Accruals as a Determinant of Debt Covenant Tightness

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Abstract
This paper examines the use of accounting accrual information by commercial lenders in setting debt covenants. Tests of the relation between accruals and debt covenant tightness indicate that lenders do not use the information in accruals in setting debt covenants. However, further tests show that lenders extract compensation for the risk of lending to firms with extreme accruals by charging higher initial interest rates.
1. Introduction

This study examines whether commercial lenders use the information in accounting accruals in debt contracting—specifically in setting the initial level of debt covenants. This study adds to the literature on the use of accrual information by sophisticated users of accounting data. Prior studies have shown that neither investors, analysts, nor auditors completely understand the relation between accruals and firm performance (Sloan, 1996; Bradshaw, Richardson, and Sloan, 2001; Ahmed, Nainar, and Zhou, 2005; Barth and Hutton, 2001). Commercial lenders, like investors, analysts, and auditors are knowledgeable and motivated users of financial accounting information. As a group of sophisticated users of accounting information, commercial lenders may provide even more insight into the understanding and use of accruals than groups previously studied. Like investors, lenders make decisions based on financial information that put assets at risk. Unlike investors, however, commercial lenders have access to firms' internal financial records. Given the risk of losses faced by lenders and their access to borrowers' financial records, lenders have the motivation and opportunity to acquire a greater understanding of the firms they examine than other groups of accounting information users that have been studied.

This study utilizes Dealscan, a database of private lending agreements, to obtain detailed information on debt covenants. The use of Dealscan gives this study two advantages over prior studies of debt covenants. First, it allows the study of private debt contracts. Most prior studies examine public debt contracts (i.e. bonds). Because of the large number of bondholders involved in a public debt issue, renegotiating a debt contract following a debt covenant violation can be costly and difficult. Therefore, private debt agreements generally contain a greater number of debt covenants that are more likely to be the product of careful analysis than those in public debt agreements (Smith & Warner, 1979; Gopalakrishnan and Parkash, 1995). Second,

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1There were approximately $2.8 trillion in syndicated commercial loans outstanding at the end of 2008. Of these, approximately $163 billion were classified as substandard, doubtful, or a loss under the Federal Reserve rating system (Board, 2008)
since Dealscan provides information on the actual debt covenants, actual debt covenant tightness can be calculated. As discussed in Dichev and Skinner (2002), most existing studies on debt covenants use a measure such as total debt or debt-to-equity ratio to proxy for covenant tightness. Because these measures are noisy, studies using them are difficult to interpret (e.g. Mohrman, 1993; Ball and Foster, 1982; Leftwich, 1983). Eliminating the need to use proxies for debt covenant tightness, the results of this study are less subject to alternative interpretations.

Debt covenants are used by commercial lenders as early warning systems to signal impending financial problems among borrowers. When a covenant is violated, lenders have the option to require immediate repayment of the loan. Most of the time, however, after assessing the borrower's situation, the lender waives the violation and resets the covenant below the current level (Garleanu and Zweibel, 2009). If the borrower's performance improves, there is no further problem. If the borrower's performance continues to deteriorate, the covenant is again violated, and the lender once again has the opportunity to evaluate the borrower's performance (Smith, 1993; Chen and Wei, 1993; Gopalakrishnan and Parkash, 1995; Dichev and Skinner, 2002).

Given the role of debt covenants in warning of declining performance (which may result in financial distress), the level of debt covenants should reflect the information in accruals about financial distress. However, tests of the relation between accruals and initial debt covenant tightness yield mixed results. Controlling for earnings, debt covenants are set more tightly for firms with low accruals, as expected. However, debt covenants for borrowing firms with high accruals are not set more tightly than firms with moderate accruals. Results of additional tests indicate that although borrowing firms with extreme accruals are not subject to increased monitoring through debt covenants, they are charged higher interest rates than firms with moderate accruals. This result can be interpreted as lenders foregoing more restrictive monitoring of high accrual firms in favor of compensation for the additional risk assumed by lending to these firms.
The remainder of this paper proceeds as follows: The next section develops a testable hypothesis. Section 3 examines the relation between accruals and debt covenant tightness, and Section 4 concludes.

2. Hypothesis Development

As discussed in the previous section, debt covenants are used to monitor the performance of borrowers. Although enforcement of debt covenants can vary from situation to situation, there is strong evidence that debt covenants impact firms in several ways. Core and Schrand (1999) find that firms that are close to violating debt covenants experience a greater negative stock price reaction to bad news than do firms that are not close to violating covenants. El-Gazzar (1993) finds a negative stock price reaction to the announcement of new accounting policies that may push firms closer to violating debt covenants. Finally, Beneish and Press (1993) document costs associated with the violation of positive debt covenants, referred to as technical default. Frequently, these violations can be waived or the covenant can be renegotiated, but the borrower incurs costs in doing so, ranging from the actual costs of negotiation (attorney’s fees, etc.) to the addition of new covenants.²

Sweeney (1994) and Dichev and Skinner (2002) find evidence that managers take actions to avoid debt covenant violations, although they are unable to determine whether such actions are cases of earnings management or “real” actions such as accessing equity, selling assets, deferring purchases, etc. Dichev and Skinner also reaffirm earlier studies that debt covenants in private contracts are used in an active monitoring role, with lenders using the covenants as an early warning system to inform them of potential problems with the borrower.

Despite the importance of debt covenants in the lending process and the subsequent operation of borrowing firms, there have been few studies on the role of accounting in debt contracts³ (Sloan, 2001). Existing studies that examine characteristics of debt contracts and

² See Chen and Wei (1993) for a discussion of the determinants of waivers.
³ Recent research on the role of accounting in debt contracts has examined the use of performance pricing, a feature that allows the interest rate charged on a loan to vary based on the borrower’s financial health, as measured by accounting ratios or credit ratings (Asquith, et al, 2005; Dichev, et al, 2004; Doyle, 2002).
Determinants of debt covenants primarily deal with public debt (i.e. bonds). These studies focus on factors such as the industry in which the borrower operates, the number of lenders involved in syndicating the loan, leverage, profitability, and probability of bankruptcy (Malitz, 1986; El-Gazaar and Pastena, 1991; Berlin and Mester, 1992). Additionally, Berlin and Mester (1992) show that the restrictiveness of debt covenants is decreasing in the credit worthiness of the borrower.4

Evidence discussed above and in Section 1 shows that debt covenants play a significant role in debt contracting and that lenders have ample opportunity and motivation to use all available information in setting debt covenants. Additionally, extant literature includes several studies linking high accruals to weaker future performance or signals of weaker performance (Defond and Subramanyam, 1998; Dechow, Sloan and Sweeney, 1996; Xie, 2001; Dichev and Skinner, 2002; Defond and Jiambalvo, 1994). Most notably for this study, Janes (2009) documents that firms with extreme high and low accruals are more likely to experience financial distress than firms with moderate accruals. Because of the link between extreme accruals and financial distress, one would expect that the initial level of debt covenants would reflect this information.5 Stated formally as a testable hypothesis:

The initial level of debt covenants for firms with extreme high or extreme low accruals is set more tightly than for firms with moderate accruals.

The results of tests of the hypothesis developed in this section are presented in the next section.

Dichev, et al (2004) finds that performance pricing and covenants are complements rather than substitutes, particularly when measured over the same variable (e.g. a debt contract that includes performance pricing based on debt-to-EBITDA as well as a covenant requiring the firm to maintain the a minimum level of the same ratio). They conclude that performance pricing addresses improvements in firm health (or credit risk), whereas, debt covenants are used to monitor for declines in firm health.

4 Discussions with commercial lenders confirmed that the findings of prior research are consistent with actual lending practices (Chaika, 2001; Bacevich, 2002).

5 The benchmark contained in the covenant may change over time, generally requiring improving performance by the borrower. However, because factors unrelated to the lender's analysis of the borrower (e.g. economic downturns, etc.) may affect debt covenant tightness during the term of the loan, this study focuses only on the initial tightness of the debt covenant.
3. Tests of Relation between Accruals and Debt Covenant Tightness

3.1 Debt Covenant Sample

Tests of the hypothesis examine whether commercial lenders appear to understand the implications of accruals for financial distress by setting debt covenants more tightly. Data for these tests is collected for firms with loans originating from 1990 to 2000. The data on loans is taken from the Dealscan database provided by LPC Market Access. Dealscan provides a database of over 50,000 loans dating back to 1986. Dealscan consists of loan data gathered from SEC filings, supplemented by research by LPC. The database includes information on the terms of the loan (amount, interest rate, length, etc.) as well as the covenants contained in the debt contract.

Each debt contract in the database typically has two or more parts, called facilities. For example, the loan could include a revolving loan and a term loan. Each facility can have different terms, such as different interest rates, maturity, repayment schedule, etc., but the debt covenants written into the contract generally apply to all facilities in the contract. For this study, the facility with the longest maturity is assumed to represent the loan and is considered to be the primary part of the loan. If two facilities have equal maturities, the facility with the largest principal amount is selected for inclusion in the sample.

The Dealscan database organizes debt covenant information into 12 positive covenants and five negative covenants. Positive covenants generally involve meeting benchmark accounting ratios, such as a minimum current ratio level, and negative covenants restrict specific actions, such as selling assets or acquiring additional debt. As discussed in Dichev and Skinner (2002), there is a great deal of variation in the definitions of the ratios used in debt covenants. For example, in an examination of Dealscan loans they find over a dozen different ways that the debt-to-cash flow ratio is defined in debt contracts. They find similar problems with most other commonly used covenants. Dichev and Skinner (2002) use the current ratio covenant to examine debt covenant violations because they find that it is fairly consistently defined. This allows them to calculate covenant slack using covenant data from Dealscan and data from the borrower’s
financials available from Compustat. Since this study also uses Compustat data and Dealscan covenant data together, the current ratio covenant is the primary subject of tests.

A sample of 1,096 loans originating from 1990-1999 was collected from the Dealscan database. Loans included in the sample were required to have complete data on loan amount, maturity, initial pricing of the loan (i.e. interest rate), and the initial current ratio covenant. Observations in the sample were also required to have sufficient data available on Compustat to calculate the variables used in multivariate tests. The variables will be discussed below.

3.2 Variable Measurement

Accounting-based debt covenants usually take the form of accounting ratios and are set such that the borrower must maintain a certain level of performance that indicates financial health. In the case of the current ratio covenant tested in this section, the borrower must maintain their current ratio above the minimum benchmark level specified in the debt contract. According to loan officers contacted in conjunction with this study, when the lender evaluates a potential borrower’s financial health, perceived deficiencies will prompt the lender to set the initial level of the covenant more tightly (Chaika, 2001; Bacevich, 2002). Tighter debt covenants give the lender more advance warning of deterioration in the borrower’s financial health. A “tight” covenant is one in which the initial benchmark level in the covenant is close to the firm’s actual level of the measure at the time of loan inception. For example, consider a debt contract which contained a current ratio covenant requiring the borrower to maintain a current ratio greater than 2.0. A firm with an actual current ratio of 2.2 would have a tighter debt covenant than a firm with a current ratio of 3.0. The difference between the actual measure and the covenant benchmark is referred to as “slack.” Slack at loan inception is used as the measure of covenant tightness, with lower slack indicating a tighter covenant. Initial slack is calculated as:

\[
Slack = \frac{CurrentRatio - CurrentRatioCovenant}{CurrentRatioCovenant}
\] (1)

where
Current Ratio = borrower’s current ratio from the annual report immediately preceding the loan, calculated as current assets (Item #4) divided by current liabilities (Item #5)

Current Ratio Covenant = initial minimum current ratio required in the debt contract

In multivariate tests, several variables shown by prior research to be determinants of debt covenant tightness are included as control variables. These variables include the Investment Opportunity Set of the borrower (Smith and Warner, 1978; Skinner, 1993), the Term (i.e. duration) of the loan (El-Gazaar and Pastena, 1991; Malitz, 1986; Berlin and Mester, 1992), the indebtedness of the borrower (Debt) prior to acquiring new debt (El-Gazaar and Pastena, 1991), the size of the borrower (Firm Size) as measured by the log of total assets, and the amount being borrowed (El-Gazaar and Pastena, 1991). Finally, to separate the effects of low and high accruals, I use indicator variables for low and high accruals, with High Accruals being set equal to one for borrowing firms in the highest quintile of total accruals, and Low Accruals being set equal to one for borrowing firms in the lowest quintile of total accruals. Since prior research has shown that firms with extreme high and low accruals are more likely to experience financial distress (Janes, 2007), the signs of the coefficients on High Accruals and Low Accruals are predicted to be positive.

3.3 Tests of the Relation between Accruals and Debt Covenant Tightness

Descriptive data for the sample of loans is found in Table 1. For comparison purposes, the last column of Table 1 presents the mean value of each variable for the entire population of Compustat firms with sufficient data during the sample period. The data in Table 1 shows that borrowing firms have higher earnings than the average Compustat firm but accrual levels are similar. The investment opportunity set for the borrowing firms is lower, suggesting that firms that use commercial loans have lower prospects for growth. Borrowing firms are significantly smaller than the average Compustat firm, but they have less debt. Table 1 also shows that the median loan term is 36 months and the average loan term is about 41 months—nearly 3½ years.
Janes (2009) documents that the relation between the level of accruals and financial distress is non-linear, with high and low accruals being associated with a greater incidence of financial distress than moderate levels of accruals. To test whether this relation holds in the sample of firms with current ratio debt covenants, the debt covenant sample has been divided into quintile portfolios based on the level of total accruals reported in the annual report preceding the loan closing.

Evidence about the information provided by accruals can be gathered by examining the occurrence of financial distress among borrowing firms in the sample. Following Janes (2009), Dichev (1998) and Shumway (1996), financial distress is indicated by a CRSP delisting code showing delisting for financial reasons. The time period examined is the four years following loan inception—again, the intent is to look at what happens during the average loan term shown to be a little over three years in Table 1. Figure 1, Panel A graphically depicts the occurrence of financial distress in portfolios formed on total accruals. Panel B of Figure 1 presents the results of forming portfolios on total accruals while holding earnings constant. Following Dechow and Dichev (2002), the sample is sorted into decile portfolios based on the level of earnings. Then, each earnings decile is sorted into quintile portfolios based on the level of total accruals. Portfolios are then formed by pooling the subportfolios formed in each decile. The final result is five portfolios based on total accruals while controlling for earnings. Portfolio 5 is comprised of the highest quintile of total accruals in each earnings decile; Portfolio 1 is comprised of the lowest quintile of total accruals in each earnings decile, and so on.

Panel A shows that, consistent with prior research (Janes, 2007), the occurrence of financial distress is much greater in the high and low accrual portfolios (Portfolios 5 and 1, respectively), with over 3% of firms in Portfolio 5 and over 2.5% of firms in Portfolio 1 experiencing distress during the average loan period. Compare this with the incidence of distress in Portfolios 2 through 4, which is less than 1% in Portfolios 2 and 3 and a little over 1% in Portfolio 4. Untabulated t-statistics show that the difference between Portfolio 5 and Portfolios
2, 3, and 4 is statistically significant at the 1% level or better. The same holds for the difference between Portfolio 1 and Portfolios 2, 3, and 4. The difference between extreme and moderate accrual portfolios is not as pronounced in Panel B, which presents distress in portfolios formed on accruals controlling for earnings, but it is still statistically significant. The results presented in Figure 1 indicate that high accrual firms underperform other firms during the years following loan inception, and firms with high accruals and firms with low accruals at loan inception encounter financial trouble at greater rates than firms with moderate accruals. Taken together, these results lead one to expect that firms with extreme accruals would be subject to greater monitoring by lenders.

---Insert Figure 1 about here---

Figure 2 depicts data about the initial tightness of current ratio debt covenants in the sample. Firms in Portfolio 5 enjoy the highest initial level of current ratio covenant slack among the quintile portfolios. Panel A of Figure 2 shows that slack increases monotonically from a low of 0.343 in Portfolio 1 to 0.695 in Portfolio 5. Panel B of Figure 2 presents the results of forming portfolios on total accruals while holding earnings constant. Again, the firms in Portfolio 5 receive the highest initial level of current ratio covenant slack among the quintile portfolios, with slack levels ranging from 0.421 in Portfolio 1 to 0.730 in Portfolio 5.

---Insert Figure 2 about here---

Univariate tests of the debt covenant sample presented in Figure 2 indicate that, contrary to expectations, firms with high accruals have looser debt covenants. Table 2 presents the results of multivariate tests of the relation between accruals and covenant slack. Model 1 shows the results of including the High Accruals and Low Accruals indicator variables in a regression of debt covenant slack on earnings. The coefficient on Earnings is 0.567, which is significant at the 1% level, indicating a positive relation between earnings and slack. The coefficient on Low Accruals is –0.140, which is statistically significant at the 5% level, which shows that low accruals are associated with lower initial slack in the current ratio covenant. The coefficient on High Accruals (0.102) indicates that high accruals are associated with higher levels of initial
slack in the current ratio covenant. However, this coefficient is not statistically significant. The results of this test indicate that, while lenders correctly associate low accruals with greater risk of financial distress, they do not make the same association with high accruals.

--- Insert Table 2 about here ---

Model 2 is the same regression model but includes the control variables--other factors that have been shown to affect debt covenant slack. In Model 2, the coefficient on earnings (0.303) is still positive, but no longer statistically significant. The coefficient on Low Accruals (-0.136) remains significantly negative, and the coefficient on High Accruals (0.013) remains statistically insignificant. Of the control variables, only Investment Opportunity Set and Debt have significant coefficients. The coefficient of 0.061 on Investment Opportunity Set indicates that greater investment opportunities are associated with higher slack. The sign on this variable was predicted to be negative using the reasoning that more investment opportunities were associated with greater opportunities to shift risk to the lender. However, it appears from this result that lenders may value the borrower’s opportunities to invest in many projects more than they fear any additional risk the increase in investment opportunity may bring. The coefficient on Debt is also significant. The coefficient of -0.857 indicates that borrowers with higher ex ante debt levels are subjected to a greater level of monitoring.

3.4 Tests of the Relation between Accruals and Initial Loan Pricing

Section 2 mentions the use of performance pricing in recent debt contracts. Performance pricing allows the interest rate on a loan to fluctuate with changes in the borrower’s financial health. Dichev, et al (2004) finds that performance pricing and covenants are complements rather than substitutes, particularly when measured over the same variable (e.g. a debt contract that includes performance pricing based on debt-to-EBITDA as well as a covenant requiring the firm to maintain the a minimum level of the same ratio). They conclude that performance pricing addresses improvements in firm health (or credit risk), whereas, debt covenants are used to monitor for declines in firm health. While it is beyond the scope of this paper to examine the
relation between performance pricing and debt covenant slack, the existence of performance pricing suggests that lenders may use the pricing of the loan to compensate for increased initial pricing of the loan and total accruals.

Initial interest rate data was collected from DealScan for each loan in the sample, with interest rates stated in basis points over LIBOR. Figure 3 depicts the results of a univariate test of initial interest rates in basis points over LIBOR. Figure 3 shows that the coefficients on both Low Accruals and High Accruals are significantly positive, indicating that firms with extreme accruals pay higher initial interest rates.

Rates in the moderate accrual portfolios are 117, 110 and 128 basis points over LIBOR in Portfolios 2, 3, and 4, respectively. This result is consistent with Bharath, et al. (2008) which finds that borrowers with low accounting quality, measured by discretionary accruals, are subject to higher interest rates.

Table 3 presents the results of multivariate tests of the relation between accruals and loan pricing. In Table 3, the same regression models presented in Table 2 are shown with the dependent variable being the initial interest rate in basis points over LIBOR. Regression results in Model 1 of Panel A shows that the coefficients on both Low Accruals and High Accruals are significantly positive, indicating that firms with extreme accruals pay higher initial interest rates.

---Insert Figure 3 about here---

---Insert Table 3 about here---

Table 3 shows the results of multivariate tests of the relation between accruals and loan pricing. In Table 3, the same regression models presented in Table 2 are shown with the dependent variable being the initial interest rate in basis points over LIBOR. Regression results in Model 1 of Panel A shows that the coefficients on both Low Accruals and High Accruals are significantly positive, indicating that firms with extreme accruals pay higher initial interest rates.

---Insert Figure 3 about here---

---Insert Table 3 about here---

3.5 Summary
This section examines whether lenders appear to use the information in accruals about financial distress when setting the initial tightness of debt covenants. A sample of 1,096 loans originating in the period 1990-1999 was examined and divided into portfolios based on total accruals at loan inception. Univariate tests show that firms with high accruals underperformed other firms in the sample in the years following loan inception, and that both firms with high and low accruals experience significantly greater occurrences of financial distress than do sample firms with moderate accruals. These findings and the findings of prior literature on accruals create the expectation that firms with extreme accruals would be subject to increased monitoring in the form of tighter debt covenants—or in this case, the current ratio covenant. Contrary to this expectation, univariate tests show that there is a negative relation between accruals and current ratio debt covenant tightness, with high accrual firms receiving more slack in the initial level debt covenant than other firms. Multivariate tests show that, although low accrual firms are subject to tighter debt covenants, there is no relation between high accrual firms and debt covenant tightness. Finally, univariate and multivariate tests of the relation between initial loan pricing and accruals indicate that firms with extreme accruals are initially charged higher interest rates on loans. This finding suggests that, although lenders either intentionally or unintentionally fail to increase monitoring for firms with extreme accruals, the lenders may extract compensation for the added risk by charging higher interest rates.

4. Conclusion

This paper examines whether commercial lenders use the information in accruals about financial distress in setting the initial tightness of debt covenants. Debt covenants are a mechanism used by lenders to monitor the financial health of borrowers so that financial problems can be addressed before repayment of the loan is in jeopardy. Because of the monitoring role of debt covenants and because lenders are sophisticated users of financial data, it is anticipated that the information in accruals about financial distress would be reflected in debt covenant tightness. In tests of this relation, results show that firms with extreme low accruals do
have more restrictive current ratio debt covenants than other firms. Univariate tests show that firms with high accruals actually have less restrictive current ratio debt covenants than firms with moderate accruals. Results of multivariate tests, however, show that there is no relation between high accruals and debt covenant restrictiveness. Additional tests show that borrowing firms with extreme accruals are subject to higher interest rates than firms with moderate accruals. This result can be interpreted as lenders foregoing more restrictive monitoring of high accrual firms in favor of additional compensation for the additional risk assumed by lending to firms with high accruals. This finding contributes to the literature on the understanding and use of accruals by sophisticated users of financial information by showing that the information in extreme accruals about financial distress is not reflected in debt covenants set by commercial lenders, either by design or not; however it is reflected in loan pricing.

References


Bacevich, M., Personal interview, December 12, 2002.


**TABLE 1**

Descriptive statistics on loans containing current ratio covenants

Sample consists of 1,096 loans from the period 1990-1999. Loan data was obtained from Dealscan. All other data was obtained from Compustat. Variable definitions are as follows: Earnings is net income of the borrowing firm; Total Accruals is calculated as net income minus cash from operations; Current Ratio is current assets divided by current liabilities; Investment Opportunity Set is calculated as [(book value of equity + book value of debt + book value of preferred stock)/total assets]; Debt is the total indebtedness of borrowing firm; Firm Size is equal to total assets of the borrowing firm; Loan Size is the dollar amount of the loan scaled by total assets of borrowing firm; Term is the length of the loan term in months; Current Ratio Covenant is the initial level of current ratio debt covenant; and Slack is calculated as [(Current Ratio –Current Ratio Covenant)/Current Ratio Covenant]. All financial statement variables are measured at the year end preceding loan inception and are scaled by total assets except for Firm Size, which is unscaled.

<table>
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<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<th>Median</th>
<th>Upper Quartile</th>
<th>Compustat Mean</th>
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<td>0.030</td>
<td>0.134</td>
<td>0.006</td>
<td>0.043</td>
<td>0.083</td>
<td>0.012***</td>
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<tr>
<td>Total Accruals</td>
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<td>0.128</td>
<td>-0.086</td>
<td>-0.031</td>
<td>0.023</td>
<td>-0.043</td>
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<tr>
<td>Current Ratio</td>
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<td>1.186</td>
<td>1.379</td>
<td>1.918</td>
<td>2.556</td>
<td>2.600***</td>
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<tr>
<td>Investment Opportunity Set</td>
<td>1.548</td>
<td>2.014</td>
<td>0.830</td>
<td>1.174</td>
<td>1.743</td>
<td>1.830***</td>
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<td>Debt</td>
<td>0.294</td>
<td>0.230</td>
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<td>0.265</td>
<td>0.433</td>
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<tr>
<td>Firm Size</td>
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<td>93.730</td>
<td>250.260</td>
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<td>36.000</td>
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<td>1.300</td>
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<td>Slack</td>
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<td>0.103</td>
<td>0.357</td>
<td>0.794</td>
<td>n/a</td>
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</tbody>
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*** Indicates that the difference between the current ratio sample mean and Compustat mean is significant at the <0.01 level.
TABLE 2

Regression of current ratio covenant slack on accrual information and control variables

The dependent variable in each model is the level of initial slack in the current ratio debt covenant contained in the loan. Slack is calculated as \([(\text{Current Ratio} - \text{Current Ratio Covenant})/\text{Current Ratio Covenant}]\). Independent variable definitions are as follows: Earnings is net income of the borrowing firm; Total Accruals is calculated as net income minus cash from operations; Low and High Accruals are indicator variables equal to one if the borrowing firm’s total accruals are in the lowest or highest quintile portfolio, respectively; Investment Opp. Set is calculated as \([(\text{book value of equity} + \text{book value of debt} + \text{book value of preferred stock})/\text{total assets}]\); Term is the length of the loan term in months; Debt is the total indebtedness of the borrowing firm; Firm Size is equal to total assets of the borrowing firm; and Loan Size is the dollar amount of the loan scaled by total assets of the borrowing firm. All financial statement variables are measured at the year end preceding loan inception and are scaled by total assets except for Firm Size, which is unscaled. Loan data was obtained from Dealscan. All other data was obtained from Compustat. Sample consists of 1,096 loans from the period 1990-1999.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted Sign</th>
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<th>Model 2</th>
<th></th>
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<td>Coef.</td>
<td>t stat</td>
<td></td>
<td>Coef.</td>
<td>t stat</td>
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<td>Intercept</td>
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<td>17.49</td>
<td>***</td>
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<td>-1.96</td>
<td>*</td>
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<tr>
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<td>Term</td>
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<td>-0.04</td>
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<tr>
<td>Debt</td>
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<td>-6.42</td>
<td>***</td>
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<td>0.107</td>
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***, **, * Significant at <0.01, 0.01, 0.05 levels, respectively.
TABLE 3

Regression of initial interest rate on accrual information, cash flow volatility, and control variables

The dependent variable in each model is the initial interest rate on the loan. Interest rates are stated in basis points over LIBOR. Independent variable definitions are as follows: Earnings is net income of the borrowing firm; Total Accruals is calculated as net income minus cash from operations; Low and High Accruals are indicator variables equal to one if the borrowing firm's total accruals are in the lowest or highest quintile portfolio, respectively; Investment Opp. Set is calculated as [(book value of equity + book value of debt + book value of preferred stock)/total assets]; Term is the length of the loan term in months; Debt is the total indebtedness of borrowing firm; Firm Size is equal to total assets of the borrowing firm; and Loan Size is the dollar amount of the loan scaled by total assets of borrowing firm. All financial statement variables are measured at the year end preceding loan inception and are scaled by total assets except for Firm Size, which is unscaled. Loan data was obtained from Dealscan. All other data was obtained from Compustat. Sample consists of 1,096 loans from the period 1990-1999.

<table>
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<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
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<tr>
<td>Debt</td>
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<tr>
<td>Firm Size</td>
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<tr>
<td>Loan Size</td>
<td>-</td>
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</tbody>
</table>

|             |             |             |             |
| Adjusted R-squared | 0.014       | 0.013       |

***, **, * Significant at <0.01, 0.01, 0.05 levels, respectively.
FIGURE 1
Panel A
Financially Distressed Firms by Portfolio Formed on Total Accruals
1,096 Firms with Loans Originating in 1990-1999

FIGURE 1
Panel B
Financially Distressed Firms by Portfolio Formed on Total Accruals Controlling for Earnings
1,096 Firms with Loans Originating in 1990-1999
FIGURE 2
Panel A
Current Ratio Covenant Slack by Portfolio Formed on Total Accruals
1,096 loans from 1990-1999.

Panel B
Current Ratio Covenant Slack by Portfolio Formed on Total Accruals Controlling for Earnings
1,096 loans from 1990-1999.
FIGURE 3
Mean Interest Rate at Loan Inception in Portfolios Formed on Total Accruals
1,096 Loans Originating during 1990-1999

Portfolios formed on total accruals (5 = highest)
Interest rate (basis points over LIBOR)