

# Class Action Spillover Effects on Joint Venture Partners

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## Abstract

We study joint ventures where one partner faces a shareholder class action lawsuit. On average, non-sued partners with equal stakes in these ventures earn a 0.6% negative abnormal stock return when the lawsuit against their partner is announced. Once a joint venture partner is sued, the litigation risk for its non-sued partners increases, non-sued partners spend less on investments and acquisitions and also exhibit significant declines in their volatility of stock returns, cash flows, and assets. Although non-sued joint venture partners are not named in the original complaint, they suffer considerable spillover effects that impair their valuation and growth prospects.

*JEL classification:* G33; G34; L22

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## 1. Introduction

On March 25, 2008, a lawsuit seeking class action status on behalf of the purchasers of the common stock of Morgan Stanley (MS) was filed in the U.S. District Court of Manhattan. According to the complaint, Morgan Stanley violated the Securities Exchange Act of 1934 by purposefully engaging in deceptive marketing of auction-rate securities. As a result, shares of MS experienced a -5.53% market adjusted three-day cumulative abnormal return (*CAR*) centered on the lawsuit announcement date. During the same period, Duke Energy Corporation (DUK) earned a *CAR* of -3.33%. Although Duke Energy was not named in the lawsuit, had no specific industry legal exposure, and no harmful news had recently surfaced against it, the firm had an ongoing equal-ownership joint venture with Morgan Stanley.

The MS-DUK case study suggests that Duke Energy suffered a spillover effect when its joint venture partner was sued. In this paper, we examine whether such spillover occurs in a systematic fashion using a sample of 41,726 firm-year observations for 6,785 unique firms that are part of a joint venture agreement during the 1996 to 2012 period. Notwithstanding the importance of joint ventures to corporate investment and growth, there is little systematic evidence on whether the litigation affecting one venture partner triggers spillover effects for the other partners.<sup>1</sup> While the legal costs and consequences of fraud litigation are documented in the literature (e.g., Karpoff, Lee, and Martin, 2008), little research exists on whether these penalties are confined to the sued firm. We fill this gap by studying whether a lawsuit affecting one of the partners in a joint venture

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<sup>1</sup> A joint venture is an entity formed between two or more firms to undertake economic activity together. The partners agree to create the new entity by contributing equity and then sharing in the revenues, expenses, and control of the enterprise. The entity can be established as a partnership, a corporation, or any other form of business organization the participating firms choose. The dissolution and termination of a joint venture are governed by the Uniform Partnership Act. However if there is a written agreement made by the parties, then such agreement would determine a venture's dissolution. The relationship can be terminated if the goals of the venture are (are not) met, if the time agreed for the venture has elapsed, if one of the venture parties faces legal or financial issues, if evolving market conditions render the venture irrelevant, or if one party acquires the other.

affects the valuation, litigation risk, financial policies, and investment decisions of the other (non-sued) partners.

Our interest in studying a joint venture as a potential channel for spillover effects when one of the partners faces litigation stems from the fact that a lawsuit is likely to impair the sued firm's ability to fulfil its responsibilities under a venture agreement. Even if a lawsuit provides the legal basis for dissolving the relationship, the valuation and operational effects on the non-sued partner are unclear. On the one hand, terminating the venture could benefit the non-sued partner if it affords that firm the ability to devote assets toward a higher-value use. On the other hand, the partner's lawsuit could have an unfavorable effect on the non-sued party by harming its reputation or by truncating its venture-related benefits. Either scenario is likely to have a negative impact on the non-sued party's valuation.

It is also possible that spillover effects could arise due to the way in which joint ventures are controlled. Specifically, venture relationships are governed by a board of directors where the partner firms receive board seats, control, and cash flow rights proportional to their equity investments. This setup could provide the platform for all partners to share in their own managerial practices and processes. As such, during the course of the venture, non-sued partners could learn (and adopt) corporate policies similar to those implemented by the sued partner. By doing so, non-sued partners may put their own firms at a higher risk of litigation if these policies are inadvisable. Such a scenario would be consistent with the evidence by Bizjak, Lemmon, and Whitby (2009) showing that firms that share a director with another company accused of option backdating are themselves more likely to backdate.<sup>2</sup>

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<sup>2</sup> Relatedly, Bouwman (2011) finds that corporate governance practices spread through the director.

The central finding of our study is that there are negative wealth effects for the venture partners of a firm facing litigation. Event study results show that non-sued partner firms experience an average market capitalization reduction of US\$55 million to US\$71 million during the class action lawsuit three-day announcement period.<sup>3</sup> The drop-in market capitalization afflicting the non-sued partners is considerable since these firms are not named in the complaint. These results, which are robust to the inclusion of numerous control variables and different robustness tests, indicate that the lawsuit event has a detrimentally meaningful effect on the valuation of the non-sued partner. Importantly, we show that the detrimental effect is more severe when non-sued firm are equal joint venture partners with the sued company.

A second key finding is that joint venture firms that are not sued are one percentage point more likely to face litigation themselves in the year after their partner is sued. This result is notable since the annual unconditional probability of facing a lawsuit for firms in our sample is 2.7%. The increase in litigation risk is also economically important given that aggregate annual firm losses due to lawsuit settlements are almost US\$10 billion (Zingales, 2007). Moreover, Karpoff, Lee, and Martin (2008) show that the reputational costs to firms subjected to litigation exceed the collective financial penalties imposed by legal institutions.

We use differences-in-differences (DiD) estimation to evaluate the spillover effect by comparing changes in the probability that the non-sued firms face litigation over time when they are partners of sued firms (the treatment group) and partners of firms that are not sued (the control group). We perform a number of tests showing a lack of pre-trend with respect to the lawsuit probability for the non-sued partners. Specifically, we find that in the absence of treatment, the difference between the ‘treatment’ and ‘control’ group is constant over time. These results suggest

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<sup>3</sup> Our results are robust to controlling for joint venture partners in the same industry, which mitigate that the spillover we document is industry driven as in in Lang and Stulz (1992), Gande and Lewis (2009), and Arena and Julio (2015).

that the parallel trends condition, which is necessary to ensure internal validity of DiD models, appears to be satisfied in our data. We also estimate non-parametric permutation tests (Chetty, Looney, and Kroft, 2009) that show that our DiD estimates are unlikely to be biased by serial correlation and artificially inflated  $t$ -statistics (Bertrand, Duflo, and Mullainathan, 2004).

The spillover effect to a non-sued partner affects its operations as it extends to some of its financial policies and investment decisions. Our results indicate that non-sued partners lower their risk profile following the lawsuit to their venture partner. Specifically, we find significant decreases in the non-sued partners' volatility of stock returns, cash flows, and assets. The tests also show a drop in these firms' dividend payments to shareholders and also in their discretionary accruals. The dividend result is consistent with the evidence and arguments by Talijan (2016) that firms try to conserve cash when the threat of litigation increases. The accruals result is of note given the evidence by DuCharme, Malatesta, and Sefcik (2004) indicating that sued firms often exhibit higher abnormal accruals. We also find that non-sued partners are 18% more likely to terminate an active joint venture in the year after their partner's lawsuit. This evidence suggests that non-sued partners try to mitigate the threat of litigation by reducing their risk exposure.

Spillovers to non-sued firms have real effects on those firms: they are more likely to decrease investment (expenditures in both capital and research and development) and spend less in acquisitions. Our spillover evidence on both investments and acquisitions is compelling given that Gormley and Matsa (2011) find increases in these activities for firms that observe a direct surge on their liability risk. At the same time, the drop in investment spending is again consistent with the preservation of cash implemented by firms once their litigation risk increases (Talijan, 2016).

Our tests collectively show that a lawsuit event afflicting a joint venture firm has first-order repercussions in shaping the financial and investment policies of its non-sued partners. Indeed,

while joint ventures often produce substantial benefits to the participating firms,<sup>4</sup> our evidence suggests that, when one party faces a lawsuit, the loss of those benefits can lead to a decrease in shareholder wealth and worsening performance for the non-sued partners. In this vein, our results indicate that joint ventures provide a channel for spillover effects among the participating firms. Importantly, our evidence suggests that partner firms in an active joint venture should adjust their own hurdle rates to account for the potential venture-related related spillover effects we uncover.

Our paper contributes important new evidence of the factors affecting litigation risk by firms. Work in this literature considers, among other aspects, the litigation risk associated with universal demand laws (Appel, 2016), firm age (Hanley and Hoberg, 2012), executive compensation (Peng and Röell, 2008), IPO underpricing (Lowry and Shu, 2002), accounting disclosure (Skinner, 1997), and voluntary disclosure (Francis, Philbrick, and Schipper, 1994). Our results also contribute to the literature studying the actions by firms in response to an increase in their litigation risk (Gormley and Matsa, 2011; Arena and Julio, 2015; Talijan, 2016) and the real effects endured by counterparties of firms involved in misdeeds (Graham, Li, and Qiu, 2008; and Murphy, Shrieves, and Tibbs, 2009). The evidence we present also adds to the work on the spillover effects bore by counterparties of distressed firms linked through strategic alliances (Boone and Ivanov, 2012) or through a supply chain relation (Hertzel, Li, Officer, and Rodgers, 2008).

The paper continues as follows. Section 2 describes our data. Section 3 presents our empirical analyses. Section 4 contains the conclusions. The appendix describes all the variables we use.

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<sup>4</sup> McConnell and Nantell (1985) use a sample of 210 firms involved in 136 U.S. domestic joint ventures from 1972 to 1979 and find a significant a two-day average abnormal joint venture announcement return of 0.73%. They also find that the smaller partner earns a larger abnormal return than the larger partner while the dollar gains are more equally shared. Chan, Kensinger, Keown, and Martin (1997), and, more recently, Johnson and Houston (2000) show that, on average, partner firms earn positive and significant abnormal returns when joint ventures are announced.

## 2. Data and sample characteristics

Our objective is to study whether joint venture partners of a sued firm experience significant spillover effects even if the partners are not named in the complaint. For this purpose, we begin by identifying shareholder class action lawsuits in the Securities Class Action Clearinghouse (SCAC), jointly maintained by the Stanford Law School and Cornerstone Research.<sup>5</sup> The SCAC contains all federal civil securities class action lawsuits filed by shareholders against public firms since 1996. These suits usually allege that the firm's managers withheld material adverse information or publicized misleading information, thereby violating Rule 10b-5 of the Securities Exchange Act of 1934. We code a firm that has been targeted in a 10b-5 lawsuit with an indicator, *Lawsuit*, which is set to "1" if the firm is targeted in the fiscal year and set to "0" otherwise.

Table 1 reports 1,848 securities class action lawsuit filings occurring during our sample period. The annual distribution of lawsuits in our firm sample is in line with the distribution of federal securities class litigation as described on the SCAC database (Panel A). Unconditionally, 2.7% of our sample firms are targeted in a given year. Our sample of firms span a wide range of industries with most lawsuits occurring in the high tech and healthcare industries (Panel B). According to the information in Panel C, litigants most commonly allege that management issued misleading statements or committed accounting violations.

Next, we match the lawsuits to the universe of U.S. public firms listed in the COMPUSTAT industrial annual database for the fiscal years 1996 to 2012. We additionally merge in stock return data from the Center for Research on Securities Prices (CRSP) monthly stock file. Finally, we identify firms in our sample involved in joint ventures by accessing Thompson Reuters' Securities Data Corporation (SDC) Platinum Joint Ventures / Alliances database. We classify a joint venture

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<sup>5</sup> Other papers that use this database for similar purposes include Field, Lowry, and Shu (2005); Fich and Shivdasani (2007); and Gande and Lewis (2009).

as “active” if the relationship is not listed as terminated or if is no more than four years removed from its initiation date.<sup>6</sup>

The foregoing selection criteria generates a sample of 41,726 firm-year observations covering 6,785 unique firms. Approximately 18.2% percent of the firm-year observations, or 25.1% of the firms in our sample, maintain an active joint venture during at least one year in our sample period. As shown in Panel D of Table 1, the average firm maintains 1.8 strategic alliance and joint venture relationships in a given year. Approximately 29% of these relationships are solely joint ventures which typically consist of two partner firms. Therefore, these business arrangements constitute a significant part of the operations for many major US companies.

Other firm characteristics in Panel D suggest that our data are not unusual. On average, firms in our sample are mature at 20.3 years since inception and widely held by institutional investors. The median firm is profitable with a return on assets of 3% and a positive stock return of 7.5%. These firms are relatively large in size with an average market capitalization of \$3.1 billion. The typical firm in our sample has positive spending on both investment and acquisitions in an average year. All of these summary statistics compare favorably with those from other work [e.g., Gantchev, Gredil, and Jotikasthira (2016); Gormley and Matsa (2016)].

### **3. Empirical analyses**

#### *3.1. Investor reactions to lawsuit announcements*

To assess the stock market impact of a shareholder class-action lawsuit for the sued firm and for any of its partners in an active joint venture, we use standard event study methods [Dodd and Warner (1983)] to compute three-day *CARs*.

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<sup>6</sup> Comparably, Boone and Ivanov (2012) indicate that the median alliance length in their sample is four years.



In Table 2, we report the *CARs* accruing to the firms in our sample that have both been sued and maintain an active joint venture with other firms. Consistent with prior studies, we find that investors react negatively to firms that are targeted in shareholder class action lawsuits. The three-day (-1,+1) *CAR* exhibits a mean (median) reaction of -5% (-1.4%). For these sued firms, the mean reaction translates to an average abnormal loss of US\$232 million in market value.

We focus on the joint venture partners of the firms targeted by a shareholder class action suit to detect potential spillover effects. The sample consists of 940 firms that have not been legally targeted by their own shareholders, accused of any wrongdoing, or named in the complaint filed against their joint venture partner. We observe that the joint venture partners of sued firms also suffer meaningful negative wealth effects when the lawsuit is filed. These partners exhibit a statistically significant mean (median) three-day *CAR* of -0.44% (-0.28%).<sup>7</sup>

It is possible that the strength of the joint venture affects the investors' reactions. We test this in Table 2 by splitting the 940 partner observations into those where the partner is an equal owner in the venture with the sued firm (*Equal Partner of Firm Sued*,  $N=767$ ) and those where the partner is not an equal owner (*Non-Equal Partner of Firm Sued*,  $N=173$ ). *Equal Partner of Firm Sued* is an indicator defined as one where all partners in the joint venture have the same percentage ownership stake in the relationship.<sup>8</sup> This variable is defined as zero otherwise.

The results indicate that the negative wealth effects are concentrated in those ventures where the sued firm and the spillover firm are equal partners. At the mean (median), equal venture partners of a sued firm experience a negative and statistically significant *CAR* of 0.57% (0.33%) when their partner is sued. This decrease implies an average loss of \$71 million in market capitalization for these (non-sued) firms.

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<sup>7</sup> Using different *CAR* windows around the lawsuit event date [e.g., (0,0), (0,1), or (-2,2)] generates similar results.

<sup>8</sup> For example, two partners that have 50% ownership, or three partners with 1/3 ownership each.

In Table 3, we regress the three-day cumulative abnormal return of the spillover firm on an indicator for whether that firm is an equal joint venture partner with the sued firm (*Equal Partner of Firm Sued*). All models control for characteristics of the venture and of the non-sued partner. Models (2)-(4) control for the non-sued partner's corporate governance for a subsample for which suitable proxies (ownership by the top five employees and the Entrenchment Index) are available.

As with the univariate evidence, the multivariate tests indicate more negative spillover wealth effects for firms that are equal owners in joint ventures where another partner faces litigation. These firms face lawsuit announcement returns that are 1.1% to 1.5% significantly more negative than the returns accruing to spillover firms with non-equal ownership stakes. The abnormal returns are also more negative when the joint venture has been active for a longer amount of time. The results indicate that investors have an unfavorable view of partners that have forged a stronger bond with a sued venture partner (in terms of both their ownership stake in the venture and the length of the relationship). In addition, and consistent with the notion of negative signals being more informative in the presence of information asymmetries, an increase in stock volatility for the spillover firm in the past year contributes to more negative returns.

### 3.2. *Litigation spillover risk*

We now examine whether venture partners of sued firms are more likely to experience an increase in their own litigation risk. In Table 4, we estimate logistic regressions with year and industry fixed effects and robust, firm-clustered standard errors.<sup>9</sup> The (0,1) dependent variable in models (1) and (2), *Lawsuit (t)*, is set to one if the spillover firm faces a shareholder class action lawsuit in the fiscal year. Similarly, the dependent variable in models (3) and (4), *Lawsuit (t –*

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<sup>9</sup> Our results are robust whether we use logistic regressions or linear probability models with the numerous fixed effects to estimate the impact on the likelihood of future litigation for a spillover firm.

$t+1$ ), indicates whether the spillover firm is sued anytime during the next two fiscal years. The control variables include indicators for whether the firm maintains a joint venture where a partner is sued (*JV Partner of Firm Sued at  $t-1$* ) or whether the firm is an equal owner in such a venture (*Equal Partner of Firm Sued at  $t-1$* ). Following prior work on the determinants of lawsuits [e.g., Field, Lowry, and Shu (2005); Fich and Shivdasani (2007); Gande and Lewis (2009)], our tests control for firm characteristics (of the non-sued venture partner) such as firm size and age, profitability, stock return and volatility, institutional ownership, and accounting conservatism. We also control for the non-sued firm's prior litigation and joint venture activity.

The estimates in Table 4 indicate that, despite not being named in their joint venture partner's complaint, spillover firms face a heightened threat of litigation after the lawsuit. The marginal effects drawn from our logistic regressions imply that having a sued joint venture partner increases the likelihood of being sued by 0.92 percentage points ( $p$ -value = 0.07). This effect is even stronger for the equal partners, increasing their likelihood of being sued by 1.06 percentage points ( $p$ -value = 0.05). The increases in the probability of facing a lawsuit we uncover are not only statistically significant but also economically meaningful because the unconditional probability of being sued for our sample firms is 2.7%. The findings in Table 4 suggest that the negative investor reactions on spillover firms (Table 2) represent a rational assessment of the increased litigation risk faced by those companies.

### *3.2.1. Concerns about pre-trends*

The logistic regressions in Table 4 are based on DiD estimation allowing us to evaluate the spillover effect by comparing changes in the probability that the non-sued firms face litigation over time when they partner with firms that are sued (the treatment group) and partner with firms

that are not (the control group). In Table 5 we estimate logistic regressions to examine the likelihood that the spillover firm is sued during the two years *before* its venture partner is sued. All models use the same control variables as in Table 4. We estimate these regressions without fixed effects (Panel A) and with firm and year fixed effects (Panel B). The tests in Table 5 reveal an absence of pre-trends with respect to lawsuit probabilities for non-sued partners. According to the estimates, prior to the treatment, the difference between the ‘treatment’ and ‘control’ group is not statistically significant. These findings suggest that our data and experimental setting comply with the parallel trends condition, which is necessary to ensure internal validity of DiD models.

Following Seru (2014), we perform a graphical analyses of lawsuit probabilities to assess whether our specification satisfies the parallel trends condition. Figures 2 and 3 plot the kernel density of lawsuit probabilities before and after the lawsuit event for the control and treatment groups, respectively. Figure 2 shows that after the joint venture partner is sued, the treatment group exhibits an increase in the probability of being sued (about 1%). The upward shift of the density in Figure 2 is statistically significant since a Kolmogorov-Smirnov test for equality of distribution functions is rejected at the 1% level. Conversely, Figure 3 shows that, for the control group, the probability of being sued is similar to the treatment group before the lawsuit event. Consistent with the parallel trends condition, the graphical analyses suggest that firms are more likely to be sued after their joint venture partner is sued (but not before). The graphical tests also suggest that differences in lawsuit probabilities between the control and treatment groups are not driven by outliers or unobserved characteristics shared by firms in the two groups.

### 3.2.2. Serial correlation and inflated $t$ -statistics

Bertrand, Duflo, and Mullainathan (2004) warn that a serious concern with DiD estimation is that serial correlation could lead to standard errors that may understate the standard deviation of the treatment effect thereby producing inflated  $t$ -statistics. We tackle this concern here with nonparametric permutation tests following Chetty, Looney, and Kroft (2009). Specifically, we *randomly* assign a company to be a joint venture partner of a firm sued at  $t-1$  to create our placebo test group. For each of our main outcome variables in Table 4 (lawsuit at  $t$ , and lawsuit at  $t$  to  $t+1$ ), we re-estimate models (1) through (4) treating our placebo group as the actual treatment group. For each model, we repeat this process 2,000 times using a different random number generator seed for every iteration. Each estimate is recorded to produce the cumulative distribution function (cdf) plots in Figure 1.

The four graphs in Figure 1 show the placebo estimates for each of our four models in Table 4, respectively. We overlay a vertical line for each cdf figure to show where the original regression coefficient from the corresponding model in Table 4 lies in the plot. Examining plot (1), 22 out of the 2,000 (1.10%) placebo coefficients are larger than the reported estimated effect (0.393). For plot (2), 147 out of 2,000 (7.35%) of the placebo coefficients are larger than the reported estimated effect (0.454). As for probability of a lawsuit in  $t$  to  $t+1$ , in plot (3), 75 out of 2000 (3.75%) of the placebo coefficients are larger than the estimated effect in Table 4 (0.384). Likewise, in plot (4), 45 out of 2000 (2.25%) of the placebo coefficients are larger than the reported effect in Table 4 (0.506). Chetty et al. (2009) argue that the percentage of the placebo coefficients that are larger than the treatment are akin to  $p$ -values which should be similar to those earned by the true regression coefficients.<sup>10</sup> Because this is the case in our analyses, the permutation tests assuage

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<sup>10</sup> Chetty et al. (2009) also note that since the permutation tests make no parametric assumptions about the error structure, they are not susceptible to the over-rejection bias of the  $t$ -test when serial correlation exists.

concerns about serial correlation and understated standard errors driving our result of a higher probability of facing lawsuits for innocent JV partners of a sued firm.

### 3.3. Changes in corporate risk-taking following a joint venture partner lawsuit

It is possible that spillover firms might alter their corporate policies to lessen the threat of litigation. We assess this conjecture by analyzing whether spillover firms reduce the riskiness of their operating activities, corporate disclosure, and financial policies. In Table 6, we run six regressions in which we use several risk proxies as dependent variables. All specifications include controls for firm size, age, profitability, institutional ownership, previous lawsuits for the firm itself, and joint venture activity in addition to year and industry fixed effects as well as robust, firm-clustered standard errors.<sup>11</sup>

To test for potential changes in operating risk, in Table 6, we proxy for operating volatility in three ways: stock volatility in models (1) and (2), cash flow volatility in models (3) and (4), and operating asset volatility in models (5) and (6). We estimate the percentage change in each of these risk proxies from year  $t-1$  to year  $t$ , where  $t-1$  is defined as the fiscal year in which the spillover firm's partner is targeted in a class action lawsuit. In all tests, the key independent variables are the indicators *JV Partner of Firm Sued at  $t-1$*  and *Equal Partner of Firm Sued at  $t-1$*  defined earlier.

The results suggest that managers of spillover firms rein in the risk at their firms following a lawsuit to one of their venture partners. In models (1) and (2), the indicators for *JV Partner of Firm Sued at  $t-1$*  and *Equal Partner of Firm Sued at  $t-1$*  are both negative and statistically significant. The *JV Partner of Firm Sued at  $t-1$*  parameter estimate in model (1) implies a 9.3% decrease in the percentage change to the spillover firm's stock volatility. Given the average percentage change

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<sup>11</sup> We use ordinary least squares regressions for all estimations unless otherwise specified. For any model where the dependent variable is a percentage change in the value, the results are robust to using Tobit models instead.

in stock volatility is 22.5% from year  $t-1$  to year  $t$ , this finding translates to a 2.1% decrease in the percentage change in stock volatility. We obtain similar results in models (3) and (5) where the estimates imply that being a joint venture partner of a sued firm is associated with an annual percentage change decline in cash flow (operating asset) volatility of 25.8% (19.4%). We note that for all firms in our sample, the average percentage change in cash flow (operating asset) volatility is 50% (60%) from year  $t-1$  to year  $t$ . Given this benchmark, our estimates imply a non-trivial decrease in the percentage change in cash flow (operating asset) volatility of 12.9% (11.7%). When the non-sued firm is an equal joint venture partner of the sued firm, the results indicate a greater decrease in these variables. Models (4) and (6) show that equal-owner spillover firms exhibit a fall in the percentage change in cash flow (operating asset) volatility of 32.7% (23.5%). Based on the mean percentage change in cash flow and operating asset volatility in our sample, these estimates imply a non-trivial drop in cash flow (operating asset) volatility of 16.4 (14.1) percentage points.

Besides lowering the volatility of the underlying assets, spillover firms may also wish to manage their reporting more conservatively. We proxy for this conservatism by looking at how aggressively companies manage their earnings. We follow Dechow, Sloan, and Sweeny (1995) and Dechow, Richardson, and Tuna (2003) and look at discretionary accruals.<sup>12</sup> While the total change in accruals is immediately observable, it is not obvious what portion of accruals varies involuntarily due the daily business operations of the firm and whether such portion has been deliberately altered to manage earnings. Consequently, we estimate the level of non-discretionary accruals using the modified Jones (1991) model as the benchmark level of accruals by running

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<sup>12</sup> To compute discretionary total accruals that can be used to manage reported income upwards or downwards, we first measure the level of total accruals as:

$$TA_{i,t} = (\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} - \Delta STD_{i,t} - Dep_{i,t}) / (A_{i,t-1})$$

where  $TA_{i,t}$  is total accruals,  $\Delta CA_{i,t}$  is the change in current assets,  $\Delta CL_{i,t}$  is the change in current liabilities,  $\Delta Cash_{i,t}$  is the change in cash and marketable securities,  $\Delta STD_{i,t}$  is the change in short-term debt,  $Dep_{i,t}$  is depreciation and amortization, and  $A_{i,t-1}$  is beginning of period total assets.

annual cross-sectional regressions upon each two-digit industry in the COMPUSTAT universe with available data.<sup>13</sup>

We report regressions of the percentage change in the absolute value of discretionary accruals from the lawsuit year ( $t-1$ ) to the following year ( $t$ ) upon our indicators for being a venture partner of a sued firm in models (7) and (8) of Table 6. The results in model (7), while negative, are not statistically significant at conventional levels. The estimates in model (8) imply that having a sued partner is associated with a reduction in earnings management of 13 percentage points.

Next, we explore whether spillover firms alter their dividend policy. Models (9) and (10) of Table 6 report logistic regressions where we examine whether a firm reduces the dividends per share paid to shareholders in the year after its joint venture partner is sued. The dependent variable, *Decrease in Dividend/Share*, is an indicator variable set to one if the firm lowers its dividend per share from year  $t-1$  to year  $t$  and set to zero otherwise. The coefficients for our key independent variables in models (9) and (10) are positive and statistically significant at the one percent level. The marginal effects imply a 3.4 percentage points increase in the likelihood of lowering dividends in the year after a joint venture partner's lawsuit. This effect is substantial given that the unconditional probability of an annual decrease in dividends per share for our sample firms is 7.4%. The results related to equal partners of a sued venture firm yield an analogous inference.

The evidence in Table 6 indicates that spillover firms exhibit a reduction in their volatility of stock, operating assets, and cash flow. They also appear to manage their financial reporting risk

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<sup>13</sup> The model used for determining non-discretionary total accruals is:

$$NDA_t = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t}) + \alpha_3(PPE_{i,t})$$

where  $NDA_t$  (the estimated level of non-discretionary accruals for each two-digit industry at time  $t$ ) is level of total accruals for each benchmark firm,  $A_{i,t-1}$  is beginning of period total assets,  $\Delta REV_{i,t}$  is the change in revenues,  $\Delta REC_{i,t}$  is the change in accounts receivables,  $PPE_{i,t}$  is the level of property, plant, and equipment. *Discretionary accruals* are defined as:

$$DA_{i,t} = TA_{i,t} - NDA_t$$

the residual of the difference between total accruals and the predicted level of non-discretionary accruals.



more conservatively and to save cash by reducing dividend payments. These results suggest that spillover firm managers are particularly concerned about the risk level at their firms when their joint venture partners face litigation.

#### *3.4. Changes in corporate policies following a joint venture partner lawsuit*

Next, we examine whether spillover managers implement other policy changes after the joint venture partner's lawsuit. We explore changes in investment, acquisition spending, and joint venture activity because these actions are likely to affect firm growth and productivity.

The dependent variable in models (1) and (2) of Table 7, *Change in Investment*, is the percentage change in investment expenditures by the firm.<sup>14</sup> In these tests, the coefficient on the *JV Partner of Firm Sued at t-1* indicator is negative and statistically significant. The estimate implies that the percentage change in investment at the spillover firm declines by approximately one percent after their venture partner's lawsuit. The *Equal Partner of Firm Sued at t-1* coefficient is also negative and of similar magnitude.

In models (3) and (4) of Table 7 the dependent variable is the *Change in Acquisition Spending* defined as the percentage change in the amount of cash acquisitions scaled by assets. The results indicate that non-sued firms significantly reduce their cash acquisition spending in the year after their venture partner's class action lawsuit. The estimates show that the change in cash spent in acquisitions falls by 1.9% to 2.2%. In general, the results in models (1) through (4) of Table 7 indicate that spillover firms cut their investment spending following a lawsuit targeting their joint venture partner. This action is consistent with both risk reduction and cash preservation motives.

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<sup>14</sup> We calculate firm investment as the sum of capital expenditures and research and development expense scaled by assets [Boone and Ivanov (2012); Gantchev, Gredil, and Jotikasthira (2016)].

The logistic regressions in models (5) and (6) of Table 7 examine whether a non-sued firm is more likely to experience a joint venture termination following its partner's lawsuit. The dependent variable is an indicator variable set to one if a firm experiences a termination of a joint venture in the following fiscal year and set to zero otherwise. The marginal effect on *JV Partner of Firm Sued at t-1* implies that the spillover firm is 18% significantly more likely to have a terminated joint venture once their partner is sued. For spillover firms, we note that one out of four terminated ventures involves a sued firm.<sup>15</sup> This evidence suggests at least two non-mutually exclusive conjectures. One is that the sued firm ends the venture because it cannot keep its commitments. The other is that its non-sued partners finish the relationship to mitigate any detrimental spillover effects from their venture partner's lawsuit.

### 3.5. Alternative specifications

To ensure that our results are not spurious, we perform several robustness tests including the use of an alternative measure of our main construct. For each baseline specification in Tables 3, 4, 6, and 7, we use different methods and report the findings in Table 8.

In Panels A, B, and C of Table 8, we re-estimate our baseline tests using multiplicative fixed effects to control for unobserved heterogeneity. Many firm risks and corporate policies may depend on unobservable factors that are not identified by the control variables in our regressions. As such, these omitted unobservable factors may impose bias into our estimation. To address this issue, we use multiplicative fixed effects following the method in Gormley and Matsa (2014). We re-estimate the main specifications in Tables 3, 4, 6, and 7 by including the interaction of year and industry fixed effects based on Fama-French 48 industry codes for the non-sued firms. With these

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<sup>15</sup> When we re-estimate this regression examining terminations with firms in which none of the partners are involved in a lawsuit, we obtain similar results suggesting that the lawsuits are not driving the result.

additional fixed effects, we continue to show a detrimental impact to the spillover firms (those who are in a joint venture where a partner is sued).

As an alternative metric to our two main indicator variables (*JV Partner of Firm Sued at t-1* and *Equal Partner of Firm Sued at t-1*) used in Tables 3-7, we construct a continuous ownership variable and report our findings in Panels D and E of Table 8. The variable, *Ownership in JV of Non-Sued Partner*, is the spillover firm's percentage ownership stake in the joint venture.

In Panels D and E, the marginal effects drawn from our point estimates confirm earlier findings. For example, a one standard deviation increase in ownership of the non-sued partner increases its own lawsuit probability by 5 percentage points. Similarly, a one standard deviation increase in ownership of the non-sued firm leads to a 1.7% decrease in the percentage change in stock volatility, a 6.4% decrease in cash flow volatility, and a 5.6% reduction in operating asset volatility. Therefore, the use of a continuous measure of ownership for non-sued partners produces spillover results that are consistent with those from our baseline analyses.

We are sensitive to the possibility of a selection bias when observing the treatment effect for joint venture firms and firms that are not in these relationships. This bias could happen if the 25.1% of firms in our sample with an active joint venture are different from all other companies. Therefore, to ensure our results are not skewed, in Panels F and G of Table 8, we analyze only those companies with an active joint venture. According to the parameter estimates, the subsample analyses generate inferences similar to those from our baseline tests: Firms engaged in a joint venture where a partner is sued experience negative wealth effects as well as a reduction in both risk and investment.

#### 4. Conclusions

Different firms can be linked through supply-chain relations, through industry or geographic dependencies, and also through explicit contractual agreements, such as joint ventures. It is well known that joint ventures, which are forged to achieve specific and common objectives (e.g., pooling of resources for a large project), are often profitable for the participating firms. Indeed, academic studies show that investors react favorably when joint ventures are announced. Yet, the risk incurred by firms that enter into joint venture agreements is an important issue that is not well understood. In this paper, we advance our knowledge in this area by studying joint ventures in which one of the partners faces litigation.

We begin by establishing a novel result: firms that are equal owners in a joint venture where their partner is subsequently sued exhibit a 0.5% negative abnormal return when the class action lawsuit is announced. This finding is notable because the spillover firm is not named in the complaint. Our analyses also indicate more negative abnormal returns for spillover firms in a lengthier joint venture with the sued partner. Collectively, these results suggest that investors have a less favorable outlook for spillover firms with a potentially stronger tie with their sued venture partner. The tests also show that spillover firms are one percentage point more likely to face litigation themselves after their joint venture partner is sued. This result suggests that investors rationally update and assess the risk faced by the spillover firm when their partner's lawsuit is announced.

Following the lawsuit event, spillover firms also exhibit important declines in key risk metrics (e.g., discretionary accruals and volatility of stock returns, cash flows, and assets) and a reduction in investment spending (e.g., acquisitions, CAPEX, and R&D). Moreover, we also find that

spillover firms lower dividend payments to shareholders. These findings survive different econometric specifications and robustness tests.

Overall, our results document the risks bore by firms that have an ongoing joint venture with another company that is subsequently sued. The real effects endured by these spillover firms appear to have a non-trivial impact on their value and growth. In this vein, our evidence has broad and important implications for practitioners and academics. One implication is related to the decision to enter into joint ventures or similar cooperative agreements. Another key implication is centered on the risk adjustment needed in the hurdle rate used to evaluate joint projects as well as in the hurdle rates used in the investments individually undertaken by the participating firms while the joint venture (and the relationship-related risk) is still active.

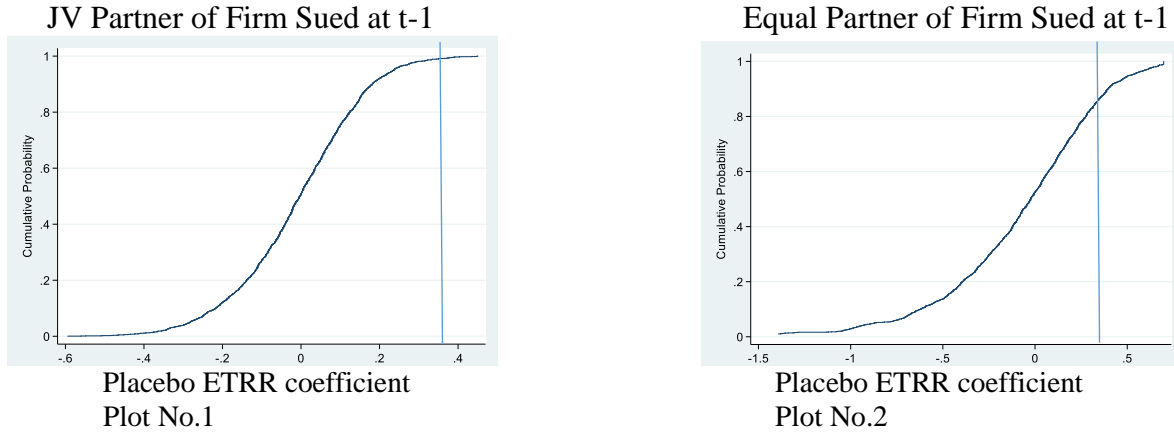
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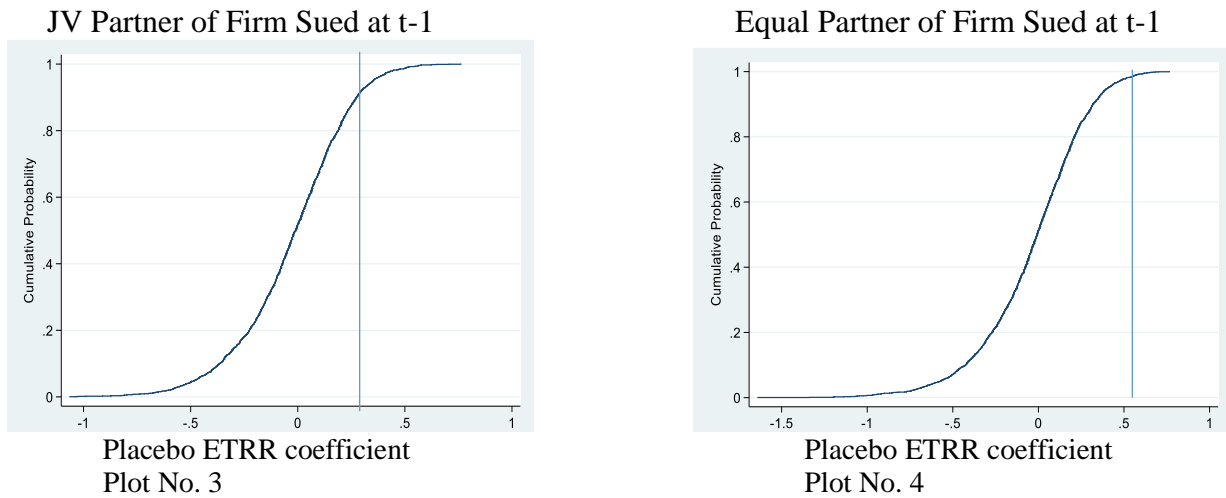
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**Figure 1: Permutation Tests**

*Dependent variable: Lawsuit at time t*



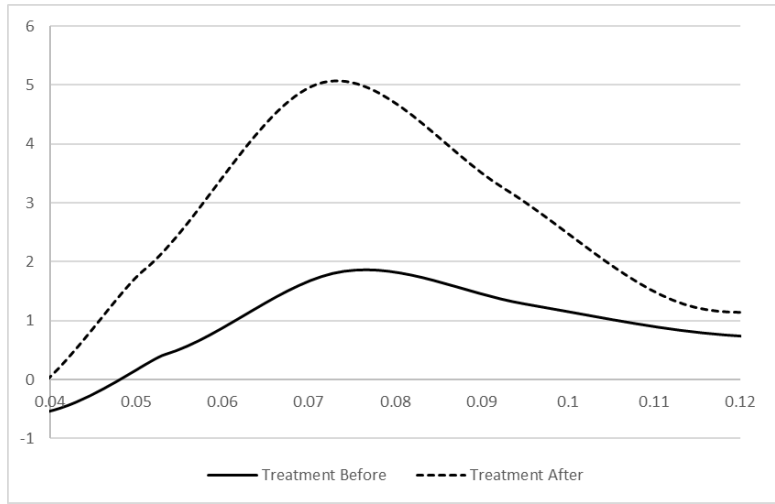
*Dependent variable: Lawsuit at time t to t+1*



These figures plot the cumulative distributions of the placebo effects for the two key outcome variables: lawsuit in time  $t$  or a lawsuit in time  $t$  to  $t+1$ . Each cdf is constructed by regressing the outcome variable on 2,000 randomly assigned ETRR treatments. To create the random treatments, each firm is randomly assigned as being engaged in a joint venture with a sued partner firm. The vertical lines in the figures show the original coefficients reported in Table 4. For the lawsuit in year  $t$  and being a JV partner of a firm sued at  $t-1$ , 22 out of 2000 (1.1%) of the coefficients larger than the effect in Model (1) of Table 4 (0.393). For an equal partner of a sued firm, 147 out of 2000 (7.35%) of the coefficients are larger than the effect in Model (2) of Table 4 (0.454). Examining whether a firm is sued in  $t$  to  $t+1$ , for a JV partner of a firm sued at  $t-1$ , 75 out of 2000 (3.75%) of the coefficients are larger than the effect in Model (3) of Table 4 (0.384) whereas for the equal partner of the firm sued at  $t-1$ , 45 out of 2000 (2.25%) of the coefficients are larger than the effect in Model (4) of Table 4 (0.506).

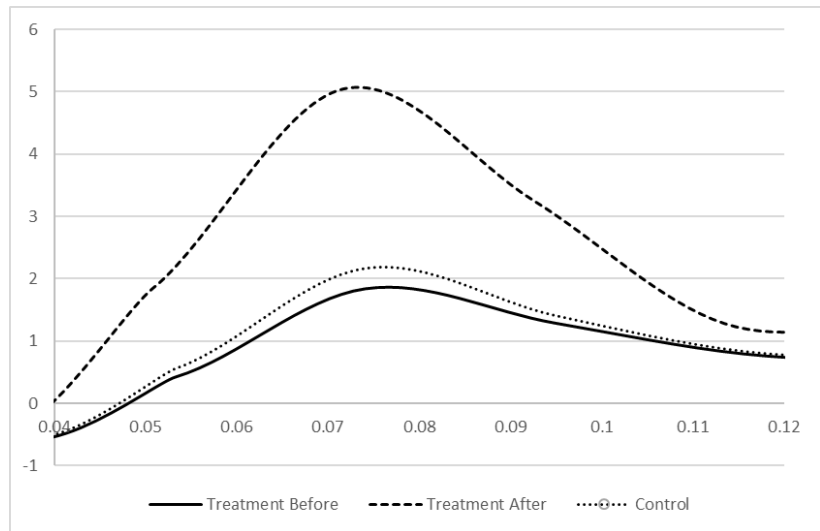


**Figure 2: Kernel Density for Treatment Group Before and After Lawsuit Event**



This figure depicts the Epanechnikov kernel density of lawsuits for the treatment group before and after their joint venture partner is sued. The figure shows that after a joint venture partner is sued, the treatment group experiences an increase in the likelihood of being sued themselves. The upward shift of the density in the figure is significant since a Kolmogorov-Smirnov test for equality of distribution functions is rejected at the 1% level.

**Figure 3: Kernel Density for Treatment Group Before and After Lawsuit Event with Control Group**



This figure depicts the Epanechnikov kernel density of lawsuits for firms in the control group and for the firms in the treatment group before and after the joint venture partner lawsuit event. The density of lawsuits is similar between the control group and the treatment group before the event. A Kolmogorov-Smirnov test for equality of distribution functions cannot be rejected at the 1% level.

**Table 1: Sample Description**

We report firm univariates for the primary variables used in our analyses. The sample time period is for fiscal years 1996 to 2012 representing 41,726 firm-year observations for 6,785 unique firms. We require each firm to have complete stock market, deal making, lawsuit, accounting, and ownership data. Panel A presents the temporal distribution of lawsuits for the sample, separating out the number of lawsuits financial in nature by year. Panel B provides a breakdown of the number of lawsuits by industry according to the Fama-French 10 industry classification. Panel C provides a breakdown of the types of lawsuits. Panel D reports sample statistics for key variables used in our analyses. All variables are defined in the Appendix.

<i>Panel A: Lawsuits by Year</i>			
<u>Year</u>	<u>Lawsuits</u>	<u>Financial Lawsuits</u>	
1996	26	13	
1997	74	44	
1998	104	73	
1999	109	73	
2000	109	83	
2001	267	59	
2002	153	112	
2003	126	88	
2004	155	121	
2005	132	86	
2006	72	41	
2007	98	55	
2008	104	65	
2009	68	37	
2010	83	39	
2011	86	50	
<u>2012</u>	<u>82</u>	<u>1</u>	
<i>Total</i>	<i>1,848</i>	<i>1,040</i>	

<i>Panel B: Industry-Lawsuit Breakdown</i>			
<u>Industry</u>	<u># Unique Firms</u>	<u>No Lawsuit</u>	<u>Lawsuit</u>
Consumer Non-Durables	309	1,932	66
Consumer Durables	150	978	30
Manufacturing	850	5,794	119
Energy	379	2,282	49
High Tech	1,607	8,424	633
Telecommunications	301	1,547	70
Shops	706	4,485	167
Healthcare	955	5,397	305
Utilities	161	1,429	36
<u>Other</u>	<u>1,367</u>	<u>7,610</u>	<u>373</u>
<i>Total</i>	<i>6,785</i>	<i>39,878</i>	<i>1,848</i>

<i>Panel C: Lawsuit Type</i>	# Deals	Percent
Accounting	449	24.30%
Antitrust Laws	2	0.11%
Audit Opinion	2	0.11%
Breach of Fiduciary Duties	30	1.62%
Clinical Studies/FDA Approval	44	2.38%
Fraud	34	1.84%
IPO	246	13.31%
Improper Use of Investor Funds	2	0.11%
Insider Trading	19	1.03%
M&A	90	4.87%
No primary category listed	88	4.76%
Other Misleading Statements	562	30.41%
Other Securities Offering	2	0.11%
Pyramid Scheme	1	0.05%
Product/Technology	80	4.33%
Risk Level	16	0.87%
SEO	9	0.49%
Securities Laws	47	2.54%
Structure of Company	55	2.98%
Tender Offer	6	0.32%
Trading Activities	31	1.68%
Underwriting	33	1.79%

<i>Panel D: Firm Descriptive Statistics</i>	Mean	Median	Std. Dev
Variable			
Number of Active Alliances and JVs	1.803	0.000	4.032
Number of Active JVs	0.516	0.000	2.557
Number of Active JV Partners	0.819	0.000	6.265
Institutional Ownership	0.476	0.485	0.314
Firm Age	20.325	15.000	16.712
Market Value of Equity (\$M)	3,081	403	7,993
Return on Assets	-0.052	0.030	0.341
Capex / Net PPE	0.355	0.203	2.124
Stock Return	0.122	0.075	0.551
Stock Volatility	0.036	0.030	0.023
Trading Volume	0.890	0.173	3.179
Cash Flow Volatility	0.019	0.009	0.049
Operating Asset Volatility	0.033	0.009	1.199
Discretionary Accruals	0.360	0.097	0.989
Investment	0.123	0.073	0.169
Cash / Net Assets	0.658	0.124	2.022
Acquisition Spending	0.028	0.000	0.072

**Table 2: Investor Reactions to Lawsuit Announcements**

We present univariate statistics of the three-day cumulative announcement returns (CARs) for firms around the announcement date of when one of their active joint venture partners is sued. We separate returns into four groups. *Sued Firms* are the returns to the sued firms themselves where day 0 is the announcement day of the lawsuit. The next group, *JV Partners of Sued Firms*, shows the returns for firms that have an active joint venture with a sued partner on the announcement date of their partner's lawsuit. We then bifurcate the JV Partners group into two distinct groups: by whether the joint venture is equally owned amongst all partner firms (*Equal Partner of Firm Sued at t-1*) compared to the joint venture partners that are not equal owners (*Non-Equal Partner of Firm Sued at t-1*). To assess the statistical significance of the returns, we report the *p*-value from two-tailed tests for the averages and Wilcoxon test *p*-values for medians.

<i>Announcement CARs(-1,1) During Lawsuit Event</i>					
	N	Average CAR	p-value	Median CAR	p-value
Sued Firms	935	-0.0496	(0.00)	-0.0136	(0.00)
JV Partners of Firm Sued	940	-0.0044	(0.01)	-0.0028	(0.02)
Equal Partner of Firm Sued	767	-0.0057	(0.00)	-0.0033	(0.01)
Non-Equal Partner of Firm Sued	173	0.0014	(0.69)	-0.0005	(0.99)

**Table 3: Multivariate Analysis of Fraud Announcement CARs for Spillover Firms**

This table presents ordinary least squares estimates of three-day cumulative abnormal returns (-1,1) to joint venture partners on the announcement date when one of their active joint venture partners is sued. The dependent variable is the three-day return for all models. All models focus on those firms that are equal partners in the joint venture with the sued firm. Models (2)–(4) show estimates for a reduced subsample of firms with governance controls. All models include year by industry fixed effects using the Fama-French 48 classification and are estimated with robust industry clustered standard errors. For each coefficient, *p*-values are reported in parentheses. All financial and stock variables are as of the fiscal year prior to the partner firm's lawsuit date. Variables are defined in the Appendix.

	CAR (-1,1)			
	(1)	(2)	(3)	(4)
Equal Partner of Firm Sued	-0.011 (0.03)	-0.015 (0.08)	-0.014 (0.10)	-0.015 (0.07)
Long Venture	0.000 (0.91)	-0.009 (0.00)	-0.009 (0.00)	-0.009 (0.00)
Relative Size	0.003 (0.16)	0.002 (0.42)	0.002 (0.31)	0.002 (0.40)
Same Industry	-0.005 (0.41)	-0.006 (0.55)	-0.006 (0.55)	-0.006 (0.55)
Financing JV	-0.024 (0.38)	-0.028 (0.08)	-0.029 (0.07)	-0.028 (0.08)
R&D JV	-0.001 (0.88)	-0.007 (0.47)	-0.007 (0.47)	-0.007 (0.44)
Cross Border JV	0.003 (0.68)	-0.005 (0.49)	-0.005 (0.49)	-0.005 (0.51)
Disclosed Value	-0.002 (0.69)	0.002 (0.78)	0.002 (0.81)	0.002 (0.77)
Same Auditor	0.003 (0.61)	0.004 (0.74)	0.004 (0.73)	0.004 (0.73)
Multisegment Firm	0.008 (0.19)	0.013 (0.18)	0.013 (0.18)	0.013 (0.18)
Return on Assets	0.010 (0.27)	-0.014 (0.71)	-0.015 (0.69)	-0.014 (0.68)
Log Market Value of Equity	0.001 (0.53)	-0.001 (0.63)	-0.001 (0.82)	-0.001 (0.61)
Log Firm Age	0.005 (0.10)	0.006 (0.23)	0.005 (0.26)	0.006 (0.23)
Stock Volatility	-0.055 (0.01)	-0.185 (0.45)	-0.159 (0.50)	-0.181 (0.46)
Previously Sued	-0.002 (0.59)	0.005 (0.55)	0.005 (0.56)	0.005 (0.54)
Number of Active JV Partners	-0.000 (0.06)	-0.000 (0.48)	-0.000 (0.51)	-0.000 (0.42)
Financial Lawsuit	0.010 (0.36)	0.010 (0.38)	0.010 (0.38)	0.010 (0.41)
Top 5 Ownership		0.000 (0.92)	0.000 (0.94)	
E-Index		-0.002 (0.44)		-0.002 (0.42)
Constant	-0.037 (0.00)	-0.004 (0.86)	-0.004 (0.85)	-0.016 (0.46)
Year by Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	940	572	572	572
Adjusted R-squared	0.047	-0.059	-0.057	-0.056

**Table 4: Probability of Future Litigation for JV Partners of Sued Firms**

This table reports the likelihood of a firm being sued on whether a firm has an active joint venture with a sued partner using logistic regressions. We use all of the firms in Compustat with complete stock market, accounting, ownership, and lawsuit data from 1996-2012. The dependent variable in models (1) and (2), probability of a lawsuit during time ( $t$ ), is an indicator for whether the partner firm is sued in the year ( $t$ ) after engaging in a joint venture with a sued partner (who is sued in  $t-1$ ). The dependent variable in models (3) and (4), probability of a lawsuit in ( $t$  to  $t+1$ ), is an indicator for whether the firm is sued within the next two years after engaging in a joint venture with a sued partner (who is sued in  $t-1$ ). All models include year and industry fixed effects (based on the Fama-French 48 classification) and use robust firm-clustered standard errors. For each coefficient,  $p$ -values are reported in parentheses. All financial and stock variables are as of the fiscal year prior to the partner firm's lawsuit date. Variables are defined in the Appendix.

Probability of a Lawsuit during:	(t)		(t to t+1)	
	(1)	(2)	(3)	(4)
JV Partner of Firm Sued at t-1	0.393 (0.07)		0.384 (0.04)	
Equal Partner of Firm Sued at t-1		0.454 (0.05)		0.506 (0.01)
Previously Sued	-0.096 (0.28)	-0.096 (0.28)	-0.105 (0.22)	-0.105 (0.22)
Log Firm Age	-0.472 (0.00)	-0.474 (0.00)	-0.446 (0.00)	-0.447 (0.00)
Stock Return	-0.714 (0.00)	-0.715 (0.00)	-0.391 (0.00)	-0.392 (0.00)
Number of Active JV Partners	-0.005 (0.20)	-0.004 (0.24)	0.001 (0.58)	0.002 (0.47)
Institutional Ownership	0.894 (0.00)	0.892 (0.00)	0.794 (0.00)	0.793 (0.00)
Return on Assets	-0.009 (0.92)	-0.007 (0.93)	-0.009 (0.91)	-0.008 (0.92)
Log Market Value Equity	0.443 (0.00)	0.443 (0.00)	0.432 (0.00)	0.431 (0.00)
High Litigation Risk Industry	0.671 (0.00)	0.670 (0.00)	0.602 (0.00)	0.600 (0.00)
Stock Volatility	21.857 (0.00)	21.877 (0.00)	21.509 (0.00)	21.515 (0.00)
Trading Volume	0.000 (0.11)	0.000 (0.10)	0.000 (0.28)	0.000 (0.25)
Discretionary Accruals	0.050 (0.13)	0.049 (0.13)	0.025 (0.28)	0.025 (0.28)
Constant	-7.096 (0.00)	-7.094 (0.00)	-6.630 (0.00)	-6.624 (0.00)
Observations	41,726	41,726	41,726	41,726
Pseudo R-squared	0.117	0.117	0.102	0.102

**Table 5: Pre-Trend Effects**

This table reports the likelihood of a firm being sued in the years before a firm has an active joint venture with a sued partner using logistic regressions. We use all of the firms in Compustat with complete stock market, accounting, ownership, and lawsuit data from 1996-2012. The dependent variable, the probability of a Lawsuit in ( $t-3$  to  $t-2$ ), in all models in both panels is an indicator for whether the partner firm is sued within the two years preceding engaging in a joint venture with a sued partner (who is sued in  $t-1$ ). All models include control variables from Table 4. In Panel A, models (1) and (2) use robust standard errors while models (3) and (4) use robust firm-clustered standard errors. In Panel B, models (1) and (2) include year and industry fixed effects (based on the Fama-French 48 classification) and use robust standard errors. Models (3) and (4) are the same specifications as models (1) and (2) but with robust firm-clustered standard errors. For each coefficient,  $p$ -values are reported in parentheses. Variables are defined in the Appendix.

Panel A:				
	Probability of a Lawsuit (t-3 to t-2)			
	(1)	(2)	(3)	(4)
JV Partner of Firm Sued at t-1	0.272 (0.24)		0.272 (0.28)	
Equal Owner of Firm Sued at t-1		0.174 (0.52)		0.174 (0.57)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	No	No	No	No
Firm Fixed Effects	No	No	No	No
Robust Standard Errors	Yes	Yes	No	No
Firm Clustered Standard Errors	No	No	Yes	Yes
Observations	41,726	41,726	41,726	41,726
Pseudo R-squared	0.0358	0.0357	0.0358	0.0357
Panel B				
	Probability of a Lawsuit (t-3 to t-2)			
	(1)	(2)	(3)	(4)
JV Partner of Firm Sued at t-1	0.055 (0.82)		0.055 (0.83)	
Equal Owner of Firm Sued at t-1		0.003 (0.99)		0.003 (0.99)
Control Variables	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Robust Standard Errors	Yes	Yes	No	No
Firm Clustered Standard Errors	No	No	Yes	Yes
Observations	41,726	41,726	41,726	41,726
Pseudo R-squared	0.0809	0.0809	0.0809	0.0809

**Table 6: Risk Implications of Having a Sued JV Partner**

This table reports the changes in the stock, cash flow, operating asset volatility, discretionary accruals, and dividends per share for a firm in the year after one of their joint venture partners is sued. The sample is all firms in Compustat with complete stock market, accounting, ownership, and lawsuit data from 1996-2012. The dependent variable in models (1) and (2) is the percentage change in daily stock volatility from  $t-1$  to  $t$ . The dependent variable in models (3) and (4) is the percentage change in cash flow volatility calculated as the annual standard deviation of the firm's quarterly ratio of cash flow to assets. The dependent variable in models (5) and (6) is the percentage change in stock volatility multiplied by operating assets. The first three dependent variables are derived from Gormley and Matsa (2016). The dependent variable in models (7) and (8) is the percentage change in the absolute value of discretionary accruals following the modified Jones (1991) model. The dependent variable in models (9) and (10) is an indicator set to one if the firm decreased their dividends per share in the year following the partner lawsuit, zero otherwise. Models (1) – (8) are estimated with ordinary least squares and models (9) and (10) use a logistic regression. All models include year and industry fixed effects (based on the Fama-French 48 classification) and use robust, firm-clustered standard errors. For each coefficient,  $p$ -values are reported in parentheses. The change in financial variables (market value of equity, ROA, and capex) are from  $t-2$  to  $t-1$ . Variables are defined in the Appendix.

	Stock Volatility		Cash Flow Volatility		Operating Asset Volatility		Discretionary Accruals		Decrease in Dividend/Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JV Partner of Firm Sued at t-1	-0.093 (0.01)		-0.258 (0.04)		-0.194 (0.00)		-0.097 (0.21)		0.521 (0.01)	
Equal Partner of Firm Sued at t-1		-0.083 (0.02)		-0.327 (0.01)		-0.235 (0.00)		-0.128 (0.08)		0.552 (0.00)
Previously Sued	-0.082 (0.00)	-0.082 (0.00)	-0.018 (0.44)	-0.018 (0.44)	-0.165 (0.00)	-0.165 (0.00)	0.237 (0.29)	0.238 (0.29)	-0.355 (0.00)	-0.355 (0.00)
Log Firm Age	-0.014 (0.01)	-0.014 (0.01)	-0.071 (0.00)	-0.071 (0.00)	-0.046 (0.00)	-0.046 (0.00)	-0.006 (0.96)	-0.004 (0.97)	0.360 (0.00)	0.360 (0.00)
Stock Return	-0.410 (0.00)	-0.410 (0.00)	0.050 (0.11)	0.050 (0.11)	-0.728 (0.00)	-0.728 (0.00)	-0.234 (0.33)	-0.233 (0.33)	-0.233 (0.00)	-0.235 (0.00)
Number of Active JV Partners	-0.001 (0.00)	-0.001 (0.00)	0.011 (0.03)	0.010 (0.03)	-0.003 (0.01)	-0.004 (0.00)	0.017 (0.17)	0.016 (0.17)	0.013 (0.00)	0.014 (0.00)
Institutional Ownership	0.005 (0.29)	0.005 (0.29)	0.024 (0.07)	0.023 (0.07)	0.009 (0.48)	0.009 (0.48)	-0.058 (0.46)	-0.058 (0.45)	-0.023 (0.34)	-0.023 (0.35)
Market Value of Equity	0.080 (0.00)	0.080 (0.00)	-0.055 (0.00)	-0.055 (0.00)	0.007 (0.65)	0.007 (0.65)	-0.061 (0.66)	-0.062 (0.66)	-0.150 (0.00)	-0.149 (0.00)
ROA	-0.000 (0.69)	-0.000 (0.69)	0.000 (0.92)	0.000 (0.92)	-0.001 (0.73)	-0.001 (0.74)	-0.016 (0.40)	-0.016 (0.40)	-0.007 (0.12)	-0.007 (0.11)
Capex/PPE	-0.001 (0.51)	-0.001 (0.52)	0.003 (0.61)	0.003 (0.61)	0.029 (0.00)	0.029 (0.00)	0.039 (0.33)	0.039 (0.33)	-0.016 (0.18)	-0.016 (0.18)
Constant	0.550 (0.00)	0.550 (0.00)	0.764 (0.00)	0.763 (0.00)	1.108 (0.00)	1.108 (0.00)	3.998 (0.00)	3.997 (0.00)	-2.852 (0.00)	-2.854 (0.00)
Observations	41,726	41,726	41,726	41,726	41,726	41,726	41,726	41,726	41,726	41,726
Adjusted R-Squared	0.287	0.287	0.015	0.015	0.076	0.076	0.020	0.020	0.084	0.084



**Table 7: Repercussions of Having a Sued JV Partner**

This table reports repercussions to the firm for having a joint venture with a sued partner. The sample includes all firms in Compustat with complete stock market, accounting, ownership, and lawsuit data from 1996-2012. The dependent variable in models (1) and (2) is the percentage change in investment by the firm, calculated as capital expenditures plus research and development expense scaled by assets. The dependent variable in models (3) and (4) is the percentage change in amount of cash acquisitions to total assets from  $t-1$  to  $t$ . The dependent variable in models (5) and (6) is an indicator set to one for whether the firm has a terminated joint venture in the year following a sued partner ( $t$ ). Models (1) – (4) are estimated using ordinary least squares regressions and models (5) and (6) are estimated using a logistic regression. All models include year and industry fixed effects (based on the Fama-French 48 classification) and robust firm-clustered standard errors. For each coefficient,  $p$ -values are reported in parentheses. The change in financial variables (market value of equity, ROA, and capex) are from  $t-2$  to  $t-1$ . Variables are defined in the Appendix.

	Change in Investment		Change in Acquisition Spending		Terminated Joint Venture	
	(1)	(2)	(3)	(4)	(5)	(6)
JV Partner of Firm Sued at $t-1$	-0.012 (0.04)		-0.022 (0.03)		1.709 (0.00)	
Equal Partner of Firm Sued at $t-1$		-0.009 (0.07)		-0.019 (0.05)		1.822 (0.00)
Previously Sued	0.004 (0.01)	0.004 (0.01)	0.285 (0.41)	0.285 (0.41)	0.248 (0.33)	0.252 (0.32)
Log Firm Age	0.006 (0.00)	0.006 (0.00)	-0.014 (0.82)	-0.014 (0.82)	0.613 (0.00)	0.616 (0.00)
Stock Return	0.027 (0.00)	0.027 (0.00)	0.147 (0.39)	0.147 (0.39)	-0.356 (0.10)	-0.372 (0.09)
Number of Active JV Partners	0.000 (0.32)	0.000 (0.84)	0.001 (0.86)	0.000 (0.96)	0.015 (0.00)	0.016 (0.00)
Institutional Ownership	-0.010 (0.00)	-0.010 (0.00)	-0.020 (0.53)	-0.020 (0.53)	0.028 (0.77)	0.029 (0.77)
Market Value of Equity	-0.024 (0.00)	-0.024 (0.00)	-0.067 (0.14)	-0.067 (0.14)	0.156 (0.21)	0.161 (0.19)
ROA	0.001 (0.00)	0.001 (0.00)	0.004 (0.43)	0.004 (0.42)	-0.008 (0.58)	-0.010 (0.52)
Capex/PPE	0.007 (0.00)	0.007 (0.00)	0.014 (0.33)	0.014 (0.33)	0.039 (0.21)	0.039 (0.20)
Constant	-0.022 (0.00)	-0.022 (0.00)	0.108 (0.47)	0.109 (0.47)	-6.894 (0.00)	-6.911 (0.00)
Observations	41,726	41,726	41,726	41,726	41,726	41,726
Adjusted R-Squared	0.049	0.049	0.000	0.000	0.092	0.092

**Table 8: Alternative Specifications**

In this table we conduct alternative variable specifications and robustness tests for our baseline regressions from Tables 3, 4, 6, and 7. In Panels A - C, we include year by industry multiplicative fixed effects (based on the Fama-French 48 classification) following Gormley and Matsa (2014) to control for unobserved heterogeneity. Panels D and E use a continuous alternative metric for measuring the strength of the relationship between the spillover JV partner and the sued firm. *Ownership in JV of Non-Sued Partner* is the percentage of ownership by the spillover firm in the venture with the sued firm. Panels F and G create a subsample conditional on firms that have an active JV in the current year. For brevity, we only report the coefficients for each main variable of interest with *p*-values reported in parenthesis. All models contain the same control variables as in Tables 3, 4, 6 and 7.

<b>Panel A: Unobserved Heterogeneity - Tables 3 and 4</b>										
Dependent Variable =	CAR(-1,1)		Lawsuit (t)		Lawsuit (t to t+1)					
	(1)	(2)	(3)	(4)	(5)					
JV Partner of Firm Sued at t-1		0.028 (0.04)		0.027 (0.15)						
Equal Partner of Firm Sued at t-1	-0.011 (0.02)		0.031 (0.06)		0.037 (0.08)					

<b>Panel B: Unobserved Heterogeneity - Table 6</b>										
Dependent Variable =	Stock Volatility		Cash Flow Volatility		Operating Asset Volatility		Discretionary Accruals		Decrease in Dividend/Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JV Partner of Firm Sued at t-1	-0.100 (0.00)		-0.274 (0.03)		-0.220 (0.00)		-0.105 (0.09)		0.036 (0.11)	
Equal Owner of Firm Sued at t-1		-0.094 (0.01)		-0.357 (0.00)		-0.267 (0.00)		-0.148 (0.00)		0.040 (0.08)

<b>Panel C: Unobserved Heterogeneity - Table 7</b>						
Dependent Variable =	Change in Investment		Change in Acquisition Spending		Terminated JV	
	(1)	(2)	(3)	(4)	(5)	(6)
JV Partner of Firm Sued at t-1	-0.010 (0.09)		-0.016 (0.17)		0.014 (0.21)	
Equal Owner of Firm Sued at t-1		-0.007 (0.18)		-0.014 (0.24)		0.020 (0.10)

**Table 8 Continued**

<i>Panel D: Alternative Metric - Tables 3, 4, and 7</i>									
Dependent Variable =	CAR(-1,1)	Lawsuit (t)	Lawsuit (t to t+1)	Change in Investment	Change in Acquisition Spending	Terminated JV			
	(1)	(2)	(3)	(4)	(5)	(6)			
Ownership in JV of Non-Sued Partner	-0.005 (0.64)	0.077 (0.01)	0.063 (0.04)	-0.023 (0.03)	-0.027 (0.07)	1.799 (0.00)			

<i>Panel E: Alternative Metric - Table 6</i>									
Dependent Variable =	Stock Volatility		Cash Flow Volatility	Operating Asset Volatility		Discretionary Accruals		Decrease in Dividend/Share	
	(1)		(2)	(3)		(4)		(5)	
Ownership in JV of Non-Sued Partner	-0.094 (0.06)		-0.354 (0.08)	-0.312 (0.00)		-2.092 (0.02)		0.713 (0.02)	

<i>Panel F: Subsample of Firms with Active JVs - Table 4 and 7</i>										
Dependent Variable =	Lawsuit (t)		Lawsuit (t to t+1)		Change in Investment		Change in Acquisition Spending		Terminated Joint Venture	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JV Partner of Firm Sued at t-1	0.045 (0.01)		0.026 (0.18)		-0.013 (0.04)		-0.032 (0.24)		0.613 (0.06)	
Equal Partner of Firm Sued at t-1	0.051 (0.02)		0.036 (0.10)		-0.008 (0.10)		-0.031 (0.30)		0.757 (0.02)	

<i>Panel G: Subsample of Firms with Active JVs - Table 6</i>										
Dependent Variable =	Stock Volatility		Cash Flow Volatility		Operating Asset Volatility		Discretionary Accruals		Decrease in Dividend/Share	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
JV Partner of Firm Sued at t-1	-0.077 (0.04)		-0.278 (0.03)		-0.109 (0.13)		-0.967 (0.24)		0.385 (0.04)	
Equal Partner of Firm Sued at t-1	-0.066 (0.09)		-0.361 (0.00)		-0.129 (0.08)		-1.432 (0.06)		0.415 (0.02)	

## Appendix

### Variable Definitions

JV Partner of Firm Sued	(0,1) indicator: '1' denotes the firm has an active joint venture with a firm that has been sued in the fiscal year, '0' otherwise.
Equal Partner of Firm Sued	(0,1) indicator: '1' denotes that all partners have an equal ownership stake in the venture (e.g., 33.3%, 33.3%, 33.3% for a three firm JV), '0' otherwise.
Acquisition Spending	The amount of cash acquisitions [AQC] to total assets [AT] from Compustat.
Annual Cash Flow Volatility	The annual standard deviation of the firm's quarterly ratio of cash flow to assets from Compustat following Gormley and Matsa (2016).
Capex / Net PPE	The amount of capital expenditures [CAPX] to net property, plant, and equipment [AT] from Compustat.
Cash / Net Assets	Cash and marketable securities normalized by total assets [CHE / AT]
Change in Investment	Change in capital expenditures [CAPX] plus research and development expense [XRD] scaled by total assets [AT] from Compustat. XRD is set to zero where missing.
Cross Border JV	(0,1) indicator: '1' denotes the JV involves at least one international participant, '0' otherwise.
Decrease in Dividend/Share	(0,1) indicator: '1' denotes the firm decreased their dividends per share in the following year, '0' otherwise.
Disclosed Value	(0,1) indicator: '1' denotes the value of the JV is disclosed in the SDC database, '0' otherwise
Discretionary Accruals	The absolute value of discretionary total accruals using the modified Jones (1991) model as computed by Dechow, Sloan, and Sweeney (1995).
E-Index	The Entrenchment Index (Bebchuk, Cohen, and Ferrell, 2005) which is the sum of six indicators denoting the existence of a classified board, poison pill, golden parachute, a limit on the ability to amend bylaws, a limit on the ability to amend the corporate charter, and supermajority vote provision.
Financial Lawsuit	(0,1) indicator: '1' denotes a shareholder class action lawsuit that is financial in nature against the firm in the fiscal year, '0' otherwise.
Financing JV	(0,1) indicator: '1' denotes the primary purpose of the JV is to provide capital to one of the partners (FUNDF = 1), '0' otherwise.
Firm Age	The number of years since the firm was listed with valid data in either CRSP or Compustat.
High Litigation Risk Industry	(0,1) indicator: '1' denotes industry groups with an above-median percentage of sued firms following Field, Lowry, and Shu (2005), '0' otherwise.
Institutional Ownership	Percentage of the firm's common shares held by institutional investors.

Lawsuit	(0,1) indicator: '1' denotes a shareholder class action lawsuit against the firm in the fiscal year, '0' otherwise.
Long Venture	(0,1) indicator: '1' denotes active joint ventures with an above-average duration, '0' otherwise.
Market Value of Equity (\$M)	End of period market value of equity calculated from Compustat [CSHO x PRCC_F].
Multisegment Firm	(0,1) indicator: '1' denotes the firm has more than one business or operating segment listed in the Compustat segment database, '0' otherwise.
Number Active Alliances and JVs	The total number of active strategic alliances and joint ventures maintained by the firm in the fiscal year.
Number Active Joint Ventures	The total number of active joint ventures maintained by the firm in the fiscal year.
Number of Active JV Partners	The total number of active joint venture partners maintained by the firm in the fiscal year.
Operating Asset Volatility	Stock volatility multiplied by operating assets (calculated from Compustat) following Gormley and Matsa (2016).
Ownership in JV of Non-Sued Partner	Percentage of the spillover firm's partnership stake in the joint venture with the sued firm.
Previously Sued	(0,1) indicator: '1' denotes the firm has been the target of a shareholder class action lawsuit in the previous three years, '0' otherwise.
Prior Year Stock Return	Raw stock return for the 250 trading days preceding the fiscal year-end date.
Prior Year Trading Volume	Average daily trading volume for the 250 trading days preceding the fiscal year-end date.
R&D JV	(0,1) indicator: '1' denotes the primary purpose of the JV is to conduct research and development (RNDF = 1), '0' otherwise.
Return on Assets	Operating return on assets [OIBDP / AT] from Compustat.
Relative Size	The market value of the spillover firm divided by the market value of the sued firm.
Same Auditor	(0,1) indicator: '1' denotes the spillover firm and the sued firm share the same auditor, '0' otherwise.
Same Industry	(0,1) indicator: '1' denotes the spillover firm and the sued firm are part of the same industry, '0' otherwise.
Stock Volatility	The square root of the sum of squared daily returns for one year based on data from the Center for Research in Security Prices (CRSP) following Gormley and Matsa (2016).
Terminated Joint Venture	(0,1) indicator: '1' denotes the firm experienced a terminated joint venture in the following year, '0' otherwise.
Top 5 Ownership	The combined ownership of the top-5 highest paid officers as a percentage of the common shares outstanding.