Ex-Post Change in Conservatism and Debt-Covenant Slack

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Abstract: I examine the relation between firms' debt-covenant slack and their change in conservatism following borrowing. I posit that a firm's decision to maintain its pre-contracting level of conservatism reflects a trade-off between the expected cost of lost reputation and the expected cost of a debt covenant breach, with firms being more likely to reduce their conservatism after borrowing when covenant slack is tight or the cost of a covenant breach is high. Results show that debt-covenant slack is positively related to ex-post changes in conservatism. I find that this positive relation is more pronounced when the expected cost of a debt-covenant breach is greater. Further, I find firms with tighter slack tend to have fewer amount of negative special items after borrowing. This study provides evidence that firms' overall ex-ante level of conservatism is increased after borrowing, and supports the argument that conservatism is an effective mechanism for the enhancement of debt-contract efficiency.

Keywords: Accounting Conservatism, Debt Covenant, Asymmetric Timeliness, Accruals

Data Availability: The data used in this study are from the public sources identified in the text.

I. Introduction

Wall Street is often likened to a small club, not unlike the Hoo-Hoo, where character and relationships are the coin of the realm. But it turns out that there are natural limits on how reputation -- the esteem with which one is held by others -- can affect behavior. ..... "Reputation matters until you get to some serious pain," says Edward Rock, co-director at the Institute of Law & Economics at the University of Pennsylvania. "It matters if the stakes are low. Somewhere between $25 million and $1 billion, it shifts." (The Wall Street Journal, 10/23/07)

In this paper, I examine the relation between firms' debt-covenant slack and their ex-post change in conservatism. I find firms' debt-covenant slack is positively related with ex-post change in conservatism, whether conservatism is measured in terms of asymmetric timeliness or nonoperating accruals. Further, I find that the positive relation between firms' debt-covenant slack and ex-post changes in conservatism is more pronounced when the cost of debt-covenant breach is high. I also find firms with tighter slack tend to have fewer amount of negative special items in the following year of loan initiation.

Conservatism has been credited with being a mechanism for the enhancement of debt contracting efficiency (Watts, 2003a). Recent research suggests that firms have an incentive to maintain their pre-loan-contracting (ex-ante) level of conservatism due to the potential costs of lost reputation (Zhang, 2004). Previous studies also have provided evidence that managers take actions to avoid debt-covenant violations, implying that firms may change their ex-ante level of conservatism (Dichev and Skinner, 2002). Drawing on these studies, I posit that firms' decision to maintain their pre-contracting level of conservatism reflects a trade-off between the expected cost of lost reputation and the expected cost of a breach of debt covenant. An examination of firms' behavior regarding potential changes in their post-loan-contracting (ex-post) level of conservatism provides insight into the effectiveness of conservatism on debt-contract efficiency.

Using the Dealscan database from Loan Pricing Corporation (LPC), I identify private lending agreements that contain net worth covenants. I then calculate the debt-covenant slack in the borrowing year to measure how close firms are to a covenant breach and examine the relation between this covenant slack and the firms' change in conservatism. Change in conservatism is measured in terms of asymmetric timeliness (Basu, 1997) and nonoperating accruals (Givoly and Hayn, 2000) difference between the borrowing year and the following year. I expect that if a firm's decision to maintain its ex-ante level of conservatism is associated with the expected cost of a covenant breach, covenant slack will be positively related to the change of conservatism level in the following year. I assume a low level of slack ("tight" slack) increases the probability that the firm will breach its covenants, thus inducing a high expected cost of covenant breach. I also conjecture that for a given level of covenant slack, the cost of a covenant breach will be negatively related to the ex-post change in conservatism level, because firms will try harder to avoid covenant breach when the costs are higher.

This study provides insight into whether conservatism is an effective mechanism in enhancing debt contract efficiency. Conservatism would be of little use if borrowers could freely become less conservative after signing the loan contract. The result suggests that conservatism is indeed an effective tool for contracting efficiency, as firms' ex-post conservatism levels do not decrease compared to ex-ante levels. However, I also find evidence that those firms with a high expected cost of covenant breach have an incentive to deviate from their ex-ante level of conservatism, something that will be of special concern to lenders.

The remainder of the paper is organized as follows. In section 2, I develop testable hypotheses, and I describe the data and research design in section 3. Section 4 contains the findings regarding debt covenant and level of conservatism change. In section 5, I close with a summary and concluding remark.

II. Hypothesis Development

Equity holders' limited liability forces debt holders to face an asymmetric payoff with respect to net assets. When, at maturity of a loan, a firm's net assets are greater than the face value of its debt, debt holders do not receive any additional compensation. However, when the assets are below the face value of the debt, debt holders receive less than the contracted sum. Consequently, debt holders are concerned with the lower tail of the earnings and net asset distribution. They want assurances that the borrower's minimum net assets will be greater than the contracted loan amount (Watts, 2003a). An accounting-based debt contract with a verifiable and timely loss recognition mechanism helps satifsfying the debt holders' demand for the assurances.[1]

[1] Ball and Shivakumar (2005) describes that how market demand determines financial statements' properties including timely loss recognition of economic losses.

According to Basu (1997), conservatism is defined as the tendency of accountants to require a higher degree of verification for the recognition of good news in earnings than for bad news. Without conservatism, debt holders would be reluctant to lend to firms causing the firms to lose opportunities to invest in positive net present value projects. However, the availability of verifiable and timely financial information on the borrowers does not reduce agency costs unless lenders have the tools to prevent borrowers from reducing the net assets of the firm to a level below the contracted amount. Debt covenants, such as restrictions on dividend payments or the requirement of a minimum level of net assets, allow debt holders an opportunity to recall loans earlier in order to prevent erosion of their interest, or to adjust the loan price to reflect higher risk. Therefore, a conservative, accounting-based loan contract with financial covenants reduces agency cost and contributes to the maximization of the borrowing firm's value.

Financial reporting flexibility inherent in GAAP implies that firms are not required to maintain their pre-contracting level of conservatism, even if they agree to do so before contracting. Zhang (2004) argues that firms have an incentive to maintain their pre-contracting level of conservatism due to the potential cost of loss of reputation and other mechanisms embedded into the contract, such as fixed GAAP.[2] When firms lose their reputation of being conservative, they are no longer able to enjoy a lower cost of debt in future borrowing (Ahmed et al., 2002, Bharath et al., 2006). Moreover, lenders' scrutiny

[2] "Fixed GAAP" refers to provisions that ensure that the terms of the loan contract will be unaffected by future accounting method changes. For example, some fixed GAAP provisions stipulate that covenant compliance be assessed using a particular set of accounting rules or accounting methods, typically those used by the borrowing firm, in a specified set of financial statements. When such a provision is in place, the borrower cannot reduce the probability of covenant violation by changing accounting methods (Mohrman, 1996).

of firms' financial statements ensures that firms continue to be conservative or even increase their pre-contracting level of conservatism ex post. Beatty et al., (2006) find that firms increase in conservatism after entering into the loan contract.

However, as the probability of a covenant breach increases, the expected cost of the breach also increases. This cost can offset the cost of lost reputation. Beneish and Press (1993) document covenant breach costs range between 1.2 percent and 2 percent of the market value of equity; this includes higher costs of borrowing and restrictions on the borrowing firm's investment opportunities arising from amended contracts. Therefore, firms have a strong incentive to avoid covenant breach by reducing their pre-contracting level of conservatism after borrowing when the expected cost of covenant breach is higher. Dichev and Skinner (2002) find an unusually small number of firm-quarters with financial measures just below covenant thresholds and an unusually large number of firm-quarters that just meet or beat covenant thresholds, implying that managers take actions to avoid covenant breach. They argue that even managers of firms with good financial performance have the incentive to avoid violations of covenants, because covenant breach is costly. DeFond and Jiambalvo (1994), and Beneish, Press and Vargus(2001) also find income-increasing accruals and positive working capital accruals prior to debt covenant violation.

Consequently, a firm's decision to maintain its pre-contracting level of conservatism reflects a trade-off between the expected cost of lost reputation and the expected cost of covenant breach. In the extreme, if a covenant breach causes a firm to default on its loan and subsequently to go bankrupt, the breach will be fatal and the benefit from maintained reputation cannot be utilized. Therefore, I propose that when expected cost of a covenant breach outweighs the expected benefit from maintained reputation, firms will deviate from their pre-contracting level of conservatism.

While measuring expected cost of lost reputation is challenging, I estimate the expected cost of covenant breach as simply the probability of covenant breach times the covenant breach cost. Increases in either of these two factors will result in an incremental increase in the expected cost of covenant breach. The probability of covenant breach is measured as a function of covenant slack, which is defined as difference between the current level of the reported accounting measures and the preset covenant threshold level(s). Tight slack increases the probability of covenant breach[3], resulting in a high expected cost of covenant breach.

HYPOTHESIS 1 (H1): ***Ex-post change in conservatism is positively related to debt-covenant slack.***

From the lenders' perspective, the maintenance of the pre-contracting level of conservatism is more critical for firms that are more likely to breach covenants than for those that are less likely to experience a covenant breach. However, firms that are more likely to breach their covenants have a stronger incentive to deviate from their pre-contracting level of conservatism, due to the high expected cost of a breach. Therefore, conservatism might not contribute to debt contracting when it would be most useful to lenders.

[3] Dichev and Skinner (2002) provide evidence that there is s strong negative relation between the probability of covenant violation and covenant slack at loan inception, suggesting that, on average, tighter covenants lead to more violations.

The second component of the expected cost of covenant breach, i.e. the covenant breach cost, depends on various factors, including a firm's financial situation, its credit rating, and the overall market interest rate. For a given level of the probability to breach debt-covenant, a high covenant breach cost will increase the expected cost of covenant breach and will create a stronger incentive for the firm to reduce its pre-contracting level of conservatism. For instance, if a firm's credit rating has been downgraded or the overall market interest rate has gone up since the loan was issued, the covenant breach cost to the firm will be higher, because the firm will have to pay a higher interest rate for a new loan if the existing loan is recalled. If, on the other hand, a firm has obtained a better credit rating or the market interest rate has become more favorable since the loan issuance, the covenant breach cost would be minimal, because the firm would be able to replace the existing loan with a new loan at a lower interest rate if it were recalled. Thus, my second hypothesis is as follows:

HYPOTHESIS 2 (H2): ***The positive relation between ex-post change in conservatism and covenant slack is more pronounced when the cost of covenant breach is high.***

III. Data and Research Design

3.1 Sample Selection

The sample used for this study is drawn from the Dealscan database. I extract data for all firms with private loans and net worth covenants that have facility active dates between 1990 and 2005. I restrict the sample to facilities with net-worth covenants for two reasons. First, extant studies show that net worth covenants are the most frequently used and most frequently violated financial covenants (Zhang, 2004; Dichev and Skinner, 2002, Sweeney, 1994). Second, the net worth covenant is one of the least ambiguous measures among financial covenants.[4] The total number of facilities in this sample with net-worth covenants is 5,385.

I use ticker data to match firms in Dealscan with firms in Compustat. I confirm that these matched firms are identical by comparing data from Dealscan on the borrower's sales size at the close of the deal against the sales data in COMPUSTAT. Where there is a difference between these two figures, I manually check the names from both databases and drop non-matching observations. Firms in Dealscan that cannot be matched using ticker data or do not have ticker data are matched with COMPUSTAT data, using the first 10 characters of the firm name and then the first seven characters of the firm name, in order to obtain additional samples. For those firms matched by name, I manually check whether the firm names are identical. I assign an iperm to each individual firm identified in Dealscan and match it with COMPUSTAT. The total number of observations matched with COMPUSTAT comprises 3,252 facilities from 1,287 different firms.

I delete from the sample any firms that lack earnings or returns for the facility active year (year t) or for the years before and after the facility active date (years $t - 1$ and $t + 1$, respectively) to ensure an appropriate sample for testing for change of conservatism. I also exclude outliers, specifically the top and bottom 0.5% of observations in market return and earnings at t. I require the term of the loan to be a minimum of 24 months, because financial covenants would not be relevant in the year following the deal year if

[4] In the case of debt-to-cash-flow covenants, debt can mean total debt, funded debt, or funded debt less cash, while cash flow can be cash from operations, EBIT, EBITDA, etc. (Dichev and Skinner, 2002).

the loan term is shorter. I eliminate observations for which covenant slack is equal to or less than zero at deal year, as those firms have already breached their covenants; having already incurred covenant breach costs, additional costs from the continuing covenant breach at $t + 1$ would be minimal. Finally, if a firm has several facilities in the same year with different levels of net worth covenants from different lenders, I select the facility with the lowest net-worth covenant for the sample. The final sample for asymmetric timeliness measure comprises 1,150 facilities from 778 different firms. I use a similar process for accrual measure and obtain 1,207 facilities from 824 different firms. In table 1, I summarize the sample selection process.

3.2 Research Design

3.2.1 Conservatism Measure

I measure firms' level of conservatism using two methods. One is the asymmetric timeliness measure used by Basu (1997), and the other is the accruals measure proposed by Givoly and Hayn (2000). The asymmetric timeliness measure is derived from the well-known regression below.

$$E_t / P_{t-1} = \alpha_0 + \alpha_1 DR_t + \beta_0 R_t + \beta_1 R_t * DR_t + \varepsilon_t$$

The incremental response to bad news relative to good news, captured by β_1, is my first measure of conservatism.

The second measure is the accruals measure, which is signed nonoperating accruals before depreciation and amortization, deflated by total assets. Basu (1995), Givoly and Hayn (2000), and Watts (2003b) suggest that mean, variability, and negative skewness of accruals are measures of conservatism.

3.2.2 Covenant Slack Measure

I measure closeness to covenant breach using slack, which is defined as the difference between firms' reported accounting measures and the corresponding covenant thresholds (Dichev and Skinner, 2002). In this paper, I calculate net-worth slack as the difference between actual net worth at t, $t-1$, or $t+1$ [COMPUSTAT data #216] and the net-worth covenant threshold. I standardize slack by dividing it by total assets.

3.2.3 Test of H1

3.2.3.1 Asymmetric Timeliness Measure

To test whether firms' ex-post change in conservatism is related to their closeness to debt-covenant breach, I divide the full sample into three groups based on covenant slack at borrowing year t. The low-slack group is closer to covenant breach at t than is the high-slack group. Using pooled data from the low- and high-slack groups at t and $t+1$, I run the following regression.

$$\begin{aligned} E/P &= \alpha_0 + \beta_0 DR + \beta_1 D_p + \beta_2 D_s + \beta_3 R + \gamma_0 DR*R + \gamma_1 D_p*R \\ &+ \gamma_2 D_s*R + \gamma_3 D_p*DR*R + \gamma_4 D_s*D_p*DR*R \end{aligned} \tag{1}$$

Variables in the regression are defined as follows:

(E/P) is the earnings per share of firm in the fiscal year, divided by the price per share at the beginning of the fiscal year [COMPUSTAT data #18/(lag (COMPUSTAT data #199)*COMPUSTAT data #25)]; R is Stock return of individual firm over the 12 months beginning nine months prior to the end of the fiscal year; DR is a indicator variable set equal to 1 if R is negative and 0 otherwise; D_p is a indicator variable set equal to 1 if R belongs to $t + 1$ and 0 otherwise; D_s is a indicator variable set equal to 1 if firm belongs to the low-slack group and 0 otherwise.

H1 predicts that γ_4 will be negative. I interpret a smaller increase in asymmetric timeliness from t to $t + 1$ in the low-slack group as arising from the fact that the low-slack group firms have a greater incentive to decrease their level of conservatism after borrowing due to their higher probability of breaching their loan covenants.

To confirm this relationship, I estimate the following regression using the full sample.

$$\begin{aligned}(E/P)_{t+1} &= \alpha_0 + \alpha_1 SL_t + \alpha_2 MTB_t + \alpha_3 SIZE_t + \alpha_4 LEV_t \\ &+ \eta_0 DR_{t+1} + \eta_1 SL_t DR_{t+1} + \eta_2 MTB_t DR_{t+1} + \eta_3 SIZE_t DR_{t+1} + \eta_4 LEV_t DR_{t+1} \\ &+ \beta_0 R_{t+1} + \beta_1 SL_t R_{t+1} + \beta_2 MTB_t R_{t+1} + \beta_3 SIZE_t R_{t+1} + \beta_4 LEV_t R_{t+1} \\ &+ \gamma_0 R_{t+1} DR_{t+1} + \gamma_1 SL_t R_{t+1} DR_{t+1} + \gamma_2 MTB_t R_{t+1} DR_{t+1} \\ &+ \gamma_3 SIZE_t R_{t+1} DR_{t+1} + \gamma_4 LEV_t R_{t+1} DR_{t+1} + \varepsilon_{t+1}\end{aligned} \tag{2}$$

Control variables in the regression are defined as follows:

SL_t is actual net worth at t less net worth covenant threshold divided by total assets [(COMPUSTAT data #216 − net worth covenant threshold)/COMPUSTAT data #6]; MTB is the market value of equity/Book value of equity [COMPUSTAT data #199 * data

#25/data #216]; LEV is the sum of long-term debt and debt in current liabilities divided by market value of equity [(COMPUSTAT data #9 + data #34)/(data #199 * data #25)]; *SIZE* is the natural log of the market value of equity [log (COMPUSTAT data #199 * data #25)].

Previous research shows that the earnings response to bad news is negatively associated with the market-to-book-value ratio (*MTB*) at the beginning of the estimation period (Roychowdhury and Watts, 2007). This can be explained by the high proportion of unrecorded rents in the equity values of high MTB firms. *SIZE* is included as a control variable because larger firms are likely to exhibit less asymmetric timeliness: they have a more diversified portfolio of projects, with losses tending to be offset by gains, and their returns show the effects of this diversification when the accounting system recognizes the losses. The natural log of the market value of equity is used as a proxy for size. Leverage (*LEV*) is used as an indication of agency conflicts between lenders and shareholders. As conservatism is designed to reduce this agency problem, it should be positively related to leverage, after MTB is controlled for (Watts, 2003a; Roychowdhury and Watts, 2007; Khan and Watts, 2007). In regression (2), H1 predicts that γ_1 will be positive.

3.2.3.2 Accruals Measure

H1 predicts that the change in accruals of the low-slack firms will be greater (or more positive) than that of the high-slack group due to the lower-slack group's higher likelihood of breaching their covenants. That is, low-slack group firms will become less conservative compared to high-slack group firms at t + 1. I examine this relation by testing for the difference in changes in conservatism between both groups.

To confirm this relationship, I estimate the regression below using the full sample.

$$\Delta Accrual_{t,t+1} = \alpha_0 + \alpha_1 SL_t + \alpha_2 \Delta CFO_{t,t+1} + \alpha_3 \Delta Sale_{t,t+1} + \alpha_4 MTB_t + \alpha_5 SIZE_t + \alpha_6 LEV_t \quad (3)$$

Variables in the regression are defined as follows:

$\Delta Accrual_{t,\, t+1}$ is the change in nonoperating accruals from t to t + 1. Nonoperating accruals are defined as total accruals minus operating accruals where total accruals are defined as net income, plus depreciation, minus cash flow from operations, deflated by lagged assets [(COMPUSTAT data #172 + data #14 – data #308)/lag (data #6)] and operating accruals are measured as change in non-cash current assets [COMPUSTAT data #4 – data # 1] minus change in current liabilities excluding short term debt [COMPUSTAT data #5 – data # 34], deflated by lagged assets (Kahn and Watts, 2007); $\Delta CFO_{t,\, t+1}$ is the change in cash flow from operations from t to t + 1, deflated by lagged assets [COMPUSTAT data #308/ lag (data #6)]; $\Delta Sale_{t,t+1}$ is the change in sales from t to $t+1$, deflated by lagged assets [COMPUSTAT data #12/ lag (data #6)]. MTB, SIZE, and LEV are defined as the same as in the test using asymmetric timeliness measure above and included to control cross sectional differences of the firms.

H1 predicts that α_1 will be negative, because low-slack firms are expected to experience a greater (more positive) change in accruals than high-slack firms in order to avoid a financial covenant breach.

3.2.4 Test of H2

To test whether the relation between ex-post change in conservatism and covenant slack is more pronounced when the cost of covenant breach is high, I use the change in credit rating from *t* to *t* + 1 as a proxy for the cost of covenant breach. If firms do not want to accept additional restrictions on their investment and dividend distribution decisions or an increased interest rate set by lenders as a result of a covenant breach, they have the alternative of refinancing the loan with other lenders. However, if their credit rating has deteriorated since the issuance of the loan, the cost to refinance will be higher than otherwise. Therefore, firms whose credit ratings have been lowered since borrowing will face a higher covenant breach cost. Thus, I add change in crediting rating into eq. (2) and estimate the following regression to test H2.

$$\begin{aligned}
&(E/P)_{t+1} = \alpha_0 + \alpha_1 SL_t + \alpha_2 MTB_t + \alpha_3 SIZE_t + \alpha_4 LEV_t + \alpha_5 \Delta Rating_{t,t+1} \\
&+\eta_0 DR_{t+1} + \eta_1 SL_t DR_{t+1} + \eta_2 MTB_t DR_{t+1} + \eta_3 SIZE_t DR_{t+1} + \eta_4 LEV_t DR_{t+1} \\
&+\beta_0 R_{t+1} + \beta_1 SL_t R_{t+1} + \beta_2 MTB_t R_{t+1} + \beta_3 SIZE_t R_{t+1} + \beta_4 D/E_t R_{t+1} \\
&+\gamma_0 R_{t+1} DR_{t+1} + \gamma_1 SL_t R_{t+1} DR_{t+1} + \gamma_2 MTB_t R_{t+1} DR_{t+1} \\
&+\gamma_3 SIZE_t R_{t+1} DR_{t+1} + \gamma_4 LEV_t R_{t+1} DR_{t+1} + \gamma_5 \Delta Rating_{t,t+1} SL_t R_{t+1} DR_{t+1} + \varepsilon_{t+1}
\end{aligned} \qquad (4)$$

$\Delta Rating_{t,\,t+1}$ is defined as a change in the S&P long-term domestic issuer credit rating from *t* to *t* + 1 [COMPUSTAT data #280 at *t* + 1, less data #280 at *t*]. Data #280 in

COMPUSTAT assigns a number to each S&P long-term domestic issuer credit rating, with lower numbers representing better ratings (e.g., 2 for AAA and 12 for BBB–). Therefore, a positive $\Delta Rating_{t,\,t+1}$ means the firm has been downgraded from t to t + 1. H2 predicts that γ_5 will be positive.

I also estimate the following regression to test whether H2 is supported by the accrual measure of conservatism:

$$\Delta Accrual_{t,t+1} = \alpha_0 + \alpha_1 SL_t + \alpha_2\, \Delta CFO_{t,t+1} + \alpha_3\, \Delta Sale_{t,t+1} + \alpha_4 \Delta Rating_{t,t+1} + \alpha_5 MTB_t + \alpha_6 SIZE_t + \alpha_7 LEV_t\ +\ \beta_1\, \Delta CFO_{t,t+1} * SL_t\ + \beta_2 \Delta Sale_{t,t+1} * SL_t + \beta_3 \Delta Rating_{t,t+1} * SL_t \quad (5)$$

H2 predicts that β_3 will be negative.

IV. Empirical Results

4.1 Descriptive Statistics and Simple Correlations

Table 3, panel A, reports descriptive statistics for the full sample and for the three subsample groups based on covenant slack at time *t*. Low-slack group firms have shorter tenure, higher leverage, and a lower credit rating than high-slack group firms. However, I do not observe any specific relation between slack and loan amount, asset size, market-to-book ratio, or returns.

The Pearson (Spearman) correlations for the variables (Table 3, panel B) indicate that net-worth slack exhibits a negative correlation with leverage and credit rating, implying that slack tends to be set tight for high-leverage and lower-credit-rating firms. This provides a broad idea on relation between debt covenant slack and firms' characteristics. Tenure of loans tends to be longer when firms are larger and becomes shorter when leverage is higher or rating is lower. This suggests that lenders are likely to reduce tenure of loan for more risky borrowers.

4.2 Multivariate Test Results

4.2.1 Results of the Test of H1

The OLS regression results (eq. 1; see table 4) for the ex-post change in conservatism of the low-slack and high-slack groups indicate that, as H1 predicts, γ_4 is negative, at a significance level of 1 percent. Thus, I find evidence that the increase in conservatism from t to $t + 1$ in low-slack firms is smaller than that in high-slack firms. I argue that this is because of the high expected cost of covenant breach for low-slack firms. These results also show that γ_3 is positive: that is, the overall level of conservatism increases after borrowing. Potential reasons for this increase in conservatism at $t + 1$ are, first, because firms are trying to capture the benefits of lower interest rates for future borrowing. Second, the increased level of scrutiny by lenders may cause firms' conservatism levels to increase. Unlike in the year before the loan, lenders will challenge borrowers if any bad news known to the market is not reflected in financial statements. The evidence from the regression suggests that the increase in conservatism in the low-slack group is smaller than that in the high-slack group because of the expected cost of covenant breach.

Table 5 presents OLS regression results of the test of the relation between net worth covenant slack in year *t* and the conservatism level in the year *t* + 1 using the full sample. As H1 predicts, γ_1 is positive, at a significance level of 1 percent. This supports the view that the conservatism of lower-slack firms in the year following the loan issuance is lower than that of higher-slack firms due to the high expected cost of covenant breach. In model 2, which includes the market-to-book-value ratio, size, and the debt-to-equity ratio as control variables, γ_1 is positive after these variables are controlled for. As expected, *SIZE* has a negative relation to conservatism, and *LEV* is positively related to conservatism. *MTB* is positively related to conservatism, contrary to our expectation, but the effect is not statistically significant, perhaps because a one-year horizon is too short to allow for a statistically significant negative result.[5] The results are robust even after taking year and firm fixed effects into account (see model 3).

H1 is supported by the results of the test based on the accruals measure. The change in accruals from *t* to *t* + 1 in the low-slack group is greater (less negative) than in the high-slack group (see table 6, *t* value 2.25): while at year *t* the mean of accruals in low-slack group is more negative, at *t* + 1 the conservatism level of the low-slack group is less negative compared to high-slack group. This suggests that the low-slack group becomes

[5] Over a long time horizon, beginning market-to-book ratio (M/B) is expected to be negatively correlated with conservatism, while ending M/B is expected to be positively correlated with M/B. Empirically, these predictions may not be borne out over short horizons such as one year, since M/B is highly persistent (Kahn and Watts, 2007).

less conservative than the high-slack group at $t + 1$. An overall increase in conservatism after loan initiation is observed in accruals measure, as well: accruals become more negative in both the high and low slack groups, and the change in high-slack group is statistically significant (t value –3.62).

The results provide evidence that slack is negatively related to change in accruals from t to $t + 1$ in the full sample (table 7). This supports H1, as lower-slack firms have a greater (or less negative) change in accruals from t to $t + 1$, and they become less conservative in $t + 1$ compared to higher-slack firms. After controlling for firm and year fixed effects (model 3), I find that α_1 is still significantly negative.

4.2.2 Results of the Test of H2

In table 8 I provide evidence that the relation between ex-post change in conservatism and closeness of debt-covenant breach becomes more distinct when the cost of covenant breach is high. Using change in credit rating as a proxy for cost of covenant breach, I find that γ_5 shows the existence of an incremental relationship between ex-post change in conservatism and the closeness of debt-covenant breach when a firm's credit rating changes between t and $t + 1$ (eq.4; model 1). There is an additional positive effect on the relation when the credit rating has been downgraded, i.e., when $\Delta rating_{t,\, t+1}$ is positive since borrowing. I interpret this to mean that when a firm's credit has been downgraded, low-slack firms have a stronger incentive to decrease their conservatism ex post. The result is significant with control variables such as *MTB*, *SIZE*, and *LEV*, and with firm and year fixed effects (model 2; model 3).

H2 is supported by the accrual measure (eq. 5; see table 9). β_3 shows that an additional negative relationship obtains between level of slack and change in nonoperating accruals when a firm's credit rating has been downgraded. The result is significant with control variables such as MTB, SIZE, and LEV, and with firm and year fixed effects.

4.3 Robustness Check

4.3.1 Relation between Conservatism and Covenant Slack in Borrowing Year

An alternative explanation for the results of eq. 2 showing a relation between covenant slack at year t and change in conservatism level at year $t + 1$ is that the result is inherited from the relation between covenant slack at t and conservatism level at t. This argument is based on the view that lenders increase slack for more compensate conservative borrowers, which implies a positive relationship between slack and conservatism level. I test this explanation by estimating a regression over covenant slack at t and conservatism level at t (eq. 2, with conservatism level at t). Results (table 10) show a negative relation (γ_1) between slack and conservatism at loan initiation (year t), contrary to the argument. Despite sizable samples, this negative relationship is not statistically significant when firm and year fixed effects are included.

4.3.2 Change in Level of Conservatism after Borrowing

All the test results thus far indicate that the overall level of conservatism increases after borrowing, and that tight slack counteracts this conservatism-level increase. Therefore, the net increase in conservatism from t to $t + 1$ is lower for lower-slack firms. To confirm the increase in level of conservatism after borrowing, I test eq. (6) below using full-sample pooled data for *t* and *t* + 1.

$$
\begin{aligned}
(E/P) &= \alpha_0 + \alpha_1 SL + \alpha_2 MTB + \alpha_3 SIZE + \alpha_4 LEV + \alpha_5 D_p \\
&+ \eta_0 DR + \eta_1 SL\ DR + \eta_2 MTB\ DR + \eta_3 SIZE\ DR + \eta_4 LEV\ DR \\
&+ \beta_0 R + \beta_1 SL\ R + \beta_2 MTB\ R + \beta_3 SIZE\ R + \beta_4 LEV\ R \\
&+ \gamma_0 R\ DR + \gamma_1 SL\ R\ DR + \gamma_2 MTB\ R\ DR \\
&+ \gamma_3 SIZE\ R\ DR + \gamma_4 LEV\ R\ DR + \gamma_5 D_p\ R\ DR + \varepsilon
\end{aligned} \tag{6}
$$

The results provide strong evidence that the level of conservatism increases from *t* to *t* + 1 (see table 11). γ_5 is significantly positive, even when control variables and firm and year fixed effects are included. In an untabulated analysis, I find accrual measure of conservatism increases (nonoperating accruals become more negative) as well from *t* to *t+1* with significance (t value: -2.44). The results are consistent with Beatty, Weber and Yu (2006).

4.3.2 Extraordinary Items and Gains or Losses from discontinued Operations

I test whether the results using accrual measurement are purely driven by extraordinary items and gains or losses from discontinued operations. I recalculate nonoperating accruals using income before extraordinary items (COMPUSTAT data # 18) instead of net income and re-do the tests. The results are qualitatively the same as ones with nonoperating accruals including extraordinary items and gains or losses from discontinued operations (untabulated).

I further test whether firms with tighter slack are less likely to have negative special items in t+1. I estimate the following regression to test relation between slack and special items.

$$SP_{t+1} = \alpha_0 + \alpha_1 SL_t + \alpha_2\, SP_t + \alpha_3\, MTB_t + \alpha_4 R_{t+1} \ + \beta_1\, MTB_t * SL_t \ + \beta_2 R_{t+1} * SL_t$$

where SP is special items which are defined as extraordinary items and gains or losses from discontinued operations, at either t or t+1, deflated by lagged assets [(COMPUSTAT data #48) / lag (data #6)]. Other controlled variables are defined as before. MTB is included because higher MTB may limit negative special items such as asset write off. Returns are included to control relation between news over the period and special items. Table 12 provides evidence that lower slack firms are less likely to have negative special items. α_1 is significantly negative in all three models. $\alpha_3 + \beta_1$ is positive, implying MTB is positively associated with special items. The result suggests that firms with tighter slack avoid negative special items to reduce likelihood of covenant breach.

V. Conclusion

I find that firms increase their level of conservatism after undertaking loans with net worth covenants; however, firms with tighter slack increase this level to a lesser degree than do firms with more slack. This positive relation between debt-covenant slack and ex-post change in conservatism level becomes more pronounced when the cost of a covenant breach is high. These results suggest that firms increase their conservatism level either because of the expected benefit from maintaining a reputation as conservative financial reporting firm or because of increased scrutiny from lenders. However, the expected cost of a covenant breach mitigates this effect. This result is consistent with the hypothesis that firms' decisions on ex-post changes in conservatism level reflect a trade-off between the expected cost of lost reputation and the expected cost of covenant breach.

Even though conservatism has been widely viewed as a mechanism to enhance debt contract efficiency, we know little about whether a firm commit to its pre-contracting level of conservatism and the factors that affect this commitment. My paper provides evidence that firms are, on average, committed to their ex-ante conservatism level and, therefore, that conservatism is indeed an effective tool to enhance debt-contract efficiency when loans involve financial covenants. This research also provides debt holders with the useful information that firms with a high expected cost of covenant breach have an incentive to deviate from their pre-contracting level of conservatism after borrowing.

Like other studies, this research has a number of limitations arising from choices inherent in the experimental design. First, my sample is limited to firms with bank loans involving net worth covenants, and the results may not be generalized to bank loans with other types of financial covenants. However, I believe that these results should be fairly representative, as net worth is one of the most common covenants in the market. Second, the measurement of conservatism is limited to the asymmetric timeliness[6] and accruals

[6] Recently, there are critics about asymmetric timeliness measure (Dietrich, Muller and Riedl, 2006, Givoly, Hayn and Natarajan, 2007)

measures in my study. A potential avenue for future research would be to examine the same phenomenon using alternative measures of conservatism.

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Table 1. Sample Selection Process

The sample is drawn from Dealscan, provided by LPC. I extracted all facilities with net worth covenants and facility active dates between 1990 and 2005. Financial statement information was obtained from COMPUSTAT, and stock return information was obtained from CRSP.

Panel A. Sample for Asymmetric Timeliness Measure

	Number of firms	Number of firm-years
Facilities with net worth covenants		5,385
After matching with iperm in CRSP	1,287	3,252
After excluding firms with no earnings or returns data at *t*	1,183	3,003
After excluding firms with no earnings or return data at $t - 1$ or $t + 1$	1,061	2,716
After excluding outliers (top and bottom 0.5% of firms)	1,042	2,666
After excluding firms with tenure of less than 24 months	945	2,092
After excluding firms with slack less than or equal to 0	778	1,582
After including only the facilities with the lowest net worth covenant in the same year for the same firm	778	1,150
Final sample	778	1,150

Panel B. Sample for Accruals Measure

	Number of firms	Number of firm-years
Facilities with net worth covenants		5,385
After matching with iperm in COMPUSTAT	1,387	3,586
After excluding firms with no nonoperating accruals data at *t*	1,182	3,068
After excluding firms with no nonoperating accruals data at $t + 1$	1,153	3,004
After excluding outliers (top and bottom 0.5% of firms)	1,143	2,975
After excluding firms with tenure of less than 24 months	1,040	2,412
After excluding firms with slack less than or equal to 0	824	1,731
After including only the facilities with the lowest net worth covenant in the same year for the same firm	824	1,207
Final sample	824	1,207

Table 2. Variable Definitions

	Variable	Definition
Dependent Variables	(E/P)	Firm earnings per share in the fiscal year divided by the price per share at the beginning of the fiscal year [COMPUSTAT data #18/(lag (COMPUSTAT data #199)*COMPUSTAT data #25)]
	$\Delta Accrual_{t,\,t+1}$	Change in nonoperating accruals from t to t + 1. Nonoperating accruals are defined as total accruals minus operating accruals where total accruals are defined as net income, plus depreciation, minus cash flow from operations, deflated by lagged assets [(COMPUSTAT data #172 + data #14 – data #308)/lag (data #6)] and operating accruals are measured as change in non-cash current assets [COMPUSTAT data #4 – data # 1] minus change in current liabilities excluding short term debt [COMPUSTAT data #5 – data # 34], deflated by lagged assets.
	SP	Special items. Extraordinary items and discontinued operations at either t or t+1, deflated by lagged assets [(COMPUSTAT data #48) / lag (data #6)]
Independent Variables	R	Return of individual firm over the 12 months beginning nine months prior to the end of the fiscal year
	DR	Dummy variable set equal to 1 if R is negative and 0 otherwise
	D_p	Dummy variable set equal to 1 if R belongs to t + 1 and 0 otherwise
	D_s	Dummy variable set equal to 1 if the firm belongs to the low-slack group and 0 otherwise
	SL	(Actual net worth at t, t − 1, or t + 1, less net worth covenant threshold)/Total assets [(COMPUSTAT data #216 − net worth covenant threshold)/COMPUSTAT data #6]
	MTB	Market value of equity/Book value of equity [COMPUSTAT data #199 * data #25/data #216]
	LEV	(Long-term debt + debt in current liabilities)/Market value of equity [(COMPUSTAT data #9 + data #34)/(data #199 * data #25)]
	$SIZE$	Natural log of the market value of equity [log (COMPUSTAT data #199 * data #25)]
	$\Delta Rating_{t,\,t+1}$	Change in S&P long-term domestic issuer credit rating from t to t + 1 [COMPUSTAT data #280 at t + 1, less data #280 at t]
	$\Delta CFO_{t,\,t+1}$	Change in cash flow from operations from t to t + 1, deflated by lagged assets [COMPUSTAT data #308/ lag (data #6)]
	$\Delta Sale_{t,\,t+1}$	Change in sales from t to t + 1, deflated by lagged assets [COMPUSTAT data #12/ lag (data #6)]

Table 3. Descriptive Statistics

Panel A. Descriptive Statistics for the Full Sample

This table provides descriptive statistics for the full sample of 1,150 firm-years between 1990 and 2005. The sample is divided into three subsamples based on amount of slack at borrowing year. Tenure is the anticipated maturity of the loan. Net worth covenant is the net worth threshold set up at the time of borrowing. Net worth slack is actual net worth minus net worth covenant. Total assets is book value of assets. Other variable definitions are given in table 2. Subscripts *t*, *t*–1, and *t*+1 indicate borrowing year, one year prior to borrowing year, and one year after borrowing year, respectively.

	Low Slack			Midium Slack			High Slack			Total Sample		
	Mean	Median	Std.	Mean	Median	Std.	Mean	Median	Std.	Mean	Median	Std.
Tenure (Month)	48.8	48.0	16.1	50.1	50.0	17.4	52.0	58.0	21.1	50.3	49.0	18.4
Net Worth Covenant (MM$)	576.3	174.0	1769.4	540.6	220.0	1416.0	469.3	175.0	1249.1	528.7	195.0	1493.3
Net Worth Slack	0.027	0.026	0.015	0.077	0.076	0.015	0.205	0.168	0.105	0.103	0.076	0.097
Loan amount (MM$)	298.4	150.0	531.8	340.8	177.5	675.1	308.9	150.0	507.3	316.1	150.0	576.0
Total $Asset_t$ (MM$)	5,150.9	552.0	29,223.5	2,382.0	608.1	7,499.3	2,124.0	574.7	5,128.1	3,218.2	580.1	17,705.6
Total $Asset_{t+1}$ (MM$)	5,909.8	656.3	35,050.2	2,629.4	697.2	8,619.2	2,403.2	650.8	5,518.1	3,646.6	666.8	21,116.1
$Sales_t$ (MM$)	1,633.2	487.4	4,438.4	1,539.3	587.4	3,155.3	1,952.3	536.3	5,407.1	1,708.1	536.5	4,429.4
$Sales_{t+1}$ (MM$)	1,801.3	560.6	4,818.5	1,655.9	651.2	3,334.7	2,226.9	613.5	6,249.5	1,894.5	601.2	4,946.6
LEV_t	0.83	0.45	1.16	0.55	0.30	1.05	0.34	0.18	0.54	0.57	0.30	0.97
LEV_{t+1}	0.89	0.44	1.39	0.64	0.35	1.23	0.52	0.24	1.20	0.68	0.33	1.28
MTB_t	2.35	1.69	3.70	2.21	1.81	1.53	2.42	2.03	1.80	2.33	1.85	2.53
MTB_{t+1}	2.08	1.70	2.10	2.23	1.80	1.78	2.42	1.95	2.33	2.24	1.81	2.08
$Rating_t$	12.82	13.00	2.66	11.97	12.00	2.37	10.91	11.00	3.18	11.94	12.00	2.84
$Rating_{t+1}$	13.03	14.00	2.46	12.22	12.00	2.19	11.22	11.00	3.06	12.19	12.00	2.67
$\Delta accrual_{t,\, t+1}$	-0.0053	-0.0031	0.1119	0.0057	-0.0024	0.1017	-0.0257	-0.0060	0.1425	-0.0085	-0.0035	0.1205
R_t	0.21	0.11	0.63	0.20	0.13	0.52	0.12	0.08	0.42	0.17	0.11	0.53
R_{t+1}	0.27	0.17	0.69	0.14	0.10	0.47	0.15	0.11	0.56	0.19	0.12	0.58

Panel B. Correlation Matrix of Variables

Pearson (Spearman) correlations for the variables are reported below (above) the diagonal. Figures in bold indicate correlations that are significant at a 5% or lower level. Net worth slack is actual net worth minus net worth covenant threshold. Tenure is the anticipated maturity of the loan. Total asset is book value of assets. Other variable definitions are given in table 2. Subscripts *t*, *t*–1, and *t*+1 indicate borrowing year, one year prior to borrowing year, and one year after borrowing year, respectively.

	Net Worth Slack	Loan amount	Tenure	Total $Asset_t$	$Sales_t$	LEV_t	MTB_t	$\Delta Rating_t$	$\Delta Accrual_{t, t+1}$	R_t
Net Worth Slack		-0.0468	0.0496	0.0623	0.0565	**-0.3174**	0.0484	**-0.3928**	-0.0284	-0.0525
Loan amount	0.0018		**0.2664**	**0.7897**	**0.7190**	**0.1409**	**0.2272**	**-0.4815**	-0.0124	**0.0985**
Tenure	0.0551	**0.1269**		**0.1565**	**0.1138**	**-0.0933**	**0.2077**	**-0.1918**	-0.0535	**0.1751**
Total $Asset_t$	0.0551	**0.6264**	**0.0669**		**0.8897**	**0.1745**	**0.1507**	**-0.6192**	0.0465	0.0504
$Sales_t$	0.0604	**0.5312**	0.0369	**0.7719**		**0.1261**	**0.1294**	**-0.5668**	0.0447	0.0600
LEV_t	**-0.1581**	0.0411	**-0.1357**	0.0097	-0.0085		**-0.4890**	**0.3619**	**0.1041**	**-0.1546**
MTB_t	-0.0131	**0.1211**	0.0419	0.0282	0.0527	**-0.1613**		**-0.1902**	-0.0162	**0.2294**
$\Delta Rating_t$	**-0.3794**	**-0.3971**	**-0.1880**	**-0.3622**	**-0.4049**	**0.3553**	**-0.1689**		-0.0263	0.0518
$\Delta Accrual_{t, t+1}$	-0.0521	-0.0073	**-0.0646**	0.0354	0.0299	0.0508	**-0.1178**	-0.0293		-0.0473
R_t	**-0.0773**	-0.0140	**0.0941**	0.0070	-0.0199	**-0.1350**	0.0313	**0.1325**	-0.0454	

Table 4: Change in Ex-Post Conservatism for Low-Slack and High-Slack Groups (Asymmetric Timeliness Measure)

This table presents results from OLS regression estimates for ex-post change in conservatism for low-slack and high-slack firms. The low-slack (high-slack) group is the group with the tightest (least tight) slack among the three subsamples tested. Variable definitions are given in table 2. The sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dependent Variable: *E/P*			
	Model 1		Model 2	
Indep. Variable	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	0.0507***	9.20	0.0425***	5.08
$\beta0$ (*DR*)	0.0208**	1.98	0.0198*	1.87
$\beta1$ (D_p)			0.0134	1.42
$\beta2$ (D_s)			0.0059	0.76
$\beta3$ (*R*)	0.0290***	3.87	0.0203	1.34
$\gamma0$ (*DR* * *R*)	0.1412***	4.24	0.1235***	3.25
$\gamma1$ (D_p * *R*)			−0.0106	−0.74
$\gamma2$ (D_s * *R*)			0.0188	1.43
$\gamma3$ (D_p * *DR* * *R*)	0.3509***	9.95	0.3962***	7.98
$\gamma4$ (D_s * D_p * *DR* * *R*)	−0.2495***	−6.24	−0.2544***	−5.39
Number of obervations	1,532		1,532	
Adjusted R^2	0.21		0.22	

Table 5: Ex-Post Change in Conservatism for the Full Sample (Asymmetric Timeliness Measure)

This table presents results from OLS regression estimates for relation between net worth covenant slack at borrowing year and asymmetric timeliness level in the following year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : $(E/P)_{t+1}$						
	Model 1		Model 2		Model 3	
Indep. Variable	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	0.0505***	3.73	0.0603**	2.05	0.0376*	1.78
$\alpha 1$ (*SL*)	−0.0088	−0.09	−0.0540	−0.76	−0.0426	−0.98
$\alpha 2$ (*MTB*)			−0.0044**	−2.19	−0.0044***	−4.44
$\alpha 3$ (*Size*)			0.0033	0.74	0.0016	0.59
$\alpha 4$ (*D/E*)			−0.0252***	−2.84	−0.0264*	−1.83
$\eta 0$ (*DR*)	0.0451*	1.82	−0.1423**	−2.50	−0.1502**	−2.40
$\eta 1$ (*SL * DR*)	0.0544	0.32	0.2575**	2.10	0.2671***	2.67
$\eta 1$ (*MTB * DR*)			0.0126*	1.72	0.0142***	2.72
$\eta 1$ (*Size * DR*)			0.0056	0.67	0.0056	0.68
$\eta 1$ (*LEV * DR*)			0.1194***	7.36	0.1188***	3.65
$\beta 0$ (*R*)	0.0343**	2.15	0.0800**	2.00	0.0746	1.50
$\beta 1$ (*SL * R*)	−0.0591	−0.68	−0.0600	−0.97	−0.0717*	−1.78
$\beta 2$ (*MTB * R*)			−0.0006	−0.14	−0.0001	−0.01
$\beta 3$ (*Size * R*)			−0.0089	−1.24	−0.0074	−0.86
$\beta 4$ (*D/E * R*)			0.0047	0.44	0.0063	0.47
$\gamma 0$ (*R * DR*)	0.3297***	5.64	0.0106	0.08	0.0119	0.06
$\gamma 1$ (*SL * R * DR*)	0.9722***	2.88	1.7189***	7.06	1.7734***	5.19
$\gamma 2$ (*MTB * R * DR*)			0.0184	1.21	0.0182	1.21
$\gamma 3$ (*Size * R * DR*)			−0.0388**	−1.97	−0.0385	−1.26
$\gamma 4$ (*LEV * R * DR*)			0.4387***	17.23	0.4352***	7.73
Number of observations	1,150		1,146		1,146	
Firm fixed effects	No		No		Yes	
Year fixed effects	No		No		Yes	
Adjusted R^2	0.18		0.59		0.60	

Table 6: Ex-Post Change in Conservatism for the Low-Slack and High-Slack Groups (Accruals Measure)

This table presents the mean and standard deviation values of nonoperating accruals in the low-slack and high-slack groups, as well as *t*-test results on the difference of accruals between the groups. The low-slack (high-slack) group is the group with the tightest (least tight) slack among the subsamples. *Accrual* is nonoperating accruals, which are defined as total accruals minus operating accruals where total accruals are defined as net income before extraordinary items, plus depreciation, minus cash flow from operations, deflated by lagged assets and operating accruals are measured as change in non-cash current assets minus change in current liabilities excluding short term debt, deflated by lagged assets. Subscripts t and t+1 indicate borrowing year and one year after borrowing year, respectively. $\Delta Accrual_{t,\ t+1}$ is the change in accrual from t to $t + 1$. *T*-statistics are in parentheses. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Low Slack (A)		High Slack (B)			Test of difference [(A)-(B)]	
	Mean	Std	Mean		Std	Mean	
$Accrual_t$ (a)	-0.027	0.083	-0.015		0.070	-0.012	**
						(-2.29)	
$Accrual_{t+1}$ (b)	-0.033	0.082	-0.041		0.143	0.008	
						(0.97)	
Test of difference [(b)-(a)]							
$\Delta accrual_{t,\ t+1}$	-0.005	0.112	-0.026	***	0.143	0.020	**
	(-0.97)		(-3.62)			(2.25)	
Number of Observations	402		402				

Table 7: Ex-Post Change in Conservatism for the Full Sample (Accruals Measure)

This table presents results from OLS regression estimates for the relation between net worth slack at borrowing year and change in accruals from borrowing year to the following year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : $\Delta Accrual_{t, t+1}$									
	Model 1			Model 2			Model 3		
Ind. Variable	Coeff		t-stat	Coeff		t-stat	Coeff		t-stat
Intercept	0.0125	**	2.41	0.0164		1.19	0.0079		0.50
α1 (SL)	-0.1226	***	-3.84	-0.1364	***	-4.21	-0.1406	**	-2.04
α2 ($\Delta CFO_{t, t+1}$)	-0.0835	**	-2.11	-0.0940	**	-2.35	-0.0864	*	-1.71
α3 ($\Delta Sale_{t, t+1}$)	-0.0337	***	-4.27	-0.0372	***	-4.58	-0.0382	***	-2.69
α4 (MTB_t)				-0.0037	***	-2.88	-0.0036	*	-1.72
α5 ($Size_t$)				0.0017		0.76	0.0010		0.41
α6 (LEV_t)				-0.0023		-1.37	-0.0024		-1.46
Number of Observations	1207			1207			1168		
Firm Fixed Effects	No			No			Yes		
Year Fixed Effects	No			No			Yes		
Adjusted R^2	0.03			0.04			0.05		

Table 8: Ex-Post Change in Conservatism and Change in Credit Rating (Asymmetric Timeliness Measure)

This table presents results from OLS regression estimates for the relation between ex-post change in asymmetric timeliness and change in credit rating from borrowing year to the following year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : $(E/P)_{t+1}$						
	Model 1		Model 2		Model 3	
Indep. Variable	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	0.0516***	3.30	0.0656	1.11	0.0786*	1.75
α1 (*SL*)	−0.0264	−0.23	−0.1413	−1.32	−0.1216*	−1.70
α2 (*MTB*)			−0.0086	−1.35	−0.0075*	−1.71
α3 (*Size*)			0.0056	0.70	0.0023	0.39
α4 (*LEV*)			−0.0394***	−3.33	−0.0395**	−2.06
α5 ($\Delta Rating_{t,\ t+1}$)	0.0012	0.16	−0.0037	−0.54	−0.0035	−0.33
η0 (*DR*)	0.0043	0.14	−0.0401	−0.33	−0.0211	−0.21
η1 (*SL * DR*)	0.3991*	1.81	0.4374**	2.15	0.4383**	2.56
η1 (*MTB * DR*)			0.0025	0.21	0.0006	0.07
η1 (*Size * DR*)			−0.0003	−0.02	−0.0019	−0.15
η1 (*LEV * DR*)			0.0429	1.63	0.0348	1.00
β0 (*R*)	0.0336*	1.81	0.0930	1.08	0.0707	0.47
β1 (*SL * R*)	−0.0393	−0.37	−0.0098	−0.10	−0.0121	−0.17
β2 (*MTB * R*)			0.0032	0.45	0.0025	0.41
β3 (*Size * R*)			−0.0076	−0.59	−0.0035	−0.17
β4 (*D/E * R*)			−0.0037	−0.24	−0.0020	−0.07
γ0 (*R * DR*)	0.0013	0.02	0.2547	0.75	0.3151	0.66
γ1 (*SL * R * DR*)	2.9735***	5.00	2.8801***	5.32	2.9283***	2.83
γ2 (*MTB * R * DR*)			−0.0121	−0.48	−0.0134	−0.44
γ3 (*Size * R * DR*)			−0.0539	−1.22	−0.0616	−0.97
γ4 (*LEV * R * DR*)			0.1384**	2.41	0.1259	1.05
γ5 ($\Delta Rating_{t,\ t+1}$ * *SL* * *R * DR*)	2.4545***	11.71	1.7272***	7.90	1.7326**	2.26
Number of observations	442		442		440	
Firm fixed effects	No		No		Yes	
Year fixed effects	No		No		Yes	
Adjusted R^2	0.45		0.56		0.59	

Table 9: Ex-Post Change in Conservatism and Change in Credit Rating (Accruals Measure)

This table presents results from OLS regression estimates for the relation between change in accruals and change in credit rating from the borrowing year to the following year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : $\Delta Accrual_{t, t+1}$									
	Model 1			Model 2			Model 3		
Ind. Variable	Coeff		t-stat	Coeff		t-stat	Coeff		t-stat
Intercept	0.0082		0.97	-0.0103		-0.32	-0.0074		-0.17
α1 (SL)	-0.0351		-0.52	-0.0157		-0.23	-0.0208		-0.25
α2 ($\Delta CFO_{t, t+1}$)	-0.2754	**	-2.37	-0.2400	**	-2.11	-0.2293	*	-1.97
α3 ($\Delta Sale_{t, t+1}$)	0.0118		0.45	0.0175		0.66	0.0060		0.19
α4 ($\Delta Rating_{t, t+1}$)	0.0009		0.14	0.0032		0.50	0.0047		0.64
α5 (MTB_t)				-0.0025		-1.50	-0.0023		-1.21
α6 ($Size_t$)				0.0030		0.69	0.0032		0.76
α7 (LEV_t)				0.0032		0.63	0.0026		0.50
β1 ($\Delta CFO_{t, t+1}$* SL)	-0.1929		-0.17	-0.9064		-0.82	-0.7629		-0.65
β2 ($\Delta Sale_t$* SL)	-0.2617		-1.25	-0.3063		-1.48	-0.2796		-1.03
β3 ($\Delta Rating_{t, t+1}$*SL)	-0.1656	***	-3.33	-0.1507	***	-2.81	-0.1541	**	-2.53
Number of Observations	393			393			379		
Firm Fixed Effects	No			No			Yes		
Year Fixed Effects	No			No			Yes		
Adjusted R^2	0.09			0.06			0.12		

Table 10: Relation between Conservatism and Covenant Slack in Borrowing Year (Asymmetric Timeliness Measure)

This table presents results from OLS regression estimates for the relation between asymmetric timeliness level and covenant slack at borrowing year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : $(E/P)_t$						
	Model 1		Model 2		Model 3	
Indep. Variable	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	0.0574***	9.69	0.0515***	2.84	0.0749***	4.44
*α*1 (*SL*)	−0.0756*	−1.67	−0.0583	−1.26	−0.0601	−1.25
*α*2 (*MTB*)			−0.0041	−1.51	−0.0041	−1.61
*α*3 (*Size*)			0.0018	0.66	0.0013	0.51
*α*4 (*LEV*)			0.0057	0.87	0.0073	1.23
*η*0 (*DR*)	0.0298***	2.65	−0.0236	−0.73	−0.0238	−0.75
*η*1 (*SL* * *DR*)	−0.1666**	−2.10	−0.1495*	−1.87	−0.1444	−1.14
*η*1 (*MTB* * *DR*)			−0.0032	−0.74	−0.0026	−0.46
*η*1 (*Size* * *DR*)			0.0085*	1.75	0.0082	1.42
*η*1 (*LEV* * *DR*)			−0.0018	−0.18	−0.0040	−0.36
*β*0 (*R*)	0.0271***	3.17	0.0715***	3.05	0.0743**	2.54
*β*1 (*SL* * *R*)	0.0856	1.01	0.0608	0.69	0.0594	0.55
*β*2 (*MTB* * *R*)			−0.0040	−1.03	−0.0038	−0.89
*β*3 (*Size* * *R*)			−0.0042	−1.11	−0.0042	−0.97
*β*4 (*LEV* * *R*)			−0.0104	−1.28	−0.0120	−1.32
*γ*0 (*R* * *DR*)	0.1885***	6.12	0.1817**	2.17	0.1658	1.54
*γ*1 (*SL* * *R* * *DR*)	−0.6569***	−2.81	−0.3928*	−1.68	−0.3614	−1.06
*γ*2 (*MTB* * *R* * *DR*)			−0.0072	−0.97	−0.0068	−0.71
*γ*3 (*Size* * *R* * *DR*)			−0.0133	−0.99	−0.0095	−0.55
*γ*4 (*LEV* * *R* * *DR*)			0.0348**	2.07	0.0354*	1.76
Number of observations	1,150		1,146		1,146	
Firm fixed effects	No		No		Yes	
Year fixed effects	No		No		Yes	
Adjusted R^2	0.14		0.18		0.22	

Table 11: Change in Conservatism Level after Borrowing (Asymmetric Timeliness Measure)

This table presents results from OLS regression estimates for change in asymmetric timeliness from the borrowing year to the following year in the full sample. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : *(E/P)*						
	Model 1		Model 2		Model 3	
Indep. Variable	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	0.0445***	5.63	0.0544***	2.76	0.0507***	3.43
α1 (*SL*)	−0.0081	−0.16	−0.0400	−0.90	−0.0395	−1.16
α2 (*MTB*)			−0.0043**	−2.51	−0.0041***	−4.60
α3 (*Size*)			0.0022	0.77	0.0016	0.80
α4 (*LEV*)			−0.0131**	−2.06	−0.0133	−1.30
α5 (D_p)	0.0095	1.43	0.0066	1.12	0.0091	1.53
η0 (*DR*)	0.0123	1.05	−0.1190***	−3.31	−0.1166**	−2.38
η1 (*SL * DR*)	0.0768	0.87	0.1398*	1.74	0.1372	1.47
η2 (*MTB * DR*)			0.0030	0.68	0.0031	0.73
η3 (*Size * DR*)			0.0084	1.57	0.0081	1.46
η4 (*LEV * DR*)			0.0912***	8.71	0.0915**	2.35
β0 (*R*)	0.0405***	4.56	0.0715***	2.84	0.0723***	2.75
β1 (*SL * R*)	−0.0681	−1.17	−0.0528	−1.04	−0.0559	−1.50
β2 (*MTB * R*)			−0.0020	−0.60	−0.0018	−0.51
β3 (*Size * R*)			−0.0052	−1.20	−0.0054	−1.22
β4 (*LEV * R*)			−0.0039	−0.51	−0.0035	−0.38
γ0 (*R * DR*)			−0.0995	−1.13	−0.1131	−0.69
γ1 (*SL * R * DR*)	0.9666***	5.50	1.1833***	6.38	1.1838***	3.77
γ2 (*MTB * R * DR*)			0.0022	0.26	0.0022	0.30
γ3 (*Size * R * DR*)			−0.0371***	−2.76	−0.0373*	−1.90
γ4 (*LEV * R * DR*)			0.2846***	16.50	0.2850***	3.35
γ5 (D_p * *R * DR*)	0.2677***	9.14	0.3035***	10.68	0.3273***	3.83
Number of Observations	2,300		2,292		2,292	
Firm fixed effects	No		No		Yes	
Year fixed effects	No		No		Yes	
Adjusted R^2	0.1687		0.4005		0.41	

Table 12: Relation between Covenant Slack and Special Items

This table presents results from OLS regression estimates for the relation between net worth slack in borrowing year and special items in the following year. Variable definitions are given in table 2. Sample period is 1990–2005. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable : SP_{t+1}									
	Model 1			Model 2			Model 3		
Ind. Variable	Coeff		t-stat	Coeff		t-stat	Coeff		t-stat
Intercept	-0.0006		-0.51	-0.0006		-0.51	-0.0066	***	-5.09
α1 (SL)	-0.0238	**	-2.40	-0.0277	***	-2.70	-0.0292	**	-2.08
α2 (SP_t)	0.1140	***	4.32	0.1190	***	4.52	0.1266	**	2.38
α3 (MTB_t)	-0.0008	***	-2.93	-0.0008	***	-3.04	-0.0008	***	-3.03
α4 (R_{t+1})				0.0007		0.49	-0.0009		-0.65
β1 (MTB_t* SL)	0.0085	***	2.79	0.0095	***	3.07	0.0096	***	2.99
β2 (R_{t+1}* SL)				0.0118		1.49	0.0131		1.46
Number of Observations	1056			1051			1051		
Firm Fixed Effects	No			No			Yes		
Year Fixed Effects	No			No			Yes		
Adjusted R^2	0.02			0.03			0.07		