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# Do banks react to earnings quality in a privately-dominated context?

## A joint analysis of audit-related and accrual-based measures

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**Abstract**

**Purpose** – Taking into account that debtholders bear most of the risks in the case of failure (Jensen and Meckling, 1976), earnings quality is valuable for debtholder decision makers as a monitoring mechanism and as a signal of credibility that reduces information asymmetries. In this sense, this paper aims to analyze whether banks carry out an earnings quality analysis in their lending decision processes and, in particular, how carefully they do it.

**Design/methodology/approach** – The authors focus on data from pre-bankruptcy companies because both earnings management and the potential costs faced by auditors increase considerably during the process towards failure. To test the hypotheses, the authors run separate multivariate regressions of price (cost of debt) and non-price (credit availability) lending decisions on different proxies for earnings quality. The authors use Big N and modified audit reports as a proxy for audit quality. Additionally, they use discretionary accruals as a proxy of accounting numbers quality.

**Findings** – The results show that banks do consider their borrowers' quality of earnings, but they do it quite cursorily, that is, without taking advantage of all the possibilities offered by an effective combination of external and internal proxies.

**Research limitations/implications** – The inferences apply only to financially distressed private firms, so they are not generalizable to other contexts with low ownership concentration or with a less severe risk of failure.

**Practical implications** – The language used by the auditors in the audit report, particularly in generally accepted accounting principles violations, might not be clear enough for the user to undo the specific distortions in the financial statements.

**Originality/value** – The authors provide evidence of how banks incorporate earnings quality into their lending decisions, prior research has analyzed them either separately or from an equity market perspective. Moreover, the authors also add to the debt-covenant literature by explicitly showing that manipulation helps managers to achieve better lending conditions.

**Keywords** Disclosure, Decision rules, Debt, Cost factors

**Paper type** Research paper

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## Resumen

**Propósito** – Tomando en consideración que los acreedores soportan la mayor parte del riesgo en caso de quiebra (Jensen and Meckling, 1976), la calidad de los ingresos es una información valiosa para estos acreedores como mecanismo de supervisión y una señal de credibilidad que reduce la asimetría de información. En este sentido, este trabajo analizar si los bancos llevan a cabo un análisis de la calidad de los ingresos en sus decisiones de préstamo, y en particular, como de cuidadosos son en este proceso.

**Diseño/Metodología** – Analizamos datos de empresas en la fase previa al a quiebra dado que la gestión de los ingresos y el coste potencial al que se enfrentan los auditores aumenta considerablemente durante el proceso hacia la quiebra. Para contrastar nuestras hipótesis estimamos regresiones multivariante separadas de precio (coste de la deuda) y no-precio (disponibilidad de crédito) sobre diferentes aproximaciones de calidad de ingresos. Empleamos informes de Big N y modificados para aproximar la calidad del auditor. Además, empleamos los gastos discrecionales para aproximar contable.

**Resultados** – Los resultados muestran que los bancos toman en consideración la calidad de los ingresos de los prestatarios, pero que lo hacen de forma superficial, esto es, sin aprovechar todas las posibilidades que ofrece una efectiva combinación de proxies externas e internas.

**Limitaciones** – Nuestras inferencias solo son de aplicación para empresas privadas en situación de emergencia financiera, y por lo tanto no son generalizables a contextos con una baja concentración de propiedad o con un menor riesgo de quiebra.

**Implicaciones prácticas** – El lenguaje empleado por los auditores en el informe de auditoría, particularmente cuando se violan GAAP, puede no ser suficientemente claro para el usuario a la hora de deshacer distorsiones específicas de los estados financieros.



**Palabras clave** Divulgación, Reglas de decisión, Deuda, factores de coste.

**Tipo de artículo** Trabajo de investigacíon



## Resumo

**Objetivo** – Tendo em conta que os titulares da dívida suportam a maior parte dos riscos em caso de quebra (Jensen e Meckling, 1976), a qualidade dos lucros é valiosa para os tomadores de decisão titulares da dívida; tanto como um mecanismo de monitoramento, como sinal de credibilidade que reduz as assimetrias de informação. Neste sentido, este artigo analisa se os bancos procedem a uma análise da qualidade dos lucros em seus processos de decisão de empréstimo e, em particular, o cuidado com que eles fazem isso.

**Desenho/metodologia/abordagem** – Nós nos concentramos em dados de empresas pré-falência porque tanto o gerenciamento de resultados e os custos potenciais enfrentados pelos auditores aumentam consideravelmente durante o processo de quebra. Para testar nossas hipóteses, executamos regressões separadas multivariadas de preço (custo da dívida) e não-preço (disponibilidade de crédito) que conduzem a decisões em diferentes proxies para a qualidade dos lucros. Usamos Big N e relatórios de auditoria modificados como um proxy para a qualidade da auditoria. Além disso, usamos acumulações discricionárias como um proxy da qualidade dos números contábeis.

**Resultados** – Os resultados mostram que os bancos consideram a qualidade dos lucros dos seus mutuários, mas que eles fazem isso muito superficialmente, isto é, sem tomar partido de todas as possibilidades oferecidas por uma combinação eficaz de proxies externos e internos.

**Limitações da pesquisa** – As inferências aplicam-se apenas a empresas privadas financeiramente em dificuldades, dessa forma elas não são generalizáveis para outros contextos com baixa concentração de propriedade ou com um risco de fracasso inferior.

**Implicação prática** – A linguagem utilizada pelos auditores no relatório de auditoria, particularmente nas violações de GAAP, pode não ser suficientemente clara para o usuário desfazer as distorções específicas nos estados financeiros.



**Palavras-chave** Divulgação, regra de decisão, dívida, fatores de custo.

**Tipo de artigo** Trabalho de pesquis

## Introduction

Previous research has widely analyzed the value relevance of accounting quality for stakeholders of listed US companies. Kanagaretnam *et al.* (2009), Krishnan (2003) or Teoh and Wong (1993) found a positive effect of accounting quality on investors' firm value. Moreover, clients of Big N[1] auditors are observed to have less underpricing in initial public offerings (Beatty, 1989). Recent findings indicate that Big N audits are associated with decreased cost of debt capital (Pittman and Fortin, 2004; Mansi *et al.*, 2004) and that accruals quality is inversely associated with the cost of debt capital (Francis *et al.*, 2005). However, the results for private companies are far from being conclusive. Van Tendeloo and Vanstraelen (2008) pointed out that these contradictory results can be due to the different conflicts of interest suffered by these companies.

Traditionally, the literature has concentrated on the relationship between the owner and the manager in public companies, however, in private ones, ownership is highly concentrated, and other stakeholders, such as bondholders, exhibit higher conflicts of interest (Laporta *et al.*, 1997). Shareholders have incentives to expropriate wealth form bondholders because although shareholders capture most of the gains from managers' decisions, bondholders bear most of the risks in case of failure. To solve this conflict, bondholders apply constraints and restrictions (e.g. debt covenants) to management decision-making authority (Smith and Warner, 1979), which can be less severe as earnings quality becomes higher.

The demand for earnings quality has been basically justified with two theories. First, the agency theory considers that accounting quality is useful because it can serve as a mechanism to monitor managers' behaviour, reducing the agency conflicts among managers, stockholders and other stakeholders of the firm (Jensen and Meckling, 1976). Second, the signalling theory states that as the managers use accounting policies that enhance the credibility of their companies' financial reports, the information asymmetry between managers and external stakeholders becomes lower (Seow, 2001).

Earnings quality is not directly observable, so the literature uses a wide range of proxies for it. Dechow *et al.* (2010) offer an extensive review of these proxies and classify them into three categories: accrual-based properties of earnings, investor responsiveness and external indicators. Many of these proxies, however, are only valid for public companies and, hence, are not suitable for bank lending research because most companies that borrow from banks are privately held. This is the case of the investor responsiveness category (inherently market-dependent) and of all the proxies that Dechow *et al.* (2010) list as external indicators. Among this third category, they do not explicitly include any audit-based signal as their review focuses mainly on the public case. For private firms, audit-based signals are empirically more variable (Cassar, 2011), so there are reasons to think that these signals (especially those taken from the audit report) will be a valuable source of information for banks[2]. Both the type of auditor (Big N) and the audit report content[3] are expected to reduce lenders' monitoring cost by enhancing the quality of accounting numbers (Watts and Zimmerman, 1983). The empirical literature fairly supports that assumption for public firms (Kim *et al.*, 2003; Mansi *et al.*, 2004; Pittman and Fortin, 2004), but results are not that clear for private firms (Fortin and Pittman, 2007; Karjalainen, 2011).

Data from the financial statements are also used as proxies (internal) of earnings quality (e.g. accrual-based models). These internal proxies allow us to test both the value relevance of accrual accounting (still called into question among private firms) and

whether banks use an accrual-based model to scrutinize their quality. Francis *et al.* (2005) and Bharath *et al.* (2008) find that a higher accruals quality leads to more favourable lending conditions, which suggests that lenders are able to infer and reward earnings quality. On the contrary, DeFond and Jiambalvo (1994) and Sweeney (1994) find evidence that manipulating managers make financial reporting decisions that avoid the violation of debt covenants (debt-covenant hypothesis). The results in this debate about whether banks penalize manipulators or are fooled by them are fairly open and could depend on borrower-specific factors such as country, size, financial status, etc. […].

To contribute to this debate, we analyze, for a sample of Spanish pre-bankruptcy firms, whether banks carry out an earnings quality analysis in their lending decision processes and, in particular, how carefully they do it. As the agency and signalling theories posit that an optimal trade-off should exist between the costs and benefits of earnings quality, we are at the same time testing whether earnings quality inferences are limited to low-cost alternatives (the auditor's identity and the general audit opinion) or complemented with more costly and time-consuming ones (a more exhaustive analysis of the audit report or specific accrual-based models).

We run separate regressions of price (cost of debt) and non-price (credit availability) lending decisions on different proxies for earnings quality. Our results show that banks carry out an accounting analysis in their lending decisions, but they do it quite cursorily, that is, without taking advantage of all the possibilities offered by a comprehensive process that combines audit-based and accrual-based outcomes. Being audited by a Big N auditor significantly affects credit availability but not the cost of debt. As for the audit reports, banks value different qualifications depending on the lending decision studied. Only the more severe qualification (i.e. the going concern) is significantly related with lending decisions. Surprisingly, generally accepted accounting principles (GAAP) violations are not carefully screened in the process, which may be due to the difficulties in understanding the language used by the auditor. Finally, with respect to the discretionary accruals, significant relations are found with both lending decisions, but with the unexpected sign, suggesting that bank lenders do not incorporate an accrual-based quality index into their financial statement analysis, and, hence, managers gain better conditions by fooling the banks. Our results clearly support the "debt-covenant hypothesis" and are contrary to the "screening-and-rewarding" evidence found by Francis *et al.* (2005) and Bharath *et al.* (2008). This might be explained by sample-specific features such as the borrower's size or financial status. The different behaviour found between price and non-price decisions confirms the need to go beyond the cost-of-debt decision when dealing with financially troubled firms.

Our study contributes to the literature in several ways. We provide evidence of how banks incorporate earnings quality into their lending decisions by considering the cumulative effect of external (audit-based) and internal (accrual-based) sources of information. Prior research has analyzed them either separately (i.e. as substitutes) or from an equity market perspective. We take a context where most audited companies are privately held and the potential complementarity of the two types of proxies is higher. The extent to which external verification and accruals quality variables are considered by bank loan officers as substitutes or complements is still unclear. We also contribute by extending the analysis of modified reports beyond the general opinion (different types of qualifications and

the quantified effects of the errors disclosed by the auditors). This extension is scarcely carried out in the literature but is strictly necessary for private firms. Unlike prior studies that relate higher accruals quality with a lower cost of debt in public firms (Francis *et al.*, 2005; Bharath *et al.*, 2008) or in very big firms (Gill-de-Albornoz Noguer and Illueca Muñoz, 2007), we provide evidence that in a privately dominated setting, managers succeed in fooling banks if the latter do not extend their earnings quality analysis to the different possibilities available in the process. We also add to the debt-covenant literature by explicitly showing that manipulation helps managers to achieve better lending conditions. Our study contributes to a better understanding of the behaviour of bank loan officers in code-law countries. It might also help to the understanding of the private firm segment in common-law countries where bank lending decisions and audit-based signals may be closer to the Spanish case. Private companies are rarely sampled in US or UK studies but constitute a significant segment of their economy.

The rest of the paper is structured as follows. The next section reviews previous literature on external (audit-based) and internal (accrual-based) proxies for earnings quality and presents the five hypotheses to be tested. In Section 3, we describe the sample and methodology. Results are presented in Section 4, and final conclusions are contained in Section 5.

## Review of literature on earnings quality and lending decisions

### *Audit-based proxies for earnings quality*

Audit-based signals used in the literature on cost of capital can be classified into 3 categories:

(1) auditing *per se* (the voluntary choice of enhancing financial reporting credibility through an audit review);

(2) the auditor's identity (specific features such as size, fees, tenure, etc. […]); and

(3) audit outcomes (signals taken from the audit report).

The first category is impossible to test if samples are restricted to firms under mandatory audit, which is our case.

*The auditor's identity.* The auditor's identity has been frequently related to the quality of earnings. International presence and brand name have increased the reputation of the Big N auditors, and this has contributed to a positive perception of the quality of their audits. Big N auditors are expected to reduce monitoring costs because, as evidenced by Craswell *et al.* (1995), they spend more resources on staff training, developing industry expertise or on information technologies, and, consequently, they are more likely to restrict managers' opportunistic practices. In addition, Big N auditors have more reputational rents to protect, so it is more likely that they reveal sensitive information to stakeholders.

A notable group of studies, mainly in the Anglo-Saxon context, find that Big N auditors better constrain earnings management (Becker *et al.*, 1998; Francis *et al.*, 1999; Gore *et al.*, 2001; Chung *et al.*, 2003), are more likely to issue modified audit opinions (Defond *et al.*, 2002) and charge higher audit fees (Francis and Simon, 1987; Craswell *et al.*, 1995).

Empirical evidence of a Big N effect on debtholders' decisions shows, however, somewhat mixed results. Although Mansi *et al.* (2004) and Pittman and Fortin (2004)

find that the presence of a Big N auditor leads to significantly more favourable conditions in public US firms, Fortin and Pittman (2007) are subsequently unable to extend this evidence to private companies. Outside the US context, Kim *et al.* (2003) suggest the need to focus on private debt (banks) instead of public debt (bondholders), arguing that the former use private information channels that are not available to the latter, and, so, their perception of audit quality might be different. Kim *et al.* (2011), using a sample of Korean bank borrowers, find that lower interest rate spreads for firms with Big N auditors and Karjalainen (2011) ratify these results for the Finnish case. Using a sample of both public and private Spanish firms, Cano and Sánchez (2012) found the Big N effect only in the private case.

From a cost-benefit point of view, the auditor's identity constitutes an effective signal for banks, as its incorporation into the lending decision process is effortless. In itself, however, it might provide a shortened view of the borrower's earnings quality because it reflects more expected than real outcomes of the auditing process.

*Signals taken from the audit report.* True audit quality depends not only on the auditors' competence to identify material errors and uncertainties but also on their independence to force their booking or, at least, to write about their effects in the audit report. Audit opinions are potentially informative to evaluate the borrower's credit risk and to design appropriate contracts that improve the efficiency of monitoring mechanisms in lending decisions. The Anglo-Saxon literature has studied the influence of audit opinions on lending decisions with mixed results. Some studies have showed that loan officers do not impose stricter conditions on firms with a modified opinion (Libby, 1979; Houghton, 1983; Abdel-khalik *et al.*, 1986; Bessell *et al.*, 2003), whereas others have demonstrated that modified reports do affect such decisions (Firth, 1979; Bamber and Stratton, 1997; LaSalle and Anandarajan, 1997; Lin *et al.*, 2003; Guiral-Contreras *et al.*, 2007). These contrary results could be the consequence of most of these studies coming from experimental and survey approaches. As it is likely that users behave differently in simulated settings than in real situations (Firth, 1980), it seems necessary to develop studies using an archival approach.

The information content of the audit report is not free from potential error, as auditors do not always act with total independence. Accounting scandals at the beginning of the century (Enron, Worldcom, Xerox, etc. […]) increased the suspicion that an audit process might not guarantee that audited data are reliable enough to make decisions exclusively on the basis of accounting ratios. Aware of this, and depending on the reliability perceived, banks have the option of inferring earnings quality directly from the financial statements (i.e. bypassing external proxies), so the results of research that has studied audit-based signals separately might be biased.

*Accrual-based proxies for earnings quality*

The literature has made a great effort to model earnings quality directly from the reported (post-audited) financial statements. Generally, these studies have been carried out without explicitly considering who signs the audit report or the type of opinion issued. These so-called accruals-based indexes include the relative variabilities of earnings and cash flows (Leuz *et al.*, 2003), the diverse discretionary accruals models (Jones, 1991; Dechow *et al.*, 1995; Shivakumar, 1996, etc). or the indexes obtained from cash flows time series (Dechow and Dichev, 2002), among others.

Although Dechow *et al.* (2010) review the behaviour of accrual-based proxies mostly in an equity market context, earnings quality, as a growing body of evidence indicates, might affect lending decisions in two ways. First, the important information asymmetries between managers and lenders can be reduced by committing to improve accounting quality. Using Dechow and Dichev (2002)'s accruals quality index, Francis *et al.* (2005) find that the higher the index, the lower the information risk perceived by the bank and, thus, the lower the cost of debt. They compute cost of debt as a weighted average of the interest arising from external debt and, so, include all types of debtholders. Bharath *et al.* (2008) study this relationship in greater depth by separately analyzing public and private debt. They suggest that banks are better able to process information and renegotiate contracts, and this has an important bearing on how earnings quality is incorporated into debt contracts. They find that although earnings quality is discounted by bondholders exclusively in their price decisions, bank lenders also consider it for non-price decisions. The results of these two studies are presented as evidence that external creditors are able to infer and reward earnings quality. Second, as lenders bear most of the risks in the case of failure (Jensen and Meckling, 1976), they design contracts to monitor manager's decision (Smith and Warner, 1979). Most of these contracts (i.e. debt covenants) are based on accounting information, so earnings quality is expected to reduce monitoring costs. In this sense, Watts and Zimmerman (1986) find that firms approaching accounting-based debt-covenant violations make income-increasing accounting choices to delay their debt constraints (debt-covenant hypothesis). Similarly, Sweeney (1994) and Defond and Jiambalvo (1994) show that firms that commit these violations present positive discretionary accruals in the years preceding them, suggesting that managers succeed in avoiding or, at least, in delaying the violation. Dichev and Skinner (2002), using a distribution analysis, find that financial ratios used in debt contracts present abnormal frequencies in the levels just below the covenant. Contrary to Francis *et al.* (2005) and Bharath *et al.* (2008), these studies hold that debtholders use accrual-based accounting information for decision-making purposes but that they do it without properly discounting earnings quality, and, consequently, they are fooled by their manipulating borrowers.

*Hypothesis development*

We present five hypotheses based on our conjecture of how bank loan officers incorporate earnings quality into their lending decisions. We assume that they apply a cost-benefit approach in a process that begins with the least costly proxy (the auditor's identity) and that is subsequently complemented with more time-consuming ones: the content of the audit report (at different levels) and an accrual-based index. We write all our hypotheses in a negative form. We regard the auditor's identity as the first signal because information on who signs the audit report is very easily processed. Even though prior results in the USA do not clearly support it, parallel evidence in code law contexts is favourable to a Big N effect in the private firm case. Thus, we expect that banks will positively value the presence of a Big N auditor:

*H1*. Bank lenders incorporate the auditor's identity into their lending decisions.

If bank lenders do not consider the auditor's identity a sufficient signal, they might complement it by looking at the content of the audit report. Because of the extended form of audit report, some lenders may simply browse through it, whereas others may read it much more thoroughly. Because of this, to test whether, after controlling for the auditor's identity, bank loan officers value the audit report, we break down the analysis

into three hypotheses (*H2*, *H3* and *H4*) that relate to the thoroughness with which they analyze its content. Banks could restrict their analysis to the general opinion (*H2*), extend it to the different types of qualifications (*H3*) or even consider the net income effects of the adjustments recommended by the auditor to undo the accounting distortions (*H4*). Duréndez and Sánchez (2008) provide evidence that auditors' opinions play an important role in the process of obtaining external debt from Spanish credit institutions. They find that more credit is granted to firms with clean audit opinions. The first of our hypotheses related to the audit report is:

*H2*. Modified audit reports are negatively considered by banks in their lending decisions.

Even though, in the USA, audit reports in sampled studies are almost exclusively modified for going-concern reasons, there is empirical evidence that all four standard-type qualifications (GAAP violations, scope limitations, uncertainties and the going concern) are commonly found among private firms in Spain (Arnedo *et al.*, 2008). In their study of market reactions to the content of Spanish audit reports, Pucheta Martínez *et al.* (2004) distinguish between two groups of qualifications, quantified and non-quantified[4]. In the first group, they include those that arise from material errors or instances of non-compliance with accounting standards (GAAP violations). Qualifications included in the second group (scope limitations, uncertainties and the going concern) let the user know that the reported statements might not be entirely reliable, but they do not propose any specific adjustment. It is not easy, *a priori*, with the exception of the going concern, to guess which of these four categories will be perceived by banks as of greater risk. It seems reasonable to think that because of their more specific character, qualifications involving specific adjustments (i.e. GAAP violations) are more likely to be discounted. It is also true, however, that the kind of circumstances that give rise to scope limitations or to certain kinds of uncertainties could be more alarming because, unlike precise errors, banks will not have a clear picture of their real extent.

There are not many references about this issue in the lending literature. Firth (1980) suggests that the going concern is clearly perceived by UK credit analysts as the riskiest qualification, followed by those related to asset valuations. In Spain, Duréndez Gómez-Guillamón (2003) carries out a similar survey study and also finds that these two qualifications show the highest risk. Neither of these studies, however, uses the four-fold standard classification mentioned above, so it is difficult to guess whether the term asset valuations refers to GAAP violations, to restrictions on the evidence or to uncertainties. We predict, as our third hypothesis, that banks consider all four types of qualifications negatively but not with the same severity:

*H3*. The different types of qualifications contained in the audit reports are negatively considered by banks in their lending decisions.

We break down this third hypothesis into four (*H31-H34*) depending on the type of qualification tested: GAAP violations (*H31*), scope limitations (*H32*), uncertainties other than the going concern (*H33*) and the going concern (*H34*).

As we have already mentioned, Spanish auditors, as in other European countries, are mandated by law to quantify, when possible, the net income effect of any unbooked material errors and to recommend the corresponding adjustments to the financial

statements[5]. As these net income effects can differ substantially among firms, it is reasonable to think that banks will be sensitive to them, even though this forces them to carry out a thorough reading of the audit report. We are not aware of any study that has tested the information value of these quantified income effects, which is not surprising as this only makes sense with extended models of audit reports (typical of private firms). We present our fourth hypothesis as:

*H4*. The net income effects of the errors quantified by the auditors in their GAAP violation qualifications are negatively considered by banks in their lending decisions.

GAAP violations and their quantitative effects should have a direct relationship with information risk, so, in the private firm setting where they are frequently issued, it would not be unwise to think that they act as substitutes for discretionary accruals. If this was the case, banks would have no incentives to incorporate additional accrual-based indexes into their lending decision process. The lack of effective audit control mechanisms, however, encourages auditors' lenience helping their clients to obtain better credit conditions. Aware of this, external creditors may be sceptical of the auditors' work and look for alternative mechanisms such as a discretionary accruals model. Even after controlling for audit outcomes, we hypothesize that bank lenders will make use of such a model, thus completing the steps in our hypothesized cost-benefit process. Our final hypothesis is:

*H5*. Bank lenders incorporate an accrual-based earnings quality index into their lending decisions.

The inclusion of an accrual-based index allows us to test different positions in the relationship between earnings quality and cost of debt. A lack of significance will signify that banks do not make use of accounting information, either because they are not interested in it or because they are already using alternative (more cost-effective) proxies as substitutes. A positive relationship will indicate that banks effectively use an accrual-based index to reward earnings quality. Finally, a negative relationship will mean that even though banks use accounting information, they do not apply any accruals-based quality index, and, hence, they are fooled by their borrowers who, as a result, benefit from more favourable terms than they deserve.

## Sample and methodology

### *Sample*

Our sample consists of 533 non-financial Spanish firms that filed for bankruptcy during the period 1993-2002. The sample is representative of the Spanish case. High ownership concentration is commonly used by stockholders (family-owned or subsidiaries of multinationals, mostly) to reduce information asymmetries, so, unlike in the USA, private lenders (banks mainly) are those that suffer from the greatest asymmetry problems (Casasola and Tribó, 2004)[6].

We only take financial data that are available in the full reporting format and accompanied by a complete audit report, as all companies in the sample are subject to statutory audit[7]. Failing status greatly increases the probabilities of the accounts not being deposited, especially in the year immediately preceding bankruptcy. These

circumstances explain why, from a total of 2,665 possible observations (533 × 5 years), our sample is finally reduced to 1,261 firm-year observations. As we explain later, we take our main variables in changes instead of levels, which further reduces the observations considered valid for our empirical analysis. This new requirement leads to a final sample of 476 observations.

*Pre-bankrupt firms*

Pre-bankrupt firms constitute one of the riskiest segments for external creditors because, as evidenced by the literature, both earnings management and the potential costs faced by auditors increase considerably during the process of failure (Argenti, 1976; DeFond and Jiambalvo, 1994; Beneish *et al.*, 2002; Janes, 2006)[8]. Lending decisions are especially delicate for distressed companies, whose possibilities of survival depend in many cases on bank lenience (Dichev and Skinner, 2002). Earnings quality is, hence, expected to play an important role in reducing this risk.

Table I presents the descriptive statistics of the general attributes of the final sample. Average cost-bearing debt is €10.7m, which means 55 per cent of total debt and 42 per cent of all financial resources. Corroborating prior arguments, banking debt constitutes a high percentage of these resources (€7.9m), and Spanish banks generally grant their credits on a short-term basis (€5.6m). Average total assets are €25m, which shows that our sample is made up principally of medium-sized and large firms, who are the ones under statutory audit in Spain. Only 20 per cent of the firms are audited by a Big N multinational, and 62 per cent of the analyzed audit reports received a modified opinion with an average of 1.9 qualifications in each report. This confirms both the lower presence of the big audit multinationals and the greater information potential of audit reports in our sample of distressed Spanish firms.

*Empirical models*

*Dependent variable.* Our dependent variable represents bank lending decisions. Niemi and Sundgren (2007) suggest that bank lenders react to variations in the quality of accounting information by:

| | Mean | Median | SD | 25% | 75% | *N* |
|---|---|---|---|---|---|---|
| BD_ST[a] | 5.698 | 2.302 | 11.119 | 1.112 | 4.892 | 476 |
| BD_LT[a] | 1.971 | 297 | 6.311 | 0 | 1.274 | 476 |
| BD_T[a] | 7.693 | 2.831 | 14.484 | 1.370 | 6.431 | 476 |
| CBD[a] | 10.758 | 3.684 | 23.019 | 1.803 | 8.113 | 476 |
| TD[a] | 19.593 | 7.212 | 35.159 | 4.445 | 15.145 | 476 |
| TA[a] | 25.843 | 9.195 | 48.862 | 5.204 | 19.713 | 476 |
| BIG | 0.208 | 0 | 0.406 | 0 | 0 | 476 |
| OPN | 0.619 | 1 | 0.486 | 0 | 1 | 476 |
| QUAL | 1.903 | 1 | 2.380 | 0 | 3 | 476 |

**Notes:** BD_ST: short-term bank debt; BD_LT: long-term bank debt; BD_T: total bank debt; CBD: cost-bearing debt; TD: total debt; TA: total assets; OPN: modified audit opinion; BIG: big auditor and QUAL: qualified audit opinion; [a] data in thousands of Euros

**Table I.**
Sample statistics

- increasing the interest charged on existing or new loans;
- refusing to grant or extend credit; and
- reducing maturity to a short-term basis.

Bharath *et al.* (2008) include a fourth way (increasing collateral) and classify them into two categories: price (i) and non-price decisions (ii, iii and iv). Price decisions have been those most studied in the debtholder literature. However, as Bharath *et al.* (2008) maintain, banks have a greater renegotiating flexibility and more ability to process their borrowers' information than other types of debtholders (e.g. public debtholders), which allows them to customize debt contracts on price and non-price terms. Furthermore, when the risk is excessively high, lenders refuse to grant loans altogether instead of adjusting interest rates (Stiglitz and Weiss, 1981). As non-price decisions could be even more important than price decisions for the failing segment under study, we separately test our five earnings quality hypotheses using both interest rate (price) and credit renegotiation (non-price) as alternative proxies for our dependent variable[9].

*Independent variables: earnings quality proxies.* We include both external (audit-based) and internal (accrual-based) proxies for earnings quality as our experimental variables. We use the dichotomous Big N variable as our proxy for the auditor's identity (*H1*), and we include the general opinion (OPN), the number of each of the different types of qualifications (GV, SL, UN and GC) and their net income effects (NIE) as our proxies for the content of the audit report (*H2*, *H3* and *H4*, respectively). Each audit report has been carefully read and manually processed to obtain the above variables. Finally, we include the discretionary accruals (DAJ) provided by the modified Jones model (Dechow *et al.*, 1995) as our accrual-based measure (*H5*). Although all these proxies appear separately in our hypotheses, we include them simultaneously in the multivariate models. Misspecification (omitted variables) could exist if the relations among these proxies were not properly controlled for. Our general model is the following:

$$\text{Lending decision}_{it+1} = \alpha + \beta\ \text{AUDITOR}_{it} + \gamma\,\text{AUDIT REPORT}_{it} + \lambda\ \text{ACCRUAL} - \text{BASED}_{it} + \text{CONTROL} + \varepsilon_{it}$$

where lending decisions are: cost of debt and credit availability.

We measure all variables in changes. The reason for using changes instead of levels is two-fold. Measuring dependent variables in levels would include information already used in the past that could not have any impact on the decision taken in the year of study. Using changes allows us to better identify the determinants that cause the lending decision[10]. The use of changes also allows us to capture unobservable heterogeneity to a greater extent as most omitted variables explaining lending decisions are stable (e.g. corporate governance variables) and, so, will be controlled for by the model. We separately estimate our model depending on whether the audit report content is proxied by just the opinion type (OPN) (Models 1 and 3) or by its whole content (GV, SL, UN, GC and NEI) (Models 2 and 4).

Specifically, the four versions of our main model are as follows:

$$\Delta CD_{it+1} = \alpha + \beta\Delta Big_{it} + \gamma OPN_{it} + \lambda\Delta DAJ_{it} + CONTROL + \varepsilon_{it} \quad (1)$$

$$\Delta CD_{it+1} = \alpha + \beta\Delta Big_{it} + \gamma_1\Delta GV_{it} + \gamma_2\Delta SL_{it} + \gamma_3\Delta UN_{it} + \gamma_4\Delta GC_{it} + \gamma_5\Delta NIE_{it} + \lambda\,\Delta DAJ_{it} + CONTROL + \varepsilon_{it} \quad (2)$$

$$\Delta BD_{it+1} = \alpha + \beta\Delta Big_{it} + \gamma OPN_{it} + \lambda\Delta DAJ_{it} + CONTROL + \varepsilon_{it} \quad (3)$$

$$\Delta BD_{it+1} = \alpha + \beta\Delta Big_{it} + \gamma_1\Delta GV_{it} + \gamma_2\Delta SL_{it} + \gamma_3\Delta UN_{it} + \gamma_4\Delta GC_{it} + \gamma_5\Delta NIE_{it} + \lambda\,\Delta DAJ_{it} + CONTROL + \varepsilon_{it} \quad (4)$$

where:

- $\Delta CD_{it+1}$ = change in the cost of the debt from year t to t + 1 (cost of debt is calculated as the interest expense for the year divided by its average non-commercial debt);
- $\Delta BD_{it+1}$ = change in bank debt (credit granted by banks) from the year t to t + 1. (the variable includes both long and short-term bank debt);
- $\Delta BIG_{it}$ = 1 if the firm changes to a Big N auditor in year t, − 1 if the firm changes to a non-Big N auditor in year t, 0 otherwise;
- $\Delta GV_{it}$ = the number of non-repeated GAAP violation paragraphs in the audit report issued in year t;
- $\Delta SL_{it}$ = the number of non-repeated scope limitation paragraphs in the audit report issued in year t;
- $\Delta UN_{it}$ = the number of non-repeated uncertainty paragraphs other than the going concern in the audit report issued in year t;
- $\Delta GC_{it}$ = 1 if the audit report includes a first-time going-concern qualification in year t, −1 if the audit report does not repeat a going concern qualification issued in year t−1 in year t, 0 otherwise;
- $\Delta NIE_{it}$ = change in the net income effect of the adjustments proposed in the audit report from year t−1 to t, divided by total assets at the beginning of year t; and
- $\Delta DAJ_{it}$ = change in modified Jones discretionary accruals from year t−1 to t, divided by total assets at the beginning of year t.

Following prior bank lending literature, we also include the following control variables:

- $\Delta ZMJ_{it}$ = change in the Zmijweski failure probability index from t−1 to t;
- $\Delta COV_{it}$ = change in the ratio of interest coverage from t−1 to t computed as earnings before interest and extraordinary items over interest expenses;
- $\Delta SIZE_{it}$ = change in the natural logarithm of total assets from year t−1 to t; and
- $YEAR_{it}$ = variable reflecting the calendar year.

## Results

### *Descriptive statistics*

Table II presents descriptive statistics of the variables used in the empirical analysis. The change in the cost of debt shows an average negative value ($\Delta CD = -0.037$ and $-0.006$ for the mean and median, respectively). Although this may be surprising *a priori*, the negative trend of the Spanish interbank interest rate during our period of study could explain this behaviour[11]. The average change in bank debt is positive (mean $\Delta BD = 0.036$), showing that bank dependence increases with distressed status.

**Table II.**
Descriptive statistics of the variables in the analysis

| | Mean | Median | SD | 25% | 75% | *N* |
|---|---|---|---|---|---|---|
| ΔCD | −0.037 | −0.006 | 0.407 | −0.033 | 0.021 | 390 |
| ΔBD | 0.036 | 0.015 | 0.101 | −0.026 | 0.106 | 390 |
| ΔBIG | −0.006 | 0 | 0.134 | 0 | 0 | 390 |
| ΔOPN | 0.010 | 0 | 0.371 | 0 | 0 | 390 |
| ΔGV | 0.041 | 0 | 0.710 | 0 | 0 | 390 |
| ΔSL | −0.098 | 0 | 0.593 | 0 | 0 | 390 |
| ΔUN | 0.059 | 0 | 0.700 | 0 | 0 | 390 |
| ΔGC | 0.041 | 0 | 0.293 | 0 | 0 | 390 |
| ΔNIE | 0.003 | 0 | 0.064 | 0 | 0 | 390 |
| ΔDAJ | −0.005 | −0.012 | 0.335 | −0.136 | 0.148 | 390 |
| ΔZMJ | 0.022 | 0.013 | 0.143 | −0.025 | 0.073 | 390 |
| ΔCOV | −0.234 | −0.09 | 4.727 | −0.755 | 0.330 | 390 |
| ΔSIZE | 0.095 | 0.074 | 0.227 | −0.037 | 0.226 | 390 |

**Note:** variables are described in Section 4.2

As for the earnings quality proxies, although the number of firms audited by a Big N multinational decreases on average, those receiving a modified opinion increase. These are also the expected changes for failing firms. Except for scope limitations, the table shows increases in the number of all types of qualifications and in their net income effects, which is in line with more conservative auditor behaviour as firms approach bankruptcy. Discretionary accruals show a mean negative change (ΔDAJ = −0.005). Although this might seem strange, there is evidence that as firms approach bankruptcy, auditors are stricter with the writing off of assets that are overvalued as a consequence of prior manipulation. This leads to the sudden reversal of abnormal quantities that, far from reducing them to zero, results in very negative discretionary accruals (reversal effect). Rosner (2003) further suggests that this conservative auditor behaviour usually coincides with the issuance of the first-time going concern qualification. The positive value in the 75th percentile of the ΔDAJ distribution (0.148) shows, notwithstanding, that a considerable number of the companies would still be able to use upwards discretion to improve their financial portrait. Finally, and as expected, the Zmijewski failure index increases and the coverage ratio decreases.

*Multivariate results*

Table III presents the results of our multivariate models that regress lending decisions on the different proxies for earnings quality. Regressions are estimated both for cost of debt (Models 1 and 3) and for credit availability (Models 2 and 4). We present separate results depending on whether we limit the audit report proxies to the general opinion (Columns 3 and 5) or we extend them to the whole content of the audit report (Columns 2 and 4).

Our first hypothesis refers to the auditor's identity. We expect that because of their better reputation, banks have a positive perception of Big N auditors. The results, however, only partially confirm our expectations. Although the Big N variable does not show a significant impact on the cost of debt (ΔBIG = −0.013 and −0.014, Models 1 and 2, respectively), banks do grant more credit if the borrowing company is audited by one

| | Model 1 cost of debt | | Model 2 credit availability | |
|---|---|---|---|---|
| | a | B | a | b |
| ΔBIG | −0.013 | −0.014 | 0.065*** | 0.073*** |
| ΔOPN | 0.012 | | −0.026** | |
| ΔGV | | 0.000 | | −0.001 |
| ΔSL | | 0.005** | | 0.009 |
| ΔUN | | 0.006** | | −0.0005 |
| ΔGC | | −0.004 | | −0.063** |
| ΔNIE | | 0.026 | | −0.075 |
| ΔDAJ | −0.005*** | −0.005*** | 0.004*** | 0.005*** |
| ΔZMJ | 0.080*** | 0.085*** | −0.080*** | −0.065** |
| ΔCOV | −0.000*** | −0.000*** | 0.000 | 0.0003 |
| ΔSIZE | 0.031*** | 0.030*** | −0.008 | −0.010 |
| Year | 0.002** | 0.002** | 0.002* | 0.001 |
| Intercept | −4.386*** | −4.646*** | −4.971*** | −2.959*** |
| $R^2$ | 0.1494 | 0.1534 | 0.1673 | 0.1732 |

**Notes:** *** significant at the 0.01 level; ** significant at the 0.05 level; * significant at the 0.1 level and variables are described in Section 4.2

**Table III.** Multivariate results for the effects of earnings quality proxies on the cost of debt and credit availability

of the Big N multinationals (ΔBIG = 0.065*** and 0.073***, Models 3 and 4, respectively).

The content of the audit report is the second source of information under analysis. In the models limited to the general opinion (Models 1 and 3), results are similar to those provided by auditor type, that is, modified opinions negatively affect the granting of credit (ΔOPN = −0.026**, Model 3) but not the interest rate charged by banks (ΔOPN = −0.012, Model 1). Consequently, we do not reject *H2* for credit availability but do for price decisions. Extending the analysis to the whole content of the audit report (Models 2 and 4) helps us to better understand its actual function in the lending process. As expected, the negative effect of the qualifications depends on their type. Scope limitations and uncertainties other than the going concern show a significantly positive relation with the interest rate charged (ΔSL = 0.005**, ΔUN = 0.006**, Model 2). As for credit availability (Model 4), the going concern is the only qualification that affects the amount of credit granted (ΔGC = −0.063**). *A priori*, one would expect that the going concern qualification will negatively condition any lending decision. Significance, however, is only found in Model 4, which suggests that it is the type of qualification that determines whether the bank continues to act only on the basis of the interest rate or goes further and rejects or reduces the loan. For non-price decisions, the presence of a going concern qualification makes any other audit report signal irrelevant. In the determination of interest rates, however, it is only less severe but still somewhat risky qualifications (scope limitations and uncertainties) that are taken into account. Regarding our third hypothesis, the results imply that banks do not make effective use of all the information contained in the audit report. Qualifications more explicitly related to manipulation, GAAP violations (*H31*) and their net income effects (*H4*), which are those most frequently issued by Spanish auditors, do not show any significance in our models. A possible explanation for this is the effort required to understand the language of the auditor. GAAP violations need to be written very clearly for the user to undo the

specific distortions in the financial statements. The signals provided by other qualifications refer to less concrete issues that do not require a specific adjustment of the financial reports. Studies such as Humphrey *et al.* (1992), Lee (1994) and Gay *et al.* (1998) suggest that corporate interests exist, so auditors do not always want the information contained in their reports to be perfectly understood and interpreted by the external user. Wording ambiguity might, then, be a good strategy to avoid future responsibilities without the risk of losing the client. In Spain, Arnedo *et al.* (2009) find empirical evidence of this. A careful reading would be necessary and it is not clear if this will always be cost-effective for the bank.

We finally hypothesize that banks extend their earnings quality analysis to accrual-based indexes (*H5*). Variation in the value of discretionary accruals (ΔDAJ) reflects this possibility in the model and allows the simultaneous testing of both the value of accounting information and the efficiency in its use. Results are contrary to our expectations. The significantly negative (positive) coefficient in the cost of debt (credit availability) models (ΔDAJ = −0.005 and 0.005, in Models 2 and 4) indicates that banks not only make use of the financial reports but also do not include any accrual-based index that ensures their quality. This allows manipulative managers to fool bank loan officers and explains why lower earnings quality (higher DA) gives rise to more favourable lending conditions.

*Additional tests*

*Separately analyzing positive and negative discretionary accruals.* The interpretation of our accrual-based results must be taken with care because, given their failing status, a significant proportion of firms exhibit negative discretionary accruals in our sample (Table II). For these cases, the interpretation might be noticeably different. To study this issue in greater depth, we separately estimate regressions for firms with positive/negative values of the DAJ variable (Table IV). The first and third estimations in Table IV refer to firms engaging in upwards manipulation in the current year (effects not reflected in the financial statements), whereas the second and fourth refer to firms that undergo a reversal effect (negative DA)[12]. The results confirm that upwards manipulators achieve their objective of fooling banks. All other things being equal, firms that improve their financial appearance by using income-increasing discretionary accruals not only obtain higher credit (ΔDAJ = 0.005**, Estimation 3) but also do so at a lower average cost (ΔDAJ = −0.004***, Estimation 1). The results of this positive DA model are the opposite of those previously found by Francis *et al.* (2005), Gill-de-Albornoz Noguer and Illueca Muñoz (2007) and Bharath *et al.* (2008) and, thus, support the arguments defended by the "debt-covenant hypothesis" (Sweeney, 1994; Defond and Jiambalvo, 1994). A possible explanation for this is that our sample includes only financially stressed firms (i.e. with specific incentives for manipulation), whereas prior literature is not that sample-specific. It is difficult to believe that banks apply accruals-based models properly in the general population (as inferred from the above studies) and avoid doing so in especially risky firms.

As for the negative DA model, the DAJ variable is only significant for credit decisions, but with a positive sign (ΔDAJ = 0.028**, Estimation 4). This makes sense because auditors tend to prompt the reversal effect in extreme phases of the failure process, that is, when they simultaneously issue a going concern (Rosner 2003). In such

| | Model 1 cost of debt | | Model 2 credit availability | |
|---|---|---|---|---|
| | B (DA > 0) | B (DA < 0) | B (DA > 0) | B (DA < 0) |
| ΔBIG | −0.033 | −0.005 | 0.112*** | 0.060** |
| ΔGV | 0.003 | −0.001 | −0.005 | 0.002 |
| ΔSL | 0.004 | 0.005* | 0.009 | −0.012 |
| ΔUN | 0.011*** | 0.002 | −0.045 | −0.005 |
| ΔGC | 0.017 | 0.003 | 0.070** | −0.066** |
| ΔNIE | −0.016 | 0.054 | −0.099 | −0.032 |
| ΔDAJ | −0.004*** | 0.001 | 0.005** | 0.028** |
| ΔZMJ | 0.093*** | 0.076** | −0.031 | −0.077 |
| ΔCOV | −0.000*** | −0.001 | −0.000 | 0.003*** |
| ΔSIZE | 0.018 | 0.033*** | −0.007 | −0.012 |
| Year | 0.003* | 0.002 | 0.001 | 0.001 |
| Intercept | −5.442 | −3.456 | 1.857 | −1.653 |
| $R^2$ | 0.2413 | 0.1375 | 0.0587 | 0.1089 |

**Notes:** *** significant at the 0.01 level; ** significant at the 0.05 level; * significant at the 0.1 level and variables are described in Section 4.2

**Table IV.** Separate multivariate results for positive and negative discretionary accruals

cases, it is reasonable for banks to take more severe decisions, rejecting or reducing credit lines instead of merely adjusting the interest rates.

The comparison of our results with those of Gill-de-Albornoz Noguer and Illueca Muñoz (2007), who only found significance in the accruals quality variable for the subgroup of very big firms, reveals an association between cost-effectiveness and firm size. Given that these authors did not include any audit-based control variable in their model, we could infer that the smaller the company, the more cost-effective the actions taken by banks that limit their earnings quality analysis to general (external and audit-based) proxies. The inclusion of audit-based signals leads, then, to a more accurate interpretation of the results and of the mechanisms actually used by banks.

## Conclusions

In this paper, we study how carefully banks carry out an earnings quality analysis in their lending decision processes for a sample of private financially distressed Spanish companies. Taking into account that debtholders bear most of the risks in the case of failure (Jensen and Meckling, 1976), earnings quality is valuable in this context both as a monitoring mechanism and as signal of credibility that reduces information asymmetries. We use audit-based variables (auditor identity and the audit report content) and discretionary accruals measures as external/internal proxies for earnings quality, respectively. Audit signals are expected to be more cost-effective because the analysis of accruals quality requires expert knowledge, but both kinds of proxies could be complementary especially in contexts with high incentives for earnings management and debt-covenant violations.

Our results show that banks consider the quality of earnings, but that they do it quite cursorily, that is, without taking advantage of all the possibilities offered by a comprehensive quality process. Banks do not make effective use of all the information contained in the audit report. For non-price decisions, the going concern is the only value-relevant qualification. For price decisions (interest rate), less severe but still

somewhat risky qualifications (scope limitations and uncertainties) are also taken into account. Banks do not seem to value accruals quality for price or non-price decisions, suggesting that private lenders do not use an accrual-based model to scrutinize the quality of their borrowers' information. Managers get better conditions by fooling them. Our results clearly support the "debt-covenant hypothesis" defended in the literature and are contrary to the "screening-rewarding" evidence found by Francis *et al.* (2005) and Bharath *et al.* (2008).

Our study has several implications. First, our results increase the evidence showed by Arnedo *et al.* (2009) that the language used by the auditors in the audit report, particularly in GAAP violations, might not be clear enough for the user to undo the specific distortions in the financial statements. Regulators should create a mechanism that avoids the wording ambiguity used by the auditor. Second, alternative (more cost-effective) mechanisms such as private informative channels might be used by banks, but earnings quality analysis will still be valuable especially for companies that are close to financial distress. Rosner (2003) evidenced that as firms approach bankruptcy, auditors become stricter with the writing off of overvalued assets and with the issuance of going concern qualifications. In Spain, the going concern qualification is issued quite late, so an earlier earnings quality analysis might help to avoid the negative consequences of failure. Third, the irrelevance of other kinds of qualifications questions the convenience of an open model of audit report (that includes all kinds of qualifications) vs a more restricted one (that allows only for the going concern, as it happens in the USA case). Our inferences apply only to financially distressed private firms, so they are not generalizable to other contexts with low ownership concentration or with a less severe risk of failure.

**Notes**

1. Audit mergers and The Enron scandal have progressively reduced the number of Big auditor group, consequently, we prefer use Big N auditor as a reference of the big audit firms.
2. Dechow *et al.* (2010) consider that audit-based signals are more a determinant of earnings quality than a proxy for it. Their external proxies include accounting and auditing enforcement releases, restatements and internal control weakness signals.
3. We extend the analysis of modified audit reports to the four standard-type qualifications and to the net income effects of the adjustments recommended by the auditor.
4. During Pucheta Martínez *et al.* (2004)'s period of analysis, audit reports issued to public Spanish companies still showed modified opinions for reasons other than the going concern. In the past decade, the Spanish Stock Exchange Commission has increased the severity of its actions in these cases. A similar process towards a clean model of audit report has not been developed for private companies in Spain.
5. Standard on the Audit Report (Spanish Institute of Accounting and Auditing, 1991). In fact, this is only feasible with GAAP violations.
6. In 2000, the ratio of bank loans to the private sector (which is the ratio of claims on private sector of deposit money banks and GDP) was 1.012 in Spain vs 0.493 in the USA (Rajan and Zingales, 2003).
7. Since 1990, statutory audit in Spain has been compulsory for firms (both public and private) above a specific size (average €2.8m in total assets during our period of study).

8. Carcello and Palmrose (1994) point out that pre-bankrupt firms are the principal focus of attention for regulators and users in questions of the responsibility of auditors.
9. We opt for credit availability as our non-price decision because, in Spain, the information on collateral is very difficult to obtain and, as we show in Table I, short-term bank debt is widely used by distressed firms.
10. Lending decisions will not change as a consequence of the borrowers' current default risk but because of its evolution. Credit conditions are unlikely to change if there has not been a change in this risk, so taking the experimental variables in changes seems to be the most adequate option.
11. The interbank interest rate used by Spanish banks decreased substantially during our sample period from 15.64% in 1991 to 3.483% in 2002.
12. Downwards manipulation seems very unlikely in highly distressed firms.

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