

Does corporate governance make financial reports better, or just better for equity investors?

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Abstract

Financial reports should provide useful information to both shareholders and creditors, according to U.S. accounting principles. However, directors of corporations have fiduciary duties only toward equity holders, and those fiduciary duties normally do not extend to the interests of creditors. We examine whether this slant in corporate governance biases financial reports in favor of equity investors, and in particular leads to a downward bias in reported debt that can hurt creditors. We focus on firms' decision to issue structured debt securities that are classified as equity in financial reports and can circumvent debt covenants. We find that when the local legal regime requires directors to consider creditors' interests, firms are less likely to use such structured transactions, particularly if the board of directors of the firm is independent. Our results suggest that when corporate governance is designed to protect only equity holders, firms' financial reports serve equity holders' interests at the expense of other stakeholders.

Keywords: Debt structuring, directors' fiduciary duties, board independence

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1. Introduction

Financial reports should provide useful information to both equity investors and creditors, and reflect accurately the assets and liabilities of the firm. Statement of Financial Accounting Concepts No. 1, Objectives of Financial Reporting by Business Enterprises (1978) states that:¹

“Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans.”

While financial reports should equally serve shareholders’ and creditors’ needs, corporate governance mechanisms usually protect only shareholders’ interests. In particular, U.S. managers (officers) and directors owe fiduciary duty primarily to shareholders, not creditors. Shareholders are the residual claimants to the firm’s assets. They are viewed as the weakest stakeholder, in need of directors’ protection. Other stakeholders such as debt holders and employees are able to protect themselves through contracts and other legal means (Jensen 2002; Tirole 2001). Fiduciary duties toward shareholders require managers, under the supervision of directors, to enhance shareholders’ value. This is true even when enhancing shareholder value will reduce value for creditors (Becker and Stromberg 2012). We examine whether this slant in corporate governance biases financial reports in favor of equity investors, and in particular leads to a downward bias in reported debt that can undermine creditors’ interests.

We test the effect of directors’ fiduciary duties on firms’ propensity to use structured debt transactions that lower reported debt. Directors need to approve the issuances of new

¹ The revised FASB Conceptual Framework for Financial Reporting (Statement of Financial Accounting Concepts No. 8, 2010) makes similar statement.

securities, and this form of reporting bias therefore requires their consent.² We show that firms are more likely to use structured debt when directors owe fiduciary duties only to shareholders than when directors are legally required to also consider creditors' interests.

We focus on issuances of mandatory redeemable preferred shares, preferred shares with a debt-like maturity feature that requires issuers to redeem the invested amount by a specific future date. Prior to 2003, these structured debt securities were reported as equity in financial reports, and were used by firms to lower the reported leverage and circumvent debt covenants put in place by creditors (e.g., Engel et al. 1999; Moser et al. 2011; Levi and Segal 2014).³ In other words, in some cases these structured debt securities were used to transfer wealth from creditors to shareholders by biasing financial reporting in favor of shareholders. We examine the change in structured debt securities issuances following a 1991 Delaware court ruling that changed directors' fiduciary duties.

On December 30, 1991, in the *Credit Lyonnais v. Pathe Communications* case, the Court of Chancery of Delaware issued a ruling effectively increasing directors' fiduciary duties toward creditors. Historically, the position of U.S. courts was that fiduciary duties are owed strictly to equity holders but not to creditors in solvent firms. The Delaware court, however, ruled in 1991 that when a firm is close to insolvency, directors are not merely the agent of the shareholders but should consider the interests of creditors as well. The ruling was widely viewed as having created a new obligation for directors of Delaware firms and evidence suggests that following this ruling, debt-equity conflicts decreased in Delaware firms (Becker and Stromberg 2012).

² See e.g. Del. Code Ann. tit. 8, § 161 (2010). As discussed below, there are of course legitimate economic reasons for issuing structured debt, for which we control in our tests. Structured debt, for example, may lower firms' tax payments relative to plain debt.

³ The amount owed to investors in mandatorily redeemable preferred shares was reported in a 'mezzanine' section between liabilities and shareholders' equity, and payments on it were reported as dividends and were not included in the financing expenses on income statements. SFAS 150, which came into effect in 2003, required firms to report mandatorily redeemable preferred shares as part of liabilities. See Section 2 for more details.

We use the 1991 Credit Lyonnais ruling as a natural experiment to test the effect of directors' fiduciary duties on firms' use of structured debt securities that lower reported debt. Using a difference-in-differences analysis around the 1991 ruling, we find that Delaware firms with high leverage reduced their structured debt issuances after 1991—following the court ruling, only directors in high-leverage Delaware firms potentially owe fiduciary duties to creditors. All other firms, Delaware firms with low leverage and firms incorporated elsewhere, did not experience a change in structured debt issuance around 1991. These results suggest that when managers and directors face legal fiduciary duty toward creditors, they are less likely to use structured debt transactions that lower reported leverage.

We also examine the effect of board independence on firms' use of structured debt transactions that lower reported debt. Prior literature shows that board independence is associated with better audit quality (Abbott et al. 2003; Carcello et al. 2002), higher accruals quality (Klein 2002; Jenkins 2002), and fewer financial reporting frauds and misstatements (Dechow et al. 1996; Abbott et al. 2004; Beasley et al. 2000; Agrawal and Chandra 2005). We show that board independence mitigates the downward bias in reported debt and improves the quality of reporting from the creditors' perspective only when directors owe fiduciary duties to creditors. We find that board independence is associated with lower structured debt issuances only in high-leverage Delaware firms after 1991. Board independence is not expected to lower structured debt issuances where directors are not required to protect creditors, and we indeed do not find a relation between board independence and structured debt issuances in non-Delaware firms or Delaware firms with low leverage.

This paper makes several contributions to the literature. Prior work demonstrates that firms structure transactions to lower their reported debt (e.g., Imhoff and Thomas 1988; Engel et al. 1999; Dechow and Shakespeare 2009; Moser et al. 2011; Levi and Segal 2014). We show that when corporate governance is designed to protect creditors' interests, rather

than only shareholders' interests, firms are less likely to use structured transactions that are meant to lower reported debt. Specifically, we show firms are less likely to issue debt-hybrid securities that can be reported as equity in financial reports only when directors owe fiduciary duties to creditors.

Second, we contribute to the literature that examines the relation between corporate governance and financial reporting abuses. The evidence in the literature suggests that board independence is negatively associated with reporting abuses. Board independence is associated with a reduced likelihood of fraudulent financial reporting (Dechow et al. 1996; Abbott et al. 2000; Beasley 1996; Beasley et al. 2000), better accruals quality (Klein 2002; Jenkins 2002), and a reduced likelihood of restatement (Abbott et al. 2004; Agrawal and Chandra 2005). We show that board independence is negatively associated with a downward bias in reported debt, a bias that can hurt creditors' interests. This, however, is true only when directors are legally required to protect creditors as well. We do not find any relation between board independence and reporting abuse toward creditors when directors have no fiduciary duty toward creditors.

Finally, this paper also contributes to the literature that examines the link between governance and debt-equity conflicts. Becker and Stromberg (2012) show that directors' fiduciary duties toward creditors mitigate debt-equity conflicts. We show that this 1991 Delaware ruling reduced debt-equity reporting conflicts and lowered firms' use of structured financing which downward biases reported debt. We also show that the reduction in the debt-equity reporting conflicts after 1991 is higher for firms with more independent boards. Prior research documents that governance is associated with higher credit rating and lower cost of debt (Bhojraj and Sengupta 2003; Ashbaugh et al. 2008). Better governance promotes better monitoring of management, which in turn results in higher firm value for equity holders and, consequently, in lower credit risk (Ashbaugh et al. 2008). However, better governance does

not necessarily reduce debt-equity conflicts. We show that higher board independence does not protect creditors in the case of debt-equity reporting conflicts, unless directors are legally required to protect creditor interests.

The remainder of the paper is organized as follows. Section 2 discusses the hypothesis development and prior literature. Section 3 describes our methodology, and section 4 describes the data and presents the empirical results. Section 5 concludes.

2. Hypothesis Development

Efficient governance mechanism requires that management is monitored by one stakeholder (Jensen 2002; Tirole 2001). Since shareholders are the residual claimants to the firm's assets, they represent the weakest stakeholder, and should therefore have their interests protected by directors. Other stakeholders such as debt holders and employees are presumed to be able to protect themselves through contracts and other legal means. Indeed, the position of U.S. courts is that for solvent firms directors and managers owe fiduciary duties to shareholders only. These duties require that directors protect and take actions that are in the interest of shareholders, and if directors or managers fail to do so, shareholders can sue them. This mechanism provides management and directors with an incentive to act in shareholders' interest.

The 1991 *Credit Lyonnais v. Pathe Communications* ruling changed fundamentally the fiduciary duties of directors in Delaware. The case followed the leveraged buyout of MGM corporation in November 1990. Subsequent to the buyout, MGM filed for bankruptcy. They emerged from bankruptcy in part by securing a credit line from Credit Lyonnais, a French bank, which then used its agreed contractual right under the credit agreement to replace the directors and the CEO of MGM. Pathe Communication, the controlling shareholder of MGM, felt that the newly appointed CEO and directors favored the creditors of the firm, and sued

Credit Lyonnais claiming breach of fiduciary duty by the CEO. The court ruled that when a firm is close to being insolvent, directors are not merely the agent of the risk bearer but rather owe duties to the enterprise as a whole, that is, to all stakeholders. In other words, when the firm is in the vicinity of insolvency the board should consider the interests of creditors as well.

Consistent with the change in duties toward creditors, Becker and Stromberg (2012) show that debt-equity conflicts decreased in Delaware firms following this ruling. Specifically, they provide evidence that firms that were close to insolvency were more likely to issue equity and increase investments, and to reduce operating risk. The increase in equity issuance and investments suggest a reduction in the debt overhang problem.⁴

We examine whether the shift in director duties following the court ruling affected the propensity of Delaware firms to use structured debt transactions that reduce reported debt. We focus on mandatorily redeemable preferred shares—debt securities structured as equity (DSE)—used by firms to lower reported debt and circumvent debt covenants (e.g., Engel et al. 1999; Moser et al. 2011; Levi and Segal 2014). Structured transactions that lower reported debt reduce the quality of reporting from the creditor’s perspective. These transactions bias financial reports in favor of equity holders, and may transfer wealth from creditors to shareholders.⁵

DSE are preferred shares with a debt-like maturity feature; the issuer commits to redeem the amount invested by shareholders at a specific future date. However, although DSE economically represent a source of debt, prior to 2003 they were reported outside of the liabilities section, in the ‘mezzanine’ section between liabilities and shareholders’ equity, and

⁴ Briefly, when the firm is close to insolvency, earnings from new investments go to existing debt holders, thereby leaving little incentive for the entity to improve its position.

⁵ Structured transaction that lower reported debt and circumvent debt covenants can transfer wealth from creditors to shareholders by preventing creditors from taking timely actions when the firm approached insolvency. These timely actions likely allow creditors to reduce risk or recover greater amounts from the borrowing firm.

their dividends were not reported as financing expense on the Income Statement. Hence, the accounting treatment of DSE suggests that this instrument did not represent a form of debt for financial reporting purposes. SFAS 150, which went into effect in 2003, required U.S. firms to include DSE in the liabilities section of the balance sheet and changed the longstanding practice of reporting DSE in a 'mezzanine' section between the liabilities and shareholders' equity sections. In line with the new balance sheet classification subsequent to SFAS 150, dividends on DSE were accounted for as interest payments on the income and cash flow statements.

Extant research shows that firms used DSE to lower reported debt and circumvent debt covenants until SFAS 150 came into effect. Engel et al.(1999) identify firms that issued a type of DSE called trust preferred shares (TPS) and used the proceeds to redeem debt between 1993 and 1996. They interpret this switch between debt and TPS as evidence supporting the reporting motives of firms to issue DSE to lower reported debt. Moser et al. (2011) demonstrate that MRPS were used to circumvent debt covenants. They show that, following SFAS 150, firms redeemed their DSE to avoid breaching their debt covenants. Similarly, De Jong et al. (2006) show that, following the adoption of IAS 32 (which also requires classifying DSE as debt), Dutch firms either bought back their preference shares or changed characteristics of the shares in such a way that the classification as equity could be maintained on the balance sheet. While Moser et al. (2011) and De Jong et al. (2006) focus on firms holding DSE and their choice to redeem it in reaction to SFAS 150 and IAS 32, Levi and Segal (2014) examine firms' ex-ante issuance choice between DSE and debt, and demonstrate that firms issued DSE to reduce their reported leverage. Taken together, the evidence suggests that prior to SFAS 150, firms used DSE to lower reported debt and to circumvent debt covenant violation consistent with wealth transfer from debt holders to equity holders.

The 1991 Delaware ruling determined that when firms are in the “zone of insolvency,” directors and managers owe fiduciary duties to creditors as well as shareholders. Given that DSE benefit shareholders at the expense of creditors, our first hypothesis predicts that Delaware firms that are close to insolvency are more likely to reduce the issuance of DSE following the 1991 ruling in comparison to Delaware firms that are not in the zone of insolvency as well as relative to non-Delaware firms. Formally,

***Hypothesis 1:** Following the 1991 Delaware ruling, Delaware firms that are close to insolvency are less likely to issue DSE, whereas non-Delaware firms and Delaware firms that are not close to insolvency are as likely to issue DSE.*

Fama (1980) and Fama and Jensen (1983) argue that the prevalence of top managers in the board of directors can lead to collusion and transfer of stockholders’ wealth. In some companies the board includes members that are managers and shareholders at the same time. In such a case the risk of a transfer of wealth from owners to managers is reduced, but a new risk may arise; that is, the risk of transfer from minority/outsider shareholders to controlling/insider ones. In order to reduce these risks, boards include independent directors, who have neither a managerial role nor business or ownership ties to the company, with high institutional expertise and a professional reputation to defend. Independent directors are expected to have a special role in assuring the respect of legality and in limiting agency problems, since the risk of collusion with the top management or controlling shareholders is reduced (Fama and Jensen, 1983). Extant research shows that independent directors are associated with greater financial reporting quality. Specifically, board independence is associated with a reduced likelihood of fraudulent financial reporting (Dechow et al. 1996; Abbott et al. 2000; Beasley et al. 2000), better accruals quality (Klein 2002; Jenkins 2002), and a reduced likelihood of restatement (Abbott et al. 2004; Agrawal and Chandra 2005).

Prior literature also documents that the quality of governance is negatively related to the cost of debt and positively related to firms' credit ratings. Bhojraj and Sengupta (2003) document that firms with greater board independence or institutional ownership have lower cost of debt and higher credit rating.⁶ Using a broader set of governance variables, Ashbaugh-Skaife et al. (2006) also document that better governance is associated with better credit ratings. These findings suggest that better governance promotes better monitoring of management, which in turn results in higher firm value and, consequently, benefits creditors (Ashbaugh-Skaife et al. 2006).

While the evidence supports the notion that better governance reduces the cost of debt, the exact mechanism of the relation is not clear. In particular, the primary fiduciary duty of directors is toward shareholders, implying that directors should act in the interest of shareholders even if those actions harm the interests of creditors (unless the firm is in the zone of insolvency and incorporated in Delaware). This suggests that the documented relation between governance and cost of debt does not indicate that existing governance mechanism is associated with greater protection of creditors' rights. Rather, an alternative explanation for the negative relation between the quality of governance and cost of debt is that better governance promotes better monitoring of management, which in turn results in higher firm value and, consequently, lower credit risk (Ashbaugh-Skaife et al. 2006).

The court ruling in 1991 provides an interesting setting to examine the direct relation between the quality of governance and creditor protection. Specifically, after the 1991 ruling that required directors to consider creditors' interests, directors of Delaware firms are expected to protect creditors' interests from shareholder abuse especially in firms which are close to insolvency. Formally,

⁶ Relatedly, Sengupta (1998) finds that better disclosure quality is associated with lower cost of debt financing.

Hypothesis 2: *There is a negative relation between board independence and DSE issuance for Delaware firms that are close to insolvency; and there is no relation between board independence and DSE issuance for Delaware firms that are not close to insolvency, or for non-Delaware firms.*

3. Methodology

3.1 Testing Hypothesis 1: The effect of the 1991 Delaware ruling on DSE issuances

We use difference-in-differences methodology to test the first hypothesis, investigating the effect of the court ruling on DSE issuances. Using data from 4 years before to 4 years after 1991, we estimate the following regressions:

$$DSE/Debt_{it} = a + b_1 Post1991_{it} + b_2 Delaware_{it} + b_3 Delaware_{it} * Post1991_{it} + Contorls + \varepsilon_{it} \quad (1)$$

DSE/Debt is the dollar amount of DSE issuance divided by the dollar amount of debt and DSE issuances. When a firm issues only DSE, the variable equals 1; and when a firm issues only debt, DSE equals 0. Post1991 is a dummy that equals 1 for years 1992-1995, and 0 for years 1988-1991. Delaware is a dummy variable that equals 1 for firms that are incorporated in Delaware. The control variables include Tax Rate, Loss Carryforward, and Firm Size. We measure the tax rate using the effective tax rate. Loss Carryforward is an indicator variable with 1 for firms with non-zero loss carryforward and earnings before interest, and for taxes that are either negative or less than one fifth of the loss carryforward. Size is the natural log of the market value of equity.

Tax is a major non-reporting factor in the decision to issue DSE or debt. Firms that are highly profitable or have limited non-debt tax shields and higher tax rates can take advantage of the tax benefit on the debt interest payments. Following Houston and Houston (1990) and Lee and Figlewicz (1999), we measure the effective tax rate as 1 minus the ratio of net income to earnings before taxes. Tax shields, on the other hand, lower firms' incentive

to use debt financing. Auerbach and Poterba (1986) find that firms with tax loss carryforwards are likely to face zero marginal tax rates on additional interest obligations. That is, large tax loss carryforwards have a material effect on the tax incentive to issue debt. MacKie-Mason (1990) finds that firms with high loss carryforwards are less likely to issue debt. To ensure that the loss carryforwards are large, we use an indicator variable that equals 1 for firms with loss carryforward that are at least five times larger than current earnings (before interest and taxes). Firm size proxies for firms' debt capacity—larger firms can issue more debt and are less likely to be in need of the financial flexibility that DSE can provide.

The 1991 *Credit Lyonnais v. Pathe Communications* ruling requires that fiduciary duty be owed to creditors in firms that are in the “zone of insolvency.” We use high leverage to capture firms' closeness to insolvency.⁷ In each year, we sort the sample firms into terciles based on their debt-to-equity ratio, which is computed as long-term debt divided by the market value of equity at the end of the prior year. Firms in the top (bottom two) tercile are classified as High (Low) Leverage. We estimate equation (1) separately for the High and Low Leverage samples. We test Hypothesis 1 using the coefficient on the interaction variable of *Post1991*Delaware*. A negative coefficient would indicate that Delaware firms experienced a greater decrease in DSE issuance in the period following the 1991 ruling. We expect to find a negative significant coefficient for the sample firms with high leverage.

3.2 *Testing Hypothesis 2: The effect of board independence and DSE issuances*

Data on board independence is available starting in 1996. Therefore, we cannot use the change in DSE issuances around the 1991 Delaware ruling to test the effect of board independence. Instead, we examine the change in DSE issuances before and after 2003, the

⁷ We get similar results when using Becker and Stromberg's (2012) distance to default measure—see discussion below.

year when SFAS 150 came into effect. As discussed above, SFAS 150 requires that DSE are reported as debt. Hence, if the quality of the board, measured by the extent of independence, is related to lower reporting bias which favors shareholders at the expense of debt holders, then we expect that the relation between board independence and DSE exists prior to 2003.

Using data from 1996 through 2003, we estimate the following regression:

$$DSE/Debt_{it} = a + b_1HiIndepBrd_{it} + b_2Delaware_{it} + b_3Delaware_{it} * HiIndepBrd_{it} + Controls + \varepsilon_{it} \quad (2)$$

HiIndepBrd is an indicator variable with 1 if the proportion of independent directors, computed as the number of independent directors divided by total number of directors, is greater than the sample median, and zero otherwise. The control variables are identical to those used in Equation (1). All other variables are defined above. Similar to Equation (1), we estimate Equation (2) for firms with high and low leverage.

We test Hypothesis 2 using the coefficient on $Delaware_{it} * HiIndepBrd_{it}$. A negative coefficient b_3 will support the hypothesis.

4. Data and Results

In this section we discuss the data and results pertaining to Hypothesis 1 and 2. Since the two hypotheses cover different sample periods, we discuss the data and results separately.

4.1 *The effect of the 1991 Delaware ruling on DSE issuances*

We obtain data on mandatorily redeemable preferred shares issuances—debt securities structured as equity—from the Compustat annual database.⁸ We code a firm as issuing DSE when its redeemable preferred shares increase during the fiscal year, and this increase corresponds with a rise in reported cash from issuances of preferred shares.⁹

⁸ Hovakimian et al.(2003) and Fama and French (2005), for example, similarly use the change in Compustat items to gauge debt and equity issuances.

⁹ We obtain similar results when we also require that that redeemable preferred shares increase by at least 25%.

To test Hypothesis 1, our sample includes all observations in Compustat with non-missing values of the variables needed to estimate Equation (1). All variables are winsorized at the top and bottom percentiles. We exclude financial institutions (SIC codes 6000-6499) and firms with equity market value of less than \$10 million. The sample includes 9,567 observations between 1988 and 1995.¹⁰

Table 1 provides the mean and median of the variables in equation 1 separately for Delaware and non-Delaware firms. The number of Delaware firms (4,658) is similar to non-Delaware firms (4,909). Delaware firms issue a greater proportion of DSE relative to total debt (5.2% vs. 4.5%) and are more likely to issue DSE (6% vs. 5.2%). Delaware firms have slightly lower tax rate (27% vs. 28%) and higher tax shields (12% vs. 9%), which may explain why they are more likely to issue DSE. Delaware and non-Delaware firms have comparable size and leverage.

Table 2 compares the magnitude of DSE issuance relative to total debt issued (Panel A) and the likelihood of DSE issuance (Panel B) for high and low leverage firms, incorporated in Delaware and elsewhere. Panel A shows that the proportion of DSE issuance relative to debt issuance is similar across Delaware and non-Delaware firms. Delaware firms experienced a slight decrease in DSE issuance after 1991 (from 5.4% to 5.1%) whereas Non-Delaware firms experienced an increase in DSE issuance (from 4.1% to 4.9%). However, the change in DSE issuance is not significant for both Delaware and non-Delaware firms. Looking at the change in DSE issuance for high- and low-leverage firms, we find that with the exception of high leverage firms in Delaware, there is no difference in the ratio of DSE to debt from the period before 1991 to the period after 1991. In fact, the data indicate that the mean of the ratio has increased although the difference is not significant. In contrast, Delaware firms with high leverage reduced DSE issuance relative to total debt issued

¹⁰ Results for our main test of Hypothesis 1, presented in Table 3, are similar when using data from 3 years before and after 1991, and when using data from 5 years before and after 1991.

following the court ruling in 1991, and the decrease is economically and statistically significant. In particular, the mean of DSE issuance relative to total debt issued for high leverage firms in Delaware in the period from 1988 through 1991 is 7.73% whereas from the 1992 to 1995 the ratio has decreased to 5.12%, a decrease of 34% which is significant at the 5% level. Panel B replicates the analysis in Panel A using the proportion of firms issuing DSE. The proportion of Delaware firms issuing DSE decreased from 6.3% to 5.9% after 1991 whereas the proportion of non Delaware firms increased from 4.7% to 5.6%, but the changes are not statistically significant.

When we condition based on high/low leverage, we find that with the exception of high leverage firms in Delaware, there is no change in the proportion of firms issuing DSE. The proportion of high leverage firms in Delaware issuing DSE is significantly lower after 1991. Prior to 1991, the proportion of high leverage firms in Delaware issuing DSE is 9.1% while after 1991 the proportion decreases to 6%, a 33% decrease which is statistically significant at 5%. Taken together, the univariate results reported in Table 2 support our hypothesis, and suggest the 1991 *Credit Lyonnais v. Pathe Communications* ruling, which increased directors' fiduciary duties toward creditors in Delaware firms that are in higher risk of insolvency, led to a reduction in DSE issuances for Delaware firms with high leverage.

Table 3 presents the regression results (Equation 1) for the high- and low-leverage firms. Panel A shows the results where the dependent variable is the ratio of DSE issuance to total debt issuance. Since the ratio is bounded by 0 and 1, we estimate the regression using Tobit. The coefficients on the control variables are similar across the two groups of firms with the predicted sign. Specifically, the coefficient on the effective tax rate is negative and significant in the low leverage regression, and the coefficient on loss carry forward is positive and significant in both regressions. As expected, firms with high effective tax rate are less likely to issue DSE since the dividend on DSE is not recognized for tax purposes. For the

same reason, firms with loss carryforwards are more likely to issue DSE, thereby allowing for quicker utilization of the loss carryforwards. The high leverage regression also indicates that DSE is positively associated with Size. Consistent with the univariate results, both regressions show that DSE issuance did not change on average after 1991. The low leverage regression shows that Delaware firms with low leverage are more likely to issue DSE in comparison to non-Delaware firms. Directly related to the hypothesis, the coefficient on the interaction variable of the Post1991 indicator and the Delaware indicator is negative and significant (p -value < 0.01) for the high leverage firms only, indicating that high leverage firms reduced DSE issuance following the court ruling. Panel B of Table 3 shows the results when the dependent variable takes the value of 1 if the firm issued DSE during the year and zero otherwise. The regression is estimated using Logit. The results are similar to those reported in Panel A. In particular, the coefficient on the interaction of the Delaware and Post1991 indicators is negative and significant for the high leverage firms only, indicating that the likelihood of DSE issuance after the court ruling in 1991 is lower relative to the pre-1991 period only for firms that were incorporated in Delaware and are close to insolvency.

Overall, the results suggest that the court ruling in 1991 effectively reduced the use of structured debt transactions but only in Delaware firms that were close to insolvency. These results imply that directors are likely to allow transactions which benefit shareholders at the expense of debt holders unless they face explicit fiduciary duty toward creditors.

We conduct our main tests with high debt-to-equity as a measure of firms' distance to default. As a sensitivity analysis we repeat the analyses using Becker and Stromberg's (2012) distance-to-default measures. They define the distance-to-default as low when the log of the ratio of assets to debt is less than four times the standard deviation of assets, where that standard deviation of assets is calculated following Vassalou and Xing's (2004) procedure. Vassalou and Xing calculate the standard deviation of assets with an iterative procedure.

They use daily data to obtain an estimate of the volatility of equity, which is then used as an initial value for the estimation of standard deviation of assets using the Black–Scholes formula. We obtain the standard deviation of assets from Maria Vassalou’s website.¹¹ She provides data until 2000, and we use it to re-estimate our Table 3. We can calculate the distance-to-default for 7,411 observations in our 1988-1995 sample, of which 1,900 observations are defined as low distance-to-default. We calculate the log of the ratio of total assets to debt for each firm-year observation, and define the distance-to-default as low when this value is less than four times the standard deviation of assets, where the standard deviation of assets is the annual average of monthly standard deviations. Firms with zero debt are defined as high distance-to-default without any calculation. We find that in the low distance-to-default sample the coefficient on Delaware*Post1991 is negative and significant (p -value < 0.1), and in the high distance-to-default the coefficient on Delaware*Post1991 is not different than zero.

4.2 The effect of board independence and DSE issuances

To test Hypothesis 2 we require data on board independence. We use data on board independence from RiskMetrics, which provides data on independent boards starting in 1996. As before, we exclude financial institutions (SIC codes 6000-6499) and firms with equity market value of less than \$10 million. The sample includes 5,202 observations between 1996 and 2009. RiskMetrics includes data mostly on large firms (S&P 1500 companies). For this sample, Delaware firms account for 58% of the sample.

Table 4 presents the descriptive statistics. In comparison to non-Delaware firms, Delaware firms are more likely to issue DSE (5.1% vs. 3%) and issue a greater proportion of DSE relative to total debt issued (4.8% vs. 2.6%). Given that SFAS 150 eliminated the

¹¹ <http://maria-vassalou.com/research/data/>

reporting advantage of DSE, we also report the statistics separately for the pre- and post-SFAS 150 periods. As expected, we observe a significant decrease in DSE issuance post SFAS 150. For example, the average DSE to total debt issuance falls from 6.9% to 2.2% for Delaware firms. Further, the overall difference in DSE issuance between Delaware and non-Delaware firms is attributed primarily to the pre-SFAS 150 period.

The greater proportion of DSE issuances by Delaware firms may be explained by differences in firm characteristics. Delaware firms have higher loss carryforward (5.4% vs. 1.9%), although the effective tax rate is almost identical. We also find that Delaware firms are larger, although the difference in size appears to be economically small. The leverage of Delaware firms is smaller (28% vs. 32%), which could be attributed to the fact that Delaware firms issue more DSE.

The proportion of independent directors in Delaware firms is smaller: 65% vs. 68%. However, following SOX and the changes in listing requirements, the proportion of independent directors has increased significantly from 2003 onwards. When we examine the mean proportion of independent directors before and after 2003 we observe that the overall difference in independent directors between Delaware and non-Delaware firms is attributed to the pre-2003 period. The mean and median proportion of independent directors are virtually identical for Delaware and non-Delaware firms after 2003. Taken together, we observe significant differences in DSE issuance and board independence pre- and post-2003 for Delaware and non-Delaware firms. Irrespective of incorporation location, after 2003 the likelihood and amount of DSE issuance decreased whereas board independence increased.

Table 4, Panel B shows the mean of DSE issuance and likelihood of DSE issuance pre- and post-2003 for high/low leverage firms for Delaware and non-Delaware firms. Consistent with the results in Table 4, Panel A, all firms experienced significant decrease in DSE issuance after SFAS 150 came into effect. Comparing DSE issuance between Delaware

and non-Delaware firms across high- and low-leverage firms, we observe more DSE issuance in Delaware firms for the two groups. For example, the proportion of high leverage firms in Delaware issuing DSE is 9.6% compared with 4% for non-Delaware firms prior to 2003. Similarly, low leverage firms in Delaware also issued more DSE, especially prior to 2003, in comparison to low leverage non-Delaware firms.

Table 5 presents the effect of board independence on DSE issuance before and after 2003. We define high board independence as an indicator with 1 if the proportion of independent directors is greater than the sample median and zero otherwise. Table 5, Panel A shows the regression results where the dependent variable is the ratio of DSE issuance to total debt issued (Equation 2) for the pre-2003 period. The regression is estimated separately for high- and low-leverage firms. The coefficients on the control variables are similar to those reported in Table 3. Specifically, DSE issuance is positively associated with loss carryforwards (in the low leverage regression) and size (in the high leverage regression), and negatively associated with the effective tax rate (in the high leverage regression). Consistent with the univariate results, the positive coefficient on the Delaware indicator suggests that the Delaware firms, both with high and low leverage, issue more DSE. The coefficient on the high board independence indicator is not significant, implying that there is no difference in DSE issuance between high and low board independence firms for non-Delaware firms. However, the coefficient on the interaction variable of the Delaware indicator and high board independence indicator is negative and significant (p -value < 0.05) in the high leverage regression only. These results suggest that DSE issuance is negatively related to board independence only in Delaware firms that are close to insolvency. Table 5, Panel B presents the regression results where the dependent variable takes the value of 1 if the firm issued DSE during the year and zero otherwise. The results are similar to those in Panel A. Delaware firms are more likely to issue DSE. Board independence is not associated with the

likelihood of DSE issuance in non-Delaware firms but is negatively associated with the likelihood that Delaware firms that are close to insolvency will issue DSE

Taken together, the regressions results indicate that when directors do not have explicit fiduciary duty toward debt holders, board independence does not reduce the likelihood that firms will use structured transactions that lower reported debt. Put differently, better governance structure does not protect creditors interest, and it allows for actions that benefit shareholders at the expense of creditors. The negative relation between quality of governance and DSE issuance for Delaware firms that are close to insolvency suggests that the quality of governance plays a role in the protection of creditors only when directors have explicit fiduciary duty toward creditors.

To further gain understanding of the impact of board independence on DSE, we re-estimate the regressions using data after SFAS 150 came into effect. Since the new standard eliminated the ability of firms to use DSE to reduce reported leverage, the issuance of DSE post-2003 does not benefit shareholders at the expense of debt holders, and hence independent directors are not expected to oppose the issuance of DSE even when they owe fiduciary duties toward creditors. As Table 5 shows, board independence is not related to DSE issuance (Panel C) or the likelihood of DSE issuance (Panel D), for Delaware firms and for non-Delaware firms.

Table 6 shows the difference-in-differences test around 2003 for high and low leverage firms. We examine the change in DSE issuances around 2003, the year when SFAS 150 came into effect. The years after 2003 serve as the control period. As discussed above, we expect a relation between board independence and DSE issuances only prior to 2003. Using data from 1996 through 2003, we estimate the following regression:

$$\begin{aligned}
 DSE/Debt_{it} = & a + b_1 IndepBrdD_{it} + b_2 Delaware_{it} & (3) \\
 & + b_3 Delaware_{it} * IndepBrdD_{it} + b_4 Pre2003_{it} + b_5 IndepBrdD_{it} * Pre2003_{it} \\
 & + b_6 Delaware_{it} * Pre2003_{it} + b_7 Delaware_{it} * IndepBrdD_{it} * Pre2003_{it} \\
 & + Controls + \varepsilon_{it},
 \end{aligned}$$

Pre2003 is a dummy that equals 1 for years 1996-2002 and zero for 2003-2009. The other variables are identical to those used in Equation (2). We estimate Equation (3) for firms with high- and low-leverage.

We test Hypothesis 2 using the coefficient on $Delaware_{it} * HiIndepBrd_{it} * Pre2003_{it}$. A negative coefficient for b_7 will support the hypothesis. We find that the coefficient on this variable is negative and significant for high leverage firms: -4.138 with t -statistics of -2.28. The coefficient on $Delaware_{it} * HiIndepBrd_{it} * Pre2003_{it}$ for the low leverage firms is not different than zero. The results of this difference-in-differences analysis support the hypothesis and indicate that board independence decreased DSE issuances only in Delaware firms with high leverage.

As a sensitivity analysis, we perform our tests with a sample that excludes firms incorporated in Pennsylvania and Indiana, and we get similar results. As mentioned by Becker and Stromberg (2012), these states have constituency statutes, which allow corporate directors to take into account the interests of non-owners (e.g., workers, customers, creditors, and suppliers) in certain situations, such as hostile takeovers. Excluding firms incorporated in Pennsylvania and Indiana, we lose 353 observations in the sample used to test Hypothesis 1, but results in Table 3 remain qualitatively similar. We lose 200 observations in the sample used to test Hypothesis 2 and results in Table 6 remain similar.

5 Conclusion

According to the U.S. accounting principles, financial reports should provide information to help shareholders and creditors in assessing the amount, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of loans. Although accounting should provide information that is equally useful for shareholders and creditors, U.S. corporate governance usually protects

equity investors, not debt holders. In this study, we show that this slant of corporate governance biases firms' reporting in favor of equity holders. Specifically, we show that when directors are legally required to protect only shareholders' interests, firms are more likely to use structured transactions that lower reported debt. We examine issuances of mandatorily redeemable preferred shares, structured debt securities that firms can report as equity in their financial reports to avoid debt covenant constraints. We use a change in directors' fiduciary duties in Delaware following the 1991 ruling in the *Credit Lyonnais v. Pathe Communications* case as a natural experiment to test this question. Before that ruling, directors of Delaware firms owed fiduciary duty only to shareholders. This ruling required directors in Delaware firms to protect creditors' interests in some cases. Using a difference-in-differences methodology that compares the change in DSE issuances by Delaware firms to that of non-Delaware firms around 1991, we show that Delaware firms used less of this structured debt following the *Credit Lyonnais v. Pathe Communications* ruling. Our findings suggest that corporate governance that is designed to protect only shareholders' interests biases reports in their favor, and at the expense of other stakeholders' interests, creditors in this case.

Prior literature shows that corporate governance improves the quality of reporting. We show that this is not necessarily the case. Corporate governance usually serves shareholders, and it prevents managers from abusing shareholders. However, in cases where reporting abuses hurt other stakeholders' interests while serving shareholders' interests, corporate governance that solely protects shareholders' interests will not prevent such abuse, as we demonstrate in this study. In fact, we show that the quality of governance plays a role in the protection of creditors only when directors have explicit fiduciary duty to honor creditors' rights.

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Table 1
Descriptive Statistics for HI

The sample includes debt securities structured as equity (DSE) and debt issuances for Delaware and non-Delaware firms. The sample includes 9,567 observations between 1988 and 1995. Financial institutions (SIC codes 6000-6499) and firms with equity market value of less than \$10 million are excluded. DSE issuance is a dummy variable that equals 1 for firms that issued DSE and 0 for firms that issued only debt. DSE/Debt is the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Tax Rate is the effective tax rate. Loss CarryForward is a dummy variable that equals 1 for firms with non-zero loss carry-forward and earnings before interest and taxes that are either negative or less than one fifth of the loss carry-forward. Size is the natural log of the market value of equity. *, **, *** are significance level at the 0.10, 0.05, and 0.01 levels.

Variable	(A) Delaware Firms (N=4,658)		(B) Non-Delaware Firms (N= 4,909)		(A) - (B)
	Mean	Median	Mean	Median	T-test
DSE issuance _t	0.0608	0	0.0517	0	0.0090*
DSE/Debt _t	0.0524	0	0.0451	0	0.0073*
Leverage _{t-1}	0.3554	0.1894	0.3553	0.2269	0.0000
Tax Rate _{t-1}	0.2718	0.3295	0.2809	0.3351	-0.0091**
Loss CarryForward _{t-1}	0.1237	0	0.0900	0	0.0336***
Size _{t-1}	12.06	11.78	12.00	11.74	0.0548

Table 2

Decrease in DSE issuances in Delaware after 1991 (H1)

This table shows the change in the issuances of debt securities structured as equity (DSE) for Delaware and non-Delaware firms after 1991. In each year, sample firms are sorted into terciles based on their leverage in the previous year, firms in the highest (bottom two) tercile are classified as High Leverage Firms (Low Leverage Firms). Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Panel A presents the DSE/Debt of the firms, which is the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. Panel B presents the DSE issuance, a dummy variable that equals 1 for firms that issued DSE and 0 for firms that issued only debt. The sample includes 9,567 observations between 1988 and 1995. **** are significance level at the 0.10, 0.05, and 0.01 levels.

Panel A: DSE/Debt of Delaware and non-Delaware firms

	DSE/Debt of Delaware Firms			DSE/Debt of Non-Delaware Firms		
	High Leverage Firms (N=1,473)	Low Leverage Firms (N=3,185)	All Firms (N=4,658)	High Leverage Firms (N=1,716)	Low Leverage Firms (N=3,193)	All Firms (N=4,909)
a. 1988-1991	0.0773	0.0437	0.0544	0.0641	0.0288	0.0410
b. 1992-1995	0.0512	0.0508	0.0509	0.0785	0.0324	0.0487
b - a (t-statistics)	-0.0260 (-2.12)**	0.0071 (0.95)	-0.0035 (-0.55)	0.0144 (1.18)	0.0036 (0.61)	0.0077 (1.34)

Panel B: Proportion of firms issuing DSE

	Proportion of Delaware Firms Issuing DSE			Proportion of Non-Delaware Firms Issuing DSE		
	High Leverage Firms (N=1,473)	Low Leverage Firms (N=3,185)	All Firms (N=4,658)	High Leverage Firms (N=1,716)	Low Leverage Firms (N=3,193)	All Firms (N=4,909)
a. 1988-1991	0.0912	0.0504	0.0634	0.0731	0.0338	0.0473
b. 1992-1995	0.0601	0.0582	0.0588	0.0855	0.0391	0.0555
b - a (t-statistics)	-0.0311 (-2.26)**	0.0078 (0.94)	-0.0046 (-0.65)	0.0124 (0.96)	0.0054 (0.81)	0.0082 (1.29)

Table 3

Testing the decrease in DSE Issuances in Delaware after 1991 (H1)

This table tests the decrease in the issuances of debt securities structured as equity (DSE) by Delaware firms after 1991. The dependent variable in Panel A is DSE/Debt, the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. The dependent variable in Panel B is an indicator that equals 1 for firms that issued DSE and 0 for firms that issued only debt. Delaware is an indicator variable that equals 1 for firms incorporated in Delaware. Post1991 is an indicator variable that equals 1 for 1992-1995 years. Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Tax Rate is the effective tax rate. Loss CarryForward is a dummy variable that equals 1 for firms with non-zero loss carry-forward and earnings before interest and taxes that are either negative or less than one fifth of the loss carry-forward. Size is the natural log of the market value of equity. Regressions are estimated separately for high and low leverage firms—firms in the highest tercile (bottom two terciles) of leverage during the year are classified as High Leverage Firms (Low Leverage Firms). The sample includes 9,567 observations between 1988 and 1995. **** are significance level at the 0.10, 0.05, and 0.01 levels.

$$Dependent_{it} = a + b_1Post1991_{it} + b_2Delaware_{it} + b_3Delaware_{it} * Post1991_{it} + Controls + \varepsilon_{it} \quad (1)$$

Panel A: Tobit regression with DSE/Debt as dependent variable

	Hypothesis ^a	High-Leverage Firms		Low-Leverage Firms	
		Estimates	p-value	Estimates	p-value
Intercept		-9.244	(<.01)***	-6.182	(<.01)***
Delaware _t		0.474	(0.13)	0.720	(0.05)**
Post1991 _t		0.294	(0.29)	0.121	(0.74)
Delaware _t *Post1991 _t	(1)	-1.067	(0.01)***	0.109	(0.82)
Leverage _{t-1}		0.253	(0.19)	-1.089	(0.31)
Tax Rate _{t-1}		-0.760	(0.12)	-2.816	(<.01)***
Loss CarryForward _{t-1}		1.020	(0.01)***	1.123	(<.01)***
Size _{t-1}		0.382	(<.01)***	-0.071	(0.30)
Observations		3,189		6,378	
Pseudo R-Square (LRI)		2.47%		2.80%	

(a) Hypothesis 1 predicts that fewer Delaware firms with high leverage will issue DSE after 1991. The coefficient on Delaware*Post1991 is expected to be negative for high leverage firms.

Panel B: Logistic regression with DSE issuances as dependent variable

	Hypothesis ^a	High-Leverage Firms		Low-Leverage Firms	
		Estimates	p-value	Estimates	p-value
Intercept		-5.667	(<.01) ^{***}	-2.398	(<.01) ^{***}
Delaware _t		0.270	(0.18)	0.365	(0.06) [*]
Post1991 _t		0.103	(0.57)	0.066	(0.73)
Delaware _t *Post1991 _t	(1)	-0.626	(0.02) ^{**}	0.044	(0.86)
Leverage _{t-1}		0.149	(0.24)	-0.454	(0.42)
Tax Rate _{t-1}		-0.576	(0.09) [*]	-1.583	(<.01) ^{***}
Loss CarryForward _{t-1}		0.607	(0.01) ^{***}	0.456	(0.01) ^{***}
Size _{t-1}		0.259	(<.01) ^{***}	-0.046	(0.21)
Observations		3,189		6,378	
Pseudo R-Square (LRI)		3.15%		3.14%	

(b) Hypothesis 1 predicts that fewer Delaware firms with high leverage will issue DSE after 1991. The coefficient on Delaware*Post1991 is expected to be negative for high leverage firms.

Table 4

Descriptive Statistics for H2

The sample includes debt securities structured as equity (DSE) and debt issuances for Delaware and non-Delaware firms with data on board independence. The sample included 5,202 observations between 1996 and 2009. Financial institutions (SIC codes 6000-6499) and firms with equity market value of less than \$10 million are excluded. DSE issuance is a dummy variable that equals 1 for firms that issued DSE and 0 for firms that issued only debt. DSE/Debt is the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. IndepBrd is the proportion of board members that are independent. Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Tax Rate is the effective tax rate. Loss CarryForward is a dummy variable that equals 1 for firms with non-zero loss carry-forward and earnings before interest and taxes that are either negative or less than one fifth of the loss carry-forward. Size is the natural log of the market value of equity. ***,** are significance level at the 0.10, 0.05, and 0.01 levels.

Panel A: Comparing Delaware and non-Delaware firms

Variable	(A) Delaware Firms (N= 2,977)		(B) Non-Delaware Firms (N= 2,225)		(A) - (B)
	Mean	Median	Mean	Median	T-test
DSE issuance _t 1996-2009	0.0507	0	0.0301	0	0.0206***
1996-2002	0.0687	0	0.0411	0	0.0276***
2003-2009	0.0219	0	0.0127	0	0.0091
DSE/Debt _t 1996-2009	0.0475	0	0.0262	0	0.0213***
1996-2002	0.0649	0	0.0347	0	0.0302***
2003-2009	0.0196	0	0.0127	0	0.0069
IndepBrd _t 1996-2009	0.6540	0.6923	0.6758	0.7143	-0.0218***
1996-2002	0.6024	0.6250	0.6346	0.6667	-0.0321***
2003-2009	0.7367	0.7500	0.7408	0.7500	-0.0041
Leverage _{t-1}	0.2836	0.1661	0.3233	0.2497	-0.0397***
Tax Rate _{t-1}	0.3327	0.3584	0.3330	0.3596	-0.0003
Loss CarryForward _{t-1}	0.0537	0	0.0189	0	0.0349***
Size _{t-1}	14.55	14.45	14.40	14.28	0.1454***

Panel B: Comparing high and low leverage firms

	DSE/Debt of Delaware Firms		DSE/Debt of Non-Delaware Firms	
	High Leverage Firms (N=841)	Low Leverage Firms (N=2,136)	High Leverage Firms (N=892)	Low Leverage Firms (N=1,333)
DSE issuance				
a. 1996-2002	0.0958	0.0574	0.0403	0.0416
b. 2003-2009	0.0369	0.0165	0.0162	0.0102
b - a	-0.0589 ^{***}	-0.0408 ^{***}	-0.0241 ^{**}	-0.0315 ^{***}
DSE/Debt				
a. 1996-2002	0.0891	0.0548	0.0353	0.0343
b. 2003-2009	0.0339	0.0146	0.0161	0.0102
b - a	-0.0552 ^{***}	-0.0402 ^{***}	-0.0192 [*]	-0.0242 ^{***}

Table 5

Testing the effect of board independence on DSE issuances (H2)

This table tests the relation between board independence and issuances of debt securities structured as equity (DSE). Board independence is expected to lower DSE issuances only before 2003 in Delaware firms with high leverage. The dependent variable in Panel A is DSE/Debt, the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. The dependent variable in Panel B is an indicator that equals 1 for firms that issued DSE and 0 for firms that issued only debt. Delaware is an indicator variable that equals 1 for firms incorporated in Delaware. HiIndepBrd is an indicator variable that equals 1 for firms with a proportion of independent directors that is greater than the sample median. Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Tax Rate is the effective tax rate. Loss CarryForward is a dummy variable that equals 1 for firms with non-zero loss carry-forward and earnings before interest and taxes that are either negative or less than one fifth of the loss carry-forward. Size is the natural log of the market value of equity. Regressions are estimated separately for high and low leverage firms—firms in the highest tercile (bottom two terciles) of leverage during the year are classified as High Leverage Firms (Low Leverage Firms). The sample included 5,202 observations between 1996 and 2009. Panels A and B present the estimation results for 1996-2003, and Panels C and D the results for 2003-2009. *, **, *** are significance level at the 0.10, 0.05, and 0.01 levels.

$$\begin{aligned}
 \text{Dependent} = & a + b_1 \text{HiIndepBrd}_{it} + b_2 \text{Delaware}_{it} \\
 & + b_3 \text{Delaware}_{it} * \text{HiIndepBrd}_{it} + \text{Controls} + \varepsilon_{it}
 \end{aligned}
 \tag{2}$$

Panel A: Tobit regression with DSE/Debt as dependent variable before 2003

	Hypothesis ^a	High Leverage Firms		Low Leverage Firms	
		Coefficient	p-value	Coefficient	p-value
Intercept		-9.356	(<.01) ***	-5.093	(0.01) **
Delaware _t		2.047	(<.01) ***	0.903	(0.09) *
HiIndepBrd _t		0.488	(0.46)	-0.036	(0.95)
Delaware _t *HiIndepBrd _t	(2)	-1.968	(0.02) **	-0.891	(0.27)
Leverage _{t-1}		0.847	(0.05) **	-4.604	(0.02) **
Tax Rate _{t-1}		-2.001	(0.04) **	-0.629	(0.56)
Loss CarryForward _{t-1}		1.165	(0.13)	2.209	(<.01) **
Size _{t-1}		0.266	(0.07) *	-0.085	(0.46)
Observations		1,064		2,131	
Pseudo R-Square (LRI)		6.22%		2.78%	

- (a) Hypothesis 2 predicts that board independence will affect DSE issuances only before 2003 in Delaware firms with high leverage. Coefficient on Delaware*HiIndepBrd should be negative and significant for high Leverage firms.

Panel B: Logistic regression with DSE issuances as dependent variable before 2003

Hypothesis ^a	High Leverage Firms		Low Leverage Firms	
	Coefficient	p-value	Coefficient	p-value
Intercept	-5.916	(<.01) ***	-2.261	(0.01) **
Delaware _t	1.395	((<.01) ***	0.439	(0.12)
HiIndepBrd _t	0.362	(0.45)	-0.020	(0.96)
Delaware*HiIndepBrd _t	(2) -1.280	(0.03) **	-0.483	(0.26)
Leverage _{t-1}	0.539	(0.04) **	-2.088	(0.04) **
Tax Rate _{t-1}	-1.596	(0.02) **	-0.374	(0.54)
Loss CarryForward _{t-1}	0.585	(0.20)	1.130	(0.00) ***
Size _{t-1}	0.191	(0.04) **	-0.036	(0.55)
Observations	1,064		2,131	
Pseudo R-Square (LRI)	7.74%		3.24%	

(a) Hypothesis 2 predicts that board independence will affect DSE issuances only before 2003 in Delaware firms with high leverage. Coefficient on Delaware*HiIndepBrd should be negative and significant for high Leverage firms.

Panel C: Tobit regression with DSE/Debt as dependent variable after 2003

	High Leverage Firms		Low Leverage Firms	
	Coefficient	p-value	Coefficient	p-value
Intercept	-2.309	(0.68)	4.024	(0.51)
Delaware _t	1.172	(0.41)	0.807	(0.56)
HiIndepBrd _t	-0.311	(0.85)	-1.361	(0.55)
Delaware _t *HiIndepBrd _t	2.345	(0.28)	-0.964	(0.72)
Leverage _{t-1}	-3.200	(0.16)	-5.393	(0.37)
Tax Rate _{t-1}	-9.177	(0.04) **	-13.738	(0.02) **
Loss CarryForward _{t-1}	-1.290	(0.60)	1.709	(0.37)
Size _{t-1}	-0.231	(0.52)	-0.817	(0.11)
Observations	669		1,338	
Pseudo R-Square (LRI)	9.28%		13.33%	

Panel D: Logistic regression with DSE issuances as dependent variable after 2003

	High Leverage Firms		Low Leverage Firms	
	Coefficient	p-value	Coefficient	p-value
Intercept	-0.214	(0.94)	2.071	(0.40)
Delaware _t	0.573	(0.44)	0.500	(0.41)
HiIndepBrd _t	-0.073	(0.93)	-0.763	(0.50)
Delaware _t *HiIndepBrd _t	1.083	(0.32)	-0.184	(0.89)
Leverage _{t-1}	-1.831	(0.11)	-3.333	(0.23)
Tax Rate _{t-1}	-4.165	(0.01) ***	-6.091	(<.01) ***
Loss CarryForward _{t-1}	-0.584	(0.61)	0.465	(0.52)
Size _{t-1}	-0.141	(0.46)	-0.310	(0.08)
Observations	669		1,338	
Pseudo R-Square (LRI)	9.89%		15.40%	

Table 6

Testing of the effect of board independence on DSE issuances (H2)

This table presents difference-in-differences test of the relation between board independence and issuances of debt securities structured as equity (DSE) around 2003. Board independence is expected to lower DSE issuances only before 2003 in Delaware firms with high leverage. DSE/Debt is the dollar amount of DSE issued by the firm divided by the dollar amount of debt and DSE issued by the firm. Delaware is an indicator variable that equals 1 for firms incorporated in Delaware. Pre2003 is an indicator variable that equals 1 for years 1996-2002 and zero for 2003-2009. HiIndepBrd is an indicator variable that equals 1 for firms with a proportion of independent directors that is greater than the sample median. Leverage is the natural log of 1 plus long-term debt divided by the market-value of equity. Tax Rate is the effective tax rate. Loss CarryForward is a dummy variable that equals 1 for firms with non-zero loss carry-forward and earnings before interest and taxes that are either negative or less than one fifth of the loss carry-forward. Size is the natural log of the market value of equity. Regressions are estimated separately for high and low leverage firms—firms in the highest tercile (bottom two terciles) of leverage during the year are classified as High Leverage Firms (Low Leverage Firms). The sample included 5,202 observations between 1996 and 2009, and a Tobit regression is used to estimate the regression. *, **, *** are significance level at the 0.10, 0.05, and 0.01 levels.

$$\begin{aligned}
 DSE/Debt_{it} = & a + b_1HiIndepBrd_{it} + b_2Delaware_{it} & (3) \\
 & + b_3Delaware_{it} * HiIndepBrd_{it} + b_4Pre2003_{it} + b_5IndepBrdHi_{it} * Pre2003_{it} \\
 & + b_6Delaware_{it} * Pre2003_{it} + b_7Delaware_{it} * HiIndepBrd_{it} * Pre2003_{it} \\
 & + Controls + \varepsilon_{it}
 \end{aligned}$$

	Hypothesis ^a	High Leverage Firms		Low Leverage Firms	
		Coefficient	p-value	Coefficient	p-value
Intercept		-9.086	(<.01)***	-5.876	(<.01)***
Delaware _t		0.430	(0.67)	0.584	(0.56)
Pre2003 _t		1.103	(0.23)	1.952	(0.05)**
Delaware _t *Pre2003 _t		1.826	(0.13)	0.396	(0.73)
HiIndepBrd _t		-0.534	(0.64)	-1.306	(0.43)
Delaware _t *HiIndepBrd _t		1.159	(0.20)	1.284	(0.87)
HiIndepBrd _t *Pre2003 _t		1.928	(0.39)	-0.334	(0.48)
Delaware _t *HiIndepBrd _t *Pre2003 _t	(2)	-4.138	(0.02)**	-0.623	(0.77)
Leverage _{t-1}		0.491	(0.25)	-4.885	(0.01)***
Tax Rate _{t-1}		-2.983	(<.01)***	-2.122	(0.05)**
Loss CarryForward _{t-1}		0.951	(0.19)	2.031	(<.01)***
Size _{t-1}		0.171	(0.19)	-0.158	(0.16)
Observations		1,733		3,469	
Pseudo R-Square (LRI)		7.61%		6.21%	

- (a) Hypothesis 2 predicts that board independence will affect DSE issuances before 2003 only in Delaware firms with high leverage. Coefficient on Delaware*HiIndepBrd*Pre2003 should be negative and significant for high leverage firms.