Strategic Disclosure and Debt Covenant Violation*

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Abstract

This study examines how managers change their forecasting behavior as a debt covenant violation approaches. Using a sample of firms that disclose a debt covenant violation (DCV) in their annual or quarterly financial statements, we find that management forecast errors are larger and that forecasts are more optimistic leading up to a DCV. Additionally, firms whose management forecasts' display larger forecast errors or more optimism before a DCV are more likely to experience increases in dividend payouts and stock price volatility before the violation, compared to firms that will soon violate a covenant but whose management forecasts do not exhibit these biases. Overall, our results are consistent with managers changing their disclosure behavior to conceal upcoming covenant violations from debtholders while also taking actions that are favorable to equity investors.

Keywords: Debt Covenant Violation, Strategic Disclosure, Risk-Shifting

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1 Introduction

This paper examines how managers strategically alter their provision of voluntary disclosure to capital market participants before the occurrence of a debt covenant violation. The accounting literature has extensively studied managers' incentives to voluntarily disclose part or all of the private information they possess about firms' future fundamentals.[1] Because of the repetitive nature of the decision to disclose additional information, managers have incentives to credibly commit to a truthful disclosure regime. Indeed, prior research shows that managers with better historical accuracy have been found to have a larger effect on stock prices and analyst forecast revisions and to achieve more favorable career outcomes (Williams, 1996; Lee et al., 2012; Yang, 2012). Prior studies provide evidence, however, that managers are more likely to intentionally bias the voluntarily disclosed information when there are benefits in doing so for the firms or managers (e.g., Lang and Lundholm, 2000; Nagar et al., 2003; Rogers and Stocken, 2005) (Hilary et al., 2014b). In this paper, we provide evidence that managers intentionally bias the information disclosed prior to a debt covenant violation to delay its discovery and the costs associated with the violation.

A large body of research in accounting and finance has documented the costs and consequences of debt covenant violation (DCV, hereafter). Covenant violations lead to large negative stock price reactions, increases in interest rates, and difficulty in securing further financing (Beneish and Press, 1993; Roberts and Sufi, 2009a). Additionally, recent research provides evidence that covenant violations are associated with a shift of firm control to lenders (see, e.g., Roberts and Sufi (2009b) for a survey of this literature). The shift of control rights is significant, resulting in changes to CEO turnover, corporate restructuring, and reductions in dividend payouts to shareholders (Nini et al., 2012). Prior research provides strong evidence that managers use both real actions and accrual manipulations to avoid violating a covenant (Sweeney, 1994; DeFond and Jiambalvo, 1994; Dichev and Skinner, 2002; Beatty and Weber, 2003). However, there is no evidence that managers also modify their

[1] See Beyer et al. (2010) for a thorough review of this literature.

disclosure behavior in their attempts to delay the shift of control rights and decision making to lenders. This paper intends to fill this gap.

Specifically, we provide evidence that management forecasts issued in the quarter before a DCV are less accurate (larger forecast error).[2] The inaccuracy of the forecast in the quarter before a DCV could be driven by the general uncertainty of a firm experiencing financial deterioration. We find, however, that forecasts issued in the quarter before a DCV are more optimistic (relative to the eventually realized earnings) than those issued before a non-violation quarter.[3] These results are both economically and statistically significant and are consistent with managers attempting to conceal upcoming covenant violations from debtholders. Indeed, by issuing more optimistic earnings forecasts, managers are delaying the disclosure to market participants that earnings will fall below the threshold that triggers a DCV.[4]

We next predict that managers who are modifying their forecasts to conceal an upcoming DCV may also take actions that are beneficial to equity holders and which would likely be discouraged by debtholders in the event of covenant violation.[5] Managers are likely to place the interests of shareholders ahead of debtholders because it is shareholders who employ them, and managers themselves are likely to be equity holders, especially in the recent time

[2]We concentrate our analysis on management earnings forecasts. Indeed, Beyer et al. (2010) suggest that earnings guidance represents the most important voluntary disclosure channel. They argue that, on average, it explains approximately 55% of accounting-based information and account for 15.67% of the quarterly returns variance.

[3]To examine the relevance of upcoming covenant violations on current management disclosure choices we employ the full sample of firms that provide management earnings guidance over our sample period. In order to isolate the effects attributable to DCVs for covenant violators, we restrict our sample to those firms with at least one DCV over our sample period in additional tests and inferences do not change.

[4]Our implicit assumption is that firms are attempting to decrease the perceived likelihood of violating a financial covenant, specifically a covenant containing an earnings component, while in reality firms may violate both financial and non-financial covenants. Our sample of covenant violators, however, is comprised solely of financial covenant violators. Moreover, recent studies have documented that the majority of debt contracts contain an earnings-based debt covenant and that the use of earnings-based covenants has increased substantially over time (Demerjian, 2011; Demerjian and Owens, 2014). We discuss our sample of covenant violators in Section 3.

[5]After a technical covenant violation, creditors gain the same control rights that they would in the event of a payment default; and prior studies find that lenders exercise these control rights by decreasing dividend payments, decreasing capital expenditures, choosing new managers and directors, and influencing other real decisions of the borrowers (e.g., Chava and Robert, 2008; Nini et al., 2012).

period following Reg FD (Hall and Liebman, 1998; Bebchuk and Grinstein, 2005). Consistent with this prediction, we find that the managers who are modifying their forecasts to be more optimistic are more likely to authorize large increases ($> 50\%$) in dividend payouts in the quarter before a DCV is announced, relative to the same quarter in the preceding year. We also provide evidence that firms whose managers are modifying their forecasts experience increases in daily stock return volatility. This increase in volatility corresponds to an increase the riskiness of the firm's existing assets. Such behavior has been described in the finance literature as a risk-shifting problem resulting from the conflict of interest between creditors and equity holders (Jensen and Meckling, 1976; Becker and Stromberg, 2012). Taken together, we interpret these findings as providing evidence that managers attempt to delay the news of upcoming DCVs in order to take actions that benefit equity holders over debt holders.

We next perform two cross-sectional tests. We first investigate whether the influence of debtholders over firms affects the characteristics of management forecasts. We find that our results are more pronounced in low leverage firms, with low leverage firms experiencing greater forecast inaccuracy and more optimistic bias than high leverage firms. For both the dividend and stock volatility results, we find a stronger effect for low leverage firms for which debt financing is less important. We interpret these results as being consistent with managers of firms for whom debt is less vital being more willing to use their forecasts to conceal upcoming DCVs.

Second, we find that our results are concentrated in relatively small firms. That is, managers at smaller firms alter their earnings guidance towards more optimistic estimates and use this to act in favor of equity holders over creditors before the occurrence of a DCV by increasing dividend payouts as well as the riskiness of their firm's assets. We take that as evidence that the costs to mislead capital market participants in the short-run to act in favor of equity holders before a DCV are too high for relatively large firms. This is consistent with the empirical literature in accounting suggesting that larger firms face a higher public

scrutiny and that size is a major determinant of firms' securities litigation risk (e.g., Kim and Skinner, 2012).

Finally, we perform several additional tests to ensure the robustness and validity of our results. Our main concern is that our results may be driven by optimistic managers instead of rational managers deliberately modifying their forecasts before a DCV. A recent stream of research documents that managers exhibit biases in their forecasts, and that such biases may reflect optimism traits (e.g., Hribar and Yang, 2015). Furthermore, other research suggests that agents' biases in capital markets are endogenous and dynamic (Hilary and Menzly, 2006; Hilary and Hsu, 2011). Additionally, if overconfident managers tend to overestimate their ability and judgment when managing firms (e.g., Malmendier and Tate, 2005; Ben-David et al., 2013), they may be more likely to violate covenants. The positive correlation between covenant violations and managerial optimism arising from this omitted variable could potentially bias our estimated effect upward. As such, our results may be driven by optimistic managers taking more risk, rather than by rational managers deliberately altering the characteristics of their own forecasts in order to favor equity holders before the occurrence of a DCV. To first rule out this concern, we investigate and find that management forecasts' width increases in the quarter preceding the DCV, which is inconsistent with prior research suggesting that managers' optimistic biases are associated with decreased forecasting width (Hilary and Hsu, 2011). Next, we test for and fail to find a difference in the increase in forecast errors and optimism prior to the DCV between firms with prior good versus bad performance. This again plausibly rules out our concern that our results are driven by behavioral traits, since prior research finds that optimism in forecasting arises predominantly in firms that have experienced recent success (Hilary et al., 2014a).

Our study makes three contributions to the literature. First, we add to the literature investigating covenant violation. Prior research has documented that covenant violation is costly and that managers take action to avoid DCVs (e.g., Sweeney, 1994; DeFond and Jiambalvo, 1994; Beneish and Press, 1995; Beatty and Weber, 2003), even though the most

common lender response to a DCV is to issue a waiver or renegotiate the contract (Dichev and Skinner, 2002). We provide evidence consistent with managers altering their disclosure choices in an attempt to delay the discovery of a DCV by third parties and therefore the costs associated with violation.

Second, we add to the large literature on voluntary management disclosure (see Beyer et al., 2010). Specifically, our results complement previous findings that managers intentionally introduce bias in their earnings guidance. For instance, prior works document that managers strategically use earnings guidance to "walk-down" market expectations to a beatable level (e.g., Richarson et al., 2004; Gong et al., 2009). Additionally, Ge and Lennox (2011) find no evidence of managers issuing optimistic forecasts before an acquisition using stock and argue that "deception by commission" is too costly in terms of litigation risk in their setting. We provide evidence, however consistent with managers perceiving the short-term benefits of delaying knowledge of a covenant violation using optimistic earnings forecasts to outweigh the costs of misleading investors.

Lastly, we add interesting insights to our understanding of the agency considerations that exist as managers choose actions before a covenant violation that affect debt and equity holders differently. The evidence we provide that managers delay news of an upcoming DCV using their voluntary forecasts, while taking the exact actions that lenders are likely to discourage after violation is of interest to researchers, practitioners, and regulators. Consistent with several recent studies in finance that highlight the transfer of control rights to creditors after a DCV (Roberts and Sufi, 2009a; Nini et al., 2012), we provide evidence that managers prepare for a loss of control rights by increasing dividends and stock return volatility which benefits shareholders and managers now to the detriment of creditors.

In the next section we develop our hypotheses. We describe the sample selection procedures and variables used in this study in Section 3. Section 4 presents the main empirical results, and Section 5 presents the results of additional analyses. A summary and conclusions are provided in Section 6.

2 Background and Hypothesis Development

As capital providers, lenders focus on ensuring the timely repayment of the principal and interest that are their claims on a borrower's future cash flow and assets. Because debt holders suffer from borrowers' economic losses but do not share in the upside from economic gains, they seek to gain control of the firm as soon as possible when their investment is at risk (see e.g., Aghion and Bolton, 1992). Debt covenants are included in lending contracts in order to reduce the ability of managers to extract rents from debt holders and to turn control of the firm over to creditors during bad economic states of the firm (Jensen and Meckling, 1976).[6] Debt covenants define financial tripwires which shift control rights to lenders when activated, and they restrict the actions that managers are allowed to take after debt issuance. Managers accept the costs of including debt covenants, however, because their commitment to restrict their actions and forfeit control during bad states *ex ante* generates more favorable borrowing terms (Bradley and Roberts, 2004).

Covenant violation is costly to shareholders (see e.g., Beneish and Press, 1993, 1995; Sufi, 2009; Nini et al., 2012; Gao et al., 2015). Following a DCV, lenders are entitled to demand immediate repayment of the loan or they can renegotiate the contract or grant a waiver. Dichev and Skinner (2002) document that the most common outcomes of a DCV are obtaining a waiver and renegotiating the contract. Both of these outcomes, however, can be costly. Beneish and Press (1993) estimate that the average cost of a DCV attributable to increased interest rates and renegotiation or waiver fees is between one and two percent of the market value of equity for their sample of firms.[7]

Recent research also provides evidence that DCVs are associated with a shift of firm control to lenders and other consequences that are costly to managers and equity holders (see, e.g., Roberts and Sufi (2009b) for a survey of this literature). For example, Nini et al.

[6] Jensen and Meckling (1976) list unwarranted distributions to shareholders, issuance of higher priority debt claims, and investments in negative net present value projects for purposes of empire building and diversification as potential actions that the inclusion of debt covenants attempts to prevent.

[7] DCVs may also lead to the costly inclusion of additional covenants to the debt contract during the negotiation process (Core and Schrand, 1999).

(2012) find that DCVs lead to CEO turnover, corporate restructurings, slowdowns in mergers and acquisitions, and reductions in dividend payouts. Chava and Robert (2008) also report that capital investment decreases after financial covenant violation, and Roberts and Sufi (2009a) find that DCVs increase borrowers' interest rates and restrict firms' access to debt markets. These studies provide evidence that firms that violate debt covenants incur costs related to the transfer of control to lenders *even before* formal payment default.[8]

Management earnings forecasts are voluntary disclosures that provide managers' estimate of expected earnings over a given period. This channel is one of the main mechanisms for managers to set or change the market's earnings expectation. A long literature in accounting has found that management earnings forecasts provide relevant information to market participants. For example, prior studies have found that management forecasts are associated with changes in stock prices (e.g., Nagar et al., 2003), decreases in cost of capital (Frankel et al., 1995; Coller and Yohn, 1997), and revisions in analysts' forecasts (Waymire, 1986; Baginski and Hassell, 1990; Cotter et al., 2006).[9]

Research shows that prior forecast accuracy affects the credibility, and therefore reaction to, current management forecasts (Williams, 1996; Hutton, 2007). Over 90 percent of managers surveyed by Graham et al. (2005) confirm that managers issue voluntary forecasts, including management earnings forecasts, to develop and maintain a reputation for accurate and transparent reporting. Despite the reputation incentives to be accurate and consistent when issuing management earnings forecasts, prior research does find that managers can be strategic in their forecasting behavior. Starting in the 1990s managers are, on average,

[8]The severity of the cost of DCV has also been inferred from evidence of the exercise of managerial reporting discretion. Watts and Zimmerman (1978) posit that managers will choose accounting methods that will decrease the probability of debt covenant violation, and several studies have found evidence consistent with this assertion. Sweeney (1994) finds that firms that are approaching a debt covenant violation respond with income-increasing accounting changes. DeFond and Jiambalvo (1994) examine a sample of firms that violated debt covenants and find that in the year before and in the year of the covenant violation, total accruals and working capital accruals are significantly positive. Beatty and Weber (2003) find that firms with debt covenants are more likely to adopt income-increasing accounting policies than are firms without debt covenants. Beneish et al. (2012) find evidence of earnings management and insider trading prior to default.

[9]See Hirst et al. (2008) and Beyer et al. (2010) for a review of the management earnings forecast literature.

pessimistic in their quarterly earnings forecasts; and this trend is often explained as a result of management's desire to walk-down market, in particular analysts', earnings expectation in order to increase the likelihood of beating them (Matsumoto, 2002; Cotter et al., 2006; Bergman and Roychowdhury, 2008).[10] Annual earnings forecasts, on the other hand, tend to be optimistically biased (Rogers and Stocken, 2005; Bergman and Roychowdhury, 2008).

Other factors have been found to influence management forecasting behavior. Nagar et al. (2003) provide evidence that managers holding more firm equity are more likely to issue frequent forecasts in order to avoid mispricing. Lang and Lundholm (2000) show that management forecasts are more likely to be optimistically biased leading up to an equity offering, while Aboody and Kaznik (2000) provide evidence that managers issue bad-news earnings forecasts around stock option award dates in an attempt to temporarily drive down prices. Similarly, Rogers and Stocken (2005) and Cheng and Lo (2006) provide evidence that insider trading is related to bad-news management forecasts. Taken together, these prior studies provide evidence that managers alter their earnings forecasting behavior when there are personal benefits in doing so that outweigh the costs of reducing their perceived accuracy and credibility (e.g., Lang and Lundholm, 2000; Nagar et al., 2003; Rogers and Stocken, 2005; Ge and Lennox, 2011)

We predict that an upcoming covenant violation will provide a setting in which managers have incentives to modify their forecasting behavior. If managers believe that lenders are likely to take actions that will be unfavorable to shareholders and themselves when a covenant is violated, they may choose to change their disclosure behavior in order to conceal an upcoming violation. The first question confronting managers regarding the voluntary disclosure of an earnings forecast is whether or not to issue one. Nagar et al. (2003) argue that silence on the part of managers is interpreted as bad news, so it could be that managers attempting to conceal the likelihood of an upcoming DCV are more likely to issue a management earnings forecast. Consistent with this argument, Houston et al. (2010) provide

[10]Early research conducted before the 1990s finds that management earnings forecasts are either unbiased or optimistic (see e.g., Penman, 1980; McNichols, 1989).

evidence that managers temporarily stop issuing forecasts when they are unable to meet analysts' earnings expectations and start to issue again when they are able.

Conditional on deciding to issue *any* forecasts, managers must then decide on the frequency of issuance. Prior studies have found that firms with less volatile earnings, better governance, that consistently meet or beat analysts' forecasts, or whose earnings are increasing are more likely to increase the frequency of their forecasts (Waymire, 1985; Miller, 2002; Ajinkya et al., 2005; Houston et al., 2010). At the same time, however, a firm's management forecast policy tends to be sticky over time (e.g., Hirst et al., 2008). It could be that managers do not believe they can successfully delay news of an upcoming DCV by deciding to issue a forecast or by increasing the frequency of forecasts. This leads to our first hypothesis, stated in the null:

H1: Managers change the likelihood and frequency of issuing management forecasts in the quarter before a debt covenant violation.

After deciding to issue a forecast, managers choose the characteristics of the forecast. If managers use their forecasts to change the market's earnings expectation and decrease the perceived likelihood that a covenant will be violated then forecasts issued in the quarter before a covenant violation will be less accurate. Additionally, because increases in earnings will unambiguously decrease the likelihood that a covenant is violated, these forecasts will be optimistically biased. Together, we predict that if managers issue a forecast in the period before a DCV that the forecast will be less accurate and biased upwards when compared to the forecasts of managers from firms that will not soon violate a covenant. Formally,

H2: Management forecasts issued before a debt covenant violation are more optimistic and display larger forecast error than forecasts issued before quarters with no covenant violation.

If managers are attempting to conceal an upcoming DCV from debt holders by modifying their earnings forecasts, we predict that at the same time they will be taking actions that

benefit shareholders and themselves but that lenders would be likely to prohibit once they gain control rights following a DCV. Nini et al. (2012) show that covenant violations are followed immediately by a reduction in dividend payouts. If managers are attempting to benefit shareholders at the expense of debt holders then paying out a firm's cash holdings to shareholders is convincing evidence of this. DCVs are not exogenous events, and managers may very well be taking many actions in their efforts to improve the financial prospects of the firm in ways that benefit both debt and equity holders. It would be difficult for managers to argue, however, that increased dividend payments to shareholders help the firm generally, and debt holders in particular, survive the economic conditions that led to a DCV. We predict that managers the same managers who display larger forecast errors and more optimistic bias in their management forecasts before a DCV will also be increasing dividend payments.

Another channel through which managers can benefit shareholders and themselves is to increase the riskiness of the projects that they choose. Because equity holders are the residual claimants on a firm's assets, they disproportionately benefit from high risk projects compared to debt holders whose claims on the firm are fixed (see e.g., Aghion and Bolton, 1992). Managers may choose to invest in riskier projects as a last resort, knowing that a high payoff would keep the firm from violating a covenant and financially deteriorating even more. Given the prior work showing the increases in CEO turnover following a DCV (Nini et al., 2012); managers may feel that this increases their chances of retaining employment at the firm. Shareholders may not necessarily object to the increased riskiness of the projects chosen by managers as it increases the value of their claim on the firm (Jensen and Meckling, 1976). While we do not observe the portfolio of projects chosen by management, we can observe the volatility of a firm's stock. If managers are choosing riskier projects, we will observe increases in firms' return volatility in the periods just before a DCV. This leads to our final formal hypothesis:

H3: Managers whose forecasts are more optimistic and display larger forecast error are more likely to increase dividend payouts and stock price volatility before a debt covenant violation compared to managers whose forecasts do not exhibit these characteristics.

3 Sample Selection and Empirical Specification

3.1 Sample Selection and Data Source

We use the sample of covenant violation data developed by (Nini et al., 2009) and (Roberts and Sufi, 2009a).[11] Next, we merge this dataset with management forecast data obtained from First Call. We use managerial quarterly earnings per share (EPS) estimates reported in the First Call database starting from the sample period after the Reg FD. This sample period allows us to identify management forecasts directly and mitigate the potential private communications and missing data issues prior to Reg FD (Chuck et al., 2013). For each fiscal quarter, we keep all forecasts that are issued before the actual earnings release to calculate forecast frequency, but only retain the point and range guidance observations to calculate forecast errors and width, as these variables are less clearly defined for other forms of guidance (such as open-ended and qualitative guidance).[12] Last, we retrieve accounting information from Compustat's quarterly data files, and stock price and return data are obtained from the daily files of the Center for Research in Security Prices (CRSP).

3.2 Empirical Specification

To test our first and second hypotheses, we estimate the following regression:

[11] We retrieve this dataset from Sufi's website (http://faculty.chicagobooth.edu/amir.sufi/data.html).

[12] Furthermore, in calculating forecast errors and width, we remove any forecasts issued after the fiscal quarter end (i.e. pre-announcements) to avoid the possibility that pre-announcements may differ in nature from manager earnings estimates (e.g., McNichols, 1989; Rogers and Stocken, 2005; Rogers and Van Buskirk, 2013).

$$MFVar_{i,t} = \beta_0 + +\beta_1 Viol_{i,t} + \sum_{x=1}^{n} \beta_x Control_{i,t} + \epsilon_{i,t} \quad (1)$$

In this empirical model, *MFVar* stands for a series of management forecast-related variables. Namely, *FreqMF*, *Issue*, *MFE*, and *Optim*. *FreqMF* is forecast frequency, measured as the log of the number of management forecasts issued in quarter t by firm i. *Issue* is an indicator variable equal to one if a firm issues a forecast in quarter t, and zero otherwise. *MFE* is the magnitude of forecast optimism, measured as the difference between management forecast and realized earnings, scaled by price. *Optim* is forecast optimism, measured as an indicator variable equal to one if the management forecast is greater than the realized earnings of quarter t, and zero otherwise. Our variable of interest, *Viol*, is an indicator variable equal to one if a firm violates a debt covenant in quarter t, and zero otherwise. According to our first hypothesis, we do not expect to find a statistically significant change in the likelihood of issuing a forecast or in forecasting frequency (i.e. for *FreqMF* and *Issue*). As per our second hypothesis, we expect the coefficient β_1 to be positive and statistically significant when the dependent variable is *MFE* or *Optim*.

We supplement our model with a series of control variables (*Controls*). Prior research has identified various managerial incentives that motivate managers to bias their earnings forecasts, including to support market expectations during financial distress (Frost, 1997; Koch, 2002) (*Z-Score*), deter potential industry entrants (Newman and Sansing, 1993) (*HHI*), facilitate security issuance (Frankel et al., 1995; Lang and Lundholm, 2000) (*ExtFin*), reduce expected legal costs (Skinner, 1994, 1997; Baginski et al., 2002) (*Litig*), and guide analysts' forecasts to avoid missing expectations at the earnings announcement (Matsumoto, 2002; Cotter et al., 2006; Gong et al., 2011) (*Insto*).

Aside from managerial incentives, prior studies document significant relations between bias and several firm characteristics, including firm performance (*ROA*, *Loss*, and *Return*),

accounting accruals (*Bloated*), firm size (*Size*), analyst coverage (*Coverage*), and growth opportunity (*Btm*) (e.g., McNichols, 1989; Rogers and Stocken, 2005; Gong et al., 2009).[13] We provide additional details on the above variable definitions in Appendix A. Lastly, we augment our empirical model with industry and year fixed effects. Year fixed effects account for intertemporal changes in management forecast characteristics while industry fixed effects account for cross-industry differences.[14]

We winsorize the top and bottom one percentiles of continuous variables to mitigate the influence of potential outliers. We employ OLS estimation for models with a continuous dependent variable, while we use probit estimation for models with a binary dependent variable. The standard errors are calculated according to the procedure outlined in Cameron et al. (2011) and are group-wise heteroskedasticity-consistent (i.e., adjusted simultaneously for heteroskedasticity and the clustering of observations by firm and quarter). Our results are not affected by calculating the standard errors using one-way clustering (by firm) or two-way clustering (by firm and year) instead.

To test our third hypothesis, we estimate the following regression:

$$Var_{i,t} = \beta_0 + \beta_1 Viol_{i,t} + \beta_3 Viol_{i,t} \ X \ MFVar_{i,t} + \beta_3 MFVar_{i,t} + \sum_{x=1}^{n} \beta_x Control_{i,t} + \epsilon_{i,t} \quad (2)$$

In this empirical model, the dependent variable, *Var*, stands for *SigDiv* and *RetVolt*. *SigDiv* intends to capture significant increases in dividend payouts. It is measured as an indicator variable equal to one if a firm increases the dividend payout to investors by more

[13] Our results are not affected when we further control for a firm's consistency in meeting-or-beating analyst forecasts (Barton and Simko, 2002; Das et al., 2012; Kross et al., 2011; McInnis and Collins, 2011). Likewise, our results are not affected when we replace *Bloated* with either total accruals (Gong et al., 2011) or discretionary accruals (Kasznik, 1999; Gong et al., 2009). Our results are also robust to controlling for internal control quality (Feng et al., 2009), fourth-quarter effects, the earnings response coefficient (Das et al., 2011), insider trading (Noe, 1999; Cheng and Lo, 2006), the value-relevance of earnings (Matsumoto, 2002; Hutton, 2005), and lagged forecast characteristics (Gong et al., 2011). For the sake of brevity, we do not include these additional or alternative controls in our baseline models.

[14] We define industry fixed effects following the Fama–French 12 industry classification (Gong et al., 2011).

than 50% of compared to the amount paid in the same quarter in the previous year (quarter t-4), and zero otherwise.[15] *RetVolt* is stock return volatility, measured as the standard deviation of daily stock return in quarter t. *MFVar* corresponds to the following set of management forecast related variables:*MFE* and *Optim*. We expect the coefficient on β_2, the interaction between *Viol* and *MFVar*, to be positive and statistically significant. We include the same set of control variables (*Controls*) as in Equation (1).

3.3 Descriptive Statistics

Table 1 Panel A reports the descriptive statistics for the full sample of 88,152 firm-quarter observations used to test the likelihood of managers issuing a forecast before a DCV (H1). The mean natural log of the number of management forecasts (*FreqMF* in the quarter before a DCV is 0.0663. *Issue*, has a mean of 0.0956, indicating that approximately 10% of firms have managers that issue of an earnings forecast in any given quarter. *AbFreqMF* has a mean value of -0.0002, indicating that most managers do not issue management forecasts.

Table 1 Panel B reports the descriptive statistics of the 15,698 firm-observations for our sample of firms that issue at least one management forecast over our time period (2000 to 2010) used in all subsequent tests. We limit our discussion in the text of the descriptive statistics of the other variables of interest and of the control variables to the observations in Panel B for brevity.

Viol has a mean of 0.0305, indicating that approximately 3% of firm quarters in our sample contain a DCV, compared to the 7% violation rate reported by Nini et al. (2012) for the universe of Compustat firms over their sample period. This difference indicates that the types of firms that issue management forecasts are less likely to violate a covenant than the average firms in Compustat, consistent with prior work that finds that managers at firms with good financial performance are more likely to issue forecasts Miller (2002).

[15]We posit that management forecast bias before a DCV is associated with significant increases in dividend payouts. The exact amount of increase, however, is an empirical question. Our results are not affected if we use 40%, 60%, or 100% to define the significance of the change in dividend payout.

The average management forecast error (*MFE*) in our sample is -0.0004, indicating that, on average, managers are pessimistic in their forecasts. This finding is consistent with prior studies of management forecasts over quarterly horizon Hirst et al. (2008). *Optim* has a mean value of 0.3722, indicating that roughly 37% of forecasts are higher than the actual earnings reported. *SigDiv* has a mean value of 0.0218, indicating that just over 2% of firms in our management forecast sample increase their dividend payout by at least 50% compared to the same quarter in the previous year. *RetVolt* has a mean of 0.0037.

The means of *Z-Score*, *HHI*, *ExtFin*, and *Litig* are 1.7405, 0.2342, -0.0029, and 0.4320, respectively. The mean of earnings volatility (*EarnVolt*) is 0.0200, and the mean institutional ownership (*Insto*) is approximately 69%. The average ROA and Return over the last quarter is 0.0114 and -0.0007, respectively. Nini et al. (2012) also documented a negative stock return in the quarter before a DCV is disclosed. The average firm size (*Size*) and book-to-market (*Btm*) of observations in our sample is 6.9819 (natural log of firm assets) and 0.4788, respectively. On average, the firms in our sample are covered by 5.67 analysts (*Coverage*), and have an average net asset bloat (*Bloated*) of 2.6259.

Table 2 reports the Pearson correlation matrix of the variables in our sample. *Viol* is positively correlated with management forecast errors, forecast optimism, significant increases in dividends, and stock return volatility with statistical significance at the 1% level. These correlations provide univariate evidence consistent with our predictions. *Viol* is also significantly correlated with many of the control variables: specifically, it is positively correlated with net external financing in the current quarter, earnings volatility, losses, net asset bloat, and book-to-market, and it is negatively correlated with Z-score, operating in a litigious industry, ROA, stock return over the previous quarter, firm size, and analyst coverage.

4 Empirical Results

4.1 Debt Covenant Violations, Likelihood of Issuing a Forecast, and Forecast Bias

We first examine whether covenant violation effects the likelihood of management forecast issuance (H1). The first two columns of Table 3 report the estimation results of equation (1) with *FreqMF* (Column 1) and *Issue* (Column 2) as the dependent variables. The coefficient on *Viol* is not significant in either specification, suggesting that the likelihood of and frequency of issuing forecasts do not change as a firm approaches the violation of a debt covenant. Column (3) presents the results of re-estimating equation (1) after replacing the dependent variable with abnormal forecast frequency (AbFreqMF). AbFreqMF is measured as the residual value from the estimation results of equation (1) (excluding *Viol*) and may better capture the effect of DCVs on management forecast issuance. The results, however, do not change; and the coefficient on *Viol* remains insignificant. While the results do not support H1, prior research argues that managers have less discretion over the decision of whether to issue a forecast, because of litigation or reputation concerns and other pre-existing conditions or antecedents (see e.g., Hirst et al. (2008)).

Next, we examine whether upcoming covenant violations affect the accuracy and bias in management forecasts (H2). Before turning to our multivariate analyses, we present some graphical evidence. One concern would be that the change in disclosure characteristics is already present several years before the occurrence of the debt covenant violation, which would make unlikely that the expected DCV is driving managers' change in disclosure. Focusing on the firms with a DCV in quarter t, the first graph in Figure 1 presents the average forecast errors around the DCV. The forecast error clearly peaks around the DCV itself, indicating that managers significantly alter their disclosure right before the DCV. In the second part of Figure 1, we plot the likelihood to issue optimistic forecast around the DCV. Again, one can see a clear increase compared to the previous periods and a drop

after the DCV. Indeed, the likelihood to issue optimistic forecast increases significantly from 50% two years before the DCV to 60% in the violation quarter. Table 4 reports results from estimating equation (1) with *MFE* and *Optim* as the dependent variables. Columns (1) and (2) show that the coefficient on *Viol* is positive and statistically significant in both specifications with a value of 0.00563 and 0.40047 for *MFE* and *Optim*, respectively. In addition to being statistically significant, the coefficients on *Viol* are also economically significant in size. The magnitude of the coefficient in Column (1) is approximately 160% of the magnitude of the effect of *Btm*.[16] The marginal effect of *Viol* in Column (2) is 14.35%, which is larger than the effect of *Btm* (untabulated 5.88%).

Many of the included control variables are statistically significant as well. Management forecast errors are positively associated with industry concentration, whether or not a firm is located in a high litigation industry, recent losses, ROA, net asset bloat, and book-to-market. Forecast errors are negatively associated with earnings volatility and stock returns over the previous quarter. Forecast optimism is increasing recent net external financing, losses, and book-to-market and decreasing in earnings volatility, recent stock returns, and firm size. Taken together, the results presented in Table 4 support H2.

We also perform two cross-sectional tests partitioning the sample on leverage and firm size. We partition our sample into quintiles of leverage and size and re-estimate equation (1) with *MFE* and *Optim* as the dependent variables. Table 5 Panel A present the leverage results. Columns (1) and (3) present the *MFE* and *Optim* results for the lowest quintile of firm leverage while Columns (2) and (4) present the results for the highest quintile. The *MFE* effect that we observe in the full sample is still present in both the high and low leverage partitions with both specifications yielding statistically significant results. The coefficients on *Viol* are 0.00772 and 0.00325 for low and high leverage, respectively. As predicted, however,

[16]It is customary to evaluate the economic effect by comparing it to the mean or median of the dependent variable. In our case, however, this would result in division by a number very close to zero. Instead, we compare the effect of *Viol* to *Btm* in order to obtain economic significance in a relative manner. To do so, we multiply the coefficient on *Viol* by the standard deviation of *Viol*, and scale this by the corresponding product for *Btm*. We continue to use a similar procedure to calculate the economic magnitude of our key variables in other OLS estimations.

the coefficient on *Viol* is larger in the sample of firms with low leverage compared to those with high leverage ($\chi^2 = 4.26$). The *Optim* effect follows the same pattern for firms with low and high leverage. The coefficient on *Viol* is 0.65656 and 0.17214 for firms with low and high leverage, respectively, and the coefficient is statistically larger in the low leverage partition ($\chi^2 = 6.35$). We interpret this result as providing evidence that firms with lower leverage having more bargaining power with lenders; and therefore, managers at low leverage firms are more willing to manipulate their voluntary forecasts to conceal upcoming DCVs and delay lenders' ability to gain control rights. Firms that rely heavily on debt may not be willing to jeopardize the relationship with their lender, knowing that the costs of switching to a new lender are substantial (Petersen and Rajan, 1994).

Table 5 Panel B presents the size results. We use firm size to capture the litigation risk of a firm. Larger firms face more public scrutiny and investors in large firms are more likely to take legal action in the event of the financial deterioration of a firm or of unexpected bad news (Kim and Skinner (2012). Columns (1) and (3) present the *MFE* and *Optim* results for the lowest quintile of firm size while Columns (2) and (4) present the results for the highest quintile of firm size. The *MFE* and *Optim* effects that we observe in the full sample are still present in both the small and large firm size partitions with the coefficient on *Viol* remaining statistically significant in all specifications. The coefficient on *Viol* in the forecast error specifications is larger in the sample of small firms compared to large firms as predicted ($\chi^2 = 5.10$). We do not find, however, a significant difference in the coefficients across small and large firms for the forecast optimism results, both coefficients are positive and statistically significant. These results are consistent with managers being more willing to manipulate their forecasts when litigation risk is lower. Overall, we interpret the two cross-sectional tests in Table 5 as providing evidence that managers are more willing to strategically alter their earnings forecasts to delay the news of upcoming covenant violations when the cost of doing so is lower.

4.2 Dividend Payouts and Stock Price Volatility

Table 6 reports the estimation results of equation (2) where the dependent variables are *SigDiv* and *RetVolt*. H3 predicts that managers that are strategically altering their earnings forecasts to delay news of an upcoming DCV will also be taking real actions that benefit shareholders. Specifically, we investigate whether or not managers that manipulate their forecasts also significantly increase dividend payouts and increase a firm's stock price volatility (by increasing the riskiness of a firm's projects). The indicator variable *SigDiv* takes a value of one if managers increase a firm's dividend payout by at least 50% compared to the same quarter in the previous year, and zero otherwise. Columns (1) and (2) show that the coefficients on the interaction terms between *Viol* and the proxies for forecast accuracy (*MFE* and *Optim*) are positive and significant, suggesting that managers who issue biased forecasts are more likely to significantly increase dividend payouts before a DCV. The marginal effect of *MFE X Viol* is 3.07%, which is greater than all of the other variables included in the regression; meanwhile, the marginal effect of *Optim X Viol* is 7.84%.

Columns (3) and (4) show the interaction effects on stock return volatility. The coefficients on *MFE X Viol* and *Optim X Viol* are also positive and significant, suggesting that managers who issue biased forecast are more likely to increase stock return volatility before a DCV. Taken together, the results in Table 6 support the view that managers modify forecasts are also taking other actions that benefit shareholders at the expense of debt holders.

We investigate the dividend and stock volatility results using the cross-sectional partitions from Table 5. We partition our sample into quintiles of leverage and size and re-estimate equation (2) with *SigDiv* and *RetVolt* as the dependent variables. Table 7 Panel A present the leverage results. Columns (1) and (3) present the *MFE X Viol* and *Optim X Viol* results for the lowest quintile of firm leverage while Columns (2) and (4) present the results for the highest quintile. The *MFE X Viol* and *Optim X Viol* effects that we observe in the full sample are driven exclusively by the low leverage observations, the interaction term is insignificant in the high leverage specifications. Additionally, the interaction coefficients in

the low leverage partitions are statistically larger than the coefficients in the high leverage partitions ($\chi^2 = 2.23$ and $\chi^2 = 3.58$ for *MFE X Viol* and *Optim X Viol*, respectively.)

Table 7 Panel A Columns (5) through (8) provide the leverage results for the stock return volatility results. We observe a similar pattern of results. The coefficients on the interaction terms are larger for in the low leverage partition than the high leverage partition. The difference in coefficients, however, is only significant at conventional levels for the *MFE X Viol* specifications ($\chi^2 = 1.99$). This is likely due to a loss of power in our tests as we partition the interaction.

Panel B of Table 7 presents the dividend and stock volatility results after partitioning on firm size. Columns (1) through (4) present the dividend results. The coefficients on *MFE X Viol* and *Optim X Viol* are both larger when firm size is small ($\chi^2 = 3.24$ and $\chi^2 = 4.90$, respectively). We find similar results in the stock volatility tests where the coefficients on *MFE X Viol* and *Optim X Viol* are again both larger when firm size is small ($\chi^2 = 3.59$ and $\chi^2 = 2.98$, respectively). Together, these cross-sectional tests provide evidence consistent with our predictions and prior studies in finance (Becker and Stromberg, 2012; Jensen and Meckling, 1976). Managers acting in the behalf of equity holders have incentives to increase the riskiness of the existing assets, and therefore stock volatility, even in cases when this reduces the net present value of the firm. This is because the benefits of this higher risk primarily go to equity holders thanks to their limited liability while the costs are primarily born by creditors. This problem is commonly known as the risk-shifting problem. These cross-sectional tests show that these effects are stronger When the costs of concealing an upcoming covenant violation are lower.

5 Robustness Tests

Correlated Omitted Variables

The results from the previous section demonstrate that, on average, managers issue

earnings guidance that exhibit larger forecast errors and that are more likely to be optimistic in the quarter before the occurrence of a debt covenant violation. Throughout the paper, we argue that managers privately anticipate the incidence of a debt covenant violation and avoid signaling this violation earlier by issuing more optimistic forecast. Next, they use the time before the covenant violation to strategically act in favor of shareholders relative to creditors by increasing dividend payments and the riskiness of firms' assets. One potential concern and alternative explanation is that our results are driven by managers' behavioral characteristics rather than by a rational managers that strategically modify firms' provision of voluntary disclosure to deliberately favor equity holders at the expense of creditors. Indeed, a recent stream of research has highlighted the role of managers' behavioral traits, such as executives' overconfidence, in explaining corporate choices (e.g., Malmendier and Tate, 2005; Ben-David et al., 2013), which could potentially lead to covenant violation. In this section, we perform two distinct robustness tests to plausibly rule out the possibility that our results are driven by underlying behavioral static and/or dynamic characteristics of managers at firms that eventually violate a debt covenant.

A first specific concern would be that firms that violate covenants are run by managers that are different (i.e. overconfident) compared to firms that do not happen to violate covenants during our sample period. If this is true and managerial overconfidence is able to explain the positive relation between DCVs and forecast optimism, we then would expect a negative association between covenant violations and forecast width. Indeed, greater forecast precision has been identified as one of the necessary conditions of managerial overconfidence (Hilary and Hsu, 2011). We directly test this alternative explanation and report our results in column (1) of Table 8. Specifically, we find a positive and statistically significant coefficient on our *Viol* variable. We measure *Width* as the difference between the upper- and lower-end estimates, scaled by price (point estimates then have a range of zero). This indicates that forecast width is larger for guidance issued by managers in firms that are about to experience a debt covenant violation. This finding is not consistent with managerial overconfidence. It

is however consistent with managers providing vague forecasts in order to conceal news of an upcoming DCV. Finally, including firm or manager fixed effects to our model does not affect our inferences (untabulated). These results further mitigate the concern that time-invariant managerial style, especially personal attributes of managers, could explain our findings (e.g., Bamber et al., 2010).

Second, a recent study by Hilary et al. (2014a) finds that recent past success leads to more optimistic forecasts in the future. These recent findings suggest that if our results are driven by dynamic managerial optimism, we should expect them to be concentrated in firms that have experienced good performance in the recent past. We re-run our tests exploring these alternative explanations and also provide the results in Table 8. Specifically, we next re-estimate equation (1) partitioning our sample by using firms' past performance. We define a firm as having had relatively bad performance if its averaged return on assets over the last four quarters is lower than that of the industry median. Columns (2)-(5) provide evidence that past performance does not effect the association between covenant violation and forecast optimism that we document in Table 4. That is, both firms that experience past good and bad operating performance display, on average, increase in forecast error and optimism before the occurrence of a debt covenant violation. In untabluated analyses, these robustness tests are not affected if we use consistency or frequency of meeting or beating earnings benchmarks to categorize past performance in lines with the design in Hilary et al. (2014a), although the reduced sample size weakens our testing power.

Selection Issues

Managers have discretion over the forecast issuance decision. Hence, the observed association between DCV and forecast bias may not represent the true relationship in a complete series of management forecasts (including both issued and unissued management forecasts) due to non-random sample selection. Our main results of forecast bias, however, are less likely to be driven by such selection issues for two reasons. First we do not find a significant change in forecast issuance as a DCV approaches, which mitigates the concern that the ob-

served change in forecast bias is potentially related to changes in forecast issuance. Second, we follow Lennox and Park (2006) and (Gong et al., 2011) to implement a Heckman two-stage procedure. Following these two studies, we use two instruments, the earnings response coefficient (ERC) and the quarterly industry-median values of ERC. Both variables plausibly explain the management forecast issuance decision (first stage) but have no obvious direct effect on forecast bias (second stage). Consistent with this view, the correlation between the instruments and an indicator variable for the forecast issuance is positive and significant (p-values¡0.01). In contrast, the correlation between the instruments and the error terms of the second stage are low (the p-values range from 0.35 to 0.91). More importantly, the untabulated second-stage regressions continue to demonstrate a positive and significant relation between forecast bias and covenant violation.

6 Conclusion

This paper studies the relation between strategic voluntary disclosure and debt covenant violation. Specifically, we find robust evidence that managers issue less accurate and more optimistic earnings guidance prior to a debt covenant violation in order to conceal the upcoming violation. Furthermore, we document that the managers who increased the strategically biased their forecasts then take actions that favor equity holders at the expense of debtholders. Specifically, managers that issue biased forecasts also significantly increase dividend payouts and the riskiness of firms' assets. Our results are stronger when firms exhibit lower leverage, consistent with the intuition that managers are more likely to act in favor of equity holders when they represent a larger source of financing. Furthermore, our results are concentrated in relatively small firms, whose public scrutiny is weaker. In other words, the trade-off to mislead capital market participants in the short-run to conceal an upcoming debt covenant violation is perceived as less costly for small firms that carry a lower litigation risk.

Our results contribute to the accounting literature investigating firms' behavior in reaction to the incidence of debt covenant violation. Next, our paper adds to the vast literature on the strategic disclosure of managers by documenting that future debt covenant violations create incentives for managers to alter their provision of voluntary disclosure. Finally, our results highlight how disclosure is used as a tool by managers to act in favor of equity holders relative to creditors, contributing to the rich literature in finance examining risk-shifting behavior and shareholders-creditor conflicts.

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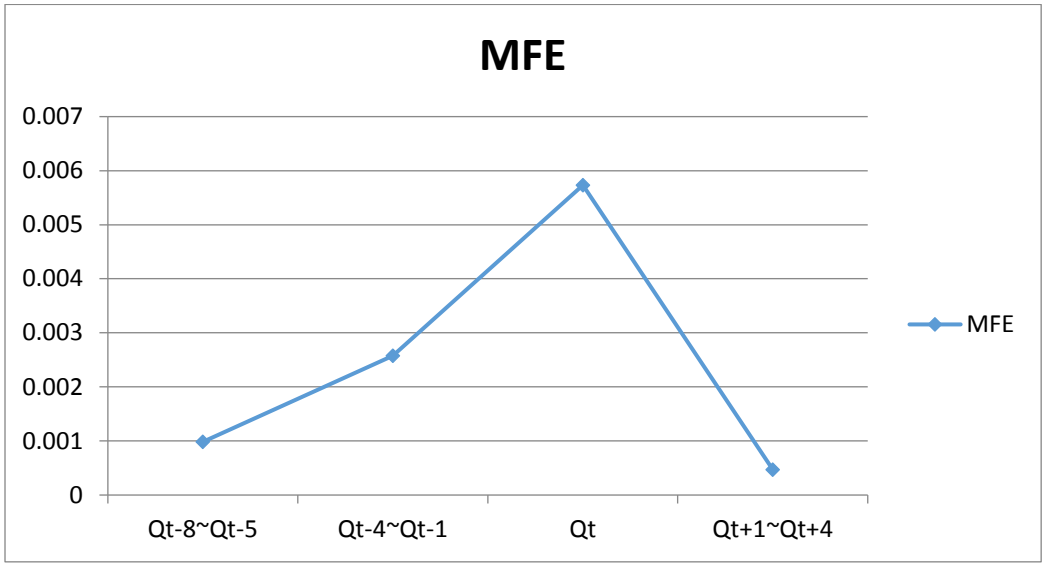
Figure 1: Management Forecast Characteristic around Debt Covenant Violation



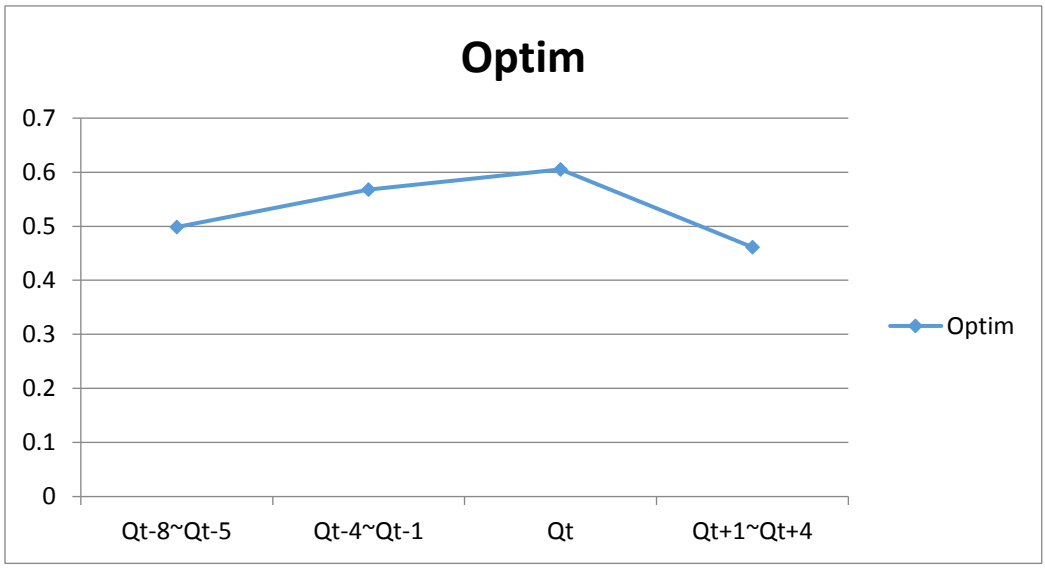


Table 1: Descriptive Statistics

This table reports summary statistics for the full sample in Panel A and management forecast sample in Panel B. All variables are defined in Appendix A.

Panel A: Full Sample

Variable	N	Mean	Std. Dev.	25th Perc.	Median	75th Perc.
FreqMF	88,152	0.0663	0.2039	0.0000	0.0000	0.0000
Issue	88,152	0.0956	0.2941	0.0000	0.0000	0.0000
AbFreqMF	88,152	-0.0002	0.1957	-0.0972	-0.0500	-0.0085
Viol	88,152	0.0591	0.2358	0.0000	0.0000	0.0000
Zscore	88,152	1.0026	2.4311	0.5174	1.3232	2.1478
HHI	88,152	0.2413	0.1852	0.1038	0.1939	0.3121
ExtFin	88,152	0.0067	0.0638	-0.0117	-0.0004	0.0070
Litig	88,152	0.3496	0.4769	0.0000	0.0000	1.0000
EarnVolt	88,152	0.0317	0.0498	0.0067	0.0141	0.0337
Insto	88,152	0.4947	0.3052	0.2181	0.5152	0.7603
Loss	88,152	0.3403	0.4738	0.0000	0.0000	1.0000
ROA	88,152	-0.0072	0.0595	-0.0108	0.0078	0.0203
Return	88,152	-0.0025	0.2588	-0.1476	-0.0175	0.1157
Bloated	88,152	3.7425	6.6275	1.1936	2.1499	3.7855
Size	88,152	5.7567	2.0127	4.2805	5.7190	7.0953
Btm	88,152	0.6204	0.5490	0.2748	0.4705	0.7655
Coverage	88,152	1.1542	0.9848	0.0000	1.0986	1.9459

Panel B: Management Forecast Sample

Variable	N	Mean	Std. Dev.	25th Perc.	Median	75th Perc.
MFE	15,698	-0.0004	0.0078	-0.0020	-0.0006	0.0000
Optim	15,698	0.3722	0.4834	0.0000	0.0000	1.0000
SigDiv	15,698	0.0218	0.1460	0.0000	01.0000	1.0000
RetVolt	15,698	0.0037	0.0021	0.0023	0.0031	0.0045
Viol	15,698	0.0305	0.1720	0.0000	0.0000	0.0000
Z-Score	15,698	1.7405	1.5994	1.1027	1.7377	2.4955
HHI	15,698	0.2342	0.1628	0.1113	0.1947	0.3042
ExtFin	15,698	-0.0029	0.0433	-0.0166	-0.0014	0.0052
Litig	15,698	0.4320	0.4954	0.0000	0.0000	1.0000
EarnVolt	15,698	0.0200	0.0283	0.0054	0.0101	0.0215
Insto	15,698	0.6892	0.2252	0.5536	0.7318	0.8602
Loss	15,698	0.1757	0.3806	0.0000	0.0000	0.0000
ROA	15,698	0.0114	0.0303	0.0041	0.0140	0.0248
Return	15,698	-0.0007	0.2171	-0.1232	-0.0088	0.1083
Bloated	15,698	2.6259	2.4029	1.1676	2.0317	3.2318
Size	15,698	6.9819	1.6192	5.8796	6.8758	7.9843
Btm	15,698	0.4788	0.3389	0.2541	0.3962	0.6070
Coverage	15,698	1.8981	0.7534	1.3863	1.9459	2.3979

Table 2: Correlation Matrix

This table reports Pearson correlations. All variables are defined in Appendix. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variable (N= 15,698)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) MFE	1.00																	
(2) Optim	0.467***	1.00																
(3) SigDiv	-0.001	0.019**	1.00															
(4) RetVolt	0.043***	0.122***	0.296***	1.00														
(5) Viol	0.140***	0.086***	0.051***	0.133***	1.00													
(6) Z-Score	0.040***	-0.019**	-0.095***	-0.190***	-0.066***	1.00												
(7) HHI	0.017**	0.002	-0.150***	-0.101***	0.007	0.008	1.00											
(8) ExtFin	-0.005	0.017**	0.096***	0.102***	0.015*	-0.075***	-0.011	1.00										
(9) Litig	-0.005	0.026***	0.216***	0.188***	-0.013*	0.026***	-0.256***	0.01	1.00									
(10) EarnVolt	-0.046***	0.000	0.194***	0.419***	0.052***	-0.352***	-0.071***	0.085***	0.125***	1.00								
(11) Insto	0.005	-0.057***	-0.034***	-0.345***	-0.084***	0.249***	-0.006	-0.044***	0.009	-0.241***	1.00							
(12) Loss	0.015*	0.061***	0.157***	0.368***	0.123***	-0.368***	-0.064***	0.058***	0.125***	0.344***	-0.234***	1.00						
(13) ROA	0.017**	-0.046***	-0.114***	-0.357***	-0.109***	0.509***	0.028***	-0.088***	-0.069***	-0.399***	0.249***	-0.629***	1.00					
(14) Return	-0.137***	-0.155***	-0.020**	-0.109***	-0.066***	-0.042***	0.01	0.031***	-0.031***	-0.052***	-0.034***	-0.064***	0.072***	1.00				
(15) Bloated	0.020**	0.009	0.003	0.075***	0.015*	-0.170***	-0.037***	0.029***	-0.098***	0.106***	-0.053***	0.154***	-0.207***	-0.060***	1.00			
(16) Size	-0.017**	-0.083***	-0.350***	-0.393***	-0.133***	0.318***	0.057***	-0.105***	-0.021***	-0.195***	0.343***	-0.264***	0.260***	-0.042***	0.075***	1.00		
(17) Btm	0.073***	0.079***	0.061***	0.214***	0.116***	-0.272***	0.019**	-0.012	-0.066***	0.028***	-0.204***	0.244***	-0.280***	0.096***	0.184***	-0.453***	1.00	
(18) Coverage	-0.020**	-0.051***	-0.071***	-0.160***	-0.085***	0.209***	-0.091***	-0.039***	0.161***	-0.047***	0.369***	-0.106***	0.127***	-0.050***	0.069***	0.654***	-0.313***	1.00

Table 3: Debt Covenant Violation and Voluntary Disclosure

This table presents the results from regressions relating voluntary disclosure choices to the violation of debt covenants for U.S. listed firms from 2000 to 2010. Columns (1) and (3) report the estimation results of the OLS regressions. Column (2) reports the ones of the Probit regression. All dependent and independent variables are defined in Appendix A. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	(1) FreqMF	(2) Issue	(3) AbFreqMF
Viol	0.00201	0.02672	0.00193
	(0.503)	(0.462)	(0.516)
Z-Score	0.00004	0.00039	-0.00217***
	(0.924)	(0.954)	(0.000)
HHI	-0.01117	-0.09505	-0.02400***
	(0.134)	(0.200)	(0.001)
ExtFin	0.00572	0.02617	0.01593
	(0.570)	(0.823)	(0.112)
Litig	0.01594***	0.08945**	-0.01321***
	(0.000)	(0.017)	(0.001)
EarnVolt	-0.02709	-0.65800***	-0.01322
	(0.118)	(0.007)	(0.445)
Insto	0.01949**	0.32111***	0.01295
	(0.014)	(0.000)	(0.101)
Loss	-0.01962***	-0.19021***	0.00153
	(0.000)	(0.000)	(0.544)
ROA	0.03328**	0.68369***	0.02144
	(0.025)	(0.006)	(0.148)
Return	-0.02978***	-0.31205***	0.00144
	(0.000)	(0.000)	(0.731)
Bloated	-0.00042***	-0.01711***	0.00066***
	(0.001)	(0.000)	(0.000)
Size	-0.00582***	-0.06544***	-0.00075
	(0.000)	(0.000)	(0.626)
Btm	-0.00874***	-0.02223	-0.01816***
	(0.000)	(0.425)	(0.000)
Coverage	0.05535***	0.54837***	0.00226
	(0.000)	(0.000)	(0.535)
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	88,152	88,152	88,152
R^2	0.095	0.160	0.028

Table 4: Debt Covenant Violation and Management Forecast Characteristics

This table presents the results from regressions relating various management forecast characteristics to the violation of debt covenants for U.S. listed firms from 2000 to 2010. Column (1) reports the estimation results of the OLS regression, and column (2) reports the ones of the Probit regression. All dependent and independent variables are defined in Appendix A. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	(1) MFE	(2) Optim
Viol	0.00563***	0.40047***
	(0.000)	(0.000)
Z-Score	0.00012	-0.01120
	(0.184)	(0.333)
HHI	0.00107*	0.13258
	(0.079)	(0.201)
ExtFin	0.00172	0.55414**
	(0.362)	(0.027)
Litig	0.00062**	0.09266*
	(0.018)	(0.063)
EarnVolt	-0.01273***	-2.64205***
	(0.001)	(0.000)
Insto	0.00098**	-0.03404
	(0.037)	(0.634)
Loss	0.00072**	0.07827*
	(0.025)	(0.065)
ROA	0.01507***	0.91051
	(0.001)	(0.120)
Return	-0.00495***	-1.02189***
	(0.000)	(0.000)
Bloated	0.00006*	-0.00019
	(0.095)	(0.973)
Size	-0.00001	-0.05235***
	(0.945)	(0.002)
Btm	0.00176***	0.16421***
	(0.005)	(0.003)
Coverage	-0.00005	0.02443
	(0.698)	(0.347)
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	15,698	15,698
R^2	0.058	0.049

Table 5: Cross-Sectional Analysis on Debt Covenant Violation and Management Forecast Characteristics

This table presents the results from regressions relating various management forecast characteristics to the violation of debt covenants for U.S. listed firms from 2000 to 2010, grouped by leverage ratio and firm size. Columns (1) and (2) report the estimation results of the OLS regressions, and columns (3) and (4) report the ones of the Probit regressions. All dependent and independent variables are defined in Appendix A. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Partition using Leverage

	(1) Low Lev MFE	(2) High Lev MFE	(3) Low Lev Optim	(4) High Lev Optim
Viol	0.00772***	0.00325***	0.65656***	0.17214
	(0.000)	(0.014)	(0.000)	(0.189)
χ^2-test for difference	4.26		6.35	
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,135	3,143	3,135	3,143
R^2	0.085	0.043	0.061	0.052

Panel B: Partition using Size

	(1) Low Size MFE	(2) High Size MFE	(3) Low Size Optim	(4) High Size Optim
Viol	0.00816***	0.00342	0.51888***	0.69170***
	(0.000)	(0.143)	(0.008)	(0.003)
χ^2-test for difference	5.10		1.36	
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,592	3,591	3,592	3,591
R^2	0.092	0.039	0.062	0.069

Table 6: Dividends and Stock Price Volatility

This table presents the results from regressions relating dividend payout policy and stock price volatility and management forecast characteristics to the violation of debt covenants for U.S. listed firms from 2000 to 2010. Columns (1) and (2) report the estimation results of the Probit regressions, and columns (3) and (4) report the ones of the OLS regressions. All dependent and independent variables are defined in Appendix A. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	(1) SigDiv	(2) SigDiv	(3) RetVolt	(4) RetVolt
Viol	0.00802	-0.11587	0.00014	0.00025**
	(0.930)	(0.329)	(0.361)	(0.013)
MFE X Viol	12.80303**	-	0.02203***	-
	(0.029)		(0.009)	
MFE	-0.07593	-	-0.00169	-
	(0.978)		(0.518)	
Optim X Viol	-	0.32689**	-	0.00035*
		(0.028)		(0.094)
Optim	-	-0.03114	-	0.00003
		(0.351)		(0.258)
Z-Score	0.00405	-0.00427	0.00010***	0.00010***
	(0.895)	(0.889)	(0.002)	(0.002)
HHI	-0.37340	-0.37044	-0.00021	-0.00021
	(0.112)	(0.114)	(0.100)	(0.105)
ExtFin	1.92331***	1.92575***	0.00138***	0.00140***
	(0.000)	(0.000)	(0.001)	(0.001)
Litig	0.11758	0.11875	0.00017***	0.00017***
	(0.324)	(0.319)	(0.006)	(0.005)
EarnVolt	8.72978***	8.69796***	0.01543***	0.01541***
	(0.000)	(0.000)	(0.000)	(0.000)
Insto	0.51647***	0.51281***	-0.00077***	-0.00076***
	(0.004)	(0.004)	(0.000)	(0.000)
Loss	0.13628*	0.13602*	0.00032***	0.00032***
	(0.065)	(0.066)	(0.000)	(0.000)
ROA	1.08943	1.10378	-0.00489***	-0.00485***
	(0.390)	(0.386)	(0.000)	(0.000)
Return	-0.00210	-0.01677	-0.00089**	-0.00090***
	(0.977)	(0.817)	(0.010)	(0.009)
Bloated	0.01478	0.01476	-0.00000	-0.00000
	(0.378)	(0.378)	(0.884)	(0.904)
Size	-0.46159***	-0.46235***	-0.00039***	-0.00039***
	(0.000)	(0.000)	(0.000)	(0.000)
Btm	-0.32096***	-0.31756***	0.00007	0.00006
	(0.007)	(0.008)	(0.655)	(0.670)
Coverage	0.36709***	0.36754***	0.00034***	0.00034***
	(0.000)	(0.000)	(0.000)	(0.000)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	15,698	15,698	15,698	15,698
R^2	0.280	0.280	0.552	0.552

Table 7: Cross-Sectional Analysis on Dividends and Stock Price Volatility

This table presents the results from regressions relating dividend payout policy and stock price volatility and management forecast characteristics to the violation of debt covenants for U.S. listed firms from 2000 to 2010, grouped by leverage ratio and firm size. Columns (1)-(4) report the estimation results of the Probit regressions, and columns (5)-(8) report the ones of the OLS regressions. All dependent and independent variables are defined in Appendix A. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Partition using Leverage

	(1) Low Lev SigDiv	(2) High Lev SigDiv	(3) Low Lev SigDiv	(4) High Lev SigDiv	(5) Low Lev RetVolt	(6) High Lev RetVolt	(7) Low Lev RetVolt	(8) High Lev RetVolt
Viol	-0.01551	-0.10027	-0.47463	-0.01629	0.00037*	0.00039**	-0.00011	0.00040*
	(0.949)	(0.559)	(0.175)	(0.946)	(0.088)	(0.011)	(0.680)	(0.091)
MFE X Viol	34.81956**	2.70633	-	-	0.02658**	0.00020	-	-
	(0.015)	(0.824)			(0.33)	(0.988)		
MFE	-18.26663***	0.87912	-	-	-0.00194	-0.00175	-	-
	(0.005)	(0.879)			(0.672)	(0.671)		
Optim X Viol	-	-	0.96897**	-0.10735	-	-	0.00094**	-0.00003
			(0.043)	(0.800)			(0.022)	(0.931)
Optim	-	-	-0.21529**	-0.01735	-	-	0.00009	-0.00001
			(0.016)	(0.831)			(0.101)	(0.816)
χ^2-test for difference	2.23		3.58		1.99		1.31	
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,143	3,135	3,143	3,135	3,143	3,135	3,143	3,135
R^2	0.31	0.26	0.31	0.26	0.58	0.28	0.58	0.58

Panel B: Partition using Size

	(1) Low Size SigDiv	(2) High Size SigDiv	(3) Low Size SigDiv	(4) High Size SigDiv	(5) Low Size RetVolt	(6) High Size RetVolt	(7) Low Size RetVolt	(8) High Size RetVolt
Viol	-0.43253**	0.22578	-0.82976***	0.49999	0.00048*	-0.00024	-0.00010	-0.00031
	(0.029)	(0.417)	(0.003)	(0.286)	(0.060)	(0.307)	(0.783)	(0.211)
MFE X Viol	85.55468*	1.81443	-	-	0.02423	-0.02649*	-	-
	(0.051)	(0.907)			(0.241)	(0.098)		
MFE	-7.65561	-2.92621	-	-	-0.00646	0.00812	-	-
	(0.178)	(0.726)	-	-	(0.193)	(0.468)		
Optim X Viol	-	-	1.01824***	-0.42831	-	-	0.00113**	0.00003
			(0.008)	(0.463)			(0.033)	(0.928)
Optim	-	-	0.01387	-0.13202*	-	-	-0.00004	0.00000
			(0.808)	(0.052)			(0.366)	(0.997)
χ^2-test for difference	3.24		4.9		3.59		2.98	
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,592	3,550	3,592	3,550	3,592	3,550	3,592	3,550
R^2	0.17	0.24	0.17	0.24	0.52	0.61	0.52	0.61

Table 8: Robustness Test - Alternative Stories

This table presents additional results from the regressions relating forecast width and other management forecast characteristics to the violation of debt covenants for U.S. listed firms from 2000 to 2010. Column (1) reports the results of forecast width. Columns (2)-(54) report the comparative statistics based on past firm performance. p-values are reported under brackets and standard errors are corrected for heteroskedasticity and clustered by firm and quarter. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	Width	Bad MFE	Other MFE	Bad Opt	Other Opt
viol	0.00045**	0.38271***	0.43243***	0.00598***	0.00504***
	(0.026)	(0.000)	(0.000)	(0.000)	(0.000)
Z-Score	-0.00019***	-0.01851	-0.00714	0.00023	0.00011
	(0.000)	(0.425)	(0.569)	(0.295)	(0.266)
HHI	-0.00037*	0.10369	0.12781	0.00199*	0.00048
	(0.060)	(0.538)	(0.306)	(0.086)	(0.435)
ExtFin	-0.00147***	0.90307	0.39046	0.00326	0.00059
	(0.006)	(0.111)	(0.164)	(0.512)	(0.748)
Litig	0.00010	0.09633	0.07860	0.00108**	0.00040
	(0.421)	(0.187)	(0.184)	(0.045)	(0.137)
EarnVolt	0.01039***	0.73044	-3.40543***	-0.01283	-0.00890**
	(0.000)	(0.481)	(0.000)	(0.283)	(0.014)
Insto	-0.00146***	0.19442*	-0.12855	0.00095	0.00095*
	(0.000)	(0.059)	(0.141)	(0.293)	(0.077)
Loss	0.00077***	0.13634**	0.05858	0.00133**	0.00028
	(0.000)	(0.013)	(0.345)	(0.013)	(0.439)
ROA	-0.00427*	4.38221***	-0.07360	0.02954***	0.00792*
	(0.073)	(0.000)	(0.920)	(0.003)	(0.084)
Return	0.00014	-1.02834***	-1.01665***	-0.00769***	-0.00376***
	(0.270)	(0.000)	(0.000)	(0.000)	(0.000)
Bloated	-0.00018***	-0.00383	-0.00011	0.00002	0.00009**
	(0.000)	(0.670)	(0.988)	(0.792)	(0.013)
Size	-0.00024***	-0.10504***	-0.03513*	-0.00050***	0.00016
	(0.000)	(0.000)	(0.073)	(0.002)	(0.127)
Btm	0.00281***	0.20801**	0.23012***	0.00149	0.00192**
	(0.000)	(0.018)	(0.008)	(0.125)	(0.030)
Coverage	-0.00007	0.05962	0.00842	0.00060*	-0.00030**
	(0.211)	(0.161)	(0.787)	(0.075)	(0.033)
χ^2-test for difference	-	0.43		0.15	
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	15,698	4,278	11,420	4,278	11,420
R^2	0.378	0.052	0.053	0.077	0.052

Appendix A: Variable Definitions

In this Appendix, we describe our empirical measures and provide their sources.

Variable	Definition	Source
Variable of Interest		
Viol	Indicator variable equal to 1 if a firm violates the debt covenant in a quarter, zero otherwise	Amir Sufi's website
Dependent Variables		
FreqMF	Log of number of management forecasts issued in a quarter	First Call
Issue	Indicator variable equal to 1 if a firm issues a forecast in a quarter, zero otherwise	First Call
AbFreqMF	Abnormal FreqMF, measured as the residual value of the regression of FreqMF	First Call
Optim	Indicator variable equal to 1 if management forecast is greater than realized earnings, zero otherwise	First Call
MFE	Management forecast bias, measured as the difference between management forecast and realized earnings, scaled by price	First Call
SigDiv	Significant increase in dividend payout, measured as an indicator variable equal to 1 if a firm increases more than 50% of dividend from the quarter of last year to current quarter, zero otherwise	Compustat
RetVolt	Stock return volatility, measured as the standard deviation of daily stock return in a quarter	CRSP
Width	Management forecast width, measured as the the difference between the upper- and lower-end estimates, scaled by price (point estimates have a range of zero)	First Call
Control Variables		
Z-Score	Financial distress, measured by Altman's Z-score at the beginning of current quarter (Altman 1968)	Compustat
HHI	Industry concentration, measured by the Herfindahl-Hirschman index and calculated as the sum of squares of firms' last-quarter market shares of sales within each 4-digit SIC industry	Compustat
ExtFin	External financing of current quarter, measured as the sum of net equity financing and net debt financing, scaled by total asset	Compustat
Litig	Indicator variable set to one for litigious industries including Biotechnology (SIC 2833 to 2836) Computer Hardware (SIC 3570 to 3577), Electronics (SIC 3600 to 3674), Retailing (SIC 5200 to 5961), and Computer Software (SIC 7371 to 7379), and zero otherwise	Compustat
EarnVolt	Earnings volatility, measured as the standard deviation of the quarterly return on assets over the last two years	Compustat
Insto	Institutional investor ownership, measured as the percentage of institutional ownership in a firm at the beginning of current quarter	Compustat
Loss	Negative earnings, an indicator variable equal to one if income before extraordinary items of last quarter is negative, and zero otherwise	Compustat
ROA	Return on firm assets of last quarter, measured as income before extraordinary items divided by total assets	Compustat
Return	Buy-and-hold size-adjusted return over last quarter	CRSP
Bloated	Net asset bloat of quarter t, measured as book value of equity plus debt, minus cash, and scaled by sales	Compustat
Size	Natural logarithm of the market value of equity at the beginning of current quarter	Compustat
Btm	Book-to-market ratio at the beginning of the current quarter, measured as the book value of equity divided by the market value of equity at the end of quarter t	Compustat
Coverage	Analyst coverage, measured as natural logarithm of one plus the number of analysts following of current quarter	First Call
Lev	Leverage ratio of last quarter, measured as total debts, scaled by total assets.	compustat