

The Litigation Environment of a Firm and its Impact on Financial Policy*

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September 22, 2009

*I would like to thank seminar participants at Baylor University and the University of Texas Austin. I would also like to acknowledge financial support from the Dora and Eugene Bonham Memorial Fund. All errors are my own.

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Abstract

Theory suggests that management may be able to increase firm value through the strategic use of debt when facing contingent liabilities. This paper examines whether managers strategically use financial policy when facing the risk of one such liability - litigation claims. I find that higher litigation exposure leads firms to choose higher leverage. I show that this leverage increase is brought on by an active decision to repurchase shares. These repurchases appear to be financed with a combination of excess cash and short term debt as they coincide with a significant decrease in cash holdings and an increase in short term liabilities. These firms also increase their use of operating leases, which due to their priority in bankruptcy, have similar characteristics to secured debt. These results run counter to anecdotal suggestions that firms may adjust financial policy to build a war chest in anticipation of litigation and they suggest that firms use capital structure strategically to increase firm value.

1 Introduction

One of the fundamental questions in corporate finance is how capital structure impacts firm value. In a frictionless world free of taxes and bankruptcy, Modigliani and Miller (1958) famously demonstrated the irrelevancy of the firm's debt and equity choice. However, when we consider bankruptcy, the result is less obvious.¹ The classic interpretation suggests that, when facing costly bankruptcy, firms will use less debt. However, other research, beginning with Scott (1977), has demonstrated how firms can use debt strategically to the advantage of one claimant at the expense of another and, in the process, increase overall firm value. The idea is relatively straight forward. The value of liabilities depends in part on their priority in bankruptcy. If a firm can issue new securities that are senior in bankruptcy to existing claims, it can reduce the amount available to those existing claims in the event of bankruptcy, thereby increasing firm value.² Creditors understand this and most liabilities are protected from such action through covenants.³ However, certain contingent liabilities, such as future litigation claims, may have a positive expected value while having no official claimant at that time to demand compensation for a reduction in the claim's value.⁴ As a result, firms may be able to reduce the value of these liabilities by increasing the amount of senior claims in the capital structure.⁵

In this paper, I empirically examine whether firms use their capital structure strategically to increase firm value in the face of one such claim - litigation. As litigation exposure is an undeniable reality for firms in today's marketplace, this seems the ideal setting in which to examine this issue. A firm exposed to major civil litigation can find itself spending millions in legal fees, settlements, and/or judgements. In extreme cases, large judgments have the potential to force firms into bankruptcy. I ask whether a firm's management takes this risk of litigation into account in developing financial policy. Specifically, I examine how firms react when shocks to the legal environment change the

¹Stiglitz (1969) shows that if investors can borrow at the same rate as the firm and purchase equity (using the equity as collateral on the debt) then the irrelevancy of capital structure still applies even in the face of bankruptcy.

²This would not hold if the firm was forced to compensate existing creditors for the reduction in their priority.

³In the case of trade credit this protection also occurs through the Uniform Fraudulent Transfer Act.

⁴These types of liabilities include, in addition to future litigation claims, certain types of taxes, future wages, and bankruptcy costs

⁵Spier and Sykes (1998) and Bronars and Deere (1991) show theoretical results consistent with this idea, modeling specific cases in which using more debt can reduce the value of claims of litigants and unions respectively

value of future litigation claims.

There are several ways in which firms could use financial policy when considering changes to their litigation exposure.⁶ On one hand, a firm may choose to alter its capital structure strategically to reduce the value of litigation claims in bankruptcy. As Scott (1977) and Spier and Sykes (1998) point out, a firm may use both secured and unsecured debt to reduce the value of litigation claims as these both take priority in bankruptcy.⁷ This increase in debt would be combined with an increase in payout either through dividends or share repurchases.⁸ Alternatively, firms may increase their cash holdings (potentially through a reduction in dividends and/or investment) in order to build a “war chest” to defend against civil litigation.⁹ This strategy can also reduce the expected value of the litigation claim, but this would be done through the reduction in the probability of successful litigation, not necessarily through the reduction in bankruptcy priority.

There are several challenges in examining the effect of litigation on a firms’ financial policy. First, there is likely to be a significant firm specific component in future litigation claims (because of firm policies, products, etc.) making it difficult to control for other factors that also play a role in financial policy decisions. As a result, I will focus on what I believe are shocks to the value of these future claims and examine how firms respond to these shocks. The second empirical difficulty is that, while certain industries and firms face a greater risk of litigation than others, we only ever observe litigation events that have happened, not the expected value of all claims that will occur in the future.¹⁰ To address this issue, I will proxy for the litigation environment of the firm (the present value of these future claims) by using a sample of actual lawsuits.

First, I examine how a firm responds when new lawsuits are filed. I find suggestive evidence that

⁶The expected firm response may have broader implications for issues such as product pricing ex-ante because firms would not be able to commit to not respond to increased litigation risk.

⁷Unsecured debt in the sense of collateral is still “secure” in the sense that it is protected from unlawful conveyance under Uniform Fraudulent Transfer Act and may still have priority equal to or better than litigation claims.

⁸Growing the firm through the issuance of debt and subsequent investment in positive NPV projects will not necessarily reduce the value of future litigation claims as the amount available to those litigants in bankruptcy may actually increase. On the other hand, the firm could simply shrink, liquidating assets and paying out the proceeds without issuing new debt. This may or may not be associated with a change in capital structure.

⁹See for example “Merck & Co Inc - Merck Finally to Answer for VIOXX Injuries”, *Market News Publishing*, November 9, 2006.

¹⁰In fact, we only observe a sample of claims that have already occurred as not all litigation events have to be reported by the firms.

firms are increasing leverage and payout while holding less cash and using more short term debt (trade credit). This is consistent with the idea that firms are using capital structure strategically to reduce the value of litigation claims. However, there are difficulties with examining the impact of litigation on the firm being sued. The first is related to timing. There are legal impediments that may prevent firms from significantly adjusting their capital structure after the litigation process has actually begun (in the framework described above, this is the point where an actual claimant exists and may have legal protection in terms of bankruptcy priority). The second issue is the endogeneity with respect to litigation and financial policy. The probability that a firm is sued may be related to the overall financial policy decisions of the firm. There are several reasons why this may be true. Poor firm performance may increase the probability of a lawsuit (for example if product quality suffers due to cost cutting measures). This same poor performance may also have a significant impact on the financial policy decisions of the firm. In other cases, the financial policy decisions of the firm may actually be the cause of the litigation (securities class-action for example). In either case, this endogeneity makes using actual litigation against the firm problematic when looking at financial policy responses.

In order to mitigate this problem, I take advantage of exogenous variation in the probability of litigation by proxying for litigation exposure using the number of litigation events within that firm's industry over time. Put simply, industry trends in litigation may tell us about the risk of a lawsuit that a given firm faces even though those industry trends are unrelated to the specific financial policy decisions of a particular firm. For example, a product liability suit against firm A may signal a shift in the litigation environment. Due to legal trends, judicial precedent, or even the success of plaintiffs attorneys, this lawsuit may increase the probability that firm B is ultimately sued, even though the lawsuit against firm A is independent of firm B's financial policy or performance. Using this basic idea and data on actual litigation, I construct a proxy for exogenous changes in the value of future litigation for each firm through time and use this measure to test whether (and how) firms respond to changes in their litigation environment. I validate this proxy by showing that it is significantly related to the probability that a firm is actually sued.

Using this measure, I test if and how financial policy is impacted by the litigation environment.

My results indicate that, in periods with a higher risk of litigation, firms choose higher leverage. In fact, a one standard deviation increase in my proxy for litigation risk results in a 1.5% increase in leverage. I show that this is not a passive result due to firm performance, but rather an active decision by managers. These firms buy back significantly more shares of common stock (18.5%) when the risk of litigation increases by one standard deviation. I show that these share repurchases appear to be financed with cash holdings and an increase in short-term liabilities. These findings are consistent with firms increasing the use of debt in order to reduce the value of future litigation claims.

I also show that these firms increase their use of operating leases. Operating leases have similar features to secure debt in the sense that the lease holder has highest priority in bankruptcy - they simply can repossess the leased asset. As firms increase the use of these leases, the value of future litigation claims is also reduced. I find that firms facing a one standard deviation increase in litigation risk increase the use of operating leases by 8.08%. Finally, I find no support for the idea that firms may actually reduce leverage and/or hoard cash in order to build a “war chest” to defend against litigation.

This paper contributes to the literature in two primary ways. First, this paper adds to the literature on the strategic use of financial policy. Several theoretical works have explored the bargaining aspects of capital structure. These papers include those on contract bargaining generally (Perotti and Spier (1993)), bargaining with suppliers and employees (Dasgupta and Sengupta (1993)), bargaining with unions (Bronars and Deere (1991)), and the strategic use of debt in the face of takeovers (Israel (1991)). Empirically, Matsa (2009) shows support for use of financial policy strategically in union bargaining. This paper is most closely related to the work by Gormley and Matsa (2009) that shows that firms facing an increase in litigation risk increase their acquisitions. This supports the idea that managers may respond to litigation, although in this case they focus on investment choice rather than financing choices.

Secondly, my research adds to our understanding of the litigation process. Prior research demonstrates that litigation is costly and that it has a significant negative impact on shareholders (for example, see the case study of Cutler and Summers (1987) who examine the costs related to the

Texaco-Pennzoil litigation). Several other papers have established the negative impact of litigation filings on firm stock price as well as the negative price reaction to firm settlements.¹¹ Finally, Haslem (2005) looks at agency conflicts in the settlement process, documenting the fact that the market reacts negatively to settlements when compared to judgments (even losing judgments) because of the potential agency conflicts associated with the settlement process.

The rest of the paper is organized as follows: Section 2 describes the data used in the empirical tests. Section 3 discusses the direct effect of litigation events on the firms being sued. Section 4 describes the construction of the main proxy variable. Section 5 describes the empirical methodology and results and Section 5 concludes.

2 Data

In order to examine the impact of litigation on a firm's financial policy, it is necessary to develop a proxy for the firm's litigation environment. To do so, I examine those litigation events that are likely to signal change in the litigation environment of the industry as a whole. Those industry lawsuits that are most likely to signal this change are likely to be the large, well publicized cases. To find a sample of such cases, I use actual litigation events as reported by the Audit Analytics Litigation database. These data report information on litigation for the Russell 1000 firms from 1.) legal disclosures filed with the SEC, 2.) litigation details related to class-action and other civil litigation from disclosures and newswires, and 3.) registrations and legal opinions filed with the SEC. The data cover the period from 2000-2007. From this sample of litigation, Audit Analytics collects details related to the specific litigation, including original date of filing, and if available, the original claim and settlement amounts.¹² While this is in no way an exhaustive list of all litigation faced by the Russell 1000 firms, it is likely to capture all materially large cases, which for the

¹¹Specifically, Bhagat et al. (1994) examine the wealth effects of inter-firm litigation and show that defendant stock price drops and total wealth between firms falls. Bhagat et al. (1998) continue this research by examining the effect of the type of litigation and by looking at the market reaction upon conclusion of the case. Karpoff and Lott (1999) show that share price drops after legal settlements.

¹²Claim and settlement information is available for only a small percentage of the overall cases.

purposes of this study are the cases most likely to cause variation in the litigation environment.¹³

These litigation data are then matched to quarterly financial data over the same period (January 2000 through December 2007). Cases are matched systematically by CIK code and firm name to those firms in the CRSP/Compustat merged database. They are then merged with quarterly financial and return data (calculated from monthly returns) in the quarter in which the case began. It is important to note that many of the cases may involve multiple public firms and as such will be matched more than once. Securities class action litigation is dropped from the sample to avoid endogeneity concerns induced by litigation directly related to firm financial policy. Table 1 presents the number of cases in the merged sample as well as summary statistics on the size of the claims and settlements as reported by Audit Analytics. While there is a relatively large sample of litigation events (7781 cases), the number of cases with detailed information on the size of the claim or the settlement is relatively small (8.7% and 10.3% of the overall sample respectively). The second row of Table 1 illustrates that for those cases in which claim data is available, the median claim is quite small at \$0.71 million. However, a number of very large suits skew the results considerably, resulting in a mean claim value of \$31 billion. Because juries are allowed to award no more than the maximum sought by the plaintiff in the original claim, these numbers are likely to be upwardly biased relative to the true expected loss the firm faces from the litigation. The settlement numbers, while also skewed, are more likely to represent the expected value of the litigation. As can be seen from Table 1, the median settlement amount is \$7.4 million while the mean of \$88.1 million is skewed by a number of very large suits. The standard deviation of the settlement amounts in the data is \$434 million.

The final sample of litigation events covers a wide range of industries. Table 2 shows the average number of new cases by industry (defined at the 2-digit SIC level) each quarter. The industry with the largest average number of new lawsuits each quarter is the *Business Services* industry (134 new cases per quarter) which is a broad industry that includes everything from data processing and security services to advertising and pest control. The second most sued industry is the *chemicals & Allied Product Mfrs* which, not surprisingly, includes the oft-sued pharmaceutical firms and

¹³It is unlikely that the omission of certain cases (specifically the small, immaterial ones) will bias the results discussed below.

has 118 new lawsuits per quarter. The industry with the least number of cases in the Audit Analytics data is the *Social Services* industry which has approx. .08 new cases per quarter. Table 2 demonstrates that Audit Analytics provides broad industry coverage with respect to the litigation data. These data are shown at the 2-digit SIC level for the sake of brevity. As is clear from the *Business Services* category, these industry classifications may be too broad to successfully measure the litigation environment (it is unlikely that the litigation with respect to pest control will have a significant impact on the litigation environment of data processing firms). As such, most of the tests described below will rely on industry classifications defined at the 3 or 4-digit SIC code level.

Table 3 displays summary statistics for the final merged sample used in the analysis. The variables presented are consistent with the financial policy literature in general (including work on cash holdings, payout and capital structure) and are used throughout the remainder of the empirical analysis. *Debt/Assets* is defined as total debt divided by total assets. *Asset Tangibility* is total property, plant, and equipment divided by total assets. *Mkt. to Book* is defined as the book value of debt plus the market value of assets divided by the book value of assets. *ROA* is earnings before interest, taxes, depreciation, and amortization divided by total assets. *Cash Holdings* is cash and short-term investments divided by total assets. *Cash Flow* is defined as operating income minus interest, taxes, and dividends divided by assets.

3 Direct Effect of Litigation

As a first step in examining the impact of the litigation environment of a firm on its financial policy, I look at the direct effect of litigation filings on financial policy. Because the litigation events in my sample are relatively large lawsuits (by virtue of the fact they are reported in firm financials), these litigation filings are likely to represent a significant increase in the present value of litigation claims for the firm being sued. If this is true and if firms are responding to this increased litigation risk, we would expect to see some change in financial policy around the time of the filing. However, as mentioned above, the prediction on timing of such a response is not obvious. It is not clear how much leeway firms will have to alter financial policy once the litigation has begun.

To examine this effect and account for uncertainty in timing, I look graphically at aggregate firm responses. First, I average the book leverage for all firms that are sued in my sample. I line these firms up in event time and graph the average leverage from four quarters before to four quarters after a litigation filing. Figure 1 shows that on average, leverage seems to increase by about 1% for all firms in the quarter before the litigation event. This one quarter lead is not surprising in that firms are likely to know when they are going to be sued and may have difficulty adjusting financial policy after the litigation. This seems to suggest that firms increase their leverage in response to an increase in litigation risk.

Figure 2 shows a similar (albeit noisier) response with common share repurchase. This graph shows that the average common share repurchases as a percent of assets spikes right before the litigation event. Figures 3 and 4 show a similar decrease in cash holdings and increase in trades payable. Taken together, these results suggest that firms, on average, increase their leverage through share repurchases that are funded with an increase in short-term debt and a decrease in cash.

While these results are far from conclusive, they do suggest that, in aggregate firms may be responding to increased litigation claims. In order to draw more robust conclusions and alleviate the omitted variable concern that factors such as recent firm or industry performance may be impacting both litigation events and financial policy decisions, I focus now on examining the effects of exogenous litigation shocks on financial policy decisions.

4 Proxy Construction

In order to capture exogenous variation in a firm's risk of litigation (expected value of litigation claims) I look at actual litigation events involving industry peers. When a firm's industry peers are sued this may signal that the firm itself is at increased risk of litigation. There are several reasons this may be true. This may signal that legal precedent has been set, making litigation in this industry easier. It may signal a generally more litigious environment. It may also indicate that plaintiffs attorney's suddenly have the financial wherewithal to engage in costly litigation within

that industry. As a result, firms may respond when they observe other industry peers being sued. Figure 5 shows a simple illustration of this behavior. When the Merck Vioxx litigation was filed, the following quarter the leverage of Pfizer increases.

To construct a specific proxy for the litigation environment of a firm, I examine the number of cases that begin in each industry each quarter. For each firm, i , in each quarter, t , I count the number of new cases that began for all firms in that industry exclusive of any new cases involving firm i in that quarter. The calculation for the proxy variable is given by:

$$LitigationEnvironment_{i,t} = \sum_{n \neq i} \sum_1^k I_t$$

where n is the total number of firms in firm i 's industry, k is the total number of litigation cases for firm n across the sample and I_t is an indicator function equal to 1 if that case began in quarter t . Industry in this case is defined at the 3-digit SIC code level.¹⁴ This variable will take on larger values when a large number of cases are filed against a firm's competitors. I claim that these periods represent times when the probability of litigation is higher across all firms in the industry, regardless of a firm's specific characteristics.

To test whether this proxy seems to capture an exogenous increase in the risk of litigation, I estimate the probability that a firm is sued in quarter t , conditional on that firm's characteristics and the *LitigationEnvironment* at $t-1$. Table 4 shows the results of conditional logit estimations under three separate specifications. Each model is estimated with groups defined at the firm level to control for unobserved firm effects. Year dummies are also included across specifications and to correct for correlation in the error terms, standard errors are clustered by 3 digit sic code (because the proxy variable is an industry level variable)¹⁵. As shown in column 1, the impact of the *LitigationEnvironment* _{$t-1$} is positively and significantly related to the probability that a firm is sued in the next period, even after controlling for a variety of firm specific variables. This result indicates that an increase of 1 lawsuit among other firms in that industry in the prior quarter

¹⁴All results are qualitatively similar when using a variable defined at the 4-digit level

¹⁵The groups over which the conditional logit model are defined must be nested within the clusters used in the standard error correction. Because of this, this model is run only on firms that maintain the same 3 digit SIC code over the entire period. Point estimates are similar when the model is run over the entire sample with standard errors clustered by firm. However, in this case the standard errors are also lower

increases the odds that a firm will be sued in the current quarter by 1.017 times, or approximately 1.7%. This result is significant at the 1% level. The table also shows firms with lower market to book ratios have an economically and statistically higher probability of being sued. The odds ratios of this variable is approximately 0.60 across all specifications and is significant at the 5% level. In column 3, *ROA* and *Industry Return*_{*t*-1} are added to the model. Neither impact the point estimates or the standard errors from the previous specifications in any meaningful way. These results across the three models are consistent with poorly performing firms or firms that are in industries in which there are recent lawsuits being targets for litigation. It is important to note that even after controlling for a variety of firm characteristics across the three specifications, the odds ratio on the *LitigationEnvironment*_{*t*-1} is always economically and statistically significant, suggesting that this is a reasonable proxy for an exogenous change in the litigation environment.

Finally, in columns 2 and 3 of Table 4, the firm's debt to assets ratio is included. It is of note that this does not appear to be an important determinant of the probability of litigation. Because the debt to assets ratio is relatively time invariant, these estimates may be impacted by the firm level conditioning in the logit model; nonetheless, it may suggest that if firms are adjusting their capital structure in response to litigation, they may be not be doing so completely. This is not surprising given that there are many other potential costs associated with increased leverage.

5 Results

Having developed a proxy for a firm's litigation environment, I examine firm financial policy decisions to determine if the litigation environment plays a role in those decisions. Specifically, I look at firm cash holdings, payout policy (specifically stock repurchases), and capital structure. Examining the firms' capital structure allows us to better understand if firms are acting strategically to increase firm value in the face of litigation by reducing the value of those claims. Cash holdings will tell us if firms that face a higher probability of litigation maintain higher cash reserves in support of the "war chest" theory. Alternatively, firms may reduce their cash holdings, either through irreversible investment or increased payout, in an effort to reduce the amount of liquid assets available

to potential litigants. Finally, looking at a firm’s payout policy will help to determine whether managers are taking active steps in the face of this litigation, or whether capital structure and/or cash holdings are changing passively as a result of firm performance.

5.1 Capital Structure

If firms are in fact acting strategically to reduce the value of litigation claims, then those firms facing a higher probability of litigation should utilize more debt in their capital structure. Using the panel of firm specific data described above, I am able to test this hypothesis. Using the 7 year sample of quarterly data, I run a pooled OLS regression which includes my proxy variable for the litigation environment. The specification for these tests generally is:

$$Debt/Assets_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$$

where $X_{i,t}$ represents a vector of control variables for firm i at time t . The vector of control variables includes those shown to be important in the cross-sectional tests of capital structure (see Titman and Wessels (1988), Hovakimian et al. (2001), Rajan and Zingales (1995), Harris and Raviv (1991), and Lemmon et al. (2008)). These include *Ln Size*, *Mkt. to Book*, *Asset Tangibility*, *Ln Sales*, *ROA*, *Return_{t-1}*, *Industry Return_{t-1}*, and *Median Industry Leverage_{t-1}*. The regressions also include firm and year fixed effects or rolling firm-year effects.

Table 5 shows the results of these regressions. Column 1 of the table shows a basic regression specification using the firm’s litigation environment as an explanatory variable along with basic firm characteristics and firm fixed effects. This regression shows that as the risk of litigation increases, leverage actually increases as well. Importantly, the coefficients on the control variables are comparable in magnitude and significance to the results shown in the fixed effect regressions of Lemmon et al. (2008). Columns 2 and 3 of Table 5 add year effects and firm-36 month effects¹⁶

¹⁶This allows the “fixed” effect to change through time by demeaning each firm’s observations by that firm’s average over a 36 month period

respectively and show that generally, when the risk of litigation increases, so does firm leverage. Regression coefficients for columns 1-3 have been standardized and are interpreted as the effect of one standard deviation change in the independent variable. These results show that an increase of one standard deviation in *LitigationEnvironment*_{*t*-1} is associated with an increase in firm leverage of between 0.96% and 1.51%. This result is statistically significant across all of these specifications at the 10% level (1% level when year effects are controlled for).

As expected, *Ln Size*, *Mkt. to Book*, *Asset Tangibility*, *ROA*, *Return*_{*t*-1} and *Median Industry Leverage* are all significant across the specifications in columns 1-3 and are generally consistent with prior literature. The coefficients on *Ln Size* range from .1396 to .1846 and are statistically significant at the 1% level. This result is consistent with prior evidence that smaller firms have lower leverage. *Mkt. to Book* is also highly significant with estimates between -0.033 and -0.053. The coefficients on *Asset Tangibility* range from 0.23 to 0.28 and are statistically significant at the 1% level across all specifications.

One potential concern regarding the use of the industry lawsuits as a proxy is that this variable may merely be capturing firm and industry performance. If firms are more likely to be sued when performance is poor and firms in the same industry suffer poor performance at similar times, then this variable may only be capturing this effect. In order to control for this, I include both firm and industry performance variables including *ROA*, lagged industry returns, and lagged firm returns. Even after controlling for this issue, the litigation environment variable is still positive and significant. *ROA* and *Quarterly Return*_{*y*-1} are significant across specifications, consistent with the idea that better performing firms, in the sense of operating performance, have less debt but better stock price performance is associated with higher leverage. Past industry performance is marginally significant in some specifications and is consistent with the idea that better performing industries have higher leverage. It is worth noting that the R^2 value across the specifications in columns 1-3 is greater than 80%, indicating that the variables included explain a great deal of the within firm (or firm-3 year) variation.

In columns 4 and 5 of Table 5, I present a simple changes model. This model calculates the changes of all variables from their value 4 quarters before. This has a similar effect as the fixed

effects regression in terms of removing unobserved heterogeneity, but it may be easier to interpret. Under this specification, the coefficient on $LitigationEnvironment_{t-1}$ in column 4 is still positive and significant, albeit slightly smaller. Nonetheless, under this simple change-on-change framework, the overall results still hold.

Finally, in order to make interpretation easier, in column 5 of Table 5, I repeat the change model but use an indicator variable as a proxy for the litigation environment. The *High Litigation Risk* variable takes a value of one if the percent increase in lawsuits for that firm's industry is in the top quartile of all firms, and zero otherwise. The *Low Litigation Risk* variable takes a value of one if the percent increase in lawsuits for that firm's industry is in the bottom quartile of all firms, and zero otherwise. Under this specification, we see results consistent with the prior columns. Here a firm in the top quartile of litigation has a debt/assets ratio .4% higher than firms in the middle fifty percent, while firms in the bottom quartile have a debt/assets ratio .081% lower.

In unreported results, I also conducted this analysis in a Tobit framework to account for the truncation of leverage at 0 (Hovakimian et al. (2001)). These results are qualitatively similar, although the interpretation of firm dummies is difficult in the non-linear setting. The results are also robust to using longer lags to proxy for the litigation environment, including $LitigationEnvironment_{t-2}$ and $LitigationEnvironment_{t-4}$.

5.1.1 Large Lawsuits

The use of industry litigation to proxy for an increase in the risk that a given firm is sued reduces the endogeneity associated with litigation of a particular firm and its own capital structure. However, not all lawsuits against industry peers may signal a shift in the litigation environment of a given firm. There are likely to be certain bellwether cases that signal a shift and others that are less important. I argue that those lawsuits in my sample are likely to be those bellwether cases primarily because of their size (by virtue of their appearance in the data these cases are material to the firm being sued).

However, it is likely that those bellwether cases are also those cases that have the largest impact on the value of the firm being sued. To further examine this, I conduct an event study for each of the lawsuits in my sample. Using the date the lawsuit was filed, I calculate the abnormal return in the two days around the filing. As expected, the overall reaction is negative and significant.

Using only those lawsuits that are in the top quintile of stock price reaction (the most negative), I repeat the analysis described above. The results (unreported) are consistent with the findings in Table 5. This effect is similar in terms of magnitude and significance, suggesting that the overall sample is a good indication of major litigation.

5.2 The Mechanism for Increased Leverage

The above results support the idea that firms may be using their capital structure strategically as the risk of litigation arises. In the following section I investigate how this increase in leverage occurs. On one hand, it is possible that as the litigation environment changes, firms suffer in terms of performance. If this poor performance leads to write-downs of assets then the increase in leverage may be largely mechanical, and not in fact attributable to some strategic decision made by firm management. On the other hand, firms may be taking active measures that increase leverage, either through a reduction in assets via dividends or share repurchases, or by raising additional debt capital.

I examine this issue by looking first at the payout policy of firms using a pooled OLS regression similar to the analysis for capital structure above. The specification is:

$$ShareRepurchases_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$$

where $X_{i,t}$ represents a vector of control variables for firm i at time t . *Share Repurchases* is defined as *Common Share Repurchase/Assets*. I again use control variables based on prior literature on the determinants of payout policy. As in Fenn and Liang (2001), I include *Ln Size*, *Mkt. to Book*,

Debt/Assets, and *ROA* as control variables. These regressions also include combinations of firm and year dummies or rolling firm-year effects. Regression coefficients have been standardized and are interpreted as the effect of a one standard deviation change in the independent variable.

Table 6 shows the results from these regressions. In these models, *Litigation Environment*_{*t*-1} is statistically significant at the 5% level. The coefficients range from 0.1863 to 0.1958. Economically, these coefficients represent between an 18.65% and 19.58% increase for a 1 standard deviation increase in *Litigation Environment*_{*t*-1}. In these specifications, *Mkt. to Book* is positive and significant at the 5% level with a coefficient of between 8.3 and 12.9. Column 4 presents a change model and includes indicator variables for high and low litigation risk (as described in previous section). This specification shows that the repurchases as a percent of assets in the high litigation risk category is 0.32% higher than those firms in the middle 50% of litigation risk.

These results show that firms facing an increased risk of litigation repurchase a significantly greater amount of common shares. This is consistent with the idea that firms can protect shareholders by repurchasing shares, resulting in increased leverage.

5.3 Funding Share Repurchase

Overall, the results suggest that managers are in fact taking active measures to increase leverage when the risk of litigation is high. While dividends do not appear to be affected, share repurchases are significantly higher when a firm's peers face a greater number of lawsuits. In unreported tests, I find no evidence that firms are raising more debt capital. It appears that the effect on leverage is exclusively through share repurchase. However, the question still remains as to where the funds for the repurchase of these shares come from.

To answer this question, I look first at cash holdings using a pooled OLS regression represented by the following equation:

$$CashHoldings_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma \Delta LitigationEnvironment_{t-1} + \epsilon_{i,t}$$

where $X_{i,t}$ represents a vector of control variables for firm i at time t . This regression is run on quarterly data where the control variables included are based on those variables determined by Opler et al. (1999) to have a significant impact on firm cash holdings. These include *Ln Size*, *Cash Flow*, *Net Working Capital/Assets*, *Mkt. to Book*, *Debt/Assets*, *R&D/Sales*, and lagged returns. The regressions also include firm and year fixed effects or rolling firm-year effects. Regression coefficients have been standardized and are interpreted as the effect of a one standard deviation change in the independent variable.

Table 7, column 1, shows the results of this regression. We see that cash holdings are lower for firms facing a higher risk of litigation. The coefficient is -0.00395 and is significant at the 5% level representing a decrease in cash holdings of 0.395% for a one standard deviation increase in *Litigation Environment* $_{t-1}$. *Mkt. to Book*, *Cash Flow*, and both lagged firm and industry returns are positively and significantly related to cash holdings. The coefficients on *Net Working Capital/Assets* and *Debt/Assets* are both negative and significant. While the coefficient on *Litigation Environment* $_{t-1}$ is small, it still suggests that, on the margin, an increase in litigation exposure does reduce the cash holdings of firms on average. Column 2 of Table 7 shows no significant effect of the litigation environment on total current assets.

The last two columns of Table 7 examine another potential source of funds for the share repurchases shown above. Firms, in addition to reducing cash, may increase short term liabilities. By using this short term leverage, firms may be provided with an additional source of capital that they can use to fund share repurchases. We see from columns 3 and 4 that the litigation environment has a positive and significant effect on both accounts payable and total current liabilities. In column 3, the coefficient on *Litigation Environment* $_{t-1}$ represents an increase of 0.939% for a one standard deviation increase in litigation exposure. The coefficient of *Litigation Environment* $_{t-1}$ on total current liabilities is slightly higher at 0.01137. Taken in conjunction with the results on cash holdings, these results suggest that firms are increasing their short term liabilities, and at the same time reducing their cash holdings when faced with an increased risk of litigation. These two results suggest a potential source of funds for these firms to increase leverage through share repurchase. Additionally, these results suggest that, on average, firms are not hoarding cash in preparation for

litigation but are using cash to increase their overall leverage.

5.4 Operating Leases

In addition to increasing firm value through share repurchases and the use of short term debt, firms may also reduce the payoffs to potential litigants by increasing the use of operating leases. When facing litigation, a firm that capitalizes assets puts those assets at risk in judgments (or ultimately bankruptcy). However, firms that lease those same assets can protect those assets from litigants. In bankruptcy, those leased assets would most likely return to the lessor and any other liabilities to the lessor would be placed in line with the litigants in terms of absolute priority.

We might expect a firm facing an increased risk of litigation to substitute capitalized assets for operating leases. By doing so, they explicitly reduce the value of the contingent liability (litigation judgment or settlement). I examine this question by looking at the use of operating leases when the litigation environment has changed. I again used a pooled OLS regression. Because lease data is only available annually, I look at the change in litigation environment over the prior four quarters and ask whether this is associated with change in the use of operating leases. The present value of the operating lease is calculated using an assumed discount rate of 9%.

The regression specification is the following:

$$OperatingLeases_{i,t} = \beta_0 + \beta_1 X_{i,t} + \delta_i + \gamma \Delta LegalEnvironment_{t-1} + \epsilon_{i,t}$$

where $X_{i,t}$ represents a vector of control variables for firm i at time t and δ_i represents firm fixed effects. Regression coefficients have been standardized and are interpreted as the effect of a one standard deviation change in the independent variable.

The results of this regression are given in Table 8. These results show that the increase in the risk of litigation for a firm is associated with an increase in the use of operating leases by that firm. An increase of one standard deviation in the *Litigation Environment* _{$t-1$} is associated with an increase

in operating leases of up to 8%. These results are robust to using firm and year dummies and are statistically significant across all of these specifications at the 1% level. These results suggest that firms do increase the use of operating leases to reduce the value of litigation claims.

5.5 Alternative Explanations

A potential alternative explanation for why firms' capital structure seems to change in response to a litigation event within the industry is that the litigation event may have triggered a shift in the industry leverage equilibrium. Shleifer and Vishny (1992) suggest that the leverage within an industry is determined in part by the competitive nature of that industry. If the litigation environment variable is capturing periods where some firms in the industry are distressed (as a result of litigation) other firms in the industry may be using excess debt capacity to lever up and purchase the assets of the distressed firms. If this is the case the behavior observed may not be a strategic use of capital structure to reduce the value of litigation claims.

To address this, first I argue that this is inconsistent with the results showing an increase in share repurchases. Second, in untabulated results I test this directly by examining whether capital expenditures are related to the change in the litigation environment. I find no evidence of increased investment for firms that have an increase in lawsuits within the industry. Finally, I also find that the change in capital structure is stronger for smaller firms, which are more likely to be financially constrained and as a result less likely to be levering up to purchase assets from distressed peers.

A second related alternative explanation is that litigation against another firm in the industry may result in the undervaluation of peer firms. If the market believes that peer firms have similar liabilities as the sued firm, these firms may find their market values falling. If the management of these firms knows the firm does not in fact have such a liability, they may repurchase shares in an effort to time the market (Baker and Wurgler (2002)) or signal firm value (Vermaelen (1981)). In such a case, controlling for firm and industry returns in the regression may not adequately control for the effect. However, if this is the case, we would expect those firms who find themselves

in industries that are being sued but are not sued themselves to subsequently outperform. In unreported results, I find no evidence that these firms' returns are higher in the following quarters or year, suggesting that this observed behavior is not a response to undervaluation but a strategic response to the risk of litigation.

6 Conclusion

To what extent firms use financial policy strategically is still not well understood. One place we might expect to see evidence of this behavior is when firms face the risk of litigation. Taking advantage of exogenous variation in the probability of litigation I use actual litigation events to construct a proxy for each firm's litigation environment and test whether that environment impacts firm financial policy. My results indicate that, in periods with a higher risk of litigation, firms choose higher leverage. I show that this is not a passive result due to firm performance, but rather an active decision by managers. These firms buy back significantly more shares of common stock when the risk of litigation is high and finance these repurchases using cash holdings and an increase in short-term liabilities. Furthermore, these firms increase the use of operating leases which provide a level of protection in bankruptcy. These findings are consistent with firms increasing the use of debt in order increase bargaining power in the settlement process. These results are consistent with the idea that firms use financial policy strategically to increase bargaining power and ultimately limit the payoffs to potential litigants. Furthermore, I find no evidence that firms, on average, are hoarding cash in preparation for legal battles.

Overall, these results suggest that firms may see financial policy as a strategic tool to influence firm value and that there may be a role for financial policy in dealing with civil litigation. They suggest that additional work in the area would be valuable in helping to determine to what extent managers are successful in mitigating litigation exposure and minimizing costs as well as in what other areas we may see similar behavior.

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Figure 1: This figure shows the average Debt/Assets for all firms before and after the filing of the significant litigation.

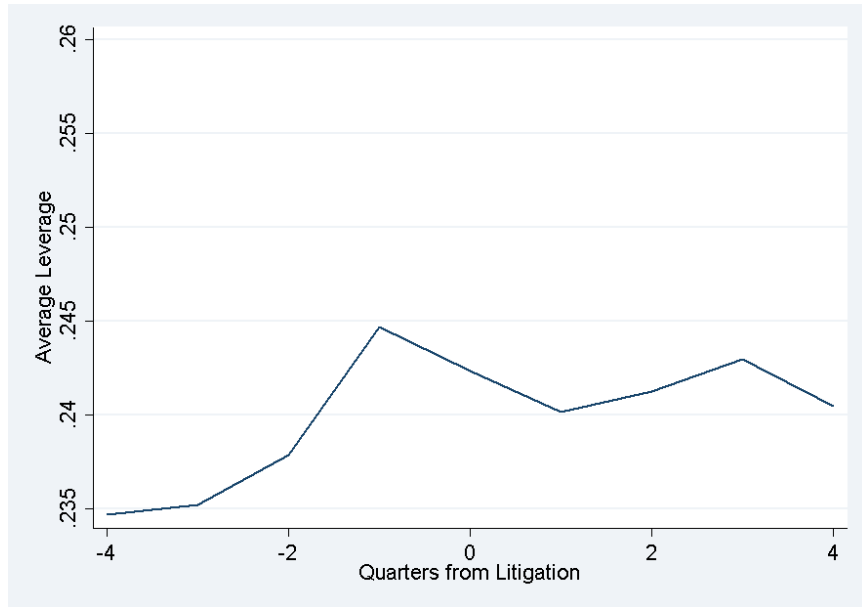


Figure 2: This figure shows the average amount of share repurchases for firms before and after the filing of the significant litigation.

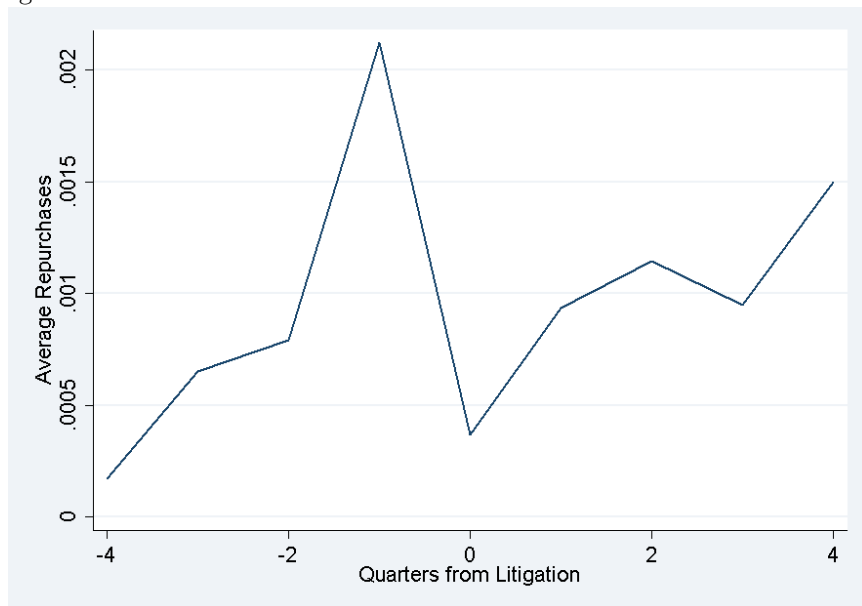


Figure 3: This figure shows the average amount of average cash holdings for firms before and after the filing of the significant litigation.

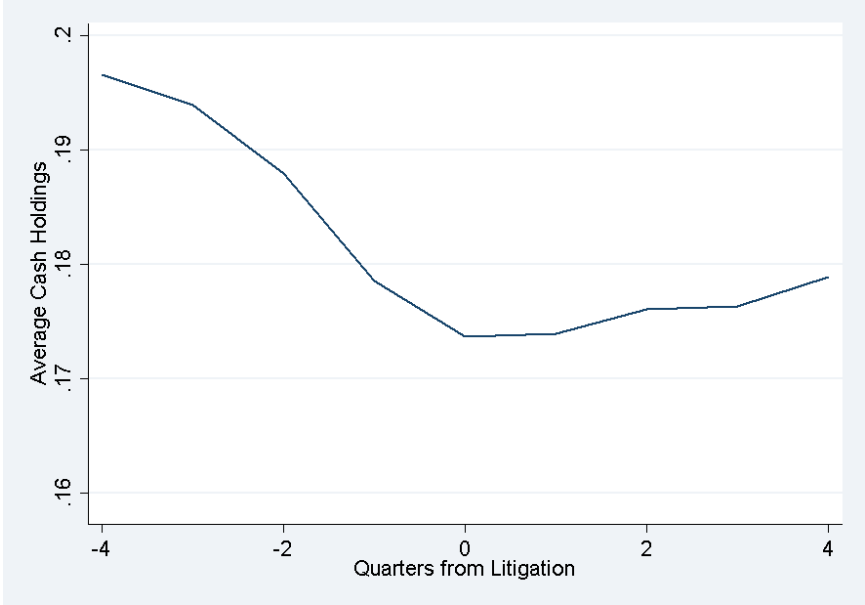


Figure 4: This figure shows the average amount of average accounts payable for firms before and after the filing of the significant litigation.

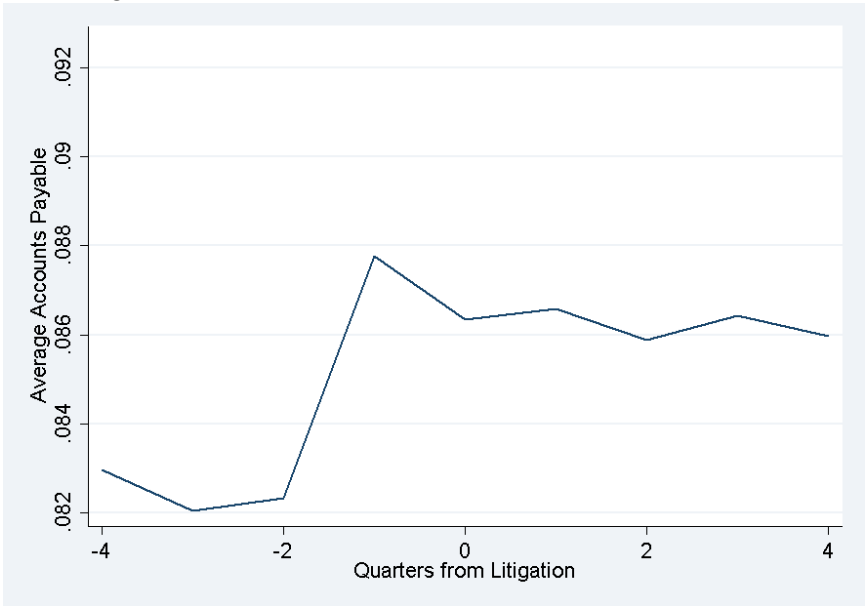


Figure 5: This figure shows the Debt/Assets for Pfizer before and after the filing of the Merck Vioxx litigation.

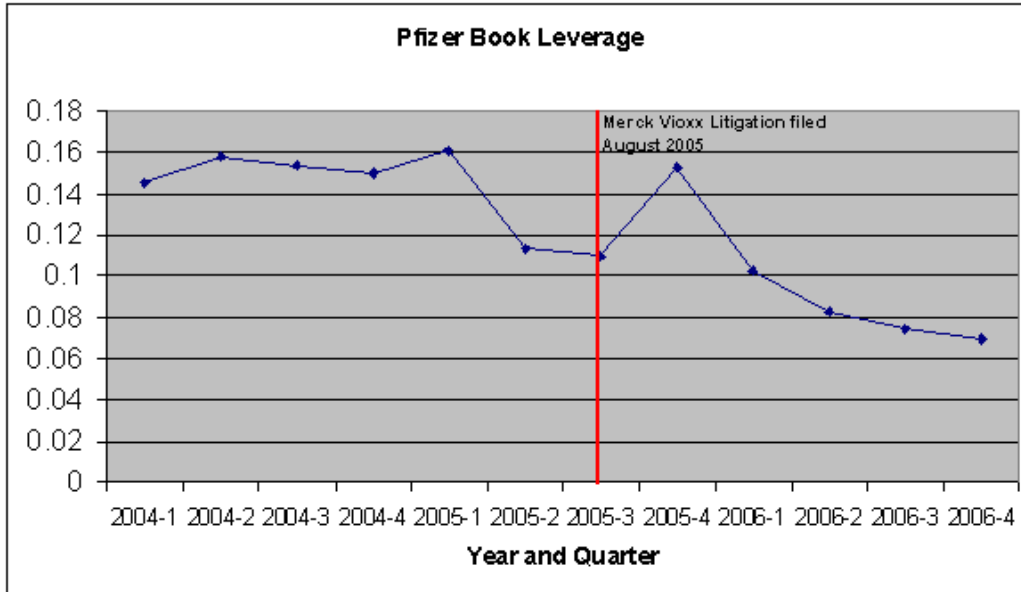


Table 1: Summary Statistics: Litigation Filings

This table presents summary statistics related to the cases in the Audit Analytics database that were successfully matched with the CRSP/Compustat merged database. Claim and settlement means and medians are calculated conditional on being reported

Variable	Observations	Mean(\$MM)	Median(\$MM)	Std.Dev(\$MM)
<i>Cases</i>	7781			
<i>Claim</i>	681	31,000	0.71	783,000
<i>Settlement</i>	806	88.1	7.4	434

Table 2: Average Number of New Litigation Cases Each Quarter by Industry

This table presents the average number of new litigation cases per quarter by industry over the 2000-2007 period in the final merged sample. The industry is classified at the two-digit SIC code level. Only those industries with at least 1 case over the sample period are included in the table.

Industry	SIC	Mean Cases
AGRICULTURAL PRODUCTION-CROPS	1	0.21
AGRICULTURAL PRODUCTION-LIVESTOCK	2	0.18
COAL MINING	12	1.74
OIL & GAS EXTRACTION	13	12.31
MINING & QUARRYING-NONMETALLIC MINERALS	14	0.67
BUILDING CONSTRUCTION-GEN CONTRACTORS	15	2.81
HEAVY CONSTRUCTION EXCEPT BUILDING	16	1.89
CONSTRUCTION-SPECIAL TRADE CONTRACTORS	17	0.72
FOOD & KINDRED PRODUCTS MFRS	20	16.04
TOBACCO PRODUCTS MFRS	21	3.15
TEXTILE MILL PRODUCTS MFRS	22	1.91
APPAREL & OTHER FINISHED PRODUCTS MFRS	23	3.28
LUMBER & WOOD PRODS EXCEPT FURNTR MFRS	24	2.12
FURNITURE & FIXTURES MFRS	25	2.06
PAPER & ALLIED PRODUCTS MFRS	26	6.88
PRINTING PUBLISHING & ALLIED INDUSTRIES	27	7.48
CHEMICALS & ALLIED PRODUCTS MFRS	28	118.07
PETROLEUM REFINING & PLASTICS MFRS	29	10.05
RUBBER & MISCELLANEOUS PLASTICS MFRS	30	6.77
LEATHER & LEATHER PRODUCTS MFRS	31	2.73
STONE CLAY GLASS & CONCRETE PRODS MFRS	32	4.36
PRIMARY METAL INDUSTRIES MFRS	33	8.24
FABRICATED METAL PRODUCTS MFRS	34	8.08
INDUSTRIAL & COMMERCIAL MACHINERY MFRS	35	53.82
ELECTRONIC & OTHER ELECTRICAL EQUIP MFRS	36	97.81
TRANSPORTATION EQUIPMENT MFRS	37	18.6
MEASURING & ANALYZING INSTRUMENTS MFRS	38	40.53
MISCELLANEOUS MANUFACTURING INDS MFRS	39	4.94
RAILROAD TRANSPORTATION	40	1.56
MOTOR FREIGHT TRANSPORTATION/WAREHOUSE	42	2.66
WATER TRANSPORTATION	44	1.06
TRANSPORTATION BY AIR	45	7.58
PIPELINES EXCEPT NATURAL GAS	46	0.11
TRANSPORTATION SERVICES	47	1.08
COMMUNICATIONS	48	29.38
ELECTRIC GAS & SANITARY SERVICES	49	35.8
WHOLESALE TRADE-DURABLE GOODS	50	13.2
WHOLESALE TRADE-NONDURABLE GOODS	51	13.05
BUILDING MATERIALS & HARDWARE	52	2.09
GENERAL MERCHANDISE STORES	53	11.59
FOOD STORES	54	4.22
AUTOMOTIVE DEALERS & SERVICES STATIONS	55	2.6
APPAREL & ACCESSORY STORES	56	10.92
HOME FURNITURE & FURNISHING STORES	57	5.89
EATING & DRINKING PLACES	58	7.08
MISCELLANEOUS RETAIL	59	16.84
DEPOSITORY INSTITUTIONS	60	24.91
NONDEPOSITORY CREDIT INSTITUTIONS	61	8.72
SECURITY & COMMODITY BROKERS	62	31.74
INSURANCE CARRIERS	63	27.01
INSURANCE AGENTS BROKERS & SERVICES	64	8.64
REAL ESTATE	65	0.53
HOLDING & OTHER INVESTMENT OFFICES	67	11.05
HOTELS ROOMING HOUSES & CAMPS	70	3.44
PERSONAL SERVICES	72	3.4
BUSINESS SERVICES	73	132.75
AUTO REPAIR SERVICES & PARKING	75	0.85
MOTION PICTURES	78	7.83
AMUSEMENT & RECREATION SERVICES	79	5.35
HEALTH SERVICES	80	12.36
EDUCATIONAL SERVICES	82	4.07
SOCIAL SERVICES	83	0.08
ENGINEERING & ACCOUNTING & MGMT SVCS	87	14.84
MISCELLANEOUS SERVICES NEC	89	0.16
ADMIN-ENVIROMENTAL QUALITY PROGRAMS	95	0.11
NATIONAL SECURITY & INTERNATIONAL AFFAIR	97	1.2

Table 3: Summary Statistics

This table presents firm level summary statistics for the main variables used in the empirical analysis. *Debt/Assets* is defined as total debt divided by total assets. *Asset Tangibility* is total property, plant, and equipment divided by total assets. *Mkt. to Book* is defined as the book value of debt plus the market value of assets divided by the book value of assets. *ROA* is earnings before interest, taxes, depreciation, and amortization divided by total assets. *Cash Holdings* is cash and short-term investments divided by total assets. *Cash Flow* is defined as operating income minus interest, taxes, and dividends divided by assets.

<u>Variable</u>	<u>Mean</u>	<u>Median</u>	<u>Std. Deviation</u>	<u>Min</u>	<u>Max</u>
<i>Debt/Assets</i>	0.20	0.16	0.20	0	1.01
<i>Asset Tangibility</i>	0.26	0.18	0.23	0.00	0.99
<i>Mkt. to Book</i>	1.87	1.23	2.24	0.01	101.42
<i>Ln Sales</i>	3.96	4.02	2.33	-6.91	11.50
<i>ROA</i>	0.002	0.024	0.060	-0.318	0.125
<i>Ln Size</i>	5.96	5.46	2.06	-6.91	12.58
<i>Cash Holdings</i>	0.22	0.11	0.25	0.00	1.00
<i>Cash Flow</i>	0.002	0.015	0.065	-6.001	5.813
<i>Net Work. Cap/Assets</i>	0.05	0.03	0.18	-0.76	0.53
<i>R&D/Sales</i>	0.03	0.02	0.04	0.00	1.92

Table 4: Conditional Logit Model: Estimating the Probability of a Lawsuit

This table presents a conditional logit model estimating the probability of a lawsuit in a given quarter for a given firm. The dependent variable is equal to 1 if the firm is sued in that quarter and zero otherwise. The groups for the conditional model are defined at the firm level to control for firm specific omitted variables. Control variables include *Ln Size*, *Mkt. to Book*, defined as the book value of debt plus the market value of assets divided by the book value of assets, and *Asset Tangibility* which is calculated as property, plant and equipment divided by total assets. Odds Ratios are presented in lieu of coefficients. Standard errors are clustered at the 3 digit sic code.

Variable	<u>1</u>	<u>2</u>	<u>3</u>
<i>Litigation Environment</i> _{<i>i,t-1</i>}	1.017 [4.13]***	1.017 [4.21]***	1.017 [4.40]***
<i>Payout</i> _{<i>i,t-1</i>}	1.10 [0.15]	1.09 [0.14]	0.99 [0.02]
<i>Cash Holdings</i> _{<i>i,t-1</i>}	0.54 [0.37]	0.38 [0.50]	0.24 [0.62]
<i>Ln Size</i> _{<i>i,t-1</i>}	1.30 [0.65]	1.33 [0.73]	1.57 [0.92]
<i>Mkt. to Book</i> _{<i>i,t-1</i>}	0.60 [2.44]**	0.60 [2.52]**	0.61 [2.53]**
<i>Asset Tangibility</i> _{<i>i,t-1</i>}	0.29 [0.34]	0.59 [0.16]	0.20 [0.44]
<i>Debt/Assets</i> _{<i>i,t-1</i>}		0.19 [0.78]	0.22 [0.77]
<i>ROA</i> _{<i>i,t-1</i>}			0.001 [1.04]
<i>Industry Return</i> _{<i>t-1</i>}			1.12 [0.38]
Year Dummies	Y	Y	Y

Groups defined at the firm level

Robust z statistics clustered by 3-digit SIC code in brackets.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Pooled OLS Regression: The Effect of the Litigation Environment on Firm Capital Structure

This table presents the results of a pooled OLS regression examining the effect of the litigation environment proxy, $Litigation\ Environment_{t-1}$ on firm capital structure. The dependant variable is $Debt/Assets$, defined as total debt divided by total assets. The regression is given by the form $Debt/Assets_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$. Control variables include $Ln\ Size$, $Mkt. to\ Book$, defined as the book value of debt plus the market value of assets divided by the book value of assets, ROA , defined as operating income divided by assets, and $Asset\ Tangibility$ which is calculated as property, plant and equipment divided by total assets. Also included are the lagged firm and industry return and $Ln\ Sales$. Specifications in columns 4 and 5 present a variety of indicator variables to control for firm and year effects. Columns 1-3 present standardized regression coefficients. Column 4 and 5 present a simple change regression where all variables are calculated as differences from 4 quarters before. $High\ Litigation\ Risk_{i,t-1}$ ($Low\ Litigation\ Risk_{i,t-1}$) is an indicator variables taking a value of one if the increase in litigation is top (bottom) quartile. Standard errors are clustered at the firm level.

Variable	Changes				
	1	2	3	4	5
$Litigation\ Environment_{i,t-1}$	0.00963 [1.68]*	0.01508 [2.70]***	0.01245 [3.03]***	0.00003 [3.35]***	
$High\ Litigation\ Risk_{i,t-1}$					0.00381 [6.04]***
$Low\ Litigation\ Risk_{i,t-1}$					-0.00081 [2.78]***
$Ln\ Size_{i,t-1}$	0.1396 [3.97]***	0.18457 [5.02]***	0.1772 [4.74]***	0.04695 [12.38]***	0.04898 [12.38]***
$Mkt. to\ Book_{i,t-1}$	-0.05207 [7.89]***	-0.0535 [8.14]***	-0.03299 [5.76]***	0.00026 [0.72]	0.00049 [1.32]
$Asset\ Tangibility_{i,t-1}$	0.26125 [11.40]***	0.22971 [9.80]***	0.26722 [11.40]***	0.1675 [10.46]***	0.16592 [9.96]***
$Ln\ Sales_{i,t-1}$	0.01335 [0.55]	0.05789 [2.33]**	0.02322 [1.17]	0.00018 [0.20]	0.00041 [0.45]
$ROA_{i,t-1}$	-0.05868 [8.53]***	-0.06507 [9.24]***	-0.04305 [7.47]***	-0.14846 [13.69]***	-0.14957 [13.32]***
$Quarterly\ Return_{t-1}$	0.00349 [1.99]**	0.00441 [2.47]**	0.00458 [3.16]***	-0.00007 [0.18]	-0.00023 [0.57]
$Industry\ Return_{t-1}$	0.0011 [0.85]	0.00258 [2.03]**	0.00209 [1.88]*	0.00171 [2.25]**	0.0018 [2.37]**
$Industry\ Leverage_{t-1}$	0.0045 [5.03]***	0.00379 [4.74]***	0.00221 [2.69]***	0.11109 [13.96]***	0.10834 [13.28]***
Constant	0.07199 [3.87]***	-0.05268 [4.57]***	0.04206 [1.98]**	0.00011 [0.54]	0.0028 [3.23]***
R^2	0.82	0.82	0.89	0.03	0.03
Firm-Year Dummies	243527 N	243527 N	243527 Y	223541 N	223541 N
Firm Dummies	N	Y	N	N	N
Year Dummies	N	Y	N	Y	Y
Change Regression	N	N	N	Y	Y

Standard Errors Clustered by Firm. Absolute value t-stats presented.
* significant at 10%, ** significant at 5%, *** significant at 1%.

Table 6: Pooled OLS Regression: The Effect of the Litigation Environment on Common Share Repurchases

This table presents the results of a pooled OLS regression examining the effect of the litigation environment proxy, $Litigation\ Environment_{t-1}$ on firm payout. The dependent variable is $Common\ Share\ Repurchases/Assets$, calculated as total common share repurchases divided by assets. $High\ Litigation\ Risk_{i,t-1}$ ($Low\ Litigation\ Risk_{i,t-1}$) is an indicator variables taking a value of one if the increase in litigation is top (bottom) quartile. The regression is given by the form $Payout_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$. Control variables include $Ln\ Size$, $Mkt.\ to\ Book$, defined as the book value of debt plus the market value of assets divided by the book value of assets, ROA , defined as operating income divided by assets, and $Debt/Assets$, defined as total debt divided by total assets. Also included are the lagged returns at the firm and industry level. Specifications include a variety of indicator variables to control for firm and year effects. Standard errors are clustered at the firm level.

Variable	Common Share Repurchases		
	1	2	3
$Litigation\ Environment_{t-1}$	0.1863 [2.05]**	0.19582 [1.98]**	
$High\ Litigation\ Risk$			0.0032 [2.01]**
$Low\ Litigation\ Risk$			-0.0014 [1.74]*
$Ln\ Size_{i,t-1}$	-0.13729 [0.18]	-0.51943 [0.65]	0.00052 [1.05]
$Mkt.\ to\ Book_{i,t-1}$	8.36225 [1.45]	12.89126 [2.07]**	0.0003 [1.73]*
$ROA_{i,t-1}$	-0.56389 [2.31]**	-0.28471 [3.00]***	-0.0013 [2.24]**
$Debt/Assets_{i,t-1}$	-0.08033 [0.31]	-0.11711 [0.45]	0.08437 [0.45]
$Quarterly\ Return_{t-1}$	-0.15699 [1.65]	-0.25215 [2.15]**	-0.00017 [1.67]*
$Industry\ Return_{t-1}$	-0.03067 [1.05]	0.00236 [0.11]	0.00016 [0.76]
Constant	3.69629 [0.59]	6.32457 [0.65]	0.00009 [0.37]
R^2	0.4	0.58	0.03
Firm Effects	Y	N	N
Year Dummies	Y	N	Y
Firm-36 Month Rolling Effects	N	Y	N
Change Regression	N	N	Y

Standard Errors Clustered by Firm. Absolute value t-stats presented.

*significant at 10%, **significant at 5%, ***significant at 1%.

Table 7: Pooled OLS Regression: The Effect of the Litigation Environment on Cash Holdings, Current Assets, and Current Liabilities

This table presents the results of a pooled OLS regression examining the effect of the litigation environment proxy, $Litigation\ Environment_{t-1}$ on firm cash holdings, current assets, accounts payable, and current liabilities. The dependant variables are *Cash Holdings*, defined as cash and short-term investments divided by total assets, *Current Assets*, defined as total current assets scaled by total assets, *Accounts Payable* defined as accounts payable scaled by total assets, and *Current Liabilities* defined as total current liabilities divided by total assets. The regression is given by the form $y_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$. Control variables include *Ln Size*, *Mkt. to Book*, defined as the book value of debt plus the market value of assets divided by the book value of assets, *Cash Flow*, defined as operating income minus interest, taxes, and dividends divided by assets, and *Debt/Assets*, defined as total debt divided by total assets. All specifications include firm and year effects. Standard errors are clustered at the firm level.

Variable	Cash	Current	Accounts	Current
Variable	Holdings	Assets	Payable	Liabilities
$Litigation\ Environment_{i,t-1}$	-0.00395 [2.13]**	0.00487 [1.34]	0.00939 [2.35]**	0.01137 [2.04]**
$Ln\ Size_{i,t-1}$	-0.01104 [3.37]***	-0.56253 [7.70]***	-0.68509 [6.42]***	-1.07942 [6.91]***
$Mkt.\ to\ Book_{i,t-1}$	0.06029 [7.51]***	0.05783 [9.63]***	0.00118 [0.26]	-0.01187 [1.99]**
$Cashflow_{i,t-1}$	0.006 [1.63]	0.0112 [3.43]***	-0.0336 [4.39]***	-0.03474 [4.08]***
$Net\ Working\ Capital/Assets_{i,t-1}$	-0.1365 [7.77]***	0.07408 [8.78]***	-0.1476 [8.44]***	-0.34676 [7.40]***
$Debt/Assets_{i,t-1}$	-0.14741 [6.13]***	-0.05048 [6.19]***	-0.03752 [4.05]***	-0.08331 [8.79]***
$Asset\ Tangibility_{i,t-1}$		-0.54522 [3.11]***	-0.04331 [2.25]**	-0.08344 [4.38]***
$Ln\ Sales_{i,t-1}$		0.04918 [2.41]**	0.4521 [4.90]***	0.58715 [7.66]***
$Quarterly\ Return_{t-1}$	0.00466 [3.40]***	0.00204 [1.70]*	0.00226 [1.29]	0.00625 [3.80]***
$Industry\ Return_{t-1}$	0.00129 [1.27]	-0.00192 [2.10]**	-0.0049 [3.46]***	-0.0052 [4.07]***
Constant	-0.10044 [10.57]***	0.02486 [47.33]***	0.09067 [21.20]***	0.17765 [37.76]***
R^2	0.9	0.92	0.86	0.88
	203721	203721	202413	202413
Firm Dummies	Y	Y	Y	Y
Year Dummies	Y	Y	Y	Y

Standard Errors Clustered by Firm. Absolute value t-stats presented.

*significant at 10%, **significant at 5%, ***significant at 1%.

Table 8: Pooled OLS Regression: The Effect of the Litigation Environment on the Use of Operating Leases

This table presents the results of a pooled OLS regression examining the effect of the litigation environment proxy, $Litigation\ Environment_{t-1}$ on the amount of operating leases used by the firm. The dependant variable is $Operating\ Leases / Assets$, defined as total debt divided by total assets. The regression is given by the form $Debt/Assets_{i,t} = \beta_0 + \beta_1 X_{i,t} + \gamma LitigationEnvironment_{t-1} + \epsilon_{i,t}$. Control variables include $Ln\ Size$, $Mkt. to\ Book$, defined as the book value of debt plus the market value of assets divided by the book value of assets, ROA , defined as operating income divided by assets, and $Asset\ Tangibility$ which is calculated as property, plant and equipment divided by total assets. Also included are the lagged return and $Ln\ Sales$. Specifications in columns 1-6 include a variety of indicator variables to control for firm and year effects. All specifications have standard errors clustered at the firm level.

Variable	1	2	3	4	5
$Litigation\ Environment_{i,t-1}$	0.02209 [5.61]***	0.02204 [5.63]***	0.02237 [5.72]***	0.02242 [5.75]***	0.08081 [4.12]***
$Ln\ Size_{i,t-1}$	-0.67464 [5.03]***	-0.69346 [5.41]***	-0.67652 [4.97]***	-0.67635 [4.99]***	-0.65297 [5.58]***
$Mkt. to\ Book_{i,t-1}$	-0.03008 [5.86]***	-0.02507 [5.09]***	-0.0305 [5.90]***	-0.0305 [5.90]***	-0.0309 [4.49]***
$Asset\ Tangibility_{i,t-1}$	0.04107 [2.09]**	0.02574 [1.32]	0.04018 [2.04]**	0.04018 [2.04]**	0.04023 [2.73]***
$Ln\ Sales_{i,t-1}$	0.16829 [7.21]***	0.23193 [9.29]***	0.17084 [7.36]***	0.17082 [7.36]***	0.16885 [6.02]***
$ROA_{i,t-1}$		-0.07135 [10.20]***			
$Quarterly\ Return_{t-1}$			0.00027 [0.14]	-0.00048 [0.18]	-0.00067 [1.07]
$Industry\ Return_{t-1}$				0.0016 [0.94]	0.00175 [0.62]
Constant	0.00947 [27.78]***	0.01005 [28.00]***	0.00964 [27.58]***	0.00951 [27.58]***	0.00951 [23.60]***
R^2	0.89	0.90	0.89	0.89	0.90
Firm Dummies	Y	Y	Y	Y	Y
Year Dummies	N	N	N	N	Y

Standard Errors Clustered by Firm. Absolute value t-stats presented.

* significant at 10%, ** significant at 5%, *** significant at 1%.