The impact of technical defaults on dividend policy

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Abstract

In this paper, we examine how the violation of loan covenants (technical default) impacts firm dividend policy. Using contract-level loan data for nonfinancial firms in the U.S., we find that the occurrence of a covenant violation significantly increases the likelihood of a dividend reduction in the subsequent quarter. Moreover, we find that the degree of creditor-shareholder conflict is an important determinant of dividend cuts upon technical default: firms near financial distress and firms with weak corporate governance practices are more likely to experience dividend cuts after technical default. In addition, we find that the tendency of dividend cuts upon technical default weakened after the repeal of the Glass-Steagall Act. This is consistent with weakened bargaining power of creditors due to increased competition among banks, and increased conflict of interest due to combining commercial and investment banking businesses. Our findings suggest that loan covenants serve a critical role in mitigating creditor-shareholder conflicts.

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1. Introduction

Violations of financial covenants, often referred to as technical default, are prevalent among firms. Several recent studies have found that more than 25% of publicly traded firms in the United States violated on their financial covenants at some point between 1994 and 2005[1]. Once financial covenants are violated, control rights shift from shareholders to creditors who can threaten borrowers to accelerate loans. Through this threat, creditors can influence various policy decisions of firms. In this paper, we explore how financial covenant violations impact firm dividend policy.

Prior work suggest that firms approaching default will pay out all cash flows to shareholders before reaching default to avoid losing all cash to creditors after a default. Hence, the optimal response of creditors upon technical default is to force firms to stop dividend payments to shareholders (Fan and Sundaresan, 2000). A disruption in dividend payments is usually viewed negatively by investors[2]. The negative market reaction to dividend cuts and omissions is often attributed to current and expected financial difficulties within the firm (DeAngelo, DeAngelo and Skinner, 1992). Contrary to signaling theories however, while a reduction in dividends occurs when a firm's earnings have been deteriorating, there is little evidence to suggest that this deterioration in earnings persists after the dividend cut (Bernatzi, Michaely and Thaler, 1997; Grullon, Michaely and Swaminathan, 2002; and Lie, 2005).

Brav, Graham, Harvey and Michaely's (2005) survey evidence shows that there is a strong reluctance on the part of managers to cut a dividend while DeAngelo and DeAngelo (1990) and Daniel, Denis and Naveen (2007) present evidence supporting this view. Dividend reductions are thus viewed as a policy option only in extreme circumstances. Taken together, the

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[1] Dichev and Skinner (2002), Chava and Roberts (2008), Nini, Smith and Sufi (2008), Roberts and Sufi (2008)
[2] Aharony and Swari (1980), Dielman and Openheimer (1984), Healy and Palepu (1988), Ghosh and Wooldridge (1988)

existing literature leaves an important empirical question still open to debate: Why do firms cut dividends?

This paper attempts to shed light on this issue by examining one particular channel through which dividend policy may be affected: that of creditor control rights.[3] To accomplish this, we collect detailed information on (private) loan contracts from Dealscan for 622 U.S. firms from 1994 to 2004. We match this with dividend and financial firm data from the CRSP-Compustat merged database. From this matched dataset, we examine how violations of financial covenants of these loans influence the payout policy of the borrowing firms. Using a hazard model of dividend reductions, we find that the occurrence of a covenant violation increases the likelihood of a dividend reduction in the next fiscal quarter by 90 %. In contrast, a one standard deviation decrease in profitability (return-on-assets) increases the likelihood of a dividend reduction by only 34 %.

To our knowledge, there are very few empirical studies that relate debt covenants and dividend policy. Using a random sample of 100 firms, Kalay (1980) finds that only 5 % of observed dividend reductions can be explained by binding debt covenants. DeAngelo and DeAngelo (1990) study 80 financially distressed NYSE firms and find that a majority of these firms faced binding debt covenants in the year they reduced their dividend. However, they also find a substantial number of dividend reductions when debt covenants were far from binding. On the other hand, Healy and Palepu (1990) find that firms reduce their dividends because of dividend restrictions in debt covenants.[4]

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[3] Bulan and Subramanian (2008) and Stepanyan (2009) study this issue from the perspective of a firm's financial flexibility (financial slack). Bulan and Subramanian argue that some dividend omissions are strategically motivated to preserve financial flexibility within the firm. Stepanyan finds that the propensity to cut a dividend is inversely related to financial slack.

[4] In a related paper, Brockman and Unlu (2009) examine cross-country variation in creditor rights. They find that in countries with weaker creditor rights, firms adopt more restrictive payout policies in order to mitigate the agency costs of debt.

Several studies have shown that creditors use financial covenants as a "trip-wire" to extract information regarding the borrower's financial health (Garleanu and Zwiebel, 2009). In fact, covenant violations serve as early-warning signals that allow creditors to step in and influence firm policies, *if necessary*, to protect the security of their claim. According to Dichev and Skinner (2002), financial covenant thresholds are set tightly, just below normal operating performance levels. Thus, violations occur frequently even among healthy firms and are not necessarily an indicator of financial distress. In light of these studies, and taken together with the strong reluctance of managers to reduce dividends, our findings suggest that dividend reductions can be partly explained by the shifting of control rights to creditors. Even among otherwise healthy firms, creditors can use the threat of accelerating a loan to force a reduction in a firm's dividend.

The negative signal associated with a dividend cut can potentially exacerbate financial distress. Creditors may prefer to keep the firm as a going concern in order to avoid such situations that may lead to a costly bankruptcy. Thus, instead of forcing a firm to cut its dividend, creditors may allow it to maintain the level of dividends if they are sufficiently confident about the repayment of their loans. For example, among transparent firms with strong corporate governance and little conflict of interest between creditors and shareholders, creditors may be more willing to forgive financial default and avoid the risk of running into a costly bankruptcy. On the other hand, among opaque firms with weak corporate governance and large conflict of interest between creditors and shareholders, creditors will be more aggressive in forcing firms to cut dividends because shareholders may tunnel all of the firm's wealth right before default and leave nothing for the creditors upon default.

In another example, creditors of a financially constrained firm may fear that it may not be able to raise enough cash to overcome the temporary financial distress that triggered the violation of the financial covenant. As a result, creditors will force the firm to cut dividends either to prevent tunneling or to allow the firm to invest it in restructuring. On the contrary, creditors of a financially unconstrained firm may be sufficiently confident about firm's ability to raise funds necessary for an improvement in the financial health of the firm, and will allow the firm to maintain its dividend policy.

We analyze these issues in our data using the Gompers, Ishii, and Metrick (2003) governance index and the Kaplan and Zingales (1997) index to measure the strength of corporate governance and the severity of financial constraints, respectively. We find that creditors force firms to cut dividends significantly upon violations of financial covenants only among weakly governed firms and among financially constrained firms. In both situations, the occurrence of a violation more than doubles the likelihood of a dividend reduction in our sample.

Finally, we show that our findings are not simply the result of spurious correlations between firm dividend policies and the occurrence of financial covenant violations. The repeal of the Glass-Steagall Act in 1999 allowed commercial and investment banks to consolidate, increasing competition among financial intermediaries. Studies suggest that the effects of this repeal include less stringent credit constraints in order to maintain current and future banking relationships (Drucker and Puri, 2005; Yasuda, 2005). Anecdotal evidence suggests the repeal weakened the overall discipline from lenders as firms exploited the conflict of interest created by the merger of commercial and investment banking functions.[5] We find that creditors force a

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[5] For example, Bank of America (BoA) approved loans to Adelphia which BoA knew Aldephia was going to use for a spurious purpose and deceive investors. One of the main reasons for approving this spurious loan was because Adelphia promised BoA future underwriting assignments in return for the approval of this loan. – "The Company They Kept," *New York Times*, February 1, 2004 by Roger Lowenstein.

significant reduction in dividends upon violation of a financial covenant only in the period before the repeal and not after. This result is consistent with the over-all conditions of "weaker monitoring" in the post-repeal period.

Our paper links the literature on dividend policy and loan covenants by exploring the impact of a change in control rights from shareholders to creditors on a firm's dividend policy. We find evidence that creditors do not necessarily terminate dividend payments upon violations of financial covenants in order to secure their repayment in the event of further deterioration of the firm's financial health. Instead, they actively use information gained after the technical violation, and only force firms to cut dividends when it is necessary to secure their repayments. Given bankruptcy is also costly to creditors, they may care about protecting the firm as a going concern by intervening appropriately upon technical default such as avoiding costly dividend cuts that may send a negative signal to investors.

This paper is also related to the broader literature on loan covenants and agency conflicts. Smith and Warner (1979), Kalay (1982) and Cremers, Nair, and Wei (2007), among others, argue that covenants are required to align shareholder and bondholders interests. The presence of restricting covenants also results in limiting investment, even without the breach of a contract (Nini, Smith, and Sufi, 2008; Chava and Roberts, 2008) while Roberts and Sufi (2008) observe the effect of covenant violations on financial policy, specifically on net debt issuance.

The remainder of the paper proceeds as follows. Section 2 includes the description of the dataset used for this study and provides summary statistics of the key variables we use in our analysis. Section 3 presents evidence on the impact of covenant violations on dividend policy while Section 4 concludes.

2. Data and Key Variables

We gather data from three main sources: Firm financial data is taken from the Compustat quarterly industrial files. Dividend payment information is obtained from CRSP. Detailed information on private (primarily bank) loan contracts, including financial covenants and subsequent renegotiation terms, are obtained from Dealscan. We limit our sample to non-financial and non-utility firms that pay quarterly cash dividends (distribution code = 1232) with share codes 10 or 11.

For our analysis, we identify two key events: dividend cuts and loan covenant violations. A dividend cut occurs when the level of the current cash dividend is lower than that in the previous quarter. This definition includes dividend omissions, i.e. a cut to zero or missing dividends. For the latter, we impose the condition that the firm must have had positive dividends in the previous eight quarters and a minimum of two consecutive quarters of zero or missing dividends from the supposed omission (Lie, 2005).

Similar to existing work,[6] we use four types of loan covenants for our analysis. These covenants place minimum restrictions on the following financial measures of a firm: net worth, tangible net worth, interest coverage, and current ratio. These covenant types are the most commonly used and more importantly, the construction of these financial measures are unambiguous. There are two other covenants that could potentially affect our findings: a debt-to-cash flow[7] covenant and a dividend covenant. The former is another commonly used covenant type. However, the measurement of debt varies widely across firms[8]. Instead, we

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[6] Dichev and Skinner (2002) use net worth and current ratio covenants. Chava and Roberts (2008) use net worth, tangible net worth and current ratio covenants. Inspection of our sample shows that the interest coverage covenant is also used frequently. Hence we include this covenant type in our analysis. See Table I.
[7] Other debt-related covenants include debt-to-tangible net worth, debt-to-equity, debt service coverage and debt-to-equity.
[8] Dichev and Skinner (2002) document that there are more than a dozen variations of the debt-to-cash flow ratio.

include a measure of leverage in our regression model to control for a firm's indebtedness[9]. We include a dummy variable that equals one if a firm has a covenant that limits its dividend payout.

A firm can have multiple loan contracts and hence, multiple covenants at any given time. We use the most restrictive covenant to identify a covenant violation. Following Dichev and Skinner (2002) and Drucker and Puri (2007), we create a measure of covenant slack, i.e. the difference between each of the firm financial measures mentioned above and the corresponding covenant maintenance level. The maintenance level is the minimum value of the financial measure that the firm has to attain in order for it to remain in good standing (non-violation) with its creditors. Thus, we would have a covenant slack measure for each existing covenant type. A violation occurs when at least one covenant slack measure is negative, which means the firm is unable to meet the covenant requirement.[10]

Finally, we limit our sample to firm-quarter observations with existing (or active) covenants. Our estimation sample comprises 622 firms and 10,936 firm-quarter observations from 1994-2004. Table 1 provides some descriptive statistics. Detailed variable construction is provided in the appendix. We observe that covenant violations of the four types that we look at occur in 15 % of our observations while dividend cuts comprise only 3.2 % of the sample. On average, we observe firms cutting more than once while they violate a loan covenant an average of six times during our sample period. In our regression, we also control for the number of times a firm has cut dividends in the past and the number of prior covenant violations.

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[9] We measure leverage either as funded debt/total assets or funded debt/EBITDA where funded debt is long-term debt plus debt in current liabilities.

[10]Roberts and Sufi (2008) document that a covenant violation is fairly common and usually results in renegotiation with the current lender. In the event of renegotiation, we update our data to reflect the most recent covenant restrictions.

3. Methodology

Our empirical approach is to follow the evolution of a firm's dividend policy over time as it culminates in a dividend cut. In particular, we are interested in whether the occurrence of a loan covenant violation affects a firm's propensity to cut a dividend. To this end, we employ the following Cox proportional hazard model of dividend reductions:

$$\Pr(Cut_{it} = 1 \mid X_s, \forall s < t) = \exp(X_{it}\beta)h_0(t). \tag{1}$$

Cut is an indicator variable for the occurrence of a dividend cut in the current quarter t; X is a vector of explanatory variables that includes indicators for previous covenant violations, previous dividend cuts and other firm characteristics; β is a vector of coefficients to be estimated; and h_0 is the baseline hazard function or unconditional probability of a dividend cut as a function of time. In this specification, firms are evaluated in calendar time t, where time zero corresponds to the first quarter of 1994. Hence, the baseline hazard can be interpreted as a time-varying propensity to cut that encompasses year fixed-effects such as the dividend premium[11] of Baker and Wurgler (2004) or the disappearing dividends phenomenon documented by Fama and French (2001). Moreover, we estimate distinct baseline hazards, h_0, for each 2-digit SIC group in order to control for industry factors that may also affect the propensity to cut. We perform the Grambsch and Therneau (1994) test to ensure that the assumption of proportional hazards is appropriate. The Cox model imposes no *a priori* restrictions on the baseline hazard function, which is estimated using non-parametric methods.

We allow for multiple dividend reductions and include all of a firm's observation from 1994 until the end of our sample. Thus, our set of explanatory variables consists of the following: the number of previous dividend cuts, the number of previous loan covenant violations, a dummy

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[11]The dividend premium is a measure of investor sentiment for dividend paying stocks calculated as the log difference in market-to-book ratios of dividend payers and non-payers.

variable for the existence of a dividend covenant, and several firm characteristics that may affect the likelihood of a cut (firm size, cash balance, profitability (return on assets), growth opportunities (market-to-book ratio) and leverage). We report heteroskedasticity-consistent standard errors that are clustered by firm.

4. Results

4.1 Basic Model

Our main objective is to determine whether a covenant violation, or technical default, will lead to a change in dividend policy. It is well-established in the literature that managers are quite reluctant to cut dividends. Hence, a dividend cut occurring after a loan covenant violation suggests the change in dividend policy is a result of creditor pressures arising from the threat of acceleration of the loan.

Table 2 reports the estimation results for our basic model. We find that a loan covenant violation in the previous quarter is positively related to the likelihood of reducing the dividend in the current quarter. In particular, the occurrence of a violation in the previous quarter increases the probability that the firm will cut its dividend by 90 %.[12] This result is not only statistically significant but also economically large. Prior violations and the existence of a dividend covenant are not significant. Consistent with existing work, the occurrence of prior dividend reductions increases the likelihood of another dividend cut. Specifically, a unit increase in the number of prior dividend reductions increases the likelihood of a dividend cut in the current quarter by 26 %.

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[12] The tables report coefficient estimates, β, of equation (1). The impact of a one unit change in X is (e^{β} - 1). For L.violation, e^{β} = 1.9. Thus a unit increase in L.violation increases the probability of a dividend cut by 90 %.

We also find that firm size, cash-to-total assets and the market-to-book ratio have positive coefficients while profitability (ROA) has a negative coefficient. More profitable firms have more cash flow and hence are less likely to cut the dividend. A one standard deviation increase in ROA decreases the probability of a dividend cut by 34 %. On the other hand, a one standard deviation increase in cash-to-total assets and market-to-book increases the probability of a dividend cut by 19.5 % and 43.5 % respectively. An increase in the market-to-book ratio indicates an increase in growth opportunities. This result is consistent with firms conserving cash by reducing the dividend in anticipation of these future growth opportunities. The effect of cash on the propensity to cut a dividend is more puzzling. To check the robustness of these results, we redo our regressions using industry adjusted measures of cash, ROA, market-to-book and leverage to account for industry effects: our findings are unchanged with the exception of cash which becomes insignificant.

4.2 Lagged Violations and Covenant Type

Having established that loan covenant violations affect the propensity to cut a dividend, we examine whether there is a systematic relationship between the timing of the dividend cut relative to the violation. To do this, we include five additional lags for covenant violations to account for the occurrence of a violation within the last six quarters. Table 3, column 1 shows that a dividend cut is more likely to occur in the quarter right after the covenant violation. There is weak evidence for a cut occurring two quarters after a violation – the coefficient on twice-lagged violation is positive but marginally significant. In this specification, a violation in the previous quarter increases the likelihood of a dividend reduction by 78%. This result suggests

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that creditors do not waste any time during renegotiation and impose changes on the firm's dividend policy immediately.

Next, we examine whether one or more specific covenant types might be driving our results. In column 2, we differentiate between the four types of covenant violations, namely tangible net worth, interest coverage, net worth and current ratio. We find that the interest coverage covenant violation has the largest impact on dividend policy. In fact, the occurrence of this violation increases the likelihood of a dividend reduction by 116 %. The effects of the net worth and current ratio violations are nearly similar in magnitude, but these are statistically insignificant. One plausible explanation for these results is the fact that the interest coverage ratio is directly related to a firm's cash flow. Hence, a violation of this covenant indicates financial constraints may be binding and the firm's creditors, in order to protect the security of their claim, force the firm to cut its dividend.

4.3 Robustness Tests

Instead of forcing firms to fully cut dividends and risking a costly bankruptcy, creditors may allow firms to continue to pay dividends to their shareholders if creditors are sufficiently confident about the repayment of their loans. Garleanu and Zwiebel (2009) show that financial covenants can be used as a trip wire to extract information regarding the borrower's financial health and the security of their claim. Based on the information obtained through covenants, creditors can choose appropriate actions accordingly, either to cut or maintain dividends. We examine the robustness of our findings within this context below.

4.3.1 Corporate governance and financial constraints

If a firm has strong corporate governance and little conflict of interest between creditors and shareholders, creditors may be more willing to forgive financial default. On the other hand, if a firm is weakly governed with a severe conflict of interest between creditors and shareholders, creditors will be more aggressive in forcing firms to cut dividends because shareholders may tunnel all of firm's assets prior to default, leaving nothing to the creditors upon default.

Alternatively, creditors of a financially constrained firm may fear that the firm may not be able to raise enough cash to overcome the temporary financial distress that triggered the violation of the financial covenant, and will force the firm to cut dividends either to prevent tunneling or to allow the firm to invest it in restructuring. On the hand, creditors of a financially unconstrained firm may be sufficiently confident about the firm's ability to raise the funds necessary for improvement of the financial health of the firm, and will allow the firm to maintain its dividend.

Thus, we sort firms according to the strength of their corporate governance and the severity of financial constraints. We measure the strength of corporate governance using the Gompers-Ishii-Metrick (2003) G-index. This index measures the strength of shareholder rights relative to management control. A higher value of the index denotes weaker shareholder rights and weaker corporate governance. We measure the severity of financial constraints by the Kaplan and Zingales (1997) KZ-index. A higher KZ-index indicates a higher likelihood of being financially constrained.

Columns 1 and 2 in Table 4 show that a violation is significant only among firms with weaker governance. This result is consistent with our expectations. Creditors of well governed firms are more forgiving while creditors of weakly governed firms are more aggressive in

forcing the firm to cut its dividend. In columns 3 and 4, we find that a loan covenant violation is positively associated with a dividend cut only among financially constrained firms. Again, these results are consistent with our expectations. Creditors of a financially constrained firm force a dividend reduction while creditors of a financially unconstrained firm allow it to maintain its dividend policy.

4.2.3 Gram-Leach-Bliley Act

The repeal of the Glass-Steagall Act in November of 1999 (Gramm-Leach-Bliley Act) allowed commercial and investment banks to consolidate, increasing competition among banks and various financial intermediaries. One direct result of this act was the ability of financial institutions to provide both lending and underwriting services. Drucker and Puri (2005) find that concurrent lending increases the probability that the institution receives current and future underwriting business. Yasuda (2005), focusing on the 1989 deregulation of the US banking sector, finds that banking relationships are an important determinant of underwriter choice. These studies suggest that after the repeal of Glass-Steagall, lenders may be more forgiving of covenant violations in order to maintain lending relationships with their clients.

We redo our regressions using pre-and post-2000 sub-samples of our data. In doing so, we can determine whether our findings are a result of spurious correlation between firm dividend policy and covenant violations. For example, regardless of a covenant violation, a firm may decide to reduce its dividend to conserve cash, especially if it is in a state of financial distress with very poor financial flexibility (Bulan and Subramanian, 2008; Stepanyan, 2009). If our findings are driven by spurious correlation due to some firm-specific omitted variable, then we expect to find no difference in our results using the pre- and post-2000 sample periods. On the

other hand, if the repeal of Glass-Steagall resulted in weaker monitoring conditions, then we expect that post-2000, creditors may be more forgiving in order to maintain lending relationships and less likely to force a dividend cut upon violation of a financial covenant. Table 5 shows that this is indeed the case, supporting a causal interpretation of our results. Moreover, these results also suggest that the ability of loan covenants to solve agency problems is undermined by less stringent credit markets.

5. Conclusion

In this paper we explore the relationship between covenant violations and changes in dividend policy. Using contract-level loan data for nonfinancial firms in the U.S., we find that the degree of creditor-shareholder conflict is an important determinant of dividend cuts upon technical violation: firms near financial distress and with weak corporate governance practices are more likely to experience dividend cuts after technical violation. In addition, we find that the tendency of dividend cuts upon technical violation weakened after the repeal of the Glass-Steagall Act. This is consistent with weakened bargaining power of creditors due to increased competition among banks, and increased conflict of interest due to combining commercial and investment banking businesses. Our findings suggest that covenants serve a critical role in mitigating creditor-shareholder conflicts.

References

Aharony, Joseph and Itzhak Swary. 1980. Quarterly dividend earnings announcements and stockholder's returns: An empirical analysis. Journal of Finance, 35: 1-12.

Baker, Malcolm, and Jeffrey Wurgler. 2004. A catering theory of dividends, The Journal of Finance, 59: 1125-1165

Benartzi, Shlomo, Roni Michaely, and Richard Thaler. 1997. Do Dividend Changes Signal the Future or the Past? Journal of Finance, 52: 1007-1034.

Brav, Alon, John R. Graham, Campbell R. Harvey, and Roni Michaely. 2005. Payout Policy in the 21st Century. Journal of Financial Economics, Elsevier, Vol. 77, 3: 483-527.

Brockman, Paul and Emre Unlu. 2009. Dividend policy, creditor rights, and the agency costs of debt. Journal of Financial Economics 92: 276–299.

Bulan, Laarni, Narayanan Subramanian, and Lloyd Tanlu. 2007. When Are Dividend Omissions Good News? Forthcoming.

Chava, Sudheer, and Michael R. Roberts. 2008. How does Financing Impact Investment? The Role of Debt Covenants. Journal of Finance 63: 2085-2121

Cremers ,K.J. Martijn, Vinay B. Nair, Chenyang Wei. 2007. Governance Mechanisms and Bond Prices. Review of Financial Studies, 20:1359-1388

Daniel, Naveen D., David J. Denis and Lalitha Naveen. 2008. Do firms manage earnings to meet dividend thresholds? Journal of Accounting and Economics, Vol. 45, 1: 2-26.

DeAngelo, Harry and Linda DeAngelo. 1990. Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms. The Journal of Finance, Vol. 45, 5: 1415-1431.

DeAngelo, Harry, Linda DeAngelo, and Douglas J. Skinner. 1992. The Journal of Finance, Vol. 47, 5: 1837-1863.

Dichev, Ilia D. and Douglas J. Skinner. 2002. Large-Sample Evidence on the Debt Covenant Hypothesis. Journal of Accounting Research, 40: 1091-1123

Dielman, Terry E. and Henry R. Oppenheimer. 1984. An Examination of Investor Behavior During Periods of Large Dividend Changes. Journal of Financial and Quantitative Analysis, 19:197-216.

Drucker, Steven and Manju Puri. 2007. On Loan Sales, Loan Contracting, and Lending Relationships. Review of Financial Studies (forthcoming).

Fama, Eugene F. and Kenneth R. French. 2001. Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay? Journal of Financial Economics, 60: 3-44.

Gârleanu, Nicolae and Jeffrey Zwiebel. 2009. Design and Renegotiation of Debt Covenants. Review of Financial Studies. Vol. 22: 749–781.

Ghosh, C and Wooldridge, J., An analysis of shareholder reaction to dividend cuts and omissions, Journal of Financial Research, Vol. 9, 1988, 281-294.

Gompers, Paul, Joy Ishii, and Andrew Metrick. 2003. Corporate Governance and Equity Prices. Quarterly Journal of Economics 118:107–155.

Grambsch, Patricia M. and Terry M. Therneau. 1994. Proportional Hazards Tests and Diagnostics Based on Weighted Residuals. Biometrika, 81:515–526.

Grullon, Gustavo, Roni Michaely, and Bhaskaran Swaminathan. 2002. Are dividend changes a sign of firm maturity? Journal of Business, 75: 387-424.

Healy, Paul M., and Krishna G. Palepu. 1988. Earnings Information Conveyed by Dividend Initiations and Omissions. Journal of Financial Economics, 21: 149-176.

Jensen, Michael. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American Economic Review, Vol. 76, 2: 323-329.

Jensen, Michael and William H. Meckling. 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. The Journal Of Financial Economics, 3.

Kalay, Avner. 1980. Signaling, Information Content, and the Reluctance to Cut Dividends. The Journal of Financial and Quantitative Analysis, Vol. 15, 4: 855-869

Kalay, Avner. 1982. The Ex-Dividend Day Behavior of Stock Prices: A Re-Examination of the Clientele Effect. The Journal of Finance, Vol. 37, 4: 1059-1070.

Kaplan, Steven N., and Luigi Zingales. 1997. Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financial Constraints? Quarterly Journal of Economics 112: 159-216.

Lie, Eric. 2005. Operating performance following dividend decreases and omissions. Journal of Corporate Finance 12: 27–53.

Nini, Greg, David C. Smith, and Amir Sufi. 2008. Creditor Control Rights and Firm Investment Policy. Journal of Financial Economics (forthcoming).

Roberts, Michael R. and Amir Sufi. 2008. Control Rights and Capital Structure: An Empirical Investigation. Journal of Finance (forthcoming).

Smith, Clifford W., Jr. and Jerold B. Warner. 1979. On financial contracting: An analysis of bond covenants. Journal of Financial Economics, Vol. 7, 2: 117-161.

Stepanyan, Gohar. 2009. Do Managers Cut Dividends Because They "Have To"? working paper

Yasuda, Ayako. 2005. Do Bank Relationships Affect the Firm's Underwriter Choice in the Corporate-Bond Underwriting Market? The Journal of Finance, Vol. 60, 3: 1259-1292.

TABLE 1

SUMMARY STATISTICS

The estimation sample consists 622 firms and 10,936 firm-quarter observations with active loan covenants over the period 1994-2004. Covenant Violations refer to a violation of at least one of the following four covenant types in the current quarter: tangible net worth, interest coverage, net worth and current ratio. The sample period is from 1994-2004 and includes multiple dividend cuts by a single firm. Repeat violation is the number of prior violations excluding the current one. Previous Cuts is the number of prior dividend cuts. Dividend Covenant refers to an existing loan covenant that limits dividend payments.

Panel A: Dividend and Loan Covenant Characteristics	Observations	Frequency (%)
Dividend cuts	352	3.22
Covenant Violations	1,627	14.88
Tangible Net Worth Covenant Violations	309	2.83
Interest Coverage Covenant Violations	826	7.55
Net Worth Covenant Violations	519	4.75
Current Ratio Covenant Violations	217	1.98
Dividend Covenants with limits on Dividend Payments	582	5.32

	Mean	Median	Std. Dev.	Min.	Max.	Obs.
Maximum number of dividend cuts among dividend-cutting firms	1.551	1	1.205	1	13	227
Maximum number of covenant violations among violating firms	6.482	5	5.820	1	35	251

Panel B: Firm Characteristics	Mean	Median	Std. Dev.	Min.	Max.	Obs.
Previous Dividend Cuts	1.031	0	1.849	0	16	10,936
Repeat Violations	1.464	0	3.374	0	34	10,936
Log (Total Assets $M)	6.833	6.837	1.546	2.285	11.544	10,936
Cash/Total Assets %	5.594	2.562	7.839	0.006	49.114	10,936
Return on Assets (ROA) %	3.621	3.393	2.416	-2.897	12.127	10,936
Market-to-Book Ratio	1.532	1.266	0.820	0.667	5.399	10,936
Debt/Total Assets %	56.799	56.719	20.217	10.039	108.961	10,936

TABLE 2
BASIC MODEL

Cox proportional hazard regression estimates of the propensity to cut a dividend. The sample period is from 1994-2004 and includes multiple dividend cuts by a single firm. Violation equals one if the firm violates a covenant in the current quarter. Repeat violation is the number of prior violations excluding the current one. Previous Cuts is the number of prior dividend cuts. Dividend Covenant equals one if the firm has an existing loan covenant that limits dividend payments. L. is the lag operator. The table reports coefficient estimates of equation (1). Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)
Explanatory Variables			
L.Violation	0.843***	0.946***	0.643**
	(0.245)	(0.243)	(0.262)
L.Repeat Violation		-0.024	-0.018
		(0.030)	(0.029)
Previous Cuts	0.195***	0.195***	0.229***
	(0.033)	(0.033)	(0.031)
L.Log(Assets)	0.279***	0.276***	0.256***
	(0.070)	(0.069)	(0.073)
L.Cash/Total Assets %			0.025**
			(0.011)
L.ROA %			-0.148***
			(0.054)
L.Market-to-Book Ratio			0.426***
			(0.148)
L.Debt/Total Assets %			0.007
			(0.007)
L.Dividend Covenant			-0.360
			(0.439)
Relevant Statistics			
Observations	11374	11374	10936
Number of Firms	625	625	622
Number of dividend cuts	363	363	352
Pseudo-Loglikelihood	-243.5	-243.2	-224.7

TABLE 3
LAGGED VIOLATIONS AND COVENANT TYPE

Cox proportional hazard regression estimates of the propensity to cut a dividend. The sample period is from 1994-2004 and includes multiple dividend cuts by a single firm. Violation equals one if the firm violates a covenant in the current quarter. Specific covenant type violations equal one if only that particular covenant is violated in the current quarter. Additional controls include lags of the following: Log (Total Assets), Cash/Total Assets, Return on Assets, Market-to-Book Ratio, Debt/Total Assets and Dividend Covenant dummy. L. is the lag operator. The table reports coefficient estimates of equation (1). Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)		(2)
Explanatory Variables		**Explanatory Variables**	
L.Violation	0.576*	L.Tangible Net Worth Violation	0.062
	(0.300)		(0.611)
L2.Violation	0.382	L.Interest Coverage Violation	0.772***
	(0.273)		(0.289)
L3.Violation	0.107	L.Net Worth Violation	0.434
	(0.372)		(0.491)
L4.Violation	0.070	L.Current Ratio Violation	0.497
	(0.338)		(0.608)
L5.Violation	-0.311		
	(0.511)		
L6.Violation	0.075		
	(0.433)		
L.Repeat Violation	-0.028	L.Repeat Violation	-0.021
	(0.040)		(0.031)
Previous Cuts	0.243***	Previous Cuts	0.228***
	(0.034)		(0.032)
Additional Controls	Yes	Additional Controls	Yes
Relevant Statistics			
Observations	10620		10936
Number of Firms	616		622
Number of dividend cuts	347		352
Pseudo-Loglikelihood	-214.2		-224.0

TABLE 4
CORPORATE GOVERNANCE AND FINANCIAL CONSTRAINTS

Cox proportional hazard regression estimates of the propensity to cut a dividend. The sample period is from 1994-2004 and includes multiple dividend cuts by a single firm. A high G-index value denotes weaker corporate governance while a high KZ-index value denotes a firm is more likely to be financially constrained. The full sample is split at the median G- or KZ-index. Violation equals one if the firm violates a covenant in the current quarter. Repeat violation is the number of prior violations excluding the current one. Previous Cuts is the number of prior dividend cuts. Dividend Covenant equals one if the firm has an existing loan covenant that limits dividend payments. L. is the lag operator. The table reports coefficient estimates of equation (1). Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%.

Explanatory Variables	(1) Low G-Index	(2) High G-Index	(3) Low KZ Index	(4)` High KZ Index
L.Violation	0.397	0.902***	0.998	1.035***
	(0.613)	(0.344)	(0.893)	(0.380)
L.Repeat Violation	-0.136*	-0.003	-0.169*	-0.001
	(0.070)	(0.035)	(0.093)	(0.033)
Previous Cuts	0.121*	0.235***	0.458***	0.193***
	(0.070)	(0.046)	(0.110)	(0.036)
L.Log(Assets)	0.200	0.257***	0.103	0.193**
	(0.225)	(0.080)	(0.190)	(0.095)
L.Cash/Total Assets %	0.115**	0.017	-0.016	0.053***
	(0.056)	(0.010)	(0.017)	(0.018)
L.ROA %	-0.754***	-0.132**	-0.392***	-0.160**
	(0.224)	(0.067)	(0.133)	(0.073)
L.Market-to-Book Ratio	0.243	0.641***	1.204***	0.395**
	(0.264)	(0.186)	(0.335)	(0.195)
L.Debt/Total Assets %	0.026	0.002	0.019	-0.006
	(0.017)	(0.007)	(0.015)	(0.008)
L.Dividend Covenant	0.762	-0.870**	-1.009	0.453
	(0.719)	(0.404)	(0.901)	(0.537)
Relevant Statistics				
Observations	3201	7735	3906	7030
Number of Firms	233	568	374	574
Number of dividend cuts	99	253	142	210
Pseudo-Loglikelihood	-27.48	-123.6	-43.61	-103.7

TABLE 5
REPEAL OF THE GLASS-STEAGALL ACT

Cox proportional hazard regression estimates of the propensity to cut a dividend. The pre-2000 sample includes observations from 1994-1999 and the post-2000 sub-sample includes observations from 2000-20004. The sample includes multiple dividend cuts by a single firm.. Violation equals one if the firm violates a covenant in the current quarter. Repeat violation is the number of prior violations excluding the current one. Previous Cuts is the number of prior dividend cuts. Dividend Covenant equals one if the firm has an existing loan covenant that limits dividend payments. L. is the lag operator. The table reports coefficient estimates of equation (1). Heteroskedasticity-consistent standard errors clustered by firm are reported in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)
Explanatory Variables	Pre-2000	Post-2000
L.Violation	1.151**	0.254
	(0.519)	(0.328)
L.Repeat Violation	0.018	-0.027
	(0.053)	(0.032)
Previous Cuts	0.224***	0.233***
	(0.063)	(0.041)
L.Log(Assets)	0.340***	0.260***
	(0.099)	(0.098)
L.Cash/Total Assets %	0.016	0.033
	(0.013)	(0.025)
L.ROA %	0.067	-0.329***
	(0.074)	(0.071)
L.Market-to-Book Ratio	0.096	0.571***
	(0.189)	(0.187)
L.Debt/Total Assets %	0.004	0.003
	(0.009)	(0.009)
L.Dividend Covenant	-0.705	0.921
	(0.661)	(1.106)
Relevant Statistics		
Observations	4914	6022
Number of Firms	486	493
Number of dividend cuts	168	184
Pseudo-Loglikelihood	-116.0	-102.3

Appendix: Variable Construction

Note: data## refers to data from Compustat

Variable	Description
Dividend Cuts	This is a dummy variable which is 1 when the last period's cash dividend was greater than this period's dividend.
Previous Dividend Cuts or Previous cuts	This is total count of all dividend cuts over the sample period
(Tangible) Net Worth Slack	For firms with a (Tangible) Net Worth Covenant: $$= \frac{\text{(Tangible) Net Worth } - \text{Covenant Minimum}}{\text{Total Assets}}$$ ▪ Tangible Net Worth= (Current Assets + NPPE + Other Assets – Total Liabilities)*1000000 ▪ Tangible Net Worth= (data 40 + data 42 + data 43 – data 54)*1000000 ▪ Net Worth= (Total Assets – Total Liabilities)*(1000000) ▪ Net Worth= (data44 – data 54)*(1000000) ▪ Total Assets= data44 ▪ Covenant Minimum is from *DealScan*
Current Ratio Slack	For firms with a Current Ratio Covenant: $= \text{Current Ratio} - \text{Covenant Minimum}$ ▪ Current Ratio= Current Assets/Current Liabilities ▪ Current Ratio= data 40/data 49 ▪ Covenant Minimum is from *DealScan*
Interest Coverage Slack	For firms with an Interest Coverage Covenant: $= \text{Interest Coverage } - \text{Covenant Minimum}$ ▪ Interest coverage= OIBD/ Interest Expense ▪ Interest coverage = data 21/data 22 ▪ Covenant Minimum is from *DealScan*
Tangible Net Worth Violation	Dummy variable, 1 if Tangible Net Worth slack is negative, 0 otherwise.
Net Worth Violation	Dummy variable, 1 if Net Worth slack is negative, 0 otherwise.

Current Ratio Violation	Dummy variable, 1 if Current Ratio slack is negative, 0 otherwise.
Interest Coverage Violation	Dummy variable, 1 if Interest Coverage slack is negative, 0 otherwise.
Violation	Dummy variable, 1 if any of the following equal 1: ▪ Tangible Net Worth Violation ▪ Net Worth Violation ▪ Current Ratio Violation ▪ Interest Coverage Violation Dummy equals 0 otherwise.
Repeat Violations	This is a count of number of violations; this would equal 1 the quarter after the first violation. If there were two violations in a row, the quarter after the second violation this variable would equal 2. There is no upper limit to the number or repeat violations, violation do not need to be consecutive to be represented in this variable. After 8 periods of no violations this variable returns to zero.
Log (Total Assets $M)	=Log(Total Assets $M) =Log(data 44)
Cash/Total Assets %	=Cash/ Total assets =data 36/data 44
Return on Assets (ROA) %	=OIBD/Total Assets =data21/data 44

Market-to-Book Ratio	= (Share Close Price * Shares Outstanding +Total Assets – Book Equity) / Total Assets
	
	= (data 14*data 61 +data 44 – Book Equity)/data 44
	 ▪ Book Equity = Total Assets – Total Liabilities
	  and/or + deftax_itc
	  and/or – prefstock_r
	  and/or – prefstock_c
	 ▪ Book Equity = data 44 – data 54
	  and/or + data 35
	  and/or – data 71
	  and/or – data 55

Debt/ Total Assets %	=(Total assets- Book Equity)/ Total Assets =(data 44 –Book Equity)/ Data 44 ▪ Book Equity defined above (see Market-to-Book ratio).

Dividend Covenant	Dummy variable, 1 if the firm has a covenant the directly restricts dividends. From *DealScan* covenant net income percent.
G-index	Gompers, Ishii, and Metrick (2003) governance index measure. The index was created to measure management control; higher values indicate a management with greater strength. It is the summation of many management power dummy variables.
KZ-Index	Created by Lamont, Owen, Christopher Polk, and Jesus Saa-Requejo (2001), designed off of the work of Kaplan and Zingales, (1997). Measures the severity of financial constraints.

$$= -1.002 * CashFlow + .283 * Q + 3.139 * (Debt /TotalCap) - 39.368 * Dividend - 1.315 * Cash$$

$$= -1.002 * (data\ 8 + data\ 5) + .283 * [(data\ 44 - data\ 59 - data\ 79 + data\ 14 * data\ 15)/ data\ 44] + 3.139 * [data\ 54 / (data\ 54 + data\ 60)] - 39.368 * Dividend - 1.315 * data36$$

- Dividend comes from CRSP, it is the per share cash dividend payment to stock holders