

# Increased creditor rights, institutional investors and corporate myopia<sup>\*</sup>

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## **Abstract**

We examine how institutional ownership responded to the 1991 *Credit Lyonnais* court ruling, which expanded the fiduciary duties of managers towards debtholders in near-insolvent Delaware firms. Differences-in-differences tests reveal that dedicated institutional shareholders increased their ownership of Delaware firms after the ruling while transient institutional shareholders reduced it. The results are more pronounced for Delaware firms close to insolvency, who were most directly affected by the ruling. Further tests investigating meeting/beating of quarterly earnings targets, real earnings management, and innovation yield results consistent with an overall decline in corporate myopia. Our findings suggest that increased creditor rights de-emphasized short-term results and were beneficial for long-term value, which suited the preferences of dedicated but not transient institutions.

JEL codes: D92, G2, G3, G32, G33, K20, K22, M40, M41, M43, O3, O31

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## 1. Introduction

Could expanded creditor rights be beneficial for shareholders? Numerous studies examine this question but the evidence is mixed (Acharya and Subramanian 2009; Acharya, Amihud and Litov 2011; Nini, Smith and Sufi 2009, 2012; Becker and Stromberg 2012). For example, Acharya and Subramanian (2009) and Acharya, Amihud and Litov (2011) find in a cross-country setting that stronger creditor rights in bankruptcy induce solvent firms to engage in value-reducing diversifying acquisitions and to shun innovation, which lowers cash-flow risk but slows growth. The results imply that stronger creditor rights are detrimental to shareholder value. In a similar vein, Nini, Smith and Sufi (2009; 2012) find that following covenant violations, creditors exercise their control rights to impose restrictions on acquisitions and capital expenditures. However, they also report that these restrictions lead to subsequent improvements in operating and stock-price performance, thus generating benefits in the long term for shareholders as well. Our paper contributes to this literature by examining a previously unexplored clientele effect. We posit the following: whether shareholders' perceive increased creditor rights as beneficial depends on their investment horizons.

We focus in particular on institutional shareholders because the heterogeneity of their investment horizons is well-established in the literature (Bushee 1998; Bushee 2001; Matsumoto 2002; Chen, Harford and Li 2007; Cadman and Sunder 2014). Dedicated institutional investors typically trade less frequently, prefer stable growth in their investments and have longer horizons. In contrast, transient investors are frequent traders with shorter investment horizons.<sup>1</sup> They place a much greater emphasis on meeting or beating short-term earnings targets, if

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<sup>1</sup> Bushee (2001) reports that dedicated institutions on average hold around 71% of their firms continuously for two years and sell only about 23% of their portfolio within a quarter. In contrast, transients on average hold only 46% of their firms continuously for two years and sell as much as 56% of their portfolio within a quarter.

necessary via myopic real actions that are detrimental to long-term value (Bushee 1998, Roychowdhury 2006, Zang 2012).

To identify an exogenous increase in creditor rights, we take advantage of the 1991 Delaware court ruling on *Credit Lyonnais v Pathe Communications*, which affected all firms incorporated in Delaware (hereafter, Delaware firms). Until this event, US courts in practice largely conformed to the premise that managers owe fiduciary duties primarily to the firm and its owners, not its creditors, unless firms were already in bankruptcy. In a noteworthy departure, the Delaware Chancery court asserted in 1991 that when a firm is *near* insolvency, the board of directors and managers bear fiduciary duties towards *both* shareholders and debtholders. The exact legal ramifications of *Credit Lyonnais* were the subject of intense debate among the business press and legal scholars, but the general consensus was that it shifted the balance of power towards debtholders and away from shareholders (Morris 1993; Nicholson 1994; Campbell and Frost 2007; Becker and Stromberg 2012; Aier, Chen and Pevzner 2014).

While the relative rights of shareholders and debtholders are well-defined in fully solvent and bankrupt firms, there is considerable potential for conflict between the two parties in firms that are close to financial distress but not yet bankrupt (i.e., near-insolvent firms). Debtholders in near-insolvent firms are focused on protecting the value of their fixed claims. Therefore they are particularly averse to the possibility of risk-shifting, that is, shareholders' tendency to pursue risky projects that can improve future performance and competitiveness but also increase the probability of financial distress (Jensen and Meckling 1976; Parrino and Weisbach 1999; Eisdorfer 2008). As a result, following *Credit Lyonnais* creditors likely imposed restrictions on near-insolvent Delaware firms' ability to undertake risky projects (Becker and Stromberg 2012). Further, while creditors likely stressed the need to improve cash flows, they also probably de-

emphasized the importance of short-term earnings targets, in anticipation of shareholders' attempts to mislead them via earnings management (Defond and Jiambalvo 1994; Sweeney 1994). Finally, because debtholders' claims typically span multiple years, any restrictions they imposed following the ruling are likely to have improved near-insolvent Delaware firms' financial health and ability to generate payoffs over a longer term that suited debtholders' investment horizons.<sup>2</sup>

We expect that transient institutional investors were most likely to view an increase in creditor rights following *Credit Lyonnais* negatively. Creditors' heightened ability to demand restrictions on risky projects and myopic efforts to meet/beat earnings targets would have inhibited transient institutions' ability to transfer wealth from debtholders. In contrast, dedicated institutions' preferences are likely to be better-aligned with those of debtholders. Their longer horizons allow them to better-appreciate prudent actions that lower risk and improve solvency in the short run, but increase the firms' ability to return to financial health and product market competitiveness in the long run. Thus we expect that dedicated institutions responded more favorably to an increase in creditor rights with *Credit Lyonnais*.

Two existing studies examine the impact of increased creditor rights following the 1991 ruling. Aier, Chen and Pevzner (2014) document that Delaware firms report more conservatively following *Credit Lyonnais*, which the authors interpret as evidence of managers catering to debtholders' preference for conservatism. Becker and Stromberg (2012) report evidence of reduced risk-shifting, consistent with debtholders' expanded rights following the ruling. They also find an increase in capital contributions via debt and equity as well as in capital expenditures for near-insolvent Delaware firms. Their evidence is consistent with an alleviation of agency problems, but does not necessarily imply that these problems were resolved in favor of

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<sup>2</sup> Average bank loan maturities range between three to four years (Graham, Li and Qiu 2008; Ivashina 2009).

shareholders. Indeed, Becker and Stromberg (2012) report that near-insolvent Delaware firms, who were most likely to be affected by the ruling, experienced “low or insignificant” stock upon the announcement of *Credit Lyonnais*.<sup>3</sup> Heterogeneity in stockholders’ preferences provides a potential explanation for this lack of a significant net equity reaction.

An advantage of focusing on institutional shareholders is that they observably “vote with their feet”, that is, signal their investment preferences by increasing or decreasing their stock ownership (see Parrino, Sias and Starks 2003; Edmans 2009; Edmans and Manso 2011). Accordingly, we study changes in the institutional ownership of Delaware firms from three years before to three years after the 1991 court ruling and compare them to contemporaneous changes in non-Delaware firms. Since the exogenous court ruling affected only firms incorporated in Delaware, it allows us to draw causal inferences using a differences-in-differences research design. Additionally, the ruling concerned firms that are near insolvency but not yet insolvent. This setting thus lets us go beyond previous studies of contractual creditor rights in bankruptcy or those upon the violation of debt covenants, which remained unchanged with the ruling. The setting is also valuable because we can observe whether the empirical effects we document are stronger for near-insolvent Delaware firms than for solvent ones.

We find that institutional owners *increase* their investments in Delaware firms relative to non-Delaware firms, suggesting that institutional investors respond favorably to the expansion of creditor rights following *Credit Lyonnais*. Our results further indicate that dedicated investors *increase* their ownership of Delaware firms following *Credit Lyonnais*, while transient investors

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<sup>3</sup> Becker and Stromberg (2012) find that Delaware firms *on average* experience positive equity announcement returns upon the pronouncement of the ruling. However, this is not true for firms with high leverage at the time of the ruling, which are likely to be closer to financial distress and hence more directly affected by *Credit Lyonnais* (see figure 3 of Becker and Stromberg 2012). Our own tests (untabulated) confirm that while some Delaware firms further away from insolvency exhibit positive return differentials with respect to non-Delaware firms, near-insolvent Delaware firms exhibit statistically and economically insignificant return differentials upon the pronouncement of *Credit Lyonnais*.

*reduce* their ownership. Because the court ruling primarily focused on fiduciary duties of managers in near-insolvent Delaware firms, we repeat our tests after partitioning firms into those near insolvency and those further away from insolvency using Merton's (1974) distance to default measure (Vassalou and Xing 2004). We find that the shifts in dedicated and transient institutional ownership are more pronounced for near-insolvent firms, but also significant for firms further away from insolvency.<sup>4</sup> The results are important because they suggest that any restrictions Delaware firms faced on their actions as a consequence of expanded creditor rights contributed to an increase in value in the long run, consistent with the investment preferences of dedicated institutions but inconsistent with those of transient institutions.

We next test whether following *Credit Lyonnais* Delaware firms indeed exhibited observable changes in their corporate policies that emphasized long-term value and were thus more consistent with the preferences of debtholders and dedicated shareholders. An important distinguishing feature between dedicated and transient institutional shareholders is their relative tolerance for corporate myopia. Bushee (1998) and Matsumoto (2002) point to transient institutional investors' greater support for a myopic focus on short-term earnings targets at the expense of longer-term value; in contrast, dedicated institutional owners restrain investee firms from such behavior (Bushee 1998; Roychowdhury 2006; Zang 2012). Furthermore, studies such as Graham, Harvey and Rajgopal (2005) and Aghion, Reneen and Zingales (2013) argue that a myopic focus on quarterly targets among investors distracts corporate managers away from the pursuit of long-term competitiveness and value, particularly via innovation. In a similar vein, Agarwal, Vashishtha and Venkatachalam (2016) point out that short-termism of money

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<sup>4</sup> Following *Credit Lyonnais*, there was significant uncertainty regarding the exact definition of the zone of insolvency, and the ruling itself provided little guidance. Thus, it is not surprising that some of the changes following the ruling were not only evident in the near-insolvent Delaware firms the ruling clearly affected, but also perpetuated (to a lesser extent) through firms that were further away from insolvency.

managers leads to lower innovation in their investee firms. Motivated by this literature, we formulate two sets of analyses. The first one tests for changes in narrow meeting/beating of earnings targets and myopic real earnings management following *Credit Lyonnais*. The second analysis examines changes in the firm's pursuit of long-term competitiveness via innovation.

Meeting or beating short-term earnings targets incentivizes managers to engage in myopic real actions and earnings overstatements that can be detrimental to long-run value (Cohen and Zarowin 2010; Brochet, Loumioti and Serafeim 2015; Kothari, Mizik and Roychowdhury 2016). This trade-off is particularly relevant in near-insolvent firms, as real earnings management can enable shareholders to benefit from meeting/beating short-term earnings targets, but at the expense of the firms' future ability to survive, a cost shared by creditors. Our differences-in-differences tests indicate significant reductions in the propensity to meet/beat earnings benchmarks by narrow margins as well as in real activities management among Delaware firms, suggesting a shift away from short-termism. The decline in the focus on earnings targets and myopic real strategies is more pronounced in near-insolvent Delaware firms.

Changes in innovation are the second way in which we evaluate a shift in firm focus at Delaware firms following *Credit Lyonnais*. Innovation is essential for the long-term financial viability of firms and is associated with increases in future earnings (Hirshleifer, Hsu and Li 2013; Aghion et al. 2013). However, fostering innovation requires risky investments and a "tolerance for failure" (Holmstrom, 1989; Manso 2011; Acharya, Baghai and Subramaniam 2013; Tian and Wang 2014). For those reasons, innovation is typically indicative of a long-term focus (Chemmanur, Loutskina, and Tian, 2014; Tian and Wang 2014). A countervailing factor is that debtholders likely find the risks entailed in the pursuit of innovation unappealing, particularly in near-insolvent firms. Although evidence on innovation near insolvency is lacking

in the literature, studies such as Chava and Roberts (2008) and Nini, Smith and Sufi (2009; 2012) find that creditors impose investment constraints on firms close to financial distress and in violation of covenants. Thus, it is likely that following the 1991 ruling, managers of near-insolvent Delaware firms, mindful of their expanded fiduciary duties towards debtholders, sacrificed some opportunities for innovation as they concentrated on reaching financial stability. Reducing investments in innovation in the interim may have been ultimately beneficial for firms near insolvency as long as they resumed investing when they became financially stable again.

We find that innovation output (measured with patents and patent citations) declined significantly among near-insolvent Delaware firms after 1991, consistent with such firms sacrificing innovation opportunities to avoid risk-taking. On the surface, this seems inconsistent with dedicated institutions' greater presence in Delaware firms following *Credit Lyonnais*. However, we also find that near-insolvent Delaware firms exhibit a significant increase in innovation over a second three-year window immediately following the first post-event window used in our earlier tests. The evidence is thus consistent with Nini et al. (2009, 2012); it suggests that debtholders' expanded rights after *Credit Lyonnais* motivated managers to curtail innovation efforts in near-insolvent firms for the sake of ensuring survival. These restrictions then facilitated a "return to innovation" in future years, presumably once the firms became more financially stable.<sup>5</sup>

We observe that, in contrast to near-insolvent firms, fully solvent Delaware firms increased their innovation output following *Credit Lyonnais*. One plausible explanation is that greater protection for creditors' interests near insolvency made creditors more forthcoming with debt capital for fully solvent firms, allowing managers of such firms to pursue innovation

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<sup>5</sup> The patterns in innovation we observe over the more remote window should be interpreted with some caution, as they may not solely reflect the influence of *Credit Lyonnais*.

projects they could not undertake before. Consistent with this explanation, Becker and Stromberg (2012) find that after the 1991 ruling, Delaware firms increased their leverage and were subject to fewer covenants. It thus appears that the easier access to debt capital facilitated greater innovation among Delaware firms further away from insolvency.

Our results above are consistent with dedicated institutional investors appreciating the longer-term benefits of a creditor-driven focus on survival in near-insolvent firms. We next confirm an improvement in Delaware firms' solvency following *Credit Lyonnais*. Merton's distance-to-default and Altman's Z-score metrics both increased significantly for Delaware firms, indicating a decline in their probability of bankruptcy. We also observe a modest increase in Tobin's Q for Delaware firms, consistent with an increase in their long-term valuations.

In parallel trends analysis, we confirm that the patterns we observe in our dependent variables of interest in the three years following *Credit Lyonnais* cannot be attributed to trending differences between Delaware and non-Delaware firms in the pre-event period. Further, we examine investments in innovation, that is, research and development expenditures (R&D). Delaware firms close to insolvency exhibited a decline in R&D, while those further away exhibited an increase after 1991, consistent with our results on innovation output.<sup>6</sup> We also perform a battery of robustness tests on our primary results. First, we confirm that our findings are concentrated in firms with non-zero leverage and firms in industries with patents. We further test the robustness of our results to (a) the exclusion of firms from Pennsylvania and Indiana, states with already-existing statutes requiring managers to consider debtholders' interests near insolvency; (b) inclusion of state-of-location and industry fixed effects; (c) alternative proxies for

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<sup>6</sup> In contrast, capital expenditures (CAPEX) increased for both near-insolvent and fully solvent Delaware firms. These results are particularly relevant in the context of Becker and Stromberg (2012), who find that the sum of CAPEX and R&D increased for both near-insolvent and fully solvent Delaware firms. Our tests disaggregate these two types of investments and reveal that for Delaware firms near insolvency the components of the sum moved in opposite directions. That is, CAPEX increased while R&D declined.

proximity to insolvency; and (d) alternative definitions for myopic earnings management to meet/beat analysts' forecasts.

Our primary contribution is in demonstrating that shareholders with longer horizons react favorably to an increase in creditor rights. In contrast to Acharya and Subramanian's (2009) and Acharya et al.'s (2011) findings, which reflect the adversarial nature of shareholders' and debtholders' interests, our setting offers insights into positive outcomes that can arise when stakeholders have aligned interests. An important characteristic of *Credit Lyonnais* was that the ruling required managers to safeguard the interests of all stakeholders in firms near but not yet in bankruptcy. At a point in time when agency issues are likely to be the most severe, i.e. near-insolvency, the ruling motivated managers, shareholders and creditors to seek common interests. Our results are thus consistent with studies such as Sunder, Sunder and Wongsuwai (2014) and Li, Tuna and Vasvari (2014), who point to a scope for co-operation between debtholders and shareholders.

Finally, Beyer, Larcker, and Tayan (2014) point to the confounding effects in firm governance and strategy that can arise in the presence of short-horizon shareholders: "...Companies want long-term shareholders in particular because it allows them to implement their corporate strategy and make long-term investments without the distraction and short-term performance pressures that come from active traders." Nevertheless, short-term investors often own and thus influence at least some of the firms' policies (Bushee 1998; Matsumoto 2002; Graham et al. 2005; Agarwal et al. 2016), and so short-termism prevails. In this paper we present novel evidence that a favorable and perhaps unforeseen impact of increased creditor rights from the standpoint of investee firms is a mitigation in the influence of shorter-term shareholders.

## 2. Setting

Prior to *Credit Lyonnais v Pathe Communications*, the conventional legal understanding was that directors and managers did not bear fiduciary responsibilities towards creditors, unless firms were already in bankruptcy. The Delaware court ruling in the *Credit Lyonnais* case in 1991 was instrumental in setting a legal precedent (for firms incorporated in Delaware) that directors and managers also owe fiduciary duties to creditors when firms are in the “vicinity of insolvency”, but crucially, still solvent.<sup>7</sup>

The details of the *Credit Lyonnais* case are as follows. The private company that emerged out of the leveraged buyout (LBO) of MGM Corporation from Time Warner ran into financial difficulties almost immediately after its formation. Five months after the LBO, trade creditors forced MGM into bankruptcy. MGM’s exit from bankruptcy relied heavily on a credit line of \$145 million from Credit Lyonnais. MGM’s controlling shareholder at the time, Pathe Communication, also signed a corporate governance agreement with Credit Lyonnais. Exercising its contractual rights under this agreement, Credit Lyonnais subsequently replaced MGM’s directors inclusive of the CEO. In an attempt to re-gain control over MGM by paying down the Credit Lyonnais debt, Pathe Communication tried to raise money for the payoff by selling MGM’s interest in an overseas subsidiary. The newly-appointed management and directors vetoed Pathe Communication’s move. Pathe claimed that the new management was in breach of the fiduciary duties they owed to MGM stockholders by favoring creditors’ interests.

On December 12 1991 the Delaware Chancery Court ruled in favor of the new (Credit Lyonnais-appointed) management. The court held that “the new management was appropriately mindful of the potential differing interests between the corporation and its controlling

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<sup>7</sup> For a more detailed discussion of the ruling, see Memorandum opinion, Civ. A. No. 12150, Court of Chancery of Delaware, New Castle County.

shareholder. At least where a corporation is operating in the vicinity of insolvency, a board of directors is not merely the agent of the residue risk bearers, but owes its duty to the corporate enterprise”. A crucial component of this ruling, upheld in all related subsequent court opinions, was the stress on managers’ primary responsibility to serve in the best interest of the corporation rather than any specific class of stakeholders.

In a further clarification, Footnote 55 of the court’s pronouncement noted that “...*in managing the business affairs of a solvent corporation in the vicinity of insolvency, circumstances may arise when the right course to follow for the corporation may diverge from the choice that stockholders...would make*”. The ruling, particularly Footnote 55, was immediately considered a path-breaking breach with existing legal and business understanding as well as practice, and triggered widespread media coverage.<sup>8</sup> Even though the ruling referred to managers’ fiduciary duties towards all stakeholders, it was largely interpreted in the context of the conflict between Pathe and Credit Lyonnais as a shift in the balance of power towards debtholders.

The ruling generated considerable comment and controversy. The increase in fiduciary responsibilities of managers towards debtholders in the vicinity of insolvency is a distinct concept from the creditor-friendliness of the legal environment in bankruptcy. Even though the bankruptcy code does not apply to near-insolvent firms, *Credit Lyonnais* created uncertainty

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<sup>8</sup> According to Becker and Stromberg (2012), who provide some detail on the press coverage following the 1991 court ruling, the court ruling was immediately covered by newswires from *Reuters*, *Dow Jones* and *PR Newswire*. 24 newspapers covered the case and the ruling on the day or the following day of the ruling, including the *Wall Street Journal*, *New York Times*, *Financial Times*, *Washington Post*, *Chicago Sun-Times*, and *San Francisco Chronicle*. In just three months after the court ruling, the Credit Lyonnais case was covered 62 times in mainstream press and newswires. Even though the Credit Lyonnais case technically refers to all stakeholders, the interpretation of the court ruling and subsequent legal cases anchor on creditors. For example, see *Geyer V Ingersoll Publications* (1992), *Weaver V Kellogg* (1997), and *Medlin V Wells Fargo Bank* (2007). According to Becker and Stromberg, “The case is extensively cited by other cases, legal scholars and practicing lawyers.” They report that a Lexis-Nexis search in July 2009 yielded 169 citations and the Westlaw database reported 612 citations over the same period, including 56 legal cases.

about the relative superiority of shareholders' versus debtholders' claims in such firms. Legal opinions pointed to the lack of definitive guidance in the ruling on the "vicinity of insolvency" and the breadth of the stakeholder community (beyond creditors) whose interests managers were supposed to consider (Morris 1993; Nicholson 1994; Campbell and Frost 2007).

Delaware court pronouncements in relatively recent times (2004 and 2007) are perceived as partial roll-backs of the influence of the 1991 *Credit Lyonnais* decision. The 2004 Delaware Chancery Court ruling (*Production Resources v. NCT*) and the 2007 Delaware Supreme Court ruling (*North American Catholic Education Programming Foundation, Inc., v. Gheewalla*) both opine that creditors cannot sue directors and managers directly for breach of fiduciary duties, unless these duties arise from already-existing contractual arrangements. The 2004 and 2007 Delaware cases received much less publicity relative to *Credit Lyonnais*. Becker and Stromberg (2012) fail to find any significant changes around these later cases, suggesting that the perception of managers' fiduciary responsibility towards all stakeholders in near-insolvent-firms survived in spite of the partial reversals. Both of the later court rulings explicitly re-assert the duties of directors and managers to the corporation and good-faith preservation of its value for *all* stakeholders. The 2004 *Production Resources* court ruling further asserted: "In other words, *Credit Lyonnais* provided a shield to directors from stockholders who claimed that the directors had a duty to undertake extreme risk so long as the company did not technically breach any legal obligations." Some legal scholars have argued that mixed guidance from the various rulings subsequent to *Credit Lyonnais* contributed to exacerbating the uncertainty surrounding managers' fiduciary duties in the vicinity of insolvency rather than resolving it (Campbell and Frost 2007).

The exact implications of the *Credit Lyonnais* are debated to this day. But at the time of the 1991 court ruling, any uncertainty about the impact and scope was still largely regarded as “unidirectional” (Becker and Stromberg 2012). In other words, there was general and widespread agreement that the ruling favored greater than existing protection for debtholders’ interests in near-insolvent firms. Forbes (1992) concluded that *Credit Lyonnais* implied that “*when a company is in serious trouble, the directors’ responsibility shifts somewhat in the direction of the creditors*”.

Empirically, the 1991 Delaware court ruling provides a powerful identification strategy because it applies solely to firms incorporated in Delaware (that is, “Delaware” firms). This facilitates a direct comparison of changes in Delaware firms before and after the 1991 ruling with corresponding calendar-time changes in non-Delaware firms, who were unaffected by the ruling. We restrict our primary analyses to three years before and three years after the ruling to avoid the possibility of “leakage”, that is, any influence of the Delaware ruling on legal cases of a similar nature outside of Delaware.<sup>9</sup> A shorter window also captures the period following *Credit Lyonnais* when the perception that managers in near-insolvent Delaware firms are responsible towards both shareholders and debtholders was the strongest and the most pervasive.

### **3. Data**

#### **3.1. Sample**

We begin with all publicly listed firms from the Compustat/CRSP database with non-missing state of incorporation information over the sample period from 1988 to 1994. Our actual analysis concentrates on firm-years between 1988 and 1990 and those between 1992 and 1994. The one-year break in 1991 facilitates clearly-defined “before” and “after” periods straddling the

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<sup>9</sup> As Becker and Stromberg (2012) point out, leakage would generally bias against our findings, because of our difference-in-difference research design.

1991 Delaware court ruling. We exclude firms in financial industries (sic 6000-6999) and utilities (sic 4000-4999). The final sample also requires the availability of COMPUSTAT and CRSP data necessary to construct our control variables: ROA, total assets, firm age, leverage, capital expenditures, equity issues, equity volatility, and ROA volatility. Only those firms that have at least one year of data in both pre- and post-1991 periods are included in the sample. All variables are defined in Appendix A.

The sample for every test includes the maximum number of observations we can obtain after requiring that all data to conduct the test be available. As an example, our analysis with institutional shareholders includes 4,338 firms and 20,311 firm-year observations between 1988 and 1994. Firms are classified as treated (or “Delaware” firms) if, based on their historical state of incorporation, they were incorporated in Delaware at the time of *Credit Lyonnais* and hence were affected by the ruling, with the rest classified as “controls”. According to this rule, we classify 2,276 firms as treated and 2,062 firms as controls.<sup>10</sup>

## **3.2. Main variables of interest**

### **3.2.1 Shareholder clientele**

To determine the percentage of shares held by institutional investors, we obtain the institutional ownership data from the Thomson Reuters Institutional (13F) Holdings database. We compute *% Total Inst* as the total shares held by institutional investors divided by total shares outstanding.

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<sup>10</sup> Compustat backfills incorporation data; i.e., at any point in time, it reports the current state of incorporation. This introduces the possibility of misclassification and measurement errors. Prior studies have shown that firms rarely re-incorporate. For example, Becker and Stromberg (2012) examine firm re-incorporation over 1990-2006 using the Risk-Metrics database and find that annual frequency of re-incorporation is around 1%. Nevertheless, to avoid undue influence of re-incorporation cases, we base our analyses on the historical state of incorporation at the time of the court ruling as reported in Moody’s yearly Industry Manual.

We then identify the institutional ownership type by using the classification developed by Bushee (1998).<sup>11</sup> Briefly, Bushee (1998) classifies institutional investors based on investment horizon using a factor analysis and cluster analysis approach. In the paper, we focus on the ownership by two types of institutional investors: dedicated institutions and transient institutions. Dedicated (transient) institutions have low (high) portfolio turnover and less (more) diversified portfolios. We compute *% Ded Inst* (*%Trans Inst*) as the total shares held by dedicated (transient) institutions divided by total shares outstanding.

### **3.2.2 Earnings manipulation**

To capture corporate myopia as it is related to financial reporting activities, we examine the firms' propensity to meet/beat quarterly earnings benchmarks and the use of real activities management. We focus on these two activities because they have been shown to boost the firm's short-term performance at the expense of its long-term value (Bushee 1998; Roychowdhury 2006).

Burgstahler and Dichev (1997) and Degeorge, Patel and Zeckhauser (1999) find a much higher percentage of firms that narrowly meet or beat earnings targets relative to firms that narrowly miss, a pattern they point to as indicative of earnings management. To construct a variable that captures firms meeting or narrowly beating analyst forecasts, we first obtain the consensus median analyst forecast before the earnings announcement from the Institutional Brokers Estimate System (I/B/E/S) database. We then construct the indicator variable *I(Beat)*, which equals one if the earnings announcement is equal to the consensus forecast or exceeds this forecast by two cents or less, and zero otherwise.

To measure real earnings management, we focus on two primary metrics: the abnormal levels of discretionary expenses and production costs. Following Roychowdhury (2006), Cohen

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<sup>11</sup> The classification data is available at: <http://acct.wharton.upenn.edu/faculty/bushee/IIclass.html>

and Zarowin (2010) and Zang (2012), we model the normal levels of discretionary expenses and production costs with the following cross-sectional regressions for each industry and year:

$$Prod_{i,t} = \alpha_0 + \alpha_1 / Assets_{i,t-1} + \alpha_2 Sales_{i,t} + \alpha_3 \Delta Sales_{i,t} + \alpha_4 \Delta Sales_{i,t-1} + \varepsilon_{i,t}$$

$$DiscExp_{i,t} = \alpha_0 + \alpha_1 / Assets_{i,t-1} + \alpha_2 Sales_{i,t-1} + \varepsilon_{i,t}$$

*Prod* is production costs, computed as the sum of cost of goods sold and change in inventory, and *DiscExp* is discretionary expenses, computed as the sum of advertising expenses, R&D expenses, and SG&A expenses. *Assets<sub>t-1</sub>* is assets at the end of year t-1 (i.e., at the beginning of year t), *Sales* is sales revenue, and  $\Delta Sales$  is change in sales revenue; *Sales* and  $\Delta Sales$  are scaled by assets at the beginning of the year. The residuals from the respective regressions yield abnormal production costs and abnormal discretionary expenses. Abnormal production costs are denoted *RM\_Prod*; we multiply abnormal discretionary expenses by negative one so that the resultant measure, denoted *RM\_DiscExp*, is increasing in the level of earnings management. Using the above estimates of abnormal production costs and discretionary expenses, we then construct a comprehensive measure of real earnings management. The composite measure, *RM\_Total*, is computed by adding *RM\_Prod* and *RM\_DiscExp*.<sup>12</sup>

### 3.2.3 Innovation

We use firm-level patent data as output-based measures of innovation (Kamien and Schwartz 1975, Griliches 1990; Hirshleifer et al. 2013; Hsu et al. 2014).<sup>13</sup> Griliches (1990) outlines the patent claim process and concludes that patents serve as good indices of

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<sup>12</sup> We refrain from using abnormal cash flow from operations (CFO) as a measure of real earnings manipulation. Roychowdhury (2006) points out that the real earnings management methods available to managers can have countervailing effects on CFO.

<sup>13</sup> For each patent granted by the US Patent and Trademark Office (USPTO) from 1976 to 2006, the database provides the following information: the patent assignees (i.e., the firm that filed the patent application), the Compustat-matched firm identifiers (GVKEY), the technology class, the filing date (i.e., the date on which the firm filed the patent application), a list of prior patents that are cited by the designated patent, and a list of subsequent patents that cite the designated patent through 2006. These details allow us to measure the innovation activities of each public firm along multiple dimensions.

contemporaneous attempts to innovate. Using the patent records of all public firms in the updated NBER patent database, we construct two metrics of innovation output: patent counts and patent citations. We use the logarithmic value of one plus patent count or citation count to mitigate skewness in firm-level patents and citations.

Patent count, measured as  $\text{Log}(1+\text{Patents})$  is the number of successful patent applications filed by firm  $i$  during year  $t+1$  that are eventually granted by the USPTO. This proxy captures firm innovation output from a quantitative perspective, and has been widely used in economics research (e.g., Griliches 1990; Hall 1993). The second measure of firm-level innovation output is qualitative. This proxy,  $\text{Log}(1+\text{Citations})$  represents the number of patent citations received by all successful patent applications filed by firm  $i$  in year  $t+1$ . Prior studies often use the number of citations received by a patent to measure the patent's technological contribution and economic value (Trajtenberg 1990; Harhoff, Narin, Scherer, and Vopel 1999; Hall, Jaffe, and Trajtenberg 2005; Aghion et al. 2013). We adjust the number of citations received by each patent by the technology category and application year, as suggested by Hall et al. (2005), to correct for truncation bias because it takes time for patents to accumulate citations.

### **3.2.4 Proximity to insolvency**

Our empirical analyses include examinations of differential effects depending on the firm's proximity to insolvency. Following Vassalou and Xing (2004), Becker and Stromberg (2012) and Aier et al. (2014), we measure proximity to insolvency using Merton's distance to default measure. Merton's (1974) model uses the market value of a firm's equity in calculating its default risk. We construct the distance to default measure following Vassalou and Xing

(2004) who employ Merton's model to estimate the value of contingent claims on the firm's assets.<sup>14</sup>

Firms with Merton's distance to default measure (hereafter the Merton measure) in the bottom quartile of the sample population in year 1990 (i.e., the year immediately before the passage of court ruling) are identified as financially distressed and close to insolvency. In robustness tests, we repeat our analyses using two other measures of proximity to insolvency: Altman's Z-score and book leverage. We describe the results of these tests in Section 4.5.

## 4. Results

### 4.1 Research design

We examine the effect of an expansion of fiduciary duties towards debtholders on shareholders and on corporate myopia, using this general difference-in-difference regression specification:

$$Y_{it} = \beta_0 + \beta_1 Post-1991_t \times I(Delaware)_i + \gamma'X_{it} + FirmFE + YearFE + \varepsilon_{it} \quad (1)$$

$Y$  refers to the various proxies for shareholder clientele, earnings manipulations, and innovation output. These proxies are described in detail in Section 3.  $i$  indexes firms and  $t$  time. The *Post-1991* indicator is equal to one from 1992 to 1994, and zero from 1988 to 1990. There is a one-year break between the two three-year periods because the Delaware ruling occurred in 1991. The *I(Delaware)* indicator is equal to one in all sample years if the firm is incorporated in

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<sup>14</sup> We obtain the estimated value of assets and volatility of assets from Maria Vassalou's website. Vassalou and Xing (2004) calculate value of assets and volatility of assets using Black-Scholes (1973) formula:  $V_E = V_A N(d_1) - X e^{-rT} N(d_2)$ , where  $d_1 = (\ln(V_A/X) + (r + 1/2\delta_A^2)T) / \delta_A \sqrt{T}$  and  $d_2 = d_1 - \delta_A \sqrt{T}$ .  $V_E$  denotes market value of equity,  $V_A$  denotes value of assets,  $X$  denotes book value of debts that has maturity equal to  $T$ . Vassalou and Xing (2004) use an iterative procedure to estimate Value of assets ( $V_A$ ) and Volatility of assets ( $\delta_A$ ). They use daily data from the past 12 months to obtain an estimate of the volatility of equity, which is then used as an initial value for the estimation of  $\delta_A$ . Using the Black-Scholes formula, and for each trading day of the past 12 months, they compute  $V_A$  using  $V_E$  as the market value of equity of that day. In this manner, they obtain daily values for  $V_A$ . They then compute the standard deviation of those  $V_A$ 's, which is used as the value of  $\delta_A$ , for the next iteration. This procedure is repeated until the values of  $\delta_A$  of two consecutive iterations converge at tolerance level of  $10E-4$ . The distance to default is calculated as the difference between the value of assets and short-term and long-term debt, divided by the volatility of assets.

Delaware.  $X_{it}$  represents our control variables: ROA, log of total assets, log of firm age, leverage, capital expenditures, indicator for equity issues, log of equity volatility, and log of ROA volatility (all defined in Appendix A).

We follow the research design from Becker and Stromberg (2012) in including firm (*FirmFE*) and year (*YearFE*) fixed effects. As in their study, we do not include a *I(Delaware)* indicator separately as it is absorbed in the firm fixed effects. Similarly, the *Post-1991* indicator separately is absorbed in year fixed effects.

In all our regressions we cluster standard errors by the interaction of the state of incorporation and year (Becker and Stromberg, 2012). We start by estimating equation (1) above on the entire sample. We then split the sample into the subsamples of firms near insolvency and far away from insolvency (based on the indicator variable *I(Near-Insolvency)* which takes the value of 1 for firms in the bottom quartile of the Merton measure) and re-estimate equation (1) for these subsamples.

Table 1, Panel A provides descriptive statistics on our main variables of interest as well as the control variables. The number of observations (N) varies across variables depending on data availability. Therefore, for each variable, we report descriptive statistics for *all* observations with data available for that variable.<sup>15</sup> In Table 1, Panel B we list the means for our variables of interest for both Delaware and non-Delaware firms before and after the Credit Lyonnais court ruling. In the pre-ruling period, that is prior to 1991, Delaware firms were larger, but exhibited poorer ROA and lower distance to default than non-Delaware firms. Transient institutional ownership in Delaware firms was significantly higher. The evidence on pre-1991 earnings management differences across Delaware and non-Delaware firms is mixed. Delaware firms

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<sup>15</sup> We require that all control variables used in the regressions be available before we check for the availability of data to compute the dependent variables in those regressions.

exhibited weaker evidence of narrow meet/beats but stronger evidence of real activities management on average. Finally, Delaware firms in our sample had significantly higher innovation output than non-Delaware firms. This finding is consistent with Daines (2001, 2002) who documents that the state of Delaware attracts firms with larger expenditures on innovation. Other differences are statistically indistinguishable from zero. Overall we are unable to identify a common or systematic theme underlying the differences between Delaware and non-Delaware firms prior to 1991, other than those driven by Delaware firms' higher innovation activities already documented in prior studies.

Recall that our primary interest lies in examining shifts in Delaware firms relative to non-Delaware firms after the *Credit Lyonnais* ruling. This difference-in-difference analysis mitigates the impact of any pre-existing dissimilarities between Delaware and non-Delaware firms. For example, even though Delaware firms attracted more transient institutional investors on average prior to 1991, we are interested in changes in transient institutional ownership in Delaware firms relative to non-Delaware firms after 1991. Panel B provides some preliminary insights into shifts across 1991 for the average Delaware versus non-Delaware firm. After the court ruling, average shareholder clientele changed significantly for Delaware firms relative to non-Delaware firms, with Delaware firms experiencing a larger shift towards dedicated institutional ownership. Delaware firms also exhibit a significantly greater decline in real earnings manipulations and lower frequency of narrow meet/beats of analyst forecasts. Finally, Tobin's Q and distance to default increased for Delaware firms over and above the increase for non-Delaware firms.

Panel B also provides data on the explanatory variables included in our regression, starting with ROA. Most of these variables did not exhibit differential shifts after the Delaware court ruling, the only exception being leverage which grew significantly more for Delaware

firms than for non-Delaware firms. The relative increase in leverage for Delaware firms is consistent with their increased ability to attract debt capital after *Credit Lyonnais* (Becker and Stromberg 2012).

We refrain from drawing strong conclusions on statistical shifts based on the univariate differences. The next section discusses our multivariate tests which control for various firm characteristics, as well as firm and year fixed effects. These tests also allow for differential effects for firms near and away from insolvency.

#### **4.2 Results on shareholder clientele**

In this section, we investigate whether Delaware firms' shareholder base changes in response to the expansion of debtholders' rights. We estimate equation (1) using the total percentage ownership by institutional investors, the percentage ownership by dedicated institutional investors, and the percentage ownership by transient institutional investors as our dependent variables. Table 2 reports the results of these OLS regressions. In columns (1) and (2), where the dependent variables are respectively the total percentage of institutional investors and the percentage of dedicated institutional investors, the coefficient on  $Post-1991 * I(Delaware)$  is positive and statistically significant at the 1% level. Thus, institutional owners in general and dedicated owners with a long-term investment horizon in particular, add Delaware firms' shares to their portfolios following the 1991 court ruling. Moreover, as evidenced by the significantly negative coefficient on  $Post-1991 * I(Delaware)$  in column (3) of Table 2, transient institutions reduce their holdings in Delaware firms. Given that these institutions have shorter investment horizons, their exit possibly reflects their immediate aversion to the shift in power towards debtholders.

In Table 3, we further examine changes in shareholder base after splitting the firms into those near and away from insolvency (columns (1) through (3), and (4) through (6) respectively). Partitioning into sub-samples requires additional data for computing Merton's distance to default measure. Consequently, there is a drop in the number of cumulative observations in Table 3 relative to Table 2. The increase in dedicated institutional ownership and decline in transient institutional ownership is evident for both types of firms although significantly stronger for near-insolvent firms as indicated by Chi-Square statistics.

The coefficients imply that for Delaware firms near insolvency, the mean fraction owned by dedicated investors increased by 38.74%. In contrast, the fraction of transient investors decreased by 35.27% as a consequence of the ruling. For firms further away from insolvency, the fraction of dedicated investors increased by 8.42% while that of transient institutions decreased 8.66%. As expected, the economic magnitudes of the shifts are thus larger for firms classified as near insolvency.

#### **4.3 Results on earnings manipulation**

We next investigate whether, as a result of the expansion of fiduciary duties toward debtholders, firm focus shifted away from short term goals, such as narrowly meeting/beating analysts' expectations and real earnings manipulation. Table 4, columns (1) through (3) report the results of an OLS regression with year and firm fixed effects, and with standard errors clustered at the year and state of incorporation level. Columns (4) through (6) report the results of a logistic regression with year and industry fixed effects and clustering of standard errors by year and state of incorporation. We replace firm fixed effects with industry fixed effects in the

logit model to avoid the incidental parameters problem (Wooldridge, 2010).<sup>16</sup> The indicator variable *I(Delaware)* is included in the logistic regressions as it is no longer captured by the firm fixed effects.

Results across both specifications are reported for the overall sample, and the subsamples of firms near and far away from insolvency. Requiring analysts' forecasts to measure *I(Beat)* significantly reduces sample size. Rather than re-ranking firms within the reduced sample, we rely on the classification in Table 3 and impose the additional data requirements within the two groups –near and far from insolvency. For example, firms near insolvency belong to the bottom quartile based on Merton's distance to default in Table 3 and also have the data on analysts' forecasts necessary to measure the dependent variable *I(Beat)*. The rest of the sample, that is firms far from insolvency, is identified likewise. This procedure, followed in all our subsequent tables, ensures that firms identified as near (or further away from) insolvency in Table 3 remain in their respective subsample for all our ensuing tests.

Both specifications in Table 4 – OLS and conditional logit - indicate a statistically significant decline in the tendency of meeting/beating analysts' forecasts by narrow margins following the court ruling. The coefficient on *Post-1991\*I(Delaware)* is negative and statistically significant in all OLS and conditional logit regressions. The decline is thus present in the overall sample, as well as the subsamples of firms near and far away from insolvency. The results are consistent with managers of Delaware firms in general eschewing a short-term focus on meeting/beating analysts' forecasts by narrow margins. This trend is particularly pronounced in

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<sup>16</sup> Briefly the incidental parameters problem is as follows: fixed effects in logit regressions with panel data can lead to inconsistent coefficient estimates because the number of “nuisance” parameters (i.e. parameters not of primary interest) that have to be estimated grows as N, the number of unique observations, becomes larger. The problem is more severe in panel data when N is high and length of the panel is fixed.

near-insolvent firms when managers presumably focused their efforts on avoiding insolvency, rather than myopically engaging in preserving appearances.

In Table 5, we report the results from our examination of various measures of real earnings manipulation for all Delaware firms. The coefficients in all columns are significantly negative with p-values smaller than 0.05 indicating a significant reduction in real activities manipulation for Delaware firms after the court ruling. In Table 6, we re-examine changes in earnings manipulation distinguishing between Delaware firms that are close to versus those further away from insolvency. Both sets of firms exhibited a decline in real earnings management but, as indicated by the Chi-square statistics, the effects are stronger for near-insolvent firms. These results support the notion that when fiduciary duties are expanded to debtholders, managers shift their focus away from real earnings management activities, which distract them from pursuing long-term goals and can have a detrimental effect on future operations.<sup>17</sup>

#### **4.4 Results on innovation**

We next re-estimate equation (1) for the full sample with innovation output measured via patent counts and citations as the dependent variable and report the results in Table 7. In both columns, the coefficient on *Post-1991\*I(Delaware)* is positive and statistically significant, suggesting that a shift in the balance of power towards debtholders led to an increase in innovation across all Delaware firms, on average, after *Credit Lyonnais*.

Partitioning the sample based on proximity to insolvency highlights important differences across Delaware firms that are not observable in the overall sample. Table 8 reports the results

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<sup>17</sup> In additional untabulated tests, we also examine abnormal accruals as defined by Dechow and Dichev (2002). We are particularly interested in measures of real activities manipulation because they are more highly associated with negative future performance and value destruction (Cohen and Zarowin 2010; Kothari et al. 2016). Nevertheless, our results with regards to abnormal accruals are qualitatively the same as with real earnings management.

from estimating equation (1) on two subsamples: firms near insolvency (columns 1 and 2), and firms away from insolvency (columns 3 and 4). Innovation output of near-insolvent Delaware firms declined; the coefficients on *Post-1991\*I(Delaware)* in columns (1) and (2) of Table 3 are negative and statistically significant. As columns (3) and (4) report, fully solvent Delaware firms exhibited patterns in innovation similar to those we observe for the overall sample: their total innovation output increased significantly post-1991. The coefficients imply that for near-insolvent Delaware firms, patent counts decreased by 14.32% and patent citations decreased by 11.97% post-*Credit Lyonnais*. For Delaware firms far from insolvency, patent counts and citations increased by 9.91% and 10.18% respectively following the ruling.

#### **4.5 Future innovation**

Our results (Table 8) indicate that Delaware firms close to insolvency sacrificed innovation, presumably to reduce their operational risk. In follow-up tests, we examine whether these shifts facilitated near-insolvent Delaware firms to “return to innovation” in future years. Difference-in-difference tests in Table 9 reveal that Delaware firms that were close to insolvency in 1990 exhibited a significant increase in innovation from the 1992-1994 period to the 1995-1997 period, relative to near-insolvent non-Delaware firms.<sup>18</sup> The results suggest that the expected long-term benefits that dedicated institutional investors perceived/expected when they increased their holdings in near-insolvent Delaware firms following the ruling did indeed materialize. These tests are meant to be descriptive and should be interpreted with some caution, as we hesitate to unambiguously attribute events four years after 1991 solely to the influence of *Credit Lyonnais*.

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<sup>18</sup> As before, innovation for year  $t$  is measured of year  $t+1$ .

## 4.6 Changes in Tobin's Q and default risk

Our results so far suggest that Delaware firms experienced changes in firm focus towards long-term value creation and financial health after the 1991 court ruling. As a follow-up analysis, we test whether there was a corresponding increase in overall valuations of shareholders' and debtholders' claims, as well as a decline in default risk for Delaware firms. We proxy for firm value using *Tobin's Q*, computed as the sum of market value of equity and liabilities divided by the sum of book value of equity and liabilities. We rely on the Merton's *Distance to Default* measure discussed earlier in the paper to capture changes in default risk. Table 10 reports the results of our analyses.

The coefficient on *Post-1991\*I(Delaware)* is significantly positive in column (1) indicating that Tobin's Q increases for Delaware firms following the expansion of fiduciary duties to debtholders. The increase is modest in economic terms, with the coefficient implying that mean Tobin's Q for Delaware firms rises by 3.75% as a result of the court's ruling.

In column (2), the coefficient on *Post-1991\*I(Delaware)* is significantly positive indicating a decline in default risk following the court ruling, consistent with the re-orientation in focus increasing Delaware firms' ability to avoid financial distress. The coefficient implies an increase in distance to default for Delaware firms by around 11.5% of their pre-1991 mean. Our results, presented in column (3), are very similar when we use an alternative measure of a firm's solvency, the Altman Z-score (Altman 1968).

## 4.7 Additional Tests and Robustness

### 4.7.1 Parallel Trends

In our first set of additional analyses we examine whether the differences between our dependent variables of interest across Delaware and non-Delaware firms exhibit any persistent

trends prior to the 1991 ruling. Table 11 presents parallel-trends analysis for every primary dependent variable we examine. The analysis uses 1988, that is the first year in the sample, as a benchmark or “holdout” year. There is no significant relative shift between Delaware and non-Delaware firms with respect to changes in innovation, earnings manipulations, dedicated institutional ownership, Tobin’s Q or distance to default in the years prior to 1991. Transient institutional ownership is the only variable that declines for Delaware firms in 1989, but not in 1990. Overall we fail to spot any significant or consistent trend in the sample period leading up to *Credit Lyonnais*.

#### **4.7.2 R&D & CAPEX**

Our primary goal is to detect the benefits that managers of near-insolvent Delaware firms sacrificed when their fiduciary duties towards debtholders expanded following *Credit Lyonnais*. Hence the dependent variables in our main tests on innovation are innovation output measured via patents and patent citations. In Table 12 we focus on the inputs into innovation, namely research and development (R&D) expenditures (see Pandit, Wasley and Zachi 2011). Empirical tests reveal that Delaware firms close to insolvency exhibited a decline in R&D, while those further away from insolvency exhibited an increase after 1991, consistent with the patterns we observe in innovation output. Becker and Stromberg (2012) document an increase in the sum of capital expenditures (CAPEX) and R&D both close to and further away from insolvency, which they attribute to the mitigation of debt overhang following the ruling. Disaggregating these two types of expenditures, we observe in Table 12 that in contrast to R&D, CAPEX increased on average for both near-insolvent and fully solvent Delaware firms after *Credit Lyonnais*. Our paper thus highlights that the two components of the sum that Becker and Stromberg (2012) investigate, CAPEX and R&D, shifted in opposite directions in near-insolvent Delaware firms.

The explanation for this discrepancy between R&D and CAPEX probably lies jointly in the post-1991 shift in the balance of power towards debtholders and the greater uncertainty and risk associated with R&D projects (Chan, Lakonishok and Sougiannis 2001; Kothari, Laguerre and Leone 2002). Further, R&D often involves fewer collateralizable assets (Roychowdhury and Watts 2007). These intrinsic differences suggest that in near-insolvent Delaware firms, debtholders would still be interested in limiting R&D, even as they place fewer restrictions on conventional CAPEX.

#### **4.7.3 Robustness**

We conduct a variety of robustness exercises. First, we confirm that all our results with institutional ownership, earnings manipulation and innovation are indeed driven by firms with non-zero leverage. Firms with zero leverage do not exhibit similar patterns.

Second, we exclude from our tests of innovation activity those industries in which no firm holds a patent. Our results are robust to this exclusion.

Third, we exclude from the analysis two non-Delaware states, Pennsylvania and Indiana, that already had statutes requiring managers to consider debtholders' interests near insolvency, similar to the stipulation for Delaware firms in the 1991 court ruling.<sup>19</sup> Our results are similar with this exclusion.

Fourth, we augment our regressions with state of location and industry fixed effects. These fixed effects respectively control for geography-driven and industry-driven variation in economic conditions. We obtain similar results upon incorporating these fixed effects.

Fifth, we repeat our analyses using two alternative measures of proximity to insolvency: book leverage and Altman's Z-Score. Book leverage is defined as short-term debt plus long-term

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<sup>19</sup> A number of states allow corporate directors to take into account the interests of non-owners, e.g., employees, customers, creditors, and suppliers, in certain situations (notably, hostile takeovers). Prior to 1991, only Indiana and Pennsylvania *required* directors to consider non-owner interests (Becker and Stromberg 2012).

debt minus cash, divided by total assets (see *Leverage* in Appendix A). Our results are consistent with those based on the Merton measure when we classify firms as near-insolvent if they are in the top quartile of net book leverage in 1990. When we classify firms as near-insolvent if they fall in the bottom quartile of Altman's Z-score, our results are unchanged for firms away from insolvency. For near-insolvent firms, while the sign on the coefficients is always consistent with the results we obtain using the Merton measure, some coefficients are not significantly different from zero at conventional levels. Nevertheless, we still find statistically significant increases in dedicated institutional ownership and decreases in earnings manipulations. Further, innovation output as measured with patents decreases significantly following 1991.

Finally, our tests on myopic focus rely on narrow meet/beats of analysts' forecasts in Table 4, and on real earnings management proxies in Tables 5 and 6. In robustness analysis, we consider a third metric that combines attributes of both: an indicator variable capturing whether a firm meets or beats analysts' forecasts and also simultaneously exhibits above-median measures of real earnings management. The results we obtain with this metric are similar to those we observe in Tables 5 and 6: real manipulation to meet/beat analysts' forecasts declines for both fully solvent and near-insolvent Delaware firms, with the decline being more pronounced for the latter.

## **5. Conclusion**

Debtholder-shareholder conflicts peak in firms that are close to financial distress but not yet bankrupt, because the consequences of wealth transfers between the two parties in such firms can be particularly severe (Jensen and Meckling 1976; Eisdorfer 2008). We directly investigate how an increase in creditor rights among near-insolvent Delaware firms following the 1991 *Credit Lyonnais* court ruling influences the institutional ownership of impacted firms. Our results

reveal that the ruling led to a shift towards ownership by dedicated institutional investors and away from transient institutional investors, with the results more pronounced near insolvency. Our evidence suggests that increased creditor rights in the zone of insolvency united debtholders and longer-term shareholders in seeking common interests that did not suit the preferences of shorter term shareholders.

Jointly, stronger creditor rights and an increased presence of longer-horizon shareholders resulted in a mitigation of the myopic focus on earnings targets, a temporary decline in innovation efforts, and an improvement in the solvency and Tobin's Q of Delaware firms. Finally, near-insolvent Delaware firms returned to innovation in the longer term following *Credit Lyonnais*. Our findings suggest that the expansion of creditor rights can be net beneficial for long-term value, consistent with studies such as Nini et al. (2009, 2012).

While debtholders routinely include covenants in loan and bond agreements to restrict managerial choice, it is difficult to *ex ante* contractually ensure that managers will bear fiduciary duties towards debtholders if firms veer close to bankruptcy. The underlying reason is the virtual impossibility of complete contracting: neither shareholders nor their agents (i.e., the board of directors and managers) can credibly commit *ex ante* to protecting debtholders' interests when firms are near insolvency (Aghion and Bolton 1992; Zingales 1998; Crespi 2002; Armstrong, Gallimberti and Tsui 2015). In addition, short-term-oriented shareholders can pressure managers at financially troubled firms to myopically focus on meeting/beating earnings targets. They might also be more interested in projects that yield short-term payoffs but increase the probability of bankruptcy. The exogenous legal affirmation of management's fiduciary responsibility towards debtholders in near-insolvent firms aligned the interests of longer-term

shareholders with debtholders and mitigated the influence of short-term shareholders. It thus created a commitment to long-term value creation probably not achievable via explicit contracts.

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## Appendix A Variable Definitions

Variables	Definition
<i>I(Delaware)</i>	Indicator equal to one if firms are incorporated in Delaware
<i>Post-1991</i>	Indicator equal to one for years 1992-1994 and zero for years 1988-1990
<i>ROA</i>	Net income over lagged total asset
<i>Assets</i>	Total assets
<i>Firmage</i>	Number of years since a firm first appeared in CRSP
<i>Leverage</i>	Short term debt plus long term debt minus cash, all divided by total assets
<i>Capx/Assets</i>	Capital expenditures over total assets
<i>I(Issue Equity)</i>	Following Baker, Stein and Wurgler (2003), indicator equal to one if stock issuance is positive, where stock issuance is calculated as change in common equity plus change in deferred tax minus change in retained earnings, all scaled by total assets
<i>Distance to Default</i>	Following Vassalou and Xing (2004), who employ Merton's model to estimate the value of contingent claims on the firm's assets, Distance to Default is calculated as the difference between value of assets and short-term and long-term debt, divided by volatility of assets, where value of assets and volatility of assets are calculated using Black-Scholes formula and are obtained from Maria Vassalou's website.
<i>Near-Insolvent</i>	Indicator equal to one if the <i>Distance to Default</i> measure is in the bottom quartile of the sample for sample firms in 1990, the year immediately preceding the <i>Credit Lyonnais</i> court ruling.
<i>Equity Volatility</i>	Log of annualized monthly standard deviation of the stock return in year t, taken from CRSP
<i>ROA Volatility</i>	Standard deviation of quarterly ROA in year t
<i>% Total Inst</i>	Percent of shares outstanding held by institutional investors
<i>% Ded Inst</i>	Percent of shares outstanding held by dedicated institutions
<i>% Trans Inst</i>	Percent of shares outstanding held by transient institutions
<i>I(Beat)</i>	Indicator equal to one if a firm's reported earnings are equal to analyst consensus or exceed analyst consensus by less than two cents, and zero otherwise.
<i>RM_Prod</i>	Real earnings management based on production costs defined as the residual from the following regression for each year and each Fama-French 48 industry that has at least 20 observations: $Prod_{i,t} = \alpha_0 + \alpha_1 1 / Assets_{i,t-1} + \alpha_2 Sales_{i,t} + \alpha_3 \Delta Sales_{i,t} + \alpha_4 \Delta Sales_{i,t-1} + \epsilon_{i,t}$

## Appendix A Continued

<i>RM_DiscExp</i>	Real earnings management based on discretionary expenses defined as minus one times the residual from the following regression for each year and each Fama-French 48 industry that has at least 20 observations: $DiscExp_{i,t} = \alpha_0 + \alpha_1 / Assets_{i,t-1} + \alpha_2 Sales_{i,t-1} + \varepsilon_{i,t}$ . Higher values of <i>RM_DiscExp</i> represent greater cuts in discretionary expenses and thus more earnings management.
<i>RM_Total</i>	$RM\_Prod + RM\_DiscExp$
<i>Number of Patents</i>	Total number of successful patent applications filed by firm <i>i</i> in year <i>t</i> +1 that are subsequently approved by the USPTO. We use the logarithm of the patent count plus 1 to mitigate skewness in the firm-level patent counts. The data is downloaded from NBER patent database.
<i>Patent Citations</i>	Total number of citations received by all patents that are filed by firm <i>i</i> in year <i>t</i> +1 and that are subsequently approved by the USPTO. The citation measure is adjusted for truncation following Hall, Jaffe and Trajtenberg (2005). We use the logarithmic citation count plus 1 to mitigate skewness in firm-level patents and citations. The data is downloaded from NBER patent database.
<i>Altman Z-score</i>	Calculated as $1.2 * (\text{Current Assets} - \text{Current Liabilities}) / \text{Total Assets} + 1.4 * \text{Retained Earning} / \text{Total Assets} + 3.3 * \text{EBIT} / \text{Total Assets} + 0.6 * \text{Market Value of Equity} / \text{Total Liabilities} + 0.99 * \text{Sales} / \text{Total Assets}$
<i>I(year=1989)</i>	Indicator equal to one if year is 1989 and zero otherwise.
<i>I(year=1990)</i>	Indicator equal to one if year is 1990 and zero otherwise.
<i>I(year=1992)</i>	Indicator equal to one if year is 1992 and zero otherwise.
<i>I(year&gt;=1993)</i>	Indicator equal to one if year is 1993 or 1994 and zero otherwise.
<i>Log R&amp;D</i>	Log of one plus Research & Development Expenses
<i>Log Capx</i>	Log of one plus Capital Expenditures
<i>Post-1994</i>	Indicator equal to one for years 1995-1997 and zero for years 1992-1994
<i>Tobin's Q</i>	Market value of equity plus book value of assets minus the sum of book value of common equity and deferred taxes, all divided by book value of assets.

## Table 1 Descriptive Statistics

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). Panel A shows descriptive statistics and Panel B reports univariate comparison between Delaware firms and non-Delaware firms in the Pre- (1988-1990) and Post- (1992-1994) periods. All variables are defined in Appendix A.

Panel A Descriptive Statistics						
	N	Mean	Median	Std	p25	p75
<i>% Total Inst</i>	20311	16.972	6.218	21.000	0.000	31.107
<i>% Ded Inst</i>	20311	4.657	0.547	6.554	0.000	7.905
<i>% Trans Inst</i>	20311	2.942	0.100	4.922	0.000	4.207
<i>I(Beat)</i>	11320	0.191	0.000	0.393	0.000	0.000
<i>RM_Prod</i>	15933	-0.024	0.006	0.276	-0.162	0.133
<i>RM_DiscExp</i>	16923	-0.010	0.043	0.354	-0.173	0.191
<i>RM_Total</i>	14907	-0.054	0.034	0.545	-0.323	0.286
<i>Number of patents</i>	20311	3.534	0.000	14.792	0.000	0.000
<i>Number of patent citations</i>	20311	64.560	0.000	278.111	0.000	0.000
<i>Tobin's Q</i>	20071	1.775	1.308	1.376	1.009	1.971
<i>Distance to Default</i>	12904	1.841	1.755	1.917	0.890	2.815
<i>Altman Z-score</i>	19019	5.299	3.335	30.529	1.983	5.240
<i>ROA</i>	20311	-0.027	0.034	0.270	-0.040	0.085
<i>Total Assets</i>	20311	581.98	61.05	1745.48	15.48	276.19
<i>Firmage</i>	20311	17.193	11.000	14.739	7.000	24.000
<i>Leverage</i>	20311	0.105	0.133	0.347	-0.091	0.321
<i>Capx/Assets</i>	20311	0.079	0.049	0.101	0.023	0.094
<i>I(Issue Equity)</i>	20311	0.685	1.000	0.464	0.000	1.000
<i>Equity Volatility</i>	20311	0.146	0.123	0.093	0.084	0.179
<i>ROA Volatility</i>	20311	0.027	0.011	0.048	0.005	0.028

**Table 1 Descriptive Statistics Continued**

<b>Panel B Univariate Comparison</b>							
	Delaware firms		Non-Delaware firms		diff-in-diff (Post-Pre)		p-value
	Pre Mean	Post Mean	Pre Mean	Post Mean			
<i>% Total Inst</i>	14.756	20.029	14.408	17.961	1.720	***	0.003
<i>% Ded Inst</i>	3.462	5.913	3.629	5.308	0.773	***	0.000
<i>% Trans Inst</i>	2.828	3.477	2.411	2.929	0.130		0.345
<i>I(Beat)</i>	0.174	0.164	0.201	0.229	-0.037	**	0.012
<i>RM_Prod</i>	-0.009	-0.032	-0.027	-0.026	-0.024	***	0.006
<i>RM_DiscExp</i>	-0.027	-0.036	0.006	0.019	-0.021	*	0.054
<i>RM_Total</i>	-0.056	-0.096	-0.039	-0.025	-0.054	***	0.002
<i>Number of Patents</i>	3.451	3.905	3.036	3.472	0.018		0.965
<i>Number of Patent Citations</i>	59.800	75.609	51.769	67.097	0.481		0.951
<i>Tobin's Q</i>	1.614	2.021	1.556	1.846	0.117	***	0.002
<i>Distance to Default</i>	1.552	1.971	1.758	2.031	0.147	**	0.029
<i>Altman Z-score</i>	6.051	4.948	5.105	5.164	-1.161		0.191
<i>ROA</i>	-0.025	-0.044	-0.007	-0.028	0.001		0.867
<i>Total Assets</i>	655.761	696.128	449.848	504.209	-13.993		0.776
<i>Firmage</i>	16.243	17.460	16.655	18.278	-0.405		0.328
<i>Leverage</i>	0.123	0.095	0.128	0.077	0.023	**	0.017
<i>Capx/Assets</i>	0.083	0.077	0.079	0.077	-0.004		0.134
<i>I(Issue Equity)</i>	0.642	0.737	0.637	0.711	0.021		0.114
<i>Equity Volatility</i>	0.145	0.148	0.142	0.149	-0.004		0.158
<i>ROA Volatility</i>	0.025	0.029	0.025	0.028	0.001		0.582

**Table 2 Shareholder Clientele**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

	(1)	(2)	(3)
	<i>% Total Inst</i>	<i>% Ded Inst</i>	<i>% Trans Inst</i>
<i>Post-1991*I(Delaware)</i>	0.819 (3.42)***	0.518 (3.89)***	-0.206 (-2.47)**
<i>ROA</i>	-0.096 (-0.31)	-0.356 (-2.66)***	0.765 (7.54)***
<i>Log Assets</i>	3.207 (13.05)***	0.824 (11.00)***	0.675 (8.12)***
<i>Log Firmage</i>	0.929 (1.65)	0.116 (0.49)	0.440 (2.09)**
<i>Leverage</i>	-2.636 (-7.51)***	-0.442 (-2.14)**	-1.174 (-11.56)***
<i>Capx/Assets</i>	2.046 (3.64)***	-0.225 (-0.79)	2.297 (7.06)***
<i>I(Issue Equity)</i>	0.094 (0.83)	-0.169 (-2.84)***	0.347 (4.88)***
<i>Log Equity Volatility</i>	-0.657 (-4.32)***	-0.278 (-3.22)***	0.142 (2.77)***
<i>Log ROA Volatility</i>	-0.048 (-0.84)	0.039 (1.25)	-0.021 (-0.85)
Observations	20,311	20,311	20,311
R-squared	0.913	0.740	0.734
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

**Table 3 Shareholder Clientele and Proximity to Insolvency**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). The number of observations is reduced relative to those reported under Table 2 because of the availability of Merton’s Distance to Default measure. Columns (1) – (3) examine the effect of the court ruling on shareholder clientele for the near-insolvent subsample and columns (4) – (6) examine the effect for the rest of the sample. Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level. Chi-Square test compares the coefficient on *Post-1991\*I(Delaware)* for Near-insolvent firms relative to Fully Solvent Firms.

	Near-insolvent Firms			Fully Solvent Firms			
	(1) % Total Inst	(2) % Ded Inst	(3) % Trans Inst	(4) % Total Inst	(5) % Ded Inst	(6) % Trans Inst	
<i>Post-1991*I(Delaware)</i>	1.057 (1.72)*	1.452 (3.93)***	-0.865 (-5.69)***	0.622 (2.42)**	0.377 (2.65)***	-0.356 (-2.72)***	
<i>ROA</i>	1.760 (1.01)	0.430 (1.02)	1.096 (2.42)**	0.132 (0.19)	-0.377 (-1.37)	1.529 (5.61)***	
<i>Log Assets</i>	3.161 (6.70)***	0.875 (4.51)***	0.425 (3.48)***	5.002 (13.73)***	1.127 (10.66)***	1.238 (9.59)***	
<i>Log Firmage</i>	-1.897 (-2.05)**	-1.496 (-3.02)***	-0.231 (-0.51)	1.428 (1.87)*	0.227 (0.65)	0.953 (2.80)***	
<i>Leverage</i>	-2.561 (-3.39)***	-0.358 (-1.21)	-1.334 (-4.24)***	-4.651 (-7.45)***	-0.735 (-2.00)**	-2.081 (-9.86)***	
<i>Capx/Assets</i>	1.642 (0.64)	0.728 (0.63)	1.246 (1.97)*	4.654 (3.40)***	-0.669 (-0.90)	4.307 (5.65)***	
<i>I(Issue Equity)</i>	0.040 (0.14)	-0.248 (-1.39)	0.280 (1.41)	0.249 (1.30)	-0.062 (-0.72)	0.424 (4.48)***	
<i>Log Equity Volatility</i>	-0.778 (-2.58)**	-0.389 (-2.18)**	-0.090 (-0.82)	-0.845 (-3.93)***	-0.314 (-2.81)***	0.265 (2.49)**	
<i>Log ROA Volatility</i>	0.414 (2.32)**	0.226 (2.40)**	0.072 (1.19)	-0.016 (-0.21)	0.067 (1.42)	-0.014 (-0.30)	
Observations	2,888	2,888	2,888	9,118	9,118	9,118	
R-squared	0.889	0.733	0.646	0.908	0.653	0.703	
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	
Chi-Square Statistics	%Total Inst: 0.53, p=0.468;			%Ded Inst: 7.88, p=0.005;			%Trans Inst: 7.77; p=0.005

**Table 4 Narrow Meet/Beats of Analyst Forecasts**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). We estimate the linear probability model with firm fixed effects and logit model with industry fixed effects. Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level. Chi-Square test compares the coefficient on *Post-1991\*I(Delaware)* for Near-insolvent firms relative to Fully Solvent Firms.

	OLS			Logit		
	All	Near-insolvent Firms	Fully Solvent Firms	All	Near-insolvent Firms	Fully Solvent Firms
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>I(Beat)</i>	<i>I(Beat)</i>	<i>I(Beat)</i>	<i>I(Beat)</i>	<i>I(Beat)</i>	<i>I(Beat)</i>
<i>Post-1991*I(Delaware)</i>	-0.023 (-1.78)*	-0.112 (-3.03)***	-0.032 (-1.71)*	-0.199 (-2.60)***	-0.649 (-2.05)**	-0.229 (-2.21)**
<i>ROA</i>	0.138 (3.64)***	0.140 (1.31)	0.246 (3.56)***	2.768 (4.94)***	4.089 (2.64)***	5.431 (9.03)***
<i>Log Assets</i>	-0.026 (-1.55)	-0.053 (-1.46)	-0.012 (-0.63)	0.114 (6.64)***	0.038 (0.64)	0.118 (4.60)***
<i>Log Firmage</i>	-0.008 (-0.22)	0.130 (2.00)**	-0.005 (-0.12)	-0.151 (-3.67)***	-0.277 (-2.33)**	-0.121 (-1.88)*
<i>Leverage</i>	-0.099 (-3.70)***	-0.094 (-1.36)	-0.027 (-0.65)	-0.903 (-8.57)***	-0.661 (-1.38)	-0.331 (-2.20)**
<i>Capx/Assets</i>	0.052 (0.84)	-0.012 (-0.09)	0.041 (0.34)	0.982 (3.33)***	0.319 (0.42)	1.461 (3.00)***
<i>I(Issue Equity)</i>	0.009 (0.87)	0.012 (0.60)	0.006 (0.53)	0.141 (2.95)***	0.012 (0.07)	0.088 (1.70)*
<i>Log Equity Volatility</i>	-0.013 (-1.19)	-0.031 (-1.34)	-0.020 (-0.97)	-0.217 (-3.30)***	-0.563 (-2.50)**	-0.202 (-1.86)*
<i>Log ROA Volatility</i>	-0.037 (-7.31)***	-0.010 (-1.02)	-0.041 (-6.22)***	-0.306 (-11.56)***	-0.362 (-5.13)***	-0.302 (-8.57)***
<i>I(Delaware)</i>				-0.162 (-3.14)***	-0.054 (-0.22)	-0.197 (-2.83)***
Observations	11,320	1,388	5,989	11,320	1,388	5,989
R-squared	0.3591	0.3170	0.3305	0.0780	0.106	0.0840
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	No	No	No
Industry FE	No	No	No	Yes	Yes	Yes

Chi-Square Statistic  $I(Beat)$ : 4.26,  $p=0.039$

## Table 5 Earnings Manipulation

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). All variables are defined in Appendix A. All dependent variables are signed such that earnings management is increasing in more positive values. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

	(1)	(2)	(3)
	<i>RM Prod</i>	<i>RM DiscExp</i>	<i>RM Total</i>
<i>Post-1991*I(Delaware)</i>	-0.017 (-4.13)***	-0.035 (-1.99)**	-0.045 (-2.48)**
<i>ROA</i>	-0.316 (-15.09)***	0.229 (7.09)***	-0.120 (-2.24)**
<i>Log Assets</i>	0.045 (5.92)***	-0.077 (-10.85)***	-0.008 (-1.04)
<i>Log Firmage</i>	-0.060 (-5.04)***	0.210 (5.24)***	0.184 (3.78)***
<i>Leverage</i>	0.043 (4.16)***	-0.000 (-0.00)	0.057 (2.62)***
<i>Capx/Assets</i>	-0.215 (-8.77)***	-0.221 (-3.71)***	-0.396 (-7.57)***
<i>I(Issue Equity)</i>	-0.007 (-2.61)***	-0.010 (-3.60)***	-0.018 (-3.60)***
<i>Log Equity Volatility</i>	-0.010 (-3.38)***	0.002 (0.33)	-0.006 (-0.81)
<i>Log ROA Volatility</i>	-0.005 (-2.99)***	-0.003 (-1.34)	-0.007 (-2.06)**
Observations	15,933	16,923	14,907
R-squared	0.852	0.794	0.863
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

**Table 6 Earnings Manipulation and Proximity to Insolvency**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). The number of observations is reduced relative to those reported under Table 5 because of the availability of Merton’s Distance to Default measure. Columns (1) – (4) examine the effect of the court ruling on earnings manipulation for near-insolvent subsample and columns (5) – (8) examine the effect for the rest of the sample. Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. All variables are defined in Appendix A. All dependent variables are signed such that earnings management is increasing in more positive values. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level. Chi-Square test compares the coefficient on *Post-1991\*I(Delaware)* for Near-insolvent firms relative to Fully Solvent Firms.

	Near-insolvent Firms			Fully Solvent Firms		
	(1) <i>RM Prod</i>	(2) <i>RM DiscExp</i>	(3) <i>RM Total</i>	(5) <i>RM Prod</i>	(6) <i>RM DiscExp</i>	(7) <i>RM Total</i>
<i>Post-1991*I(Delaware)</i>	-0.027 (-2.92)***	-0.049 (-2.83)***	-0.066 (-2.92)***	-0.013 (-3.01)***	-0.023 (-1.79)*	-0.038 (-2.41)**
<i>ROA</i>	-0.289 (-5.65)***	0.058 (1.35)	-0.211 (-3.19)***	-0.331 (-9.54)***	0.179 (4.80)***	-0.212 (-2.87)***
<i>Log Assets</i>	0.049 (5.07)***	-0.069 (-5.16)***	-0.023 (-1.36)	0.034 (2.96)***	-0.070 (-5.46)***	-0.013 (-0.64)
<i>Log Firmage</i>	-0.003 (-0.19)	0.151 (5.85)***	0.137 (3.48)***	-0.028 (-2.20)**	0.211 (5.47)***	0.227 (5.28)***
<i>Leverage</i>	0.031 (2.14)**	-0.016 (-0.68)	0.031 (1.23)	0.070 (5.22)***	-0.016 (-0.78)	0.067 (2.16)**
<i>Capx/Assets</i>	-0.132 (-2.89)***	-0.070 (-1.22)	-0.226 (-2.84)***	-0.253 (-7.56)***	-0.240 (-2.35)**	-0.514 (-7.82)***
<i>I(Issue Equity)</i>	-0.010 (-2.16)**	-0.010 (-1.87)*	-0.026 (-2.85)***	-0.005 (-2.02)**	-0.008 (-1.96)*	-0.014 (-2.38)**
<i>Log Equity Volatility</i>	-0.003 (-0.41)	-0.003 (-0.47)	-0.008 (-0.80)	-0.009 (-1.98)**	-0.000 (-0.00)	-0.005 (-0.43)
<i>Log ROA Volatility</i>	-0.005 (-1.45)	-0.004 (-1.24)	-0.008 (-1.42)	-0.006 (-2.52)**	-0.003 (-1.06)	-0.008 (-1.76)*
Observations	2,410	2,438	2,213	8,067	8,280	7,704
R-squared	0.781	0.786	0.835	0.854	0.815	0.878
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Chi-Square Statistics	<i>RM Prod</i> : 2.69, p=0.101;		<i>RM DiscExp</i> : 6.87, p=0.009;	<i>RM Total</i> : 3.61, p=0.057		

### Table 7 Innovation – Complete Sample

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). For every year  $t$ , the innovation variables are measured as of year  $t+1$ . Thus, the post-period includes patent counts and citations over 1993-1995. We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). All variables are defined in Appendix A. Table 7 examines the effect of the court ruling on total innovation output for the complete sample. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

Complete Sample		
	(1)	(2)
	<i>Log (1+Patents)</i>	<i>Log(1+Citations)</i>
<i>Post-1991*I(Delaware)</i>	0.021 (1.86)*	0.052 (1.94)*
<i>ROA</i>	-0.004 (-0.31)	-0.020 (-0.59)
<i>Log Assets</i>	0.064 (5.76)***	0.134 (5.95)***
<i>Log Firmage</i>	0.103 (4.34)***	0.210 (3.25)***
<i>Leverage</i>	-0.034 (-3.27)***	-0.083 (-3.02)***
<i>Capx/Assets</i>	-0.061 (-1.78)*	-0.125 (-1.56)
<i>I(Issue Equity)</i>	-0.002 (-0.30)	-0.009 (-0.63)
<i>Log Equity Volatility</i>	0.003 (0.45)	0.004 (0.18)
<i>Log ROA Volatility</i>	0.003 (0.82)	-0.003 (-0.38)
Observations	20,311	20,311
R-squared	0.922	0.881
Year FE	Yes	Yes
Firm FE	Yes	Yes

**Table 8 Innovation and Proximity to Insolvency**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). For every year  $t$ , the innovation variables are measured as of year  $t+1$ . Thus, the post-period includes patent counts and citations over 1993-1995. We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). Table 8 examines the effect of the court ruling on total innovation output for near insolvency subsample, and for away from insolvency subsample. Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. The number of observations is reduced relative to those reported in Table 7 because of the availability of Merton's Distance to Default measure. All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level. Chi-Square test compares the coefficient on  $Post-1991*I(Delaware)$  for Near-insolvent firms relative to Fully Solvent Firms.

	Near-insolvent Firms		Fully Solvent Firms	
	(1) <i>Log (1+Patents)</i>	(2) <i>Log(1+Citations)</i>	(3) <i>Log (1+Patents)</i>	(4) <i>Log(1+Citations)</i>
<i>Post-1991*I(Delaware)</i>	-0.046 (-2.73)***	-0.084 (-1.69)*	0.057 (3.47)***	0.122 (3.33)***
<i>ROA</i>	0.044 (1.06)	0.055 (0.50)	0.017 (0.69)	0.029 (0.45)
<i>Log Assets</i>	0.028 (2.31)**	0.090 (2.75)***	0.113 (7.30)***	0.227 (6.69)***
<i>Log Firmage</i>	0.020 (0.52)	0.016 (0.24)	0.112 (3.75)***	0.257 (2.58)**
<i>Leverage</i>	-0.059 (-3.28)***	-0.087 (-1.59)	-0.055 (-2.62)***	-0.117 (-1.93)*
<i>Capx/Assets</i>	-0.072 (-1.63)	-0.222 (-1.63)	-0.055 (-0.68)	-0.134 (-0.79)
<i>I(Issue Equity)</i>	-0.032 (-2.49)**	-0.084 (-2.90)***	0.003 (0.36)	0.011 (0.55)
<i>Log Equity Volatility</i>	-0.002 (-0.12)	-0.012 (-0.30)	0.010 (0.92)	0.007 (0.22)
<i>Log ROA Volatility</i>	-0.003 (-0.58)	-0.002 (-0.11)	0.013 (2.07)**	0.025 (1.90)*
Observations	2,888	2,888	9,118	9,118
R-squared	0.921	0.862	0.931	0.893
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Chi-Square Statistics	<i>Log (1+Patents)</i> : 45.75, $p < 0.001$ ;		<i>Log(1+Citations)</i> : 26.99, $p < 0.001$	

### Table 9 Future Innovation

The sample period is from 1992 to 1997. The table compares years 1992-1994 to 1995-1997. For every year  $t$ , the innovation variables are measured as of year  $t+1$ . Thus, the post-period includes patent counts and citations over 1996-1998. We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

	Near-insolvent Firms		Fully Solvent Firms	
	(1) <i>Log (1+Patents)</i>	(2) <i>Log(1+Citations)</i>	(3) <i>Log (1+Patents)</i>	(4) <i>Log(1+Citations)</i>
<i>Post-1994*I(Delaware)</i>	0.052 (2.37)**	0.115 (2.16)**	0.030 (1.84)*	0.046 (1.14)
<i>ROA</i>	-0.062 (-1.17)	-0.304 (-2.01)**	0.053 (1.48)	0.008 (0.08)
<i>Log Assets</i>	0.050 (4.26)***	0.133 (4.59)***	0.059 (4.48)***	0.124 (3.79)***
<i>Log Firmage</i>	-0.020 (-0.15)	0.159 (0.59)	0.137 (2.95)***	0.239 (1.66)*
<i>Leverage</i>	-0.049 (-1.39)	-0.146 (-1.42)	0.046 (1.10)	0.131 (1.40)
<i>Capx/Assets</i>	-0.025 (-0.33)	-0.047 (-0.22)	0.087 (1.48)	0.093 (0.91)
<i>I(Issue Equity)</i>	-0.003 (-0.22)	-0.027 (-0.82)	-0.023 (-1.78)*	-0.036 (-1.35)
<i>Log Equity Volatility</i>	-0.014 (-1.15)	-0.041 (-1.09)	0.028 (2.48)**	0.040 (1.34)
<i>Log ROA Volatility</i>	0.005 (0.89)	0.014 (0.89)	-0.002 (-0.31)	-0.009 (-0.61)
Observations	2,220	2,220	7,913	7,913
R-squared	0.951	0.903	0.936	0.899
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

**Table 10 Change in Tobin's Q and Default Risk**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). *Tobin's Q*, *Distance to Default* and *Altman Z-score* are measured at the end of each year from 1988 to 1990 (period before Delaware ruling) and between 1992 and 1994 (period after Delaware ruling). All variables are defined in Appendix A. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

	(1)	(2)	(3)
	<i>Tobin's Q</i>	<i>Distance to Default</i>	<i>Altman Z-score</i>
<i>Post-1991*I(Delaware)</i>	0.041 (1.66)*	0.179 (4.40)***	0.313 (2.19)**
<i>ROA</i>	0.130 (1.16)	0.518 (6.42)***	1.948 (2.35)**
<i>Log Assets</i>	-0.415 (-5.92)***	-0.667 (-18.58)***	0.519 (1.57)
<i>Log Firmage</i>	0.014 (0.15)	-0.319 (-4.16)***	-1.062 (-2.97)***
<i>Leverage</i>	-0.031 (-0.53)	-2.424 (-22.15)***	-9.055 (-17.84)***
<i>Capx/Assets</i>	1.381 (10.69)***	-0.251 (-1.31)	3.253 (3.42)***
<i>I(Issue Equity)</i>	0.142 (11.83)***	0.067 (3.32)***	-0.021 (-0.26)
<i>Log Equity Volatility</i>	0.040 (2.39)**	-1.608 (-29.39)***	0.373 (3.89)***
<i>Log ROA Volatility</i>	0.034 (3.35)***	-0.009 (-0.70)	-0.137 (-2.41)**
Observations	20,071	12,904	19,019
R-squared	0.729	0.789	0.683
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

**Table 11 Parallel Trend Analysis**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). The holdout group is year 1988. Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. All variables are defined in Appendix A. All dependent variables are signed such that earnings management is increasing in more positive values. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

<b>Panel A Shareholder Clientele</b>						
	Near-insolvent Firms			Fully Solvent Firms		
	(1)	(2)	(3)	(4)	(5)	(6)
	% Total Inst	% Ded Inst	% Trans Inst	% Total Inst	% Ded Inst	% Trans Inst
<i>I(year=1989)*I(Delaware)</i>	0.021 (0.04)	-0.092 (-0.27)	0.098 (0.36)	-0.016 (-0.04)	0.018 (0.19)	-0.703 (-3.72)***
<i>I(year=1990)*I(Delaware)</i>	0.943 (1.53)	0.513 (1.52)	-0.255 (-0.93)	0.564 (1.45)	0.081 (0.49)	-0.334 (-1.35)
<i>I(year=1992)*I(Delaware)</i>	0.594 (1.01)	1.033 (3.16)***	-0.802 (-2.64)***	1.047 (2.43)**	0.746 (5.06)***	-0.745 (-2.54)**
<i>I(year&gt;=1993)*I(Delaware)</i>	1.867 (2.07)**	1.936 (3.67)***	-0.991 (-3.42)***	0.678 (1.64)	0.221 (1.28)	-0.697 (-2.43)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,888	2,888	2,888	9,118	9,118	9,118
R-squared	0.889	0.734	0.646	0.908	0.653	0.703
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes

**Table 11 Parallel Trend Analysis, Continued**

**Panel B Narrow Meet/Beats of Analyst Forecasts and Real Earnings Manipulation**

	Near-insolvent Firms				Fully Solvent Firms			
	(1) <i>I(Beat)</i>	(2) <i>RM Prod</i>	(3) <i>RM DiscExp</i>	(4) <i>RM Total</i>	(6) <i>I(Beat)</i>	(7) <i>RM Prod</i>	(8) <i>RM DiscExp</i>	(9) <i>RM Total</i>
<i>I(year=1989)*I(Delaware)</i>	0.059 (1.51)	0.010 (1.04)	-0.006 (-0.44)	0.001 (0.07)	-0.014 (-1.61)	0.002 (0.39)	0.004 (0.46)	0.004 (0.36)
<i>I(year=1990)*I(Delaware)</i>	-0.054 (-1.13)	0.008 (0.54)	0.026 (1.45)	0.031 (1.62)	0.022 (1.35)	0.005 (0.78)	0.016 (1.13)	0.017 (1.22)
<i>I(year=1992)*I(Delaware)</i>	-0.097 (-1.76)*	-0.011 (-0.92)	-0.001 (-0.10)	-0.013 (-0.64)	-0.022 (-2.08)*	-0.014 (-2.09)**	0.005 (0.59)	-0.014 (-1.13)
<i>I(year&gt;=1993)*I(Delaware)</i>	-0.120 (-2.80)***	-0.026 (-1.68)*	-0.064 (-3.79)***	-0.080 (-2.19)**	-0.030 (-1.09)	-0.009 (-1.29)	-0.028 (-2.20)**	-0.039 (-1.68)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,388	2,410	2,438	2,213	5,989	8,067	8,280	7,704
R-squared	0.3198	0.781	0.789	0.836	0.3308	0.854	0.815	0.879
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Panel C Innovation**

	Near-insolvent Firms		Fully Solvent Firms	
	(1) <i>Log (1+Patents)</i>	(2) <i>Log(1+Citations)</i>	(3) <i>Log (1+Patents)</i>	(4) <i>Log(1+Citations)</i>
<i>I(year=1989)*I(Delaware)</i>	-0.006 (-0.34)	-0.035 (-0.80)	-0.026 (-1.18)	-0.040 (-1.34)
<i>I(year=1990)*I(Delaware)</i>	-0.017 (-0.88)	-0.083 (-1.54)	-0.031 (-1.58)	-0.057 (-1.33)
<i>I(year=1992)*I(Delaware)</i>	-0.077 (-2.90)***	-0.211 (-2.86)***	0.014 (0.68)	0.073 (1.79)*
<i>I(year&gt;=1993)*I(Delaware)</i>	-0.040 (-1.73)*	-0.072 (-1.28)	0.049 (2.01)**	0.096 (1.78)*
Controls	Yes	Yes	Yes	Yes
Observations	2,888	2,888	9,118	9,118
R-squared	0.921	0.862	0.931	0.893
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

**Table 11 Parallel Trend Analysis, Continued**

**Panel D Change in Tobin's Q and Default Risk**

	(1) <i>Tobin's Q</i>	(2) <i>Distance to Default</i>	(3) <i>Altman Z-score</i>
<i>I(year=1989)*I(Delaware)</i>	-0.012 (-0.51)	0.014 (0.32)	-0.151 (-1.02)
<i>I(year=1990)*I(Delaware)</i>	0.002 (0.07)	0.055 (0.99)	-0.151 (-1.06)
<i>I(year=1992)*I(Delaware)</i>	0.071 (1.84)*	0.166 (3.26)***	0.447 (2.22)**
<i>I(year&gt;=1993)*I(Delaware)</i>	0.018 (0.53)	0.230 (4.65)***	0.068 (0.35)
Controls	Yes	Yes	Yes
Observations	20,071	12,904	19,019
R-squared	0.729	0.789	0.683
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

**Table 12 R&D and Capital Expenditure**

The sample period is from 1988 to 1994 (excluding 1991 – the year of the Credit Lyonnais court ruling). We exclude financial and utility industries (sic 4000-4999 and sic 6000-6999). Near-insolvent firms (fully solvent) are firms in the bottom (top three) quartile of the sample based on the Distance to Default measure in 1990, the year immediately preceding the Credit Lyonnais court ruling. For Column 1, 3 and 5, we replace missing R&D with zero and include an unreported dummy for missing R&D data, which takes a value of one if R&D is missing and zero otherwise. All variables are defined in Appendix A. All dependent variables are signed such that earnings management is increasing in more positive values. T-statistics are presented beneath the coefficients within parentheses. \*, \*\* and \*\*\* denote significance level at 10%, 5% and 1% respectively. Standard errors are corrected for heteroscedasticity and are clustered by the interaction of year and state of incorporation level.

	All		Near-insolvent Firms		Fully Solvent Firms	
	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Log R&amp;D</i>	<i>Log Capx</i>	<i>Log R&amp;D</i>	<i>Log Capx</i>	<i>Log R&amp;D</i>	<i>Log Capx</i>
<i>Post-1991*I(Delaware)</i>	0.010 (1.39)	0.039 (2.69)***	-0.030 (-2.29)**	0.062 (1.93)*	0.027 (2.57)**	0.033 (1.94)*
<i>ROA</i>	-0.059 (-2.70)***	0.031 (2.01)**	0.061 (0.74)	0.238 (2.84)***	-0.147 (-3.30)***	0.041 (1.05)
<i>Log Assets</i>	0.187 (15.06)***	0.518 (29.93)***	0.169 (8.74)***	0.638 (19.22)***	0.254 (11.75)***	0.604 (23.35)***
<i>Log Firmage</i>	0.052 (2.73)***	-0.047 (-2.16)**	-0.004 (-0.16)	-0.212 (-2.61)***	0.004 (0.19)	-0.065 (-2.15)**
<i>Leverage</i>	0.001 (0.07)	0.104 (3.61)***	0.041 (0.92)	-0.041 (-0.43)	-0.073 (-2.95)***	0.089 (2.59)**
<i>I(Issue Equity)</i>	-0.014 (-3.86)***	0.016 (2.05)**	-0.001 (-0.13)	0.032 (1.56)	-0.007 (-1.28)	0.029 (2.88)***
<i>Log Equity Volatility</i>	-0.008 (-1.75)*	-0.048 (-6.04)***	-0.022 (-2.32)**	-0.091 (-4.10)***	-0.009 (-1.16)	-0.019 (-1.18)
<i>Log ROA Volatility</i>	0.013 (5.29)***	0.004 (0.86)	0.028 (5.09)***	0.029 (2.64)***	0.013 (3.76)***	0.006 (0.84)
Observations	20,311	20,311	2,888	2,888	9,118	9,118
R-squared	0.969	0.951	0.956	0.935	0.976	0.958
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes