Conservatism and Debt

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Abstract

Despite the unquestionable influence of conservatism, there is disagreement about what economic demands give rise to financial reporting conservatism. Research examining the importance of lenders’ demands for reporting conservatism has been questioned for not considering conservative contract modifications. We document that although these modifications exist they are not ubiquitous. We then examine when contracting over GAAP might be more efficient than adjusting contracts. We find a higher probability of contract modifications when the agency costs of debt are higher and when the litigation, tax and equity demands for conservatism are lower. However, we find a positive association between the reporting conservatism unexplained by these demands and contract modifications. This suggests that contractual modifications are unlikely to completely fulfill lenders’ demands for conservatism.
1. Introduction

Accounting conservatism has a long history, but the economic demands for conservatism are still hotly debated. Watts (2003) and Holthausen and Watts (2001) argue that conservatism persists because it helps to address agency problems. Several papers examine whether the degree of conservatism in financial reports is associated with the extent of the agency problem that arises from debt financing. These papers examine how conservatism in financial reports varies with the amount of debt in the capital structure and examine how the cost of debt varies with the amount of conservatism in financial reports.

Recent academic research questions the importance of debt in explaining conservatism in financial reports. For example Leuz (2001) argues that “neither the debt contracting nor the corporate governance perspective provides an obvious rationale for asymmetry in accounting and disclosure.” Schipper (2005) builds on this idea by asking whether lenders could “protect themselves by writing conservative contracts, without requiring biased reporting.”1 Guay and Verrecchia (2006) provide a concise summary of these points by indicating that “one must articulate why contracting over GAAP-imposed bias reducing accounting requirements is more efficient than firm-specific or even setting-specific contracts that account for expected bias or make conditional adjustments over time."

Previous research examining the importance of debt in accounting conservatism has not examined whether debt contracts are actually modified to incorporate lenders’

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demand for conservatism.\textsuperscript{2} We examine the supposition that lender’s demands for conservatism can be accommodated through contract adjustments. We identify a sample of syndicated loans listed on the Securities Data Corporation (SDC) between 1994 and 2004 for which we could obtain the necessary contracting and financial data, and investigate the types of adjustments made to the contract. We find systematic use of two relatively crude modifications to the net worth covenant.

The first adjustment to net worth covenants is the exclusion of a percentage of positive net income from covenant calculations, referred to as an income escalator.\textsuperscript{3} For a contract with an income escalator a percentage of the borrower’s positive income is added to the covenant threshold and therefore reduces the effect of positive income on covenant slack. However, the threshold is not adjusted for borrower’s losses so covenant slack is tightened by the full amount of the loss. We document that even though a majority of our sample of approximately 2,000 debt contracts with net worth covenants make this type of adjustment, over one-third of the sample does not.

The second common covenant adjustment is the exclusion of purchased intangibles from the calculation of net worth. We find that sample contracts are fairly evenly split between those that exclude versus those that include intangible assets from the definition of net worth used for covenant calculations. Despite the possibility of much more sophisticated adjustments to net worth covenants that could induce an asymmetry in timeliness of gain versus loss recognition; we do not find systematic use of this type of modification.

\textsuperscript{2} One exception is Leftwich (1983). He examines the modifications made to 10 private lending agreements, documenting some of the GAAP modifications that lenders make.

\textsuperscript{3} Dichev and Skinner (2002) label this covenant modification build-up.
Based on our finding that many contracts do not contain adjustments, we then take up Guay and Verrecchia’s (2006) challenge to examine under what conditions contracting over GAAP might be more efficient than adjusting firm-specific contracts. Specifically, we examine the determinants of the choice to include conservative modifications to GAAP net worth versus the choice to contract on GAAP net worth. We argue that this choice is likely to be associated with the extent of the agency costs of debt, and the extent to which the firm provides conservative reports.

We measure the extent of the firm’s agency problems using a variety of contract level and firm level measures drawn from previous research. More specifically, we argue that agency costs are likely to be larger when the loan is of longer maturity, is larger relative to firm size, is revolving, or contains a performance pricing grid. We also argue that agency costs will be relatively larger when the firm has relatively more current accruals (absolute value) or a lower credit rating.

We use multiple empirical constructs to capture reporting conservatism, since there has been some controversy over the validity of some measures of conservatism. Specifically, we use the asymmetric recognition of good news relative to bad news (Basu, 1997), the market-to-book ratio, the difference between the skewness of cash from operations and the skewness of net income, and the amount of negative non-operating accruals. We also create a composite measure based on the ranks of all four individual measures. We also use an instrumental variables approach to isolate the portion of reporting conservatism attributable to non-lender demands for financial reporting conservatism.

Our analysis of the decision to include income escalators in the net worth covenant indicates that the greater the agency costs of debt, measured using both contract
specific and firm specific variables, the higher the probability that the contract includes this modification. This result is consistent with this type of contract modification being used to accommodate lenders’ demands for conservatism. We also find that firms with higher financial reporting conservatism are more likely to have income escalators. The positive relationship between financial reporting conservatism and the use of income escalators suggests that it may not be possible or efficient to fully meet lenders’ demand for conservatism using this type of contract modification.

We use an instrumental variables approach to investigate the relationship between other constituent’s demands for conservatism and the use of conservative modifications to net worth covenants. For the portion of financial reporting conservatism associated with the litigation, tax, and equity shareholders demands, we find that higher reporting conservatism is associated with a lower probability of conservative modifications to net worth covenants. This result is consistent with contracting over GAAP being less costly in the presence of these additional demands for conservatism. We also continue to find a positive association between the use of income escalators and the residual reporting conservatism that cannot be explained by our measures of the litigation, tax and equity demands for conservatism. This suggests that both reporting conservatism and conservative contract modifications may be required to satisfy lenders’ demands for conservatism.

As a sensitivity analysis we examine the other side of this potentially simultaneous relationship, investigating whether the probability the firm will enter into a contract that includes an income escalator is associated with the extent to which they provide conservative reports. Consistent with the main results, we find that firms that are
more likely to have income escalators are more likely to prepare their financial reports conservatively.

We find less compelling results when we investigate the determinants to exclude purchased intangibles from covenant calculations. This feature appears to be more likely to be included in a debt contract when the firm has a high probability of default, but less likely to be included when the loan has a longer maturity or is relatively larger. Thus, it is not clear that this feature appears in the debt contract when the agency costs of debt are high. These results are similar to those reported by Frankel, Seethmaraju and Zack (2006) who are also surprised by the use of this covenant modification when agency costs are expected to be lower.

We also find that the decision to include this feature does not appear to be related to the extent to which the firm provides conservative financial reports. Each of our four individual measures of conservatism, and our combined measure of conservatism, are unrelated to the decision to exclude purchased intangibles from covenant calculations. Similarly, when we use the instrumental variables approach to investigate the relationship between litigation, tax and equity demands for conservatism and the exclusion of purchased intangibles, we find no association. These results suggest that the exclusion of intangible assets from contract calculations is more likely a mechanism that lenders use to restrict firms’ future M&A activity as opposed to a mechanism that makes contract calculations more conservative.

Overall, the results of our paper provide preliminary evidence on the importance of debt in explaining conservatism in financial reports. The primary criticism of the theory that financial reporting conservatism can be explained by debtholders’ demands
for conservatism has been that lenders can make adjustments to GAAP for contract calculations, achieving desired conservatism levels outside of the financial reporting process. We examine one of the more important financial reporting covenants (net worth), and identify two modifications to this covenant that are designed to make contract calculations more conservative. We find that one modification (income escalator) is positively associated with the extent to which firms provide conservative financial reports.

There are a few potential explanations for the positive association between financial reporting conservatism and the use of covenant modifications that make contractual GAAP more conservative. First, the systematic covenant modifications that we found in debt contracts are crude. This suggests that it may be too costly to include covenant modifications that can achieve the same results as financial reporting conservatism. Second, there are constraints on the extent to which a borrower’s financial reports can be prepared conservatively. These constraints may prevent borrowers from meeting lender’s demands entirely through GAAP. Third, it may be very difficult to ex-ante predict how these agency problems will manifest themselves in the firm’s financial reports. If lenders find it difficult to predict how agency costs will affect the firm’s financial statements, then they might prefer conservatism in both contract modifications and financial reports.

In addition to informing the academic debate about the economic demand for conservatism, the results of our paper might also be of interest to standard setters. The Financial Accounting Standards Board (FASB) asserts that some financial statement users (like creditors) have specialized needs, and they have the ability to obtain the
information they desire “by making the provision of information a condition of the transaction.”

Thus, the FASB concludes that “the objectives (of financial reporting) stem primarily from the informational needs of external users who lack the authority to prescribe the financial information they want.”

We focus on one type of financial statement user (lenders), who appear to have the authority to prescribe the financial information that they want in their contracts. In contrast to the FASB’s assertion, the GAAP modifications to these contracts appear to be very crude, and we do not find results suggesting that they can entirely replace financial reporting conservatism. Thus, it appears that lenders can not (or at least currently do not) fully meet their demand for conservatism through contract modifications. This suggests that the FASB might want to consider lenders’ needs when designing standards.

The rest of this paper is organized as follows: Section 2 provides background on information on the related literature. Section 3 develops hypotheses. Section 4 discusses our sample selection procedures and outlines our research design. Section 5 and 6 discusses the results from our primary analysis and from our sensitivity analyses. Section 7 provides conclusions.

2. Background

2.1 Related Research

Papers examining the association between conservatism in financial reports and the agency costs of debt have considered both the interest rate charged on the debt and

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the extent of debt in the capital structure. Jointly these papers suggest that lenders’ demands for conservatism affects the amount of conservatism in financial reports.

For example, Ahmed, Billings, Morton, and Stanford-Harris (2002) examine the association between a firm’s debt ratings and the extent to which firms provide conservative financial reports, and Zhang (2006) examines the association between interest spreads on private debt and the extent to which firms provide conservative financial reports. Using several different measures of conservatism, both papers conclude that lenders reduce interest rates when borrowers are relatively more conservative. Zhang (2006) provides evidence that this reduction in interest rates is attributable to more conservative borrowers providing timely signals of changes in default risk. The results of these papers suggest that conservatism in financial reports is important in reducing the agency costs of debt.

Ball and Shivakumar (2005) use a sample of publicly traded companies and privately held companies within the United Kingdom to examine whether private companies recognize losses in a more or less timely manner than public companies. They find that public companies are relatively timelier in their loss recognition (and thus more conservative). This implies that the demand for conservative financial reports is likely to be stronger for publicly held firms (as opposed to privately held firms). Peek, Cuijpers, and Buijink (2006) build on this result by explicitly investigating the influence of creditors on the public versus private firm difference in conservatism. They find that when relationship financing decreases, lenders’ demands for conservatism are more likely to be reflected in reporting conservatism.

2.2 Contractual mechanisms that make covenant calculations more conservative.
Leuz (2001) and Guay and Verrecchia (2006) and Schipper (2005) each raise important questions on the role of debt in explaining conservatism in financial reports. They argue that debt contracts can be modified to accommodate lenders’ demands for conservatism without altering the extent of conservatism used in the firm’s financial reports. Previous research examining the importance of debt in explaining accounting conservatism has not examined whether debt contracts are actually modified to incorporate lenders’ demand for conservatism.

We extend the research focusing on whether lenders affect the extent of conservative financial reporting by incorporating into our research design the possibility that lenders’ demand for conservative accounting can be fulfilled either through the normal financial accounting process, or through contractual mechanisms. We investigate the relation between conservatism in debt contract modifications and in financial reports. The possibility that lenders’ demand for conservative reports could be met entirely through contractual mechanisms leaves open the question of the extent to which lenders’ demands will affect reporting conservatism.

Lenders modify covenant calculations in a variety of ways. These modifications are typically not uniform or consistent across borrowers and determining whether the modifications are conservative is often difficult. Our investigation of the types of modifications that are made by lenders revealed two modifications to the net worth covenant that are systematically used across borrowers. The first is the income escalator, which is an adjustment to net worth covenant thresholds that reduces the extent to which positive reported income increases covenant slack. For example, Lennox International’s revolving debt contract contains the following clause:
Consolidated Net Worth: The Borrower will not permit Consolidated Net Worth as at the last day of any fiscal quarter of the Borrower to be less than the sum of (a) $261,000,000, plus (b) 15% of its aggregate Consolidated Net Income (but only if a positive number) for the period beginning April 1, 1998 and ending at the end of each fiscal quarter thereafter.

In this example, each quarter the net worth covenant thresholds are increased by 15% of Lennox’s positive net income. If Lennox suffers a loss, then the threshold stays the same, but Lennox's net worth will decline by the full amount of the loss, hence covenant slack will tighten by the full amount of the loss. Thus, compared to a contract that does not have an income escalator, each dollar of income has less of an effect on covenant slack for the firms that have income escalators.

The second modification we identify adjusts the net worth covenants to exclude intangible assets from covenant calculations. For example, Dover Downs Entertainment Inc’s credit agreement contains the following definition:

"Consolidated Tangible Net Worth": as of any date of determination, (a) the aggregate amount of all assets of the Borrower and its Subsidiaries on a consolidated basis at such date as may be properly classified as such in accordance with GAAP, excluding such other assets as are properly classified as intangible assets under GAAP, minus (b) the aggregate amount of all liabilities of the Borrower and its Subsidiaries on a consolidated basis at such date, determined in accordance with GAAP.

Holthausen and Watts (2001) indicate that “debt-contracts likely exclude goodwill (and separable intangible assets representing rents) from the balance sheets because in liquidation, goodwill and the other intangible assets representing rents are presumably zero.” This suggests that excluding intangible assets from covenant calculations potentially makes the debt contract more conservative.

The impact of these two types of covenant modifications on the firm’s financial reports suggests that lenders use these covenant modifications to make contract
calculations more conservative. Furthermore, both of these adjustments are being made to the net worth covenant, which both Beneish and Press (1993) and Sweeney (1994) indicate is among the most frequently violated covenants. Thus these two types of covenant modifications are likely to be reflective of the lenders’ attempts to meet their demands for conservatism outside of the financial reporting process.

3. Motivation and Research Design

3.1 Motivation

We argue that the decision to make conservative modifications to covenant calculations is likely to be related to the extent of the agency costs of debt and the extent of conservatism in the firm’s financial reports. Conservative contract modifications should be more likely when the agency costs of debt are higher. The relationship between conservative contract modifications and financial reporting conservatism is more complicated.

Higher conservatism in financial reports may reflect a demand for conservatism because of litigation, tax, or equity investor concerns. Contracting over GAAP might be relatively more efficient than adjusting firm-specific contracts in the presence of these other demands. In these circumstances we would expect to see less conservative contract modifications when financial reports are more conservative.

Alternatively, either GAAP modifications or reporting conservative accounting could be used to reduce the agency costs of debt. If these mechanisms can produce similar results then the lowest cost alternative should be used exclusively. However, the contract modifications we observe may not be as effective as financial reporting conservatism in reducing agency costs. In addition, there may be constraints on the
extent to which a borrower’s financial reports can be prepared conservatively. It may also be very difficult to anticipate how the agency costs of debt will manifest themselves in the firm’s financial reports. These arguments suggest that financial reporting conservatism and covenant modifications may both be required to satisfy lenders’ demands and therefore may be positively associated.

### 3.2 Models of Inclusion of Conservative Contract Modifications

To provide evidence on the most efficient method of meeting lenders’ demands for conservatism, we model the determinants of the decision to include conservative modifications in lending contracts. We measure the contract modification requiring only a percentage of positive net income be added to net worth thresholds (the use of income escalators), *IncEscalator*, as a dichotomous variable equal to 1 if this contract modification is made, zero otherwise. We use a dichotomous variable, *Tangible*, to measure whether the contract excludes intangible assets from the net worth calculations. The variable is one if intangible assets are excluded, zero otherwise.

Previous research discusses the difficulties associated with developing a firm level measure of conservatism in financial reports, which is the type of measure required for our analyses. For example, Givoly, Hayn and Natarajan (2006) examine the approach

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6 Ideally, we would like to exploit any information that is contained in the amount of the income escalator. However, the distribution of this data is not obvious (see Table 1). Over 75% of our observations have either no income added to the threshold, or exactly 50% of positive income added to the threshold. The observed data appears to be a course grouping of what is likely a more continuous underlying data distribution. The data appears to reflect two decisions. The first decision is whether to include an income escalator, and the second decision, how much income should be added back to the threshold. We estimate a probit model of the decision to include an income escalator rather than a tobit model, which would incorporate the magnitude of the escalator, because we reject the Fin and Schmidt (1984) tobit model specification test (see Greene, 2000). Given the non-normality of the income escalator data we did not believe that estimating a truncated regression would be appropriate. In addition, after controlling for the decision to have an income escalator, there appears to be little additional information in how much income is excluded from contract calculations. Thus we focus on the first decision, whether to have an income escalator.
of modifying the Basu (1997) reverse regression method by running the regression in time series (Francis, LaFond, Olsson and Schipper, 2004) and find that it “is subject to considerable measurement error or to a downward bias.” They find that when the Basu (1997) method is used in time series, it fails to yield significant positive coefficient on the measure of asymmetric timeliness (the interactive effect) in 85% of the firms in their sample.

Given the concerns with firm level measures of conservatism, in this paper we use several measures and a composite measure, to enhance the validity of our results. Ryan (2006) argues that this approach is “entirely sensible … in assessing … overall conservatism.” We employ four different measures of conservatism, and create one combined measure that is based on the firm’s rank for each of the four individual measures. Each measure is developed using financial data for the fiscal periods prior to the firm entering into the debt contract.

Our first measure is the firm’s Market-to-book ratio, \textit{Mkt-to-book}. We calculate this ratio as \((\text{COMPUESTAT } \# 6 - \# 60 + \#199*\#25)/\text{COMPUESTAT } \# 6\). Ahmed et al. (2002), Beaver and Ryan (2000), and Givoly and Hayn (2000) argue that the \textit{Mkt-to-Book} ratio is a measure of the extent to which a firm has been conservative over time.

Our second measure is a modification of the Basu (1997) method based on Ryan (2006), where instead of running the model at the firm level, we run the model in cross-section for subgroups of firms that are expected to have similar levels of financial reporting conservatism (see Moerman, 2006, for an example of a paper adopting this method). Under this approach, it is crucial to identify subsets of firms that have similar levels of conservatism. While there has been extensive research on country level
differences in financial reporting conservatism, there are relatively few studies of factors expected to affect firm level measures of conservatism. The most significant exception is default risk. Ahmed et al. (2002), Franzen, Rodgers and Simin (2005), Frankel and Roychowdhury (2006) all find that default risk appears to be associated with the extent to which firms provide conservative reports. Thus we use firm level measures of default risk to group firms together and use the Basu (1997) method to measure conservatism for each group.

We start by creating a measure of the firm’s credit quality (ranging from 1 to 30) for each firm on COMPUSTAT. Then, in each year, for each credit quality class, we conduct annual pooled cross-sectional regressions using the five prior years of data to estimate the regression coefficients. Consistent with Basu (1997), we measure Earnings using the firm’s earnings per share before extraordinary items (COMPUSTAT #58) scaled by the firm’s market price on the last day of the fiscal year (COMPUSTAT #199).

We measure returns, Return, using the firm’s annual return over the 12 month period ending 3 months after the fiscal year-end. Return is also interacted with NegRet, an indicator variable that is one if Return is below zero, zero otherwise. We label the interaction of Negret with the Return variable as NI-Conserv, which is Basu’s (1997) measure of the extent to which firms are conservative. Thus each year, in each credit class, all firms will have the same measure of conservatism.

Our third and fourth measures of conservatism are based on Givoly and Hayn (2000). The third measure, Skewness, is the difference between the skewness in the

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7 To measure the firm’s credit quality we follow the procedure suggested in Barth, Hodder, and Stubben (2005). For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.
firm’s cash flows (COMPUSTAT #308/#6) and the firm’s earnings (COMPUSTAT #172/#6). We measure skewness using a maximum of 20 quarters and a minimum of 5 quarters of data prior to the firm entering into the contract. Our fourth measure, Non opp accruals, is a measure of the extent to which a firm’s earnings include negative non-operating accruals. For each firm in our sample, we calculate Non opp accruals as (COMPUSAT −(#172 + #14 − #308 + #302 + #303 + #304 + #305) / #6) and determine the average non-operating accruals for the five years prior to the firm entering into the debt contract (we require at least two years of data when developing the average). Our final measure, All-Rank, is a composite measure tabulated as the sum of the firm’s rank for each of these four measures.

To measure the agency costs of debt we use both contract specific and firm characteristics that previous research suggests are related to the agency costs of debt. Flannery (1986) suggests that debt with a longer maturity will have higher agency costs of debt. We measure the maturity of the debt, Maturity, using the maturity of the loan in years. Similarly, loans that constitute a relatively larger proportion of the firm’s assets are riskier, and increase the lender’s agency costs. We proxy for the size of the loan, Loan/Assets, by dividing the amount of the loan by the firm’s assets measured at the year prior to entering into the contract (COMPUSAT #6).

Asquith, Beatty and Weber (2005) provide evidence that loans are more likely to include performance pricing features when firms are more likely to have relatively high moral hazard or adverse selection costs. We also include a dichotomous variable indicating whether the loan includes a performance pricing feature, Performance Pricing, which takes on the value 1 if performance pricing (floating spread over LIBOR)
is included in the interest rate charged on the loan, 0 otherwise. Asquith et al. (2005) also argue that borrowers with a revolving loan have an incentive to increase the amount they borrow if their credit quality declines and thus revolving loans may increase the lender’s agency costs. We include a dichotomous variable for whether the loan type is a revolving loan, \texttt{Revolver}, which takes on the value 1 if the loan is revolving, 0 otherwise.

We also consider two firm characteristics that previous research suggests are likely to be associated with the extent of the agency costs of debt. The first measure we consider is the firm’s credit rating, \texttt{Ratings}. Myers (1977) shows that firms with higher credit risk are likely to have higher agency costs of debt. To measure the firm’s credit rating we use the fitted value from a model of credit quality discussed in footnote 7 above. The second measure we consider is the absolute value of the firm’s current accruals. Bharath, Sunder and Sunder (2005) argue that higher absolute values of accruals are associated with greater uncertainty. Greater uncertainty is associated with higher agency costs.\footnote{Bharath, Sunder and Sunder (2005) examine several measures of accruals and abnormal accruals (both signed and unsigned) and find interest rate spreads are positively associated with unsigned but not signed accruals. We also find that covenant modifications are associated with unsigned but not with signed accruals.} We measure the absolute value of current accruals, \texttt{Absolute Current Accruals}, as the average of \((\text{COMPSTAT} \#302 + \#303 + \#304 + \#305) / \#6\) measured over a 5 year period.

In addition to our test variables, we also include additional controls to help ensure our results aren’t driven by poorly designed proxies. Specifically, we include variables that may be related to our measures of conservatism and to the decision to make a covenant modification. We address concerns that our market-to-book measure may capture variation in growth by including a control variable for growth in each of our
Specifically, we control for the firm’s growth, *Growth*, by measuring the growth in assets (COMPUSTAT #6/lag1(COMPUSTAT #6)). The ratings variable is likely to be a proxy for agency costs, but it also helps to address concerns that the *NI-Conserv* measure may only reflect the borrower’s default risk. We also include, *Size*, using the log of the firm’s market value (COMPUSTAT #199*#25).

To control for the prevalence of purchased intangibles, we also include the amount of the firm’s goodwill, *Gwill*, and the amount of the firm’s other intangible assets, *Intang*, in our analysis of the determinants of the decision to exclude intangible assets from the calculation of net worth. We measure the amount of goodwill as COMPUSTAT #204/#6, and we measure the amount of intangible assets as COMPUSTAT #33/#6.

Thus we estimate the following two models. We estimate both equations using fixed time effects and fixed effects for lenders.\(^9\) Since the dependant variables are dichotomous, each regression is estimated using a logistic regression.

\[
\text{IncEscalator} = _1 + _1 \text{ConservMeasure} + _2 \text{Maturity} + _3 \text{Loan/Assets} + _4 \text{Performance Pricing} + _5 \text{Revolver} + _6 \text{Absolute current accruals} + _7 \text{Ratings} + _8 \text{Size} + _9 \text{Growth} + _ \quad (1)
\]

\[
\text{Tangible} = _1 + _1 \text{ConservMeasure} + _2 \text{Maturity} + _3 \text{Loan/Assets} + _4 \text{Performance Pricing} + _5 \text{Revolver} + _6 \text{Absolute current accruals} + _7 \text{Ratings} + _8 \text{Size} + _9 \text{Growth} + _10 \text{Gwill} + _11 \text{Intang} + _ \quad (2)
\]

**Variable Definition:**

*IncEscalator:* Indicator variable that is one if the net worth covenant is adjusted for a percentage of positive income.

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\(^9\) Since there are often multiple lenders per loan, our sample has thousands of lenders. Instead of including a fixed effect for each individual lender, we included fixed effects for each of the six largest lenders in the regressions. In addition, we include controls for whether the loan is syndicated or not, and controls for the number of lenders that are associated with the loan. We omit the coefficients on these variables when tabulating our results for parsimony.
**Tangible:** Indicator variable that is one if the net worth covenant excludes intangible assets.

**ConservMeasure:** One of the five measures of conservatism discussed below

**Mkt-to-Book:** Measured as the ratio of book value to market value in the fiscal year prior to the firm entering into the contract (COMPUSTAT #6 - #60 + #199/#25)/ #6).

**NI-Conserv:** We use Basu’s (1997) reverse regression methodology using five years of data to estimate the regression coefficients for each year/rating class. Consistent with Basu, we use the interaction coefficient in the interaction of Negret with the Return variable to measure the extent to which firms are conservative. Thus each year, in each credit class, all firms will have the same measure of conservatism.

**Skewness:** Measured as the difference between the skewness in the firm’s cash flows (COMPUSTAT #308/6) and the firm’s earnings (COMPUSTAT #172/6) using 20 quarters of data prior to the firm entering into the contract.

**Non opp accruals:** the extent to which a firm’s earnings include negative non-operating accruals, calculated as the average (COMPUSTAT #172 + #14 - #308 + #302 + #303 + #304 + #305)/ #6 measured over a 5 year period.

**All-Rank:** A composite measure tabulated as the sum of the firm’s rank for Mkt-to-Book + NI-Conserv + Skewness + Non Opp Accruals.

**Predicted All-Rank:** the predicted value from the first-stage regression of All-Rank on all exogenous variables including of proxies for the litigation, tax and equity demands for conservatism.

**Residual All-Rank:** the residual from the first-stage regression of All-Rank on a series of proxies for the litigation, tax and equity demands for conservatism.

**Maturity:** the maturity of the loan in years.

**Loan/Assets:** the size of the loan divided by the firm’s assets in the year prior to entering into the contract (COMPUSTAT #6).

**Performance Pricing:** a dichotomous variable taking value 1 if performance pricing (floating spread over LIBOR) is included in loan covenants, 0 otherwise.

**Revolver:** a dichotomous variable taking value 1 if the loan type is revolver, 0 otherwise.

**Absolute Current Accruals:** the absolute value of current accruals, calculated as the average (COMPUSTAT #302 + #303 + #304 + #305)/ #6 measured over a 5 year period.

**Ratings:** For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.

**Size:** The log of the firm’s market value of equity (COMPUSTAT #199 * #25).

**Growth:** the growth in the firm’s assets calculated as COMPUSTAT #6/lag1(COMPUSTAT #6).

**Gwill:** the amount of goodwill measured as COMPUSTAT #204/#6.
we measure the amount of intangible assets as COMPUSTAT #33/#6.

3.3. Reporting Conservatism and Litigation, Tax, and Equity demands

The association between financial reporting conservatism and conservative contract modifications is likely to be affected by other stakeholders’ demands for conservatism. The efficiency of financial reporting conservatism to meet lenders’ demands for conservatism should be greater when the other demands for reporting conservatism are higher. We use an instrumental variables approach to isolate reporting conservatism associated with these other demands.

We consider three other sources of demand for conservatism that have been discussed in previous research. Watts (2003) argues that firms subject to higher litigation risk should be more likely to prefer to recognize losses on a timelier basis than gains to reduce their expected litigation costs. In addition Watts (2003) argues that tax paying firms should have an incentive to accelerate loss recognition relative to gain recognition to minimize the present value of their tax payments. Finally, Ball, Robin, and Sadka (2005) argue that the demand for asymmetric timeliness in financial reporting decreases with the amount of minority shareholders. Similarly, LaFond and Watts (2006) argue that the demand for conservatism in financial reporting is increasing in the extent of information asymmetry among equity shareholders.

We measure firms with higher litigation risk, *Litigation Industry*, using a dichotomous variable, LITIND, that is equal to one if the firm is in a high litigation risk industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374) and zero otherwise. We measure the marginal tax rate, *Marginal Tax Rate*, using Graham (1996)
simulated corporate marginal tax rate based on income after interest expense has been deducted.\textsuperscript{10}

We use two constructs to capture the extent of equity demand for conservatism. The first is the extent of institutional ownership, \textit{Mean Institutional Ownership}, defined as the average percentage of institutional ownership over the past 4 quarters, calculated from Spectrum 13F institutional holdings data. The second is the extent of insiders ownership, \textit{Mean Insider Ownership}, measured as the average percentage of shares held by firm managers and directors, calculated from Compact Disclosure reports. To accommodate non-linearities in the relationship between these two variables and reporting conservatism we also include the square of each of these variables in our estimation of reporting conservatism.

We report the correlation between the \textit{All-rank} measure of conservatism and our variables capturing the litigation, tax, and equity demands for conservatism in Appendix A. As predicted, we find that firms in higher litigation risk industries have higher reporting conservatism. In contrast, firms with higher marginal tax rates have lower financial reporting conservatism. This negative relation most likely reflects the fact that the metric captures marginal tax rates \textit{ex-post} rather than \textit{ex-ante}, i.e. recognize losses on a timelier basis than gains will reduce the measured marginal tax rate. We find lower reporting conservatism for firms with higher institutional ownership, which is consistent with institutions having better access to information and lower information asymmetries.

We regress our \textit{All-rank} measure of financial reporting conservatism on these measures of the other demands for financial reporting and all of the exogenous variables

\textsuperscript{10} Replacing this variable with whether the firm has an NOL per Compustat, has no effect on our results.
included in our covenant modification models. The fitted value of this model is our proxy for the equity holder, litigation and tax demands for conservatism, and the residual is our proxy for all other demands for conservatism.

4. Sample Selection and Descriptive Statistics

4.1 Sample Selection

We examine the prevalence of conservative modification to net worth covenants to provide evidence on the most efficient method of meeting lenders’ demands for conservatism. We use the SDC database of syndicated loans to identify a sample of 3,641 private debt agreements with net worth covenants issued during the period 1994-2004. Of these, 2,164 observations had the necessary data available on COMPUSTAT. We require additional data restrictions to develop each of our measures of conservatism, and thus allow the number of firms to vary in each of our subsequent analyses.

We use the information about income escalators included the LPC database tear sheets to verify the information about income escalators in the SDC database. In total, LPC had data for 411 observations, 292 had income escalators and 119 did not. SDC indicated that only 104 of these 411 observations had income escalators and the remaining 307 did not. Furthermore, all 104 firms on the SDC database that had income escalators also had income escalators on the LPC database. This suggested that SDC might have misclassified firms as not having income escalators when they actually do have these provisions.

To check the validity of the SDC classification we hand collected debt contracts from LEXIS/NEXIS. We found that when SDC reported that the firm had an income escalator that coding was correct. However, approximately three quarters of the
covenants that SDC did not identify as having an income escalator actually did have an escalator. Because of this difference in the accuracy of the coding we hand collected information from the SEC filings and used the covenant information from LPC to ensure the accuracy of the SDC data.

4.2 Descriptive Statistics

Table 1 reports descriptive statistics related to our income escalator analysis. In the first two columns, we split our sample on the existence of an income escalator provision, IncEscalator. We find that firms with income escalators appear to be more conservative for four of our five conservatism measures. We also find that firms that have income escalators appear to have loans that have a longer maturity, are relatively larger, have performance pricing features, and are more likely to be a revolving loan. This suggests that firms with income escalators likely have larger agency costs associated with the debt.

We also examine the relationship between the decision to exclude intangible assets, and the use of income escalators. We find that firms that do not have an income escalator appear to be more likely to have tangible net worth covenants than firms that have income escalators. This is probably attributable to the perverse effects of income escalators on the effect of intangible asset amortization/impairment on covenant slack when a firm has a tangible net worth covenant.

When the tangible net worth covenant includes an income escalator, then the amortization/impairment of the intangibles that the firm owns prior to entering into the contract will actually increase the amount of covenant slack. This is true because the amount of tangible net worth is unaffected by the amortization/impairment but the
increase in the threshold is reduce by a non-zero percentage of the amount of the amortization/impairment. Thus, it is not surprising that contracts with income escalators are less likely to be based on tangible net worth.

In columns 3-5 we develop three groups based on the amount of income added back to covenant thresholds. The first group consists of the 110 firms that have income escalators that add between 1 and 49% of positive income back to the covenant threshold over the life of the contract. The second group consists of the 992 firms that add 50% of positive income back to the covenant threshold over the life of the contract. The final group consists of the 381 firms that add between 51 and 100% of positive income back to the covenant threshold over the life of the contract.

As the simple frequencies suggest, the vast majority of income escalators add back 50% of net income to covenant thresholds. We found only 19 firms had income escalators that added back 100% of the income. Conditional on having an income escalator, the lowest income escalator we found was only 10%. Since much of the data on income escalators was hand collected, we also verified that firms added back positive income, and not both positive and negative income. Of the 2,164 agreements with the required data, we found 68 (3%) that added back both positive and negative income to the threshold. We exclude these agreements from the rest of the analysis. We also find some evidence that firms that have a higher percentage of their positive net income added to their covenant thresholds have more conservative reports and higher expected agency costs. We find four out of our five measures of financial reporting conservatism are increasing in the amount of income added to the threshold. We also find that two of our
contract measures of agency costs (revolver and the size of the loan) and both of our firm measures of agency costs are increasing in the amount of income added to the threshold.

When you consider all six columns of Table 1 at the same time, some interesting patterns in the data emerge. When we compare the attributes of firms with no income escalator to those with an income escalator we find systematic differences suggesting that firms with income escalators are more conservative and have higher agency costs of debt. This pattern does not consistently hold across all percentages of positive net income added back. Specifically, if we compare the 110 observations that add back between 1-49% of positive income to those with no income escalator, we see that the firms that add back less than half of positive net income are generally less conservative and generally have lower agency costs of debt than those with no income escalator. Since, less than ten percent of the total observations with income escalators are in this group, the mean effect is dominated by those that add back 50% or more of positive income.\textsuperscript{11}

In Table 2, we partition our sample agreements into whether they have net worth covenants or tangible net worth covenants. We find some evidence that firms that have more conservative financial reports are more likely to exclude intangible assets from net worth covenant calculations; however, the results are not as stark as in the income escalator partition of the data. When we examine agency costs, it appears that firms that include intangible assets in covenant calculations have higher agency costs. The most significant difference across this partition is that firms that do not exclude intangible assets from net worth covenant calculations are more likely to have goodwill and to have

\textsuperscript{11} We have attempted to model these two decisions. As we discuss above, the Tobit model does not appear to be appropriate. Other models, like a probit and a truncated regression, suffer from the fundamental problem that the data is categorical, as opposed to continuous. The correlation between our 0/1 dichotomous variable and the continuous data is over 90%. Thus the decision to include an income escalator explains much of the variation in the amount of income added to the threshold.
other intangible assets. This suggests that the intangible restriction may be designed to restrict the firm from purchasing new intangibles rather than to deal with existing purchased intangibles.

At contract inception the amount of these purchased intangibles can be excluded from covenant slack in one of two ways. Lenders can exclude the intangible assets from the net worth amount that is compared to the threshold, or lenders can allow the intangible assets to remain in the firm’s net worth and adjust the threshold. At inception of the contract these two methods are equivalent. The effect of amortization/impairment of intangibles on covenant slack over the life of the loan will differ, but perhaps not in an intuitive way.

For conventional net worth covenants the effect of the amortization/impairment on income will lead to a lower covenant slack. However, for tangible net worth covenants without an income escalator the amortization/impairment of intangibles will have no affect on covenant slack. Amortization charges will increase the firm’s tangible assets which is offset by the reduction in income (net worth) associated with the amortization/impairment. Therefore, the effect of goodwill amortization will be more conservative for net worth covenants than for tangible net worth covenants.

In Table 3 we partition firms based on their credit rating at contract initiation. We group those firms with credit ratings of 10 and below together, and we group those firms with credit ratings of 18 and higher together. We also tabulate results for each credit rating level between 10 and 18. A few trends appear in the data.

We find that as credit quality deteriorates firms are more likely to exclude intangible assets from covenant calculations. This is consistent with Holthausen and
Watts’ (2001) arguments that intangible assets may be of little value in bankruptcy. We find that the relationship between credit risk and the use of income escalators is not monotonic. Initially, the use of income escalators increases with deteriorating credit risk, but declines with worsening credit risk for non-investment grade firms. We also find a concave relationship between credit risk and three of our measures of conservatism (i.e. the $NI_{Conserve}$, $Mkt$-$to$-$Book$, and our composite measure, $All$-$rank$). Although this result is inconsistent with the results in Ahmed et al. (2002) it is consistent with the results reported by Franzen et al. (2005).

In an untabulated analysis, we partitioned our sample by industry (two-digit SIC code) and compared the industry composition of the firms in our sample to the firms in COMPUSTAT. We noted that the 10 industries that had the largest proportions of firms in our sample were also amongst the most populated industries on COMPUSTAT. The two notable exceptions were that banks and utilities are underrepresented in our sample. This is either due to a lack of private debt in these industries, or a reduced reliance on net worth covenants. Other than these two industries, our sample composition is similar to the composition of firms on COMPUSTAT.

5. Results

In tables 4 and 5 we report the results of our analyses examining the determinants of the decision to include income escalators and tangible net worth restrictions in the firm’s financial contracts. In each table, we examine the relationship between a particular contractual feature and each of our four measures of conservatism. We also report results with the combined measure, $All$-$rank$, and when the $All$-$rank$ variable is split into predicted and residual components.
In table 4 we tabulate the results of our analysis of the contract modification requiring a percentage of positive net income to be added to covenant thresholds and financial reporting conservatism. We find that three of our four measures (Mkt-to-book, NI-Conserv, and Skewness) and our combined measure, All-rank, are each statistically significant and positively associated with IncEscalator. Similarly, when we use an instrumental variables approach, we find that the residual demand for financial reporting conservatism is positively associated with the use of an income escalator. In contrast we find that the portion of the All-rank variable that is associated with the litigation, tax and equity demands for reporting conservatism is negatively associated with the likelihood of using this covenant modification.

We also find that loan maturity, Maturity, loan size, Loan/Assets, revolver loans, Revolver, and loans with performance pricing, Performance Pricing, are all positively related to the use of an income escalator. Collectively the coefficients on these contract specific variables indicate that when the agency costs of debt are expected to be higher, the contract is more likely to include an income escalator adjustment. Further evidence that contracts are more likely to include an income escalator when the agency costs of debt are higher is provided by the positive and typically significant coefficient on the Absolute Current Accruals variable. In contrast, the coefficient on the Ratings variable, which is our other firm specific agency cost measure, is insignificant in most models. After controlling for the other factors expected to influence the likelihood of including an income escalator we find little evidence that any of our other control variables are significant in explaining this choice.
Overall the results in table 4 indicate that income escalators are more likely to be used when the benefits of these contracting features are higher and when the costs of increasing reporting conservatism are lower. However, the results also suggest that contract modifications alone may not always be adequate to meet the lenders’ conservatism demands.

In Table 5 we tabulate the results of the analysis of the association between the decision to exclude intangible assets from covenant calculations and the extent to which the firm provides conservative financial reports. We find no evidence that firms that have provided more conservative financial reports are either more or less likely to exclude intangible assets from covenant calculations. We also find mixed results on the relationship between our proxies for agency costs and the exclusion of intangible assets from covenant calculations. Our contracting proxies suggest that firms with higher agency costs are less likely to contract on tangible net worth. That is, debt that has a longer maturity and larger loans are both less likely to exclude intangible assets from covenant calculation. However, our firm level measures suggest the opposite. Firms that have poor credit ratings and firms that have larger current accruals are more likely to contract on tangible net worth. These results suggest it is not clear whether this contracting feature is being used to reduce agency costs.

We also find that Size is negatively associated with the decision to exclude intangible assets from the covenant calculations. Larger firms are less likely to have tangible net worth covenants. Firms that have a relatively larger goodwill balance, Gwill, and firms that have relatively more intangibles, Intan, are also both less likely to have
covenants based on tangible net worth. This may be, in part, attributable to the adjustments made in thresholds for the firms that have these assets.

These results suggest that the exclusion of tangible assets from the net worth covenant may have less to do with the role of conservative accounting reports according to the Roychowdhury and Watts (2006) framework, which “is to report the market value of net assets [exclusive of rents] available for interim distributions to claimants” and have more to do restricting firms’ future M&A activity.

6. Sensitivity Analysis

In our primary analysis we use an instrumental variables estimation to separate reporting conservatism associated with litigation, tax and equity demands from reporting conservatism associated with other demands including those of lenders. Our analysis of the association of this residual reporting conservatism with conservative contract modifications provides an indirect test of how contract modifications affect the extent to which lenders demands for conservatism affect financial reports.

An alternative possibility is that the level of anticipated contract conservatism directly affects the choice of reporting conservatism. If the firm has a demand for conservatism in its financial reports that is driven by a variety of economic factors such as litigation, tax and equity demands and the degree of conservatism it wants in its debt contracts, it may simultaneously decide on the level of contract conservatism given the optimal level of conservatism in financial reporting.

We investigate this alternative by considering the possibility of a second structural model. (Our first structural model is the income escalator model, equation 1,
described above.) Specifically, we consider the determinants of the extent to which firms report conservatively.

\[
\text{All\_Rank} = \beta_0 + \beta_1 \text{Predicted Inc\_escalator} + \beta_2 \text{Litigation} + \beta_3 \text{Tax Rate} + \beta_4 \text{Institution Own} + \beta_5 (\text{Institution Own})^2 + \beta_6 \text{Inside Own} + \beta_7 (\text{Inside Own})^2 + \beta_8 \text{Abs(current accruals)} + \beta_9 \text{Ratings} + \beta_{10} \text{Size} + \beta_{11} \text{Growth} + \epsilon
\]  
(3)

**Variable Definition:**

**Predicted Inc\_escalator:** The predicted value derived from estimating our model of the determinants of the decision to include an income escalator on all exogenous variables.

**Litigation:** one if the firm is in a high litigation risk industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374) and zero otherwise.

**Tax Rate:** simulated corporate marginal tax rate based on income after interest expense has been deducted, as obtained from John Graham’s website.

**Institution Own:** the average percentage of institutional ownership over the past 4 quarters, calculated from Spectrum 13F institutional holdings data.

**Insider Own:** the average percentage of shares held by firm managers and directors, calculated from Compact Disclosure reports.

\((\text{Institution Own})^2:\) the square of Mean Institutional Ownership.

\((\text{Insider Own})^2:\) the square of Mean Insider Ownership.

**Abs(Current Accruals):** the absolute value of current accruals, calculated as the average \((\text{COMPUSTAT \#302 + \#303 + \#304 + \#305}) / \#6\) measured over a 5 year period.

**Ratings:** For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.

**Size:** The log of the firm’s market value of equity \((\text{COMPUSTAT \#199 * \#25})\).

**Growth:** the growth in the firm’s assets calculated as \(\text{COMPUSTAT \#6/lag1(\text{COMPUSTAT \#6})}\).

We investigate this possibility by conducting a two-stage estimation that allows the choices of reporting conservatism and income escalator to be simultaneously determined. This analysis has the advantage of providing a more direct test of how contract modifications affect the extent to which lender’s demands for conservatism are reflected in the firm’s financial reports. In addition, our lender fixed effect variables
provide us with instruments that are related to the extent to which conservative contract modifications are used but are not likely to be directly related to the extent to which reporting conservatism is used to meet lenders demands. In contrast, identifying instruments that capture lenders’ demands that are related to reporting conservatism but are not directly related to contract modifications is more challenging. However, there are also drawbacks to this alternative approach.

Existing conservatism proxies require several years of data to estimate. In particular, our firm level measures of financial reporting conservatism use data that span the five years prior to the firm entering into the debt contract. For the conservative contract modifications to affect the extent to which the firm provides conservative financial reports requires the assumption that the borrower’s reporting decisions anticipate this future lender demand.

If borrowers are able to anticipate lender’s future demands, then we expect that the extent to which the firm provides conservative financial reports will be associated with the lender’s demand. More specifically, if contract modifications can be used to completely meet the lender’s demand for conservative reports, then, *ceritus paribus*, we would expect a negative relationship between the extent to which firms provide conservative financial reports and the expected probability of having a contractual modification.

Our model of the determinants of the extent to which firm’s report conservatively, uses the combined measure of conservatism, *All_rank*, as our proxy for the extent to which firms report conservatively. We include controls for the previously discussed measures of equity holder demand for conservative reports (*Mean Institutional
Ownership and Mean Insider Ownership) as well as the square of these terms to address non-linearities. We include our proxies for the demands that arise from litigation and tax (Litigation Industry and Marginal Tax Rate). We also include our firm level measures of agency costs (Ratings and Absolute Current Accruals) as well as our controls for size and growth.\textsuperscript{12} The variable of interest, Predicted Inc\_escalator, is the fitted value derived from the coefficients we obtained when we estimated model 1 without including the conservatism measure in the regression.

The results of this estimation are reported in Table 6. We find that our proxies for equity holder demand for financial reporting conservatism, and our proxies for litigation risk, are positively associated with the extent to which firms report conservatively. Our proxy for the tax incentives is insignificant. As to the variable of interest, pred\_income escalator, we find that when contracts are more likely to contain GAAP modifications, borrowers are more likely to provide conservative financial reports. This result is consistent with the results in the primary analysis, and suggests that both reporting conservatism and conservative contract modifications may be required to satisfy lenders’ demands for conservatism.

7. Conclusions

In this paper, we investigate the use of conservative debt covenant modifications. We document that the use of conservative covenant modifications rely on fairly crude adjustments to GAAP net worth and are by no means ubiquitous. Over one third of our

\textsuperscript{12} If we include the contract level measures of agency costs in this regression, we obtain similar results on the variable of interest, pred\_income escalator. We recognize that anticipated agency problems are likely to be associated with the extent to which firms report conservatively, and thus include the firm level measures in the all\_rank regression. Including the contract level measures is slightly more tenuous, since, as we discuss above, including these variables suggests that the firm can anticipate how lenders will respond to these agency problems.
sample contracts do not contain positive income escalators and over half of the contracts do not adjust for purchased intangibles. We find that income escalators are more likely to be used when the agency costs of debt are likely to be higher. This suggests that this modification is used to help meet lenders’ demands for conservatism. Furthermore these modifications are less likely to be used when the conservatism in accounting reports is associated with the litigation, tax and equity demands for conservatism. However, we find a positive association between residual reporting conservatism and this form of covenant modification. This suggests that under certain conditions both reporting conservatism and conservative contract modifications may be required to satisfying lenders’ demands for conservatism.

We believe that the results of our paper may be of interest to both academics and standard setters. From an academic perspective, our results are potentially important for the literature examining explanations for financial reporting conservatism. This literature suggests that contract modifications are a more efficient mechanism that lenders will use to meet their demands for conservative reports. Our paper provides empirical evidence questioning whether contractual modifications are more efficient than GAAP modifications.

Standard setters may find these results interesting because they may have implications for how borrowers will respond to changes in the extent to which accounting standards are conservative. Our results suggest that lenders may not be able to meet their demands for conservatism entirely through covenant modifications. As GAAP becomes less conservative, firms may be forced to make more conservative accounting choices within GAAP to meet their demands for conservative financial reports.
References


Table 1
Descriptive statistics of the determinants of the amount of positive income included in future net worth threshold calculations for a sample of 2096 firms over the period 1994-2003.

<table>
<thead>
<tr>
<th>Measures of Conservatism</th>
<th>No income escalator</th>
<th>Has income escalator</th>
<th>1-49% of positive net income</th>
<th>50% of positive net income</th>
<th>51-100% of positive net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mkt-to-book</td>
<td>1.58</td>
<td>1.65</td>
<td>1.56</td>
<td>1.61</td>
<td>1.74</td>
</tr>
<tr>
<td>NI-Conserv</td>
<td>0.18</td>
<td>0.17</td>
<td>0.14</td>
<td>0.17</td>
<td>0.18</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.99</td>
<td>1.25</td>
<td>1.29</td>
<td>1.24</td>
<td>1.21</td>
</tr>
<tr>
<td>Non opp accruals</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>All-Rank</td>
<td>193.2</td>
<td>199.5</td>
<td>186.2</td>
<td>196.5</td>
<td>207.9</td>
</tr>
<tr>
<td>Predicted All-Rank</td>
<td>200.1</td>
<td>197.2</td>
<td>184.7</td>
<td>198.0</td>
<td>202.4</td>
</tr>
<tr>
<td>Residual All-Rank</td>
<td>-7.1</td>
<td>2.3</td>
<td>-1.5</td>
<td>1.5</td>
<td>5.5</td>
</tr>
</tbody>
</table>

**Agency Cost of Debt**

<table>
<thead>
<tr>
<th></th>
<th>No income escalator</th>
<th>Has income escalator</th>
<th>1-49% of positive net income</th>
<th>50% of positive net income</th>
<th>51-100% of positive net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>2.90</td>
<td>3.39</td>
<td>3.07</td>
<td>3.51</td>
<td>3.25</td>
</tr>
<tr>
<td>Loan/Asset</td>
<td>0.32</td>
<td>0.41</td>
<td>0.20</td>
<td>0.40</td>
<td>0.48</td>
</tr>
<tr>
<td>Performance pricing</td>
<td>0.60</td>
<td>0.81</td>
<td>0.83</td>
<td>0.84</td>
<td>0.74</td>
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<tr>
<td>Revolver</td>
<td>0.77</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
<td>0.86</td>
</tr>
<tr>
<td>Abs. current accruals</td>
<td>0.04</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
<td>0.05</td>
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<tr>
<td>Ratings</td>
<td>13.56</td>
<td>13.66</td>
<td>11.73</td>
<td>13.58</td>
<td>14.39</td>
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</table>

**Other Control Variables**

<table>
<thead>
<tr>
<th></th>
<th>No income escalator</th>
<th>Has income escalator</th>
<th>1-49% of positive net income</th>
<th>50% of positive net income</th>
<th>51-100% of positive net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>5.83</td>
<td>5.92</td>
<td>7.11</td>
<td>5.98</td>
<td>5.45</td>
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<tr>
<td>Growth</td>
<td>1.32</td>
<td>1.39</td>
<td>1.25</td>
<td>1.34</td>
<td>1.55</td>
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</table>

**Other Dependant variable**

<table>
<thead>
<tr>
<th></th>
<th>No income escalator</th>
<th>Has income escalator</th>
<th>1-49% of positive net income</th>
<th>50% of positive net income</th>
<th>51-100% of positive net income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangible</td>
<td>0.53</td>
<td>0.38</td>
<td>0.37</td>
<td>0.36</td>
<td>0.39</td>
</tr>
<tr>
<td>Number of firms</td>
<td>613</td>
<td>1,483</td>
<td>110</td>
<td>992</td>
<td>381</td>
</tr>
</tbody>
</table>

**Variable Definition:**

**Tangible:** Indicator variable that is one if the net worth covenant excludes intangible assets.

**Mkt-to-Book:** Measured as the ratio of book value to market value in the fiscal year prior to the firm entering into the contract (COMPSTAT #6 - #60 + #199*#25)/ #6).

**NI-Conserv:** We use Basu’s (1997) reverse regression methodology using five years of data to estimate the regression coefficients for each year/rating class. Consistent with Basu, we use the interaction coefficient in the interaction of Negret with the Return variable to measure the extent to which firms are conservative. Thus each year, in each credit class, all firms will have the same measure of conservatism.
Skewness: Measured as the difference between the skewness in the firm’s cash flows (COMPUSTAT #308/#6) and the firm’s earnings (COMPUSTAT #172/#6) using 20 quarters of data prior to the firm entering into the contract.

Non opp accruals: the extent to which a firm’s earnings include negative non-operating accruals, calculated as the average (COMPUSTAT #172 + #14 - #308 + #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

All-Rank: A composite measure tabulated as the sum of the firm’s rank for Mkt-to-Book + NI-Conserv + Skewness + Non Opp Accruals.

Predicted All-Rank: the predicted value from the first-stage regression of All-Rank on all exogenous variables including of proxies for the litigation, tax and equity demands for conservatism.

Residual All-Rank: the residual from the first-stage regression of All-Rank on a series of proxies for the litigation, tax and equity demands for conservatism.

Maturity: the maturity of the loan in years.

Loan/Assets: the size of the loan divided by the firm’s assets in the year prior to entering into the contract (COMPUSTAT #6).

Performance Pricing: a dichotomous variable taking value 1 if performance pricing (floating spread over LIBOR) is included in loan covenants, 0 otherwise.

Revolver: a dichotomous variable taking value 1 if the loan type is revolver, 0 otherwise.

Absolute Current Accruals: the absolute value of current accruals, calculated as the average (COMPUSTAT #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

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Size: The log of the firm’s market value of equity (COMPUSTAT #199 * #25).

Growth: the growth in the firm’s assets calculated as COMPUSTAT #6/lag1(COMPUSAT #6).
Table 2
Descriptive statistics of the determinants to exclude intangible assets from the calculation of net worth covenants for a sample of 2096 firms over the period 1994-2003

<table>
<thead>
<tr>
<th>Measures of Conservatism</th>
<th>Tangible net worth</th>
<th>Net Worth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mkt-to-book</td>
<td>1.60</td>
<td>1.39</td>
</tr>
<tr>
<td>NI-Conserv</td>
<td>0.18</td>
<td>0.13</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.10</td>
<td>1.29</td>
</tr>
<tr>
<td>Non opp accruals</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>All-Rank</td>
<td>199.28</td>
<td>197.28</td>
</tr>
<tr>
<td>Predicted All-Rank</td>
<td>199.30</td>
<td>197.61</td>
</tr>
<tr>
<td>Residual All-Rank</td>
<td>-.02</td>
<td>-0.33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agency Cost of Debt</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>3.00</td>
<td>3.46</td>
</tr>
<tr>
<td>Loan/Asset</td>
<td>0.33</td>
<td>0.42</td>
</tr>
<tr>
<td>Performance pricing</td>
<td>0.68</td>
<td>0.81</td>
</tr>
<tr>
<td>Revolver</td>
<td>0.92</td>
<td>0.92</td>
</tr>
<tr>
<td>Absolute current accruals</td>
<td>0.46</td>
<td>0.35</td>
</tr>
<tr>
<td>Rating</td>
<td>13.79</td>
<td>13.49</td>
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</table>

<table>
<thead>
<tr>
<th>Other Control Variables</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Size</td>
<td>5.69</td>
<td>6.07</td>
</tr>
<tr>
<td>Growth</td>
<td>1.32</td>
<td>1.41</td>
</tr>
<tr>
<td>Gwill</td>
<td>0.03</td>
<td>0.10</td>
</tr>
<tr>
<td>Intang</td>
<td>0.02</td>
<td>0.05</td>
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</table>

<table>
<thead>
<tr>
<th>Other Dependant variable</th>
<th></th>
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<tbody>
<tr>
<td>IncEscalator</td>
<td>35.33</td>
<td>43.07</td>
</tr>
<tr>
<td>Number of firms</td>
<td>902</td>
<td>1194</td>
</tr>
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</table>

Variable Definition:

**IncEscalator:** Indicator variable that is one if the net worth covenant is adjusted for a percentage of positive net income, zero otherwise.

**Tangible:** Indicator variable that is one if the net worth covenant excludes intangible assets.

**Mkt-to-Book:** Measured as the ratio of book value to market value in the fiscal year prior to the firm entering into the contract (COMPUSTAT #6 - #60 + #199*#25)/ #6).

**NI-Conserv:** We use Basu’s (1997) reverse regression methodology using five years of data to estimate the regression coefficients for each year/rating class. Consistent with Basu, we use the interaction coefficient in the interaction of Negret with the Return variable to measure the extent to which firms
are conservative. Thus each year, in each credit class, all firms will have
the same measure of conservatism.

**Skewness:** Measured as the difference between the skewness in the firm’s cash flows (COMPUSTAT #308/#6) and the firm’s earnings (COMPUSTAT #172/#6) using 20 quarters of data prior to the firm entering into the contract.

**Non opp accruals:** the extent to which a firm’s earnings include negative non-operating accruals, calculated as the average (COMPUSTAT #172 + #14 - #308 + #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

**All-Rank:** A composite measure tabulated as the sum of the firm’s rank for *Mkt-to-Book* + *NI-Conserv* + *Skewness* + *Non Opp Accruals*.

**Predicted All-Rank:** the predicted value from the first-stage regression of All-Rank on all exogenous variables including of proxies for the litigation, tax and equity demands for conservatism.

**Residual All-Rank:** the residual from the first-stage regression of All-Rank on a series of proxies for the litigation, tax and equity demands for conservatism.

**Maturity:** the maturity of the loan in years.

**Loan/Assets:** the size of the loan divided by the firm’s assets in the year prior to entering into the contract (COMPUSTAT #6).

**Performance Pricing:** a dichotomous variable taking value 1 if performance pricing (floating spread over LIBOR) is included in loan covenants, 0 otherwise.

**Revolver:** a dichotomous variable taking value 1 if the loan type is revolver, 0 otherwise.

**Absolute Current Accruals:** the absolute value of current accruals, calculated as the average (COMPUSTAT #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

**Ratings:** For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.

**Size:** The log of the firm’s market value of equity (COMPUSTAT #199 * #25).

**Growth:** the growth in the firm’s assets calculated as COMPUSTAT #6/lag1(COMPUSTAT #6).

**Gwill:** the amount of goodwill measured as COMPUSTAT #204/#6.

**Intang:** we measure the amount of intangible assets as COMPUSTAT #33 /#6.
Table 3
Descriptive statistics based on credit rating partitions
for a sample of 2096 firms over the period 1994-2003 that have net worth covenants

<table>
<thead>
<tr>
<th>Ratings up to 10</th>
<th>Ratings =11</th>
<th>Ratings =12</th>
<th>Ratings =13</th>
<th>Ratings =14</th>
<th>Ratings =15</th>
<th>Ratings =16</th>
<th>Ratings H=17</th>
<th>Ratings above 18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependant Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IncEscalator</td>
<td>0.55</td>
<td>0.59</td>
<td>0.62</td>
<td>0.81</td>
<td>0.83</td>
<td>0.81</td>
<td>0.71</td>
<td>0.70</td>
</tr>
<tr>
<td>IncEscalator%</td>
<td>22.92</td>
<td>28.24</td>
<td>36.51</td>
<td>43.51</td>
<td>47.34</td>
<td>43.42</td>
<td>43.25</td>
<td>28.3</td>
</tr>
<tr>
<td>Tangible</td>
<td>0.31</td>
<td>0.40</td>
<td>0.40</td>
<td>0.45</td>
<td>0.40</td>
<td>0.47</td>
<td>0.50</td>
<td>0.48</td>
</tr>
<tr>
<td><strong>Measures of Conservatism</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mkt-to-book</td>
<td>1.46</td>
<td>1.67</td>
<td>1.59</td>
<td>1.77</td>
<td>1.72</td>
<td>1.54</td>
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<td>1.39</td>
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<tr>
<td>NI-Conserv</td>
<td>0.05</td>
<td>0.06</td>
<td>0.10</td>
<td>0.17</td>
<td>0.15</td>
<td>0.21</td>
<td>0.19</td>
<td>0.18</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.48</td>
<td>1.19</td>
<td>0.96</td>
<td>0.99</td>
<td>1.07</td>
<td>1.26</td>
<td>1.36</td>
<td>1.43</td>
</tr>
<tr>
<td>Non opp accruals</td>
<td>0.011</td>
<td>0.013</td>
<td>0.014</td>
<td>0.014</td>
<td>0.017</td>
<td>0.025</td>
<td>0.016</td>
<td>0.026</td>
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<td>All-Rank</td>
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<td>174.3</td>
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<td>198.3</td>
<td>214.9</td>
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<td>212.8</td>
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<td>Predicted All-Rank</td>
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<td>182.0</td>
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<td>197.7</td>
<td>204.4</td>
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<td>Residual All-Rank</td>
<td>-19.6</td>
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<td>-7.67</td>
<td>14.7</td>
<td>6.0</td>
<td>10.5</td>
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<td>-7.6</td>
</tr>
<tr>
<td><strong>Agency Cost of Debt</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maturity</td>
<td>2.21</td>
<td>2.99</td>
<td>3.27</td>
<td>3.48</td>
<td>3.43</td>
<td>3.39</td>
<td>3.27</td>
<td>3.25</td>
</tr>
<tr>
<td>Loan/Asset</td>
<td>0.13</td>
<td>0.20</td>
<td>0.27</td>
<td>0.39</td>
<td>0.42</td>
<td>0.47</td>
<td>0.48</td>
<td>0.54</td>
</tr>
<tr>
<td>Performance pricing</td>
<td>0.68</td>
<td>0.82</td>
<td>0.87</td>
<td>0.81</td>
<td>0.79</td>
<td>0.73</td>
<td>0.65</td>
<td>0.57</td>
</tr>
<tr>
<td>Revolver</td>
<td>0.91</td>
<td>0.94</td>
<td>0.94</td>
<td>0.94</td>
<td>0.92</td>
<td>0.94</td>
<td>0.90</td>
<td>0.92</td>
</tr>
<tr>
<td>Absolute current accruals</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.05</td>
<td>0.04</td>
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<td><strong>Other Control Variables</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>8.53</td>
<td>7.53</td>
<td>6.79</td>
<td>6.13</td>
<td>5.67</td>
<td>5.02</td>
<td>4.60</td>
<td>4.17</td>
</tr>
<tr>
<td>Growth</td>
<td>1.30</td>
<td>1.26</td>
<td>1.31</td>
<td>1.31</td>
<td>1.46</td>
<td>1.45</td>
<td>1.42</td>
<td>1.38</td>
</tr>
<tr>
<td>Number of firms</td>
<td>113</td>
<td>186</td>
<td>332</td>
<td>377</td>
<td>392</td>
<td>366</td>
<td>157</td>
<td>95</td>
</tr>
</tbody>
</table>

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**Growth:** the growth in the firm’s assets calculated as COMPSTAT #6/lag1( COMPSTAT #6).
Table 4
Determinants of the probability to adjust a percentage of positive net income from net worth thresholds for a sample of firms that entered into net worth covenants between 1994 and 2004

\[
\text{IncEscalator} = -1 + \text{ConservMeasure} + 3 \text{Maturity} + \text{Loan/Assets} + 4 \text{Performance Pricing} + 5 \text{Revolver} + 6 \text{Absolute current accruals} + 7 \text{Ratings} + 8 \text{Size} + 9 \text{Growth} + \_ (1)
\]

<table>
<thead>
<tr>
<th></th>
<th>Coeff (T-Stat)</th>
<th>Coeff (T-Stat)</th>
<th>Coeff (T-Stat)</th>
<th>Coeff (T-Stat)</th>
<th>Coeff (T-Stat)</th>
<th>Coeff (T-Stat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.11 (0.14)</td>
<td>-0.39 (-0.45)</td>
<td>-0.54 (-0.67)</td>
<td>0.37 (0.44)</td>
<td>0.48 (0.54)</td>
<td>-1.94 (-1.37)</td>
</tr>
<tr>
<td>Rank mkt-to-book</td>
<td>0.003 (2.08)**</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>NI-Conserv</td>
<td>---</td>
<td>0.01 (4.42)**</td>
<td>---</td>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Skewness</td>
<td>---</td>
<td>---</td>
<td>0.004 (3.08)**</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Non opp accruals</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.001 (0.75)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>All-rank</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.002 (2.93)**</td>
<td>---</td>
<td>-0.017 (-1.96)*</td>
</tr>
<tr>
<td>Predicted All-rank</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Residual All-rank</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>0.002 (3.09)**</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Maturity</td>
<td>0.14 (5.71)**</td>
<td>0.13 (5.50)**</td>
<td>0.14 (5.70)**</td>
<td>0.12 (4.64)**</td>
<td>0.12 (4.58)**</td>
<td>0.14 (5.04)**</td>
</tr>
<tr>
<td>Loan/Assets</td>
<td>0.23 (1.88)*</td>
<td>0.29 (2.45)**</td>
<td>0.36 (2.95)**</td>
<td>0.26 (2.07)**</td>
<td>0.25 (1.89)*</td>
<td>0.68 (2.87)**</td>
</tr>
<tr>
<td>Performance Pricing</td>
<td>0.52 (6.23)**</td>
<td>0.49 (5.90)**</td>
<td>0.48 (5.74)**</td>
<td>0.60 (6.87)**</td>
<td>0.61 (6.83)**</td>
<td>0.62 (6.97)**</td>
</tr>
<tr>
<td>Revolver</td>
<td>0.40 (3.22)**</td>
<td>0.33 (2.63)**</td>
<td>0.42 (3.30)**</td>
<td>0.37 (2.86)**</td>
<td>0.34 (2.56)**</td>
<td>0.50 (3.28)**</td>
</tr>
<tr>
<td>Absolute current accruals</td>
<td>2.09 (2.55)**</td>
<td>2.02 (2.48)**</td>
<td>2.54 (3.04)**</td>
<td>1.16 (1.28)</td>
<td>1.01 (1.13)</td>
<td>3.78 (2.44)**</td>
</tr>
<tr>
<td>Ratings</td>
<td>0.01 (0.37)</td>
<td>-0.04 (-1.35)</td>
<td>0.02 (0.88)</td>
<td>-0.02 (-0.65)</td>
<td>-0.04 (-1.57)</td>
<td>0.23 (1.79)*</td>
</tr>
<tr>
<td>Size</td>
<td>-0.01 (-0.36)</td>
<td>0.04 (1.22)</td>
<td>0.04 (1.22)</td>
<td>0.002 (0.07)</td>
<td>-0.03 (-0.80)</td>
<td>0.33 (1.96)*</td>
</tr>
<tr>
<td>Growth</td>
<td>0.01 (0.31)</td>
<td>0.02 (0.50)</td>
<td>0.05 (0.82)</td>
<td>0.07 (1.12)</td>
<td>0.07 (1.05)</td>
<td>-0.01 (-0.08)</td>
</tr>
<tr>
<td>Lender Fixed Effects</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>Year Fixed Effects</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Pseudo R²</td>
<td>10.8%</td>
<td>11.6%</td>
<td>11.3%</td>
<td>12.4%</td>
<td>12.8%</td>
<td>13.1%</td>
</tr>
</tbody>
</table>

*,**,** indicate statistical significance at the .10, .05, and .01 percentage level respectively
Variable Definition:

IncEscalator: Indicator variable that is one if the net worth covenant is adjusted for a percentage of positive net income, zero otherwise.

ConservMeasure: One of the five measures of conservatism discussed below

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Revolver: a dichotomous variable taking value 1 if the loan type is revolver, 0 otherwise.

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Ratings: For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.
Size: The log of the firm’s market value of equity (COMPSTAT #199 * #25).
Growth: the growth in the firm’s assets calculated as COMPSTAT #6/lag 1 (COMPSTAT #6).
Table 5
Determinants of the probability to exclude purchased intangibles from net worth calculations for a sample firms that entered into net worth covenants between 1994 and 2004

\[
\text{Tangible} = -1 + \text{ConservMeasure} + -2 \text{ Maturity} + -3 \text{ Loan/Assets} \\
+ -4 \text{ Performance Pricing} + -5 \text{ Revolver} + -6 \text{ Absolute current accruals} \\
+ -7 \text{ Ratings} + -8 \text{ Size} + -9 \text{ Growth} + -10 \text{ Gwill} + -11 \text{ Intang} + -
\]  

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<tr>
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<td>15.7%</td>
<td>16.1%</td>
<td>16.9%</td>
<td>17.0%</td>
<td>17.1%</td>
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</table>
**Tangible:** Indicator variable that is one if the net worth covenant excludes intangible assets.

**ConservMeasure:** One of the five measures of conservatism discussed below

**Mkt-to-Book:** Measured as the ratio of book value to market value in the fiscal year prior to the firm entering into the contract (COMPUSTAT #6 - #60 + #199*#25)/ #6).

**NI-Conserv:** We use Basu’s (1997) reverse regression methodology using five years of data to estimate the regression coefficients for each year/rating class. Consistent with Basu, we use the interaction coefficient in the interaction of Negret with the Return variable to measure the extent to which firms are conservative. Thus each year, in each credit class, all firms will have the same measure of conservatism.

**Skewness:** Measured as the difference between the skewness in the firm’s cash flows (COMPUSTAT #308/ #6) and the firm’s earnings (COMPUSTAT #172/#6) using 20 quarters of data prior to the firm entering into the contract.

**Non opp accruals:** the extent to which a firm’s earnings include negative non-operating accruals, calculated as the average (COMPUSTAT #172 + #14 - #308 + #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

**All-Rank:** A composite measure tabulated as the sum of the firm’s rank for Mkt-to-Book + NI-Conserv + Skewness + Non Opp Accruals.

**Predicted All-Rank:** the predicted value from the first-stage regression of All-Rank on all exogenous variables including of proxies for the litigation, tax and equity demands for conservatism.

**Residual All-Rank:** the residual from the first-stage regression of All-Rank on a series of proxies for the litigation, tax and equity demands for conservatism.

**Maturity:** the maturity of the loan in years.

**Loan/Assets:** the size of the loan divided by the firm’s assets in the year prior to entering into the contract (COMPUSTAT # 6).

**Performance Pricing:** a dichotomous variable taking value 1 if performance pricing (floating spread over LIBOR) is included in loan covenants, 0 otherwise.

**Revolver:** a dichotomous variable taking value 1 if the loan type is revolver, 0 otherwise.

**Absolute Current Accruals:** the absolute value of current accruals, calculated as the average (COMPUSTAT #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

**Ratings:** For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.

**Size:** The log of the firm’s market value of equity (COMPUSTAT #199 * #25).

**Growth:** the growth in the firm’s assets calculated as COMPUSTAT #6/lag1( COMPUSTAT #6).
**Gwill:** the amount of goodwill measured as COMPUSTAT #204/#6.

**Intang:** we measure the amount of intangible assets as COMPUSTAT #33/#6.
Table 6
Sensitivity analysis examining the association between the extent to which firms provide conservative financial reports and the probability that they will enter into a contract that contains an income escalator.

\[
\text{All\_Rank} = -1 + -2 \text{Predicted IncEscalator} + -3 \text{Litigation} + -4 \text{Tax Rate} + -5 \text{Institution Own} + -6 (\text{Institution Own})^2 + -7 \text{Inside Own} + -8 (\text{Inside Own})^2 + -9 \text{Abs(current accruals)} + -10 \text{Ratings} + -11 \text{Size} + -12 \text{Growth} + \]

(3)

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<th>Variable</th>
<th>Coeff</th>
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<td>Insider Own</td>
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<td>(Institution Own)^2</td>
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<td>(Insider Own)^2</td>
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<td>Tax Rate</td>
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<tr>
<td>Abs(current accruals)</td>
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<tr>
<td>Ratings</td>
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<tr>
<td>Size</td>
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<tr>
<td>Growth</td>
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<tr>
<td>Lender Fixed Effects</td>
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<td>Year Fixed Effects</td>
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<tr>
<td>Pseudo R²</td>
<td>15.8%</td>
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</table>

* *** indicates statistical significance at the .10, .05, and .01 percentage level respectively

**Variable Definition:**

**Predicted Inc_escalator:** The predicted value derived from estimating our model of the determinants of the decision to include an income escalator on all exogenous variables.

**Litigation:** one if the firm is in a high litigation risk industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374) and zero otherwise.

**Tax Rate:** simulated corporate marginal tax rate based on income after interest expense has been deducted, as obtained from John Graham’s website.
**Institution Own:** the average percentage of institutional ownership over the past 4 quarters, calculated from Spectrum 13F institutional holdings data.

**Insider Own:** the average percentage of shares held by firm managers and directors, calculated from Compact Disclosure reports.

**\((\text{Institution Own})^2\)**: the square of Mean Institutional Ownership.

**\((\text{Insider Own})^2\)**: the square of Mean Insider Ownership.

**Abs(Current Accruals):** the absolute value of current accruals, calculated as the average (COMPUSTAT #302 + #303 + #304 + #305) / #6 measured over a 5 year period.

**Ratings:** For firms with rated debt, we estimated a pooled cross-sectional regression of the firm’s debt rating on a set of financial variables (total assets, ROA, debt to assets, dividend indicator, subordinated debt indicator, and a loss indicator). We use the parameters from this regression and the firm’s financial information to predict a credit rating for each firm year. We truncate the ratings to be between 1 and 30.

**Size:** The log of the firm’s market value of equity (COMPUSTAT #199 * #25).

**Growth:** the growth in the firm’s assets calculated as COMPUSTAT #6/lag1(COMPUSTAT #6).
Appendix
Correlation Analysis between All-Rank and its Instruments

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<th>Litigation Industry</th>
<th>Marginal Tax Rate</th>
<th>Mean Institutional Ownership</th>
<th>Mean Insider Ownership</th>
<th>Squared Institutional Ownership</th>
<th>Squared Insider Ownership</th>
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<td>Mean Insider Ownership</td>
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Variable Definition:

All-Rank: a composite measure tabulated as the sum of the firm’s rank for Mkt-to-Book + NI-Conserv + Skewness + Non Opp Accruals.

Litigation Industry: one if the firm is in a high litigation risk industry (SIC codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, 7370-7374) and zero otherwise.

Marginal Tax Rate: simulated corporate marginal tax rate based on income after interest expense has been deducted, as obtained from John Graham’s website.

Mean Institutional Ownership: the average percentage of institutional ownership over the past 4 quarters, calculated from Spectrum 13F institutional holdings data.

Mean Insider Ownership: the average percentage of shares held by firm managers and directors, calculated from Compact Disclosure reports.

Squared Institutional Ownership: the square of Mean Institutional Ownership.

Squared Insider Ownership: the square of Mean Insider Ownership.