accounts and Failure

The average time delay between publication of the last accounts prior to failure and the failure event itself¹⁷ was 7.9 months. For qualified companies, the average time lag was only 5.5 months whereas, for companies without the qualification, it was 8.7 months.¹⁸ Table 2 provides a more detailed analysis of these lags. The fundamental going concern concept laid down in SSAP 2 (ASC, 1971) indicates that, unless stated otherwise, a company's accounts are drawn up on the basis that the 'enterprise will continue in operational existence for the foreseeable future'. This is interpreted in the UK Auditing Guideline: *The Auditor's Considerations in Respect of Going Concern* (APC, 1985 para. 8) as a period 'normally extending to a minimum of six months following the date of the audit report or one year after the balance sheet date, whichever is the later'.

Table 2 shows that, while 43% of companies that failed within six months of account publication (effectively synonymous with audit report date) were qualified, only 15% of those failing more than six months after publication were qualified. This difference is statistically significant at better than the 5% level using the χ^2 test.¹⁹ Of the 65 companies in Table 2 that failed more than six months after publication of the accounts, five failed before the next balance sheet date. Of these, however, only one received a GCQ. Thus, of the total of 47 companies failing within the Auditing Guideline's overall definition of 'foreseeable future', only 19 (40%) received a going concern qualification. We may conclude that, although the evidence again highlights the low qualification rate, it does support Hypothesis 1: that there is an inverse association between propensity to qualify and time between date of publication and failure.

Hypothesis 2. Relationship between Financial Status and Qualification

To obtain an objective measure of the failed companies' financial position as revealed in their last set of accounts, an enhancement of the conventional z-score approach termed the 'risk index' or 'z-score of z-scores' is used (Taffler, 1984). This linear additive weighted composite model is derived from three factors: the number of years the company has been registering an 'at risk' (i.e. failing profile) z-score, the size of the at risk z-score and the rate of decline in the company's z-score. The more years at risk, the lower is the score; and the steeper the downward trend, the higher is the risk index. The index provides an assessment of probability of financial distress in the next year on a 1-5 scale.²⁰

Table 3 compares the risk rating distributions of the 107 failed companies according to 'low' (risk ratings ≤ 3) or 'high' (risk rating ≥ 4) probability of financial distress. The Table shows that 22 (39%) of the 57 companies with a high probability of financial distress received going concern qualifications. However, only six (12%) of the 50 companies exhibiting low probability of distress were so qualified. This difference is significant at the 1% level using the χ^2 test.²¹ Thirty-five (44%) of the non-qualified companies were in the high probability of distress category.

This evidence is supportive of Hypothesis 2: that the weaker the financial status of the company, the more likely it is to be qualified on a going concern basis.²²

Hypothesis 3. Combined Effect of Time Period to Failure and Financial Status

Table 4 classifies the 107 failed companies according to 'likelihood of failure' at the date of publication of the final set of accounts. 'Likelihood

¹⁷Date of failure is defined as the date of suspension of stock market listing immediately prior to receivership, liquidation, etc.

¹⁸The difference is statistically significant at $\alpha = 0.01$ using the test of sample means. Peel (1989) reports similar results for an earlier time period.

¹⁹ $\chi^2_{calc} = 5.55$ with 1 degree of freedom, $\chi^2_{crit} (\alpha = 0.05) = 3.8$.

²⁰Taffler (1984, Table 3) provides cumulative probability of failure risk index statistics for the then prevailing economic climate. He shows, *ex post*, a risk index ≥ 4 is associated with an 80% probability of financial distress in the next year.

²¹ $\chi^2_{calc} = 9.7$ with 1 degree of freedom, $\chi^2_{crit} (\alpha = 0.01) = 6.6$.

²²These results are consistent with those of Peel (1989) who, using a logit model, found for a sample of failed UK quoted companies that those receiving a GCQ were more severely financially distressed than those not so qualified.

Table 3
Risk Rating of Failed Companies by Audit Report Status

	<i>Probability of Financial Distress</i>		<i>Total</i>
	<i>'Low'</i>	<i>'High'</i>	
Qualified on going concern basis	6	22	28
Not so qualified	44	35	79
	<u>50</u>	<u>57</u>	<u>107</u>
% of failing companies qualified	12	39	26

'Low': risk rating ≤ 3 .

'High': risk rating ≥ 4 .

Table 4
Combined Analysis of Period to Failure and Risk Category by Audit Report Status

	<i>Likelihood of Failure at Date of Accounts Publication</i>		<i>Total</i>
	<i>Low</i>	<i>High</i>	
Qualified on going concern basis	12	16	28
Not so qualified	68	11	79
	<u>80</u>	<u>27</u>	<u>107</u>
% of failing companies qualified	15	59	26

of failure' is defined as a function of period to failure and financial status. A company whose final accounts exhibit a high risk rating and which subsequently fails within six months of accounts publication is defined as having a high likelihood of failure. The three other possible combinations are classified as low likelihood of failure.

Table 4 shows that 59% of the companies with a high likelihood of failure were qualified on a going concern basis. This can be contrasted with the lower qualification rates of 43% for short period alone (see Table 2) and 39% for high risk rating alone (see Table 3). The difference in the rates of qualification between low and high likelihood of failure samples (15% and 59%) shown in Table 4 is statistically significant at better than the 0.1% level using the χ^2 test.^{23,24}

Hypothesis 3 is strongly supported by the evidence. The more imminent failure is and the weaker the company's financial position, the higher the probability of receiving a going concern qualification. This finding appears to underline the degree of certainty the auditor seems to require before giving a qualification.

To explore this issue further two logit models were fitted to the 107 case data, with the dependent variable indicating a going concern qualification or not and the independent variables representing time delay and degree of risk. The derived models took the following form:²⁵

$$\begin{aligned} & 1/2 \ln(p_i / \{1 - p_i\}) + 5 \\ & = 3.74 + 0.642 \text{ delay} + 0.699 \text{ risk} \quad (1) \\ & \quad (0.256) \quad (0.241) \quad (0.265) \end{aligned}$$

and

$$\begin{aligned} & 1/2 \ln(p_i / \{1 - p_i\}) + 5 \\ & = 4.13 + 1.055 (\text{delay} \times \text{risk}) \quad (2) \\ & \quad (0.157) \quad (0.251) \end{aligned}$$

where p_i is the probability of a going concern qualification for firm i ,

delay = 1 if the accounts are published within 6 months of failure
= 0 otherwise

and risk = 1 if 'high' risk rating
= 0 if not.

A 'high likelihood of failure' is represented by delay \times risk = 1 in model 2. The standard errors are provided below the variable coefficients.

By ranking the estimated probabilities and assigning the cut-offs at the 28th ranked company, in both cases, 12 of the 28 qualified statements (43%)

²³ $\chi^2_{calc} = 20.44$ with 1 degree of freedom, $\chi^2_{crit} (\alpha = 0.001) = 10.8$.

²⁴Perhaps just as interesting is the comparison between high likelihood of failure firms and those which exhibit either high probability of financial distress or period to failure less than six months but not both. For the latter sample of 45 concerns only eight were qualified on a going concern basis (18%). The relevant χ^2 statistic to test for significant difference in qualification rates is 13.1 for 1 degree of freedom which is significant at better than 0.1%. $\chi^2_{crit} (\alpha = 0.001) = 10.8$.

²⁵The models were derived using the maximum likelihood method (SPSSX, chapter 31).

Table 5
Auditor Switching by Continuing Companies by Audit Report Status

	Audit Reports of Continuing Companies by Audit Report Status		Total
	Going Concern Qualification	No Going Concern Qualification	
Auditor switch	8	2	10
No auditor switch	53	59	112
	61	61	122
% Auditor switches	13.1	3.3	8.2

Table 6
Companies Receiving a GCQ, 1979-1986

	No	%
Published subsequent accounts (= 'non failed')	61*	71
Failed	21	24
Acquired	4	5
	86	100

*Of these, two qualifications (suffered by one company) were followed by a third qualification and then failure; and two qualifications (separate companies) were each followed by a second qualification and then acquisition.

were predicted as non-qualified, but only 11 of the 79 non-qualified (14%) were misclassified.²⁶ Again we have strong evidence to support the thesis that the auditor will only qualify *in extremis*.

Hypothesis 4. Relationship between Going Concern Qualifications and Auditor Switching

We explore this by analysing auditor switch rates among continuing companies.²⁷ The hypothesis of a higher rate of auditor switching among qualified companies is tested by comparing the experience of qualified non-failed companies with a control group of matched non-qualified companies. The database contained 61 cases of going concern qualification for 38 continuing companies²⁸ with financial year-ends between 1979 and 1986. The control sample was derived as outlined in the Data section above.

²⁶We exclude consideration of differential misclassification costs because of the problems in determining their magnitude in this situation. Dopuch *et al.* (1987) and Hopwood *et al.* (1989) resolve this issue in a related situation by providing a wide range of cost considerations.

²⁷Intended auditor switch rates among the 107 failed companies in our sample were also examined. There was an indication given in nine cases (8.4%), usually in the Directors' Report, of company management intention to switch auditors in the following year. The number of such cases is too small to test for any significant differences between the qualified and non-qualified sub-samples.

²⁸These totals exclude four cases of firms acquired in the following year with resulting auditor switch to that of the new parent.

Following Chow and Rice (1982) and Schwartz and Menon (1985), we explore auditor switches occurring within one year of a qualification, as beyond this period other factors may intervene. Table 5 shows that, of the 61 audit reports available for each group, 13.1% of the qualified companies switched auditors in the following year, while only 3.3% of the non-qualified companies did so, a result just significant at the 10% level.²⁹

The difference in auditor switching rates between matched samples of qualified and non-qualified companies is in the hypothesised direction and appears statistically significant at the 10% level. As such we have some evidence that auditor switch rates may vary depending on the presence or otherwise of a going concern qualification.³⁰

Hypothesis 5. Relationship between Receipt of Going Concern Qualification and Likelihood of Failure

Table 6 summarises the subsequent events that befell the companies concerned in the 86 cases of

²⁹ $\chi^2_{\text{adj}} = 2.72$ with 1 degree of freedom, and making the continuity correction, $\chi^2_{\text{adj}} (\alpha = 0.1) = 2.71$.

³⁰This analysis tests for the objective fact of auditor switching. A related issue is whether those GCQ companies switching auditors subsequently also received a GCQ from the new incumbent. Of the eight cases in question, seven were actually unqualified in their first report from the new auditors. Of these seven, only two showed a significant financial recovery in terms of achieving a positive z-score. This issue merits further investigation.

Table 7
GCQ Rates for Failed Companies by Audit Firm Size

	<i>Audit Firm Size</i>		<i>Total</i>
	<i>Big 9</i>	<i>Non Big 9</i>	
Qualified on going concern basis	9	19	28
Not so qualified	29	50	79
	<u>38</u>	<u>69</u>	<u>107</u>
% of failing companies qualified	24	28	26

accounts with GCQs in year-ends between 1979 and 1986. Only 21 GCQs (24%) were followed by failure; 61 (71%) were cases of non-failure as defined above. To explore whether these results are consistent with the self-fulfilling prophecy argument, the subsequent events befalling the above 86 GCQ companies were compared with those for a matched sample of 86 non-qualified companies.³¹ This matching was carried out on the same basis as for Hypothesis 4, except that the control group was not now limited to non-failed companies.

Whereas 21 of the 86 GCQ companies failed before publishing another set of accounts, effectively the same number (22) of the 86 non-qualified companies also experienced failure. On this basis we have no evidence that failure is more likely to follow upon a GCQ than upon a non-qualified report, a finding not supportive of the objective existence of the self-fulfilling prophecy effect as set out in Hypothesis 5.

Hypothesis 6. Going Concern Qualification Rates among Audit Firms of Different Sizes

Table 7 sets out the going concern qualification rates among the failed clients of the Big Nine³² UK audit firms as compared with those of non-Big Nine audit firms in our sample. The rate of qualification was 24% for Big Nine clients as compared with 28% for non-Big Nine clients. As such, we are not justified in rejecting the null position that failed clients of larger audit firms should experience a higher qualification rate.

This inconclusive finding may be indicative of the contrary cost pressures at work on audit firms, referred to above. Thus, following De Angelo (1981b and 1981c), larger firms may exhibit greater independence (and hence, we argue, be more likely to qualify) owing to the collateral effect of their relatively large client base.³³ On the other hand,

Mutchler (1986) points to the financially weaker client base of smaller audit firms, inclining them to be more likely to give going concern qualifications. Furthermore it is possible that larger firms may be subject to greater competitive pressures.

Summary and conclusions

This paper seeks to assess the value of the audit report in going concern uncertainty situations. An audit report is deemed of value if it results from both a technically competent and independent audit process. The paper explores the association between rates of going concern qualification (GCQ), representing auditor decision outcomes, and those factors which might influence the auditor's competence and independence. The study is based on an analysis of GCQ rates in the UK during the decade 1977–1986 when only 26% of failing companies in our sample were qualified on a GC basis prior to bankruptcy.

A positive relationship is found between the objective likelihood of company failure and the probability of a GCQ. However, the GCQ rate appears low unless the likelihood of failure is very high. Only a combination of both a very weak financial position and imminence of the failure event produces a GCQ rate in excess of 50% for failed companies. This evidence may be consistent with auditors displaying a relatively low level of competence. Alternatively, auditors may be assigning a relatively high weight to those factors militating against giving a GCQ in order to preserve their future economic interest in the client, unless the likelihood of failure is in fact very great. It would, therefore, appear that both issues of auditor competence and auditor independence may demand attention in the context of GCQ decisions.

Sampled companies with GCQs exhibit a statistically significant (at the 10% level) higher rate of auditor switching. This finding may support the perception that fear of auditor switching could influence the audit firm against giving a GCQ. This is an area where further research may be warranted. Furthermore, there may well be a discrepancy between the objective likelihood of losing the client, as studied here, and the auditor's perception of this likelihood.

³¹We are indebted to one of the referees for suggesting this methodological approach.

³²For the period covered by this research, the Big Nine UK audit firms were Arthur Andersen, Arthur Young McClelland Moores, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Mitchell, Price Waterhouse, Thomson McLintock and Touche Ross.

³³Competence may also be enhanced by firm size as argued in the Hypotheses section.

Paradoxically, the majority of companies receiving a GCQ survive. The implication is that the fear of a self-fulfilling prophecy *should* not present a threat to auditor independence. To examine this issue more explicitly, the failure rates of matched samples of qualified and non-qualified companies were compared directly. No difference whatsoever was found. Our evidence provides no support for the objective reality of the self-fulfilling prophecy argument. Further research may need to focus on perceptual issues and beliefs of the parties involved rather more than on the objective reality.

The group of UK Big Nine firms is not found to provide a consistently higher rate of GCQs than other audit firms, thus suggesting that concern regarding the relative degree of independence and audit quality of smaller firms may be overstated. However, to gain a deeper understanding of the impact of audit firm size, further research needs to consider alternative ways of partitioning by size, and analysing firms' client health profiles.

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APPENDIX D2

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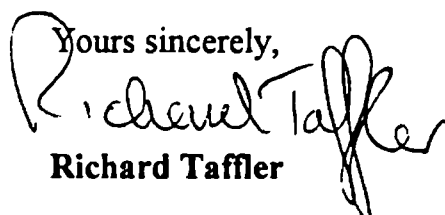
Dear Dr Seville,

Re: "The Audit report Under Going Concern Uncertainties: An Empirical Analysis" *Accounting and Business Research*, Autumn 1992, Citron and Taffler

The above paper appearing under our joint names in the referees journal *Accounting and Business Research* reports on research undertaken under my direction in the manner of a PhD supervisor by David Citron who established the basic research hypotheses, and undertook all the empirical work and the main drafting of the paper. My own input was in the area of helping to structure the research, discussing the various empirical results and providing guidance on appropriate research approaches. The paper, additionally, reflects assistance with some editing, again on a similar basis to that provided by a research supervisor for a thesis.

I would consider the work conducted by David Citron for this paper very similar to that undertaken by a research student taking a conventional PhD route.

In my opinion the above published paper is a true reflection of David Citron's independent research and is appropriate to be grouped with other published papers for submission for award of a PhD entitles "Positive Accounting Theory and Corporate Governance: The Role of Loan Covenants and Going Concern Qualification".

Yours sincerely,

Richard Taffler