

# Litigation Risk and the Independent Director Labor Market

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**Abstract:** Does litigation risk affect board composition and compensation-related issues for independent directors? We exploit an unexpected decision by the Delaware Supreme Court, which lowered the liability threshold *only* for directors in derivative litigation over their own compensation to answer this question. We find that the market, firms and directors all reacted to this rare increase in director-only litigation risk. First, Delaware firms experienced significant negative short-window returns, concentrated in firms with high return volatility (higher litigation risk firms), where equity compensation is most important. These results are consistent with investor concerns about attracting and/or retaining qualified directors. Further, higher risk Delaware firms added more qualified directors to the compensation committee. In contrast, lower risk Delaware firms decreased director equity compensation and their directors decreased insider trading activity. Overall, results are consistent with firms and directors acting to mitigate litigation concerns.

Key words: Director Labor Market; Board Composition; Director Compensation; Insider Trading; Litigation Risk

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## 1. Introduction

Does ex ante litigation risk affect board composition and compensation-related issues for independent directors? This question is important because board composition and compensation-related issues affect monitoring and financial reporting quality (e.g. Engel et al. 2010; Laux 2010; Masulis et al. 2012). Directors often express concern about litigation risk, particularly after increases in litigation, such as after the Enron-WorldCom scandals (Lubin et al. 2005). However, empirical evidence suggests that public company directors are virtually immune to ex post personal litigation costs in firm litigation outside a “perfect storm” (Black et al. 2006), so increases in *firm* litigation risk rarely translate into *personal* director risk. A further challenge for examining this question is isolating the effects of changes in director litigation risk because legal changes typically affect both directors and officers. As a result, there is a scarcity of evidence regarding the effects of ex ante, *director-specific* litigation risk. This is particularly true when litigation risk increases as such increases are rare due to long-term declines in litigation risk.

To investigate this issue, we exploit the exogenous shock to director-specific litigation risk from *In re Investors Bancorp, Inc. Stockholder Litigation* 177 A.3d 1208 (Del. 2017) (“*Investors Bancorp*”). The plaintiffs alleged that, in the year in dispute, the directors of a relatively small bank holding company were paid more than any independent directors on Wall Street at over \$2 million each. However, the stock compensation plan had been ratified by shareholders and appeared to comply with Delaware law. Thus, the Delaware Supreme Court shocked legal observers by changing the standard used to review director compensation in shareholder derivative litigation, holding that shareholder ratification was insufficient in some instances and casting future case outcomes into doubt.<sup>1</sup>

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<sup>1</sup> Confirming this, several law firms commented on the case and issued warnings to their clients (e.g., Skadden 2017; Earle et al. 2018). Further, *Investors Bancorp* is affecting outcomes in derivative cases related to equity

U.S. corporations are subject to the corporate law of the state in which they are incorporated, rather than their headquarters state, and more firms are incorporated in Delaware than all other states combined (Daines 2001). However, a firm’s headquarter location may also affect director labor market outcomes. We thus perform several analyses to examine responses to *Investors Bancorp* using firms incorporated in states other than Delaware, but headquartered in the same U.S. Census region (Northeast, Midwest, South and West) as a control sample. In addition to Census region, we match on industry, year and size. We also perform cross-sectional tests based on firm characteristics that are likely to predict where effects may be concentrated.

For our first set of analyses, we examine the market reaction to the *Investors Bancorp* decision. We find a significant negative reaction upon its announcement for Delaware firms. We then examine whether this effect is concentrated in firms where the effects should be focused. Given the unexpected nature of the ruling,<sup>2</sup> we expect investors would use a relatively simple heuristic based on the types of firms likely to use and manipulate equity compensation, rather than a sophisticated model. Thus, investors likely focused on firms with characteristics similar to the firms implicated in the option backdating scandal, which overwhelmingly involved technology firms with high stock return volatility and high levels of intangibles (see Chyz 2013; Collins et al. 2009; Coughlin et al. 2006; Heron and Lie 2009).

We use firm characteristics related to *equity* compensation for our cross-sectional

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compensation. In May 2019, in *Stein v. Blankfein*, a claim that the nonemployee directors of Goldman Sachs had overcompensated themselves was allowed to proceed by the Delaware Chancery Court, while all other claims were dismissed. As an observer noted, “*Stein* illustrates the difficulty, post *Investors Bancorp*, of dispensing with challenges to discretionary director compensation awards on a motion to dismiss. As the court recognized, proceeding past this stage ‘does give a plaintiff significant leverage’” (Greco 2019).

<sup>2</sup> The decision was particularly surprising given the decades-long general decline in state and federal litigation risk. For example, the Private Securities Litigation Reform Act significantly reduced federal securities litigation liability (Choi 2007; Choi et al. 2009), several states adopted universal demand laws to reduce derivative litigation (Appel 2016), all states increased the intent threshold for director liability under the duty of loyalty (Basu and Liang 2019) and Nevada reformed its corporate law to virtually eliminate director and officer liability (Barzuza 2012).

analysis for two interrelated reasons. First, the facts of *Investors Bancorp* explicitly focused on equity compensation. Second, even though the reasoning of the case could also be applied to total compensation, equity-based compensation provides a unique opportunity for directors to exploit the compensation process (besides mere overcompensation) due to their information advantage over other stockholders. This is because directors and officers have better insight into future stock returns and earnings information (Piotroski and Roulstone 2005), meaning that other parties may not fully appreciate the value of option grants or restricted stock. Thus, self-awarding equity-based compensation is a unique opportunity for directors.

We first partition the sample based on median stock return volatility. In addition to its association with the backdating scandal, return volatility is a natural measure for the importance of equity compensation because it affects the value of option-related compensation. We find significantly higher negative returns in firms with high return volatility. Second, we partition the sample based on median research and development (R&D) deflated by assets as a measure of technology firms. Firms with high R&D use large amounts of stock-based compensation (Hanlon et al. 2003; Cheng 2004) and have high information asymmetry (Huddart and Ke 2007). We similarly find significantly higher negative returns in firms with high R&D. We also validate that the decision resulted in concerns about director liability as we find a significant increase in Google searches of “Investors Bancorp” and “Director Liability” around the ruling.

For our second set of analyses, we use a difference-in-difference design to examine board attributes related to compensation decisions. First, we examine the compensation committee, the directors who are most likely to be concerned with the decision. These directors have the most responsibility for equity grant decisions and thus likely face higher litigation risk. Delaware directors may choose to leave the committee to reduce their personal litigation risk. However,

*some* directors must serve on the committee. Thus, it seems likely that we will see what we term demographic shifts in the directors on the committee. The increased personal litigation risk may also make it more difficult to attract or retain qualified members. Alternatively, firms may seek committee members with more expertise to deal with the increased litigation risk.

We find that Delaware firms add independent members to the compensation committee, and new members are more qualified as measured by their number of qualifications (i.e., degrees or certifications) or network size. These results are consistent with a desire by firms to avoid litigation by adding members of higher quality, individuals being unwilling to serve without expertise or a combination of these factors. We examine this further in a sub-sample analysis by splitting the sample and find stronger results in firms that have higher stock return volatility.

Second, we examine how Delaware independent director compensation changed. We expect a shift away from equity-based compensation due to the decision's focus on equity incentive plans and a possible decline in total compensation. However, directors may demand more compensation due to increased litigation risk. We find a significant decrease in total compensation for the average Delaware firm, but larger decreases in both total compensation and equity compensation in Delaware firms with lower stock return volatility. Thus, relatively lower-risk Delaware firms respond by relatively decreasing director compensation, while directors of higher risk firms appear unwilling to accept similar decreases.

Third, we examine how independent director insider trading changed. Manne (1966) suggests directors and officers could use insider trading profits to replace other compensation, and Roulstone (2003) finds evidence this occurs in some situations. However, abnormal insider trading is often used as evidence of intent in litigation (e.g., Erickson 2011), and firms may respond to litigation by limiting insiders' trading (Billings and Cedergren 2015). Thus, it is

unclear whether directors will replace compensation with insider trading profits or will curtail trading to avoid scrutiny due to enhanced litigation risk. While we find no significant changes for the average Delaware firm, we find some evidence of the latter in our subsample split. That is, directors of Delaware firms with lower return volatility decrease the percentage of total firm equity traded after *Investors Bancorp*, consistent with these directors seeking to avoid scrutiny.

This study makes two primary contributions. First, we show how changes in director litigation risk can affect labor market outcomes and director behavior. Specifically, some firms appear to increase the quality of their oversight to reduce litigation risk by changing the compensation committee composition, while others reduce compensation and insider trading. Our findings that relatively higher risk Delaware firms respond to the *increased* litigation risk by increasing director quality complement the contemporaneous findings in Masulis et al. (2018) that firms also respond to *decreases* in derivative litigation risk by increasing director quality.

Second, we provide initial empirical evidence that increases in director litigation risk may reduce firm value. While Laux (2010) analytically shows this result, it has not been shown empirically. This finding is ironic as the Delaware Supreme Court's decision was made to protect shareholders. This finding also contrasts with several prior findings that *decreases* in legal liability increase cost of capital or lower firm value (e.g., Donelson and Yust 2014; Chen et al. 2016; Ni and Yin 2018). Taken together, results from this study and prior studies are more consistent with *changes* in director litigation risk decreasing firm value, suggesting an optimal liability level when litigation is viewed as a governance mechanism (see Larcker et al. 2011).

## **2. Literature review and hypotheses**

### *2.1. Ex post director litigation costs*

Nearly all U.S. firms buy D&O insurance, which covers settlements and related expenses for directors and officers when not indemnified by the company (Baker and Griffith 2010). Thus,

out-of-pocket payments by independent directors are very rare. Black et al. (2006) find outside directors made out-of-pocket payments in only 13 cases over a 25-year period and conclude such payments should only occur in a combination of: 1) firm insolvency, 2) unusually strong facts, 3) high director culpability and 4) high director wealth. Davidoff Solomon (2011) states “the truth is that they have about the same chance of being held liable for their poor management of a public firm as they have of being struck by lightning.” Another potential cost they could incur is suffering labor market consequences, such as turnover or the inability to serve on other boards. However, there is limited evidence of labor market consequences to directors of sued firms, and the consequences are only for likely fraud cases. For example, Helland (2006) finds a net decrease in the number of other boards seats only for cases with the highest settlements.

Thus, evidence that directors of sued firms face monetary or reputational costs is limited. However, it is challenging to isolate the effect of the litigation itself as opposed to the alleged underlying fraud because other endogeneity concerns exist.<sup>3</sup> Similarly, by focusing on rare, ex post outcomes, it is difficult to know whether directors perceive any substantive ex ante litigation risk from serving on boards or whether their concerns regarding litigation risk are cheap talk.

## 2.2. *Ex ante director litigation costs*

While the prior studies focus on the ex post costs of litigation to directors, what is relatively understudied is the effect of such litigation risk *ex ante*. One of the main reasons for this lack of research is that legal changes isolated to director liability are relatively rare. One such event that affected only director litigation risk was the state-level shift in the liability duty

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<sup>3</sup> For example, Fich and Shivdasani (2007) find no evidence of abnormal director turnover for sued firms but find their directors serve on fewer boards. However, they note their evidence is also consistent with directors reducing the number of board seats to increase monitoring of the sued firm. Brochet and Srinivasan (2014) find directors named as defendants are more likely to receive negative votes in re-election and have greater turnover rates. However, cases with named directors are more likely to settle for larger amounts and less likely to be dismissed. Thus, they note that plaintiffs may strategically name directors in severe cases to get larger settlements.

of care threshold. In 1985, the Delaware Supreme Court ruled in the *Smith v. Van Gorkom* (*TransUnion*) case that the *TransUnion* directors violated their duty of care in the merger offer, despite the fact that the merger price was at a large premium over its current stock price, due to shortcomings in their decision making-process (Fischel 2002; Elson and Gyves 2004). *TransUnion* changed the general understanding of directors' duty of care and magnified a crisis in the market for D&O insurance. In response, all 50 states modified their corporate laws to limit directors' legal liability (Romano 2006). Basu and Liang (2019) exploit the passage of these state laws to examine whether the reduction in ex ante director litigation risk reduced directors' incentives to monitor firms and, thus, results in a decrease in conditional conservatism. They find results consistent with their predictions.

However, it is unclear how ex ante director litigation risk affects firm value. Laux (2010) analytically examines how increases in director litigation risk affect firm value. Motivated by the settlements directors personally paid in the Enron and WorldCom cases, Laux (2010) shows that directors can respond to an increase in their ex ante litigation risk in two ways: (1) increasing their level of oversight (likely the hope of regulators and policy makers) or (2) reducing the CEO's pay-for-performance sensitivity, which reduces their incentive to manipulate earnings, potentially resulting in litigation. The former is good for firm value; the latter is not. Thus, the effect of an increase in director litigation risk on firm value is ambiguous and will depend on firm characteristics. For example, directors of firms that are more difficult to monitor will respond to the increased litigation risk by lowering CEO incentive pay and decreasing oversight for the very firms where board oversight is most critical, ultimately decreasing firm value.

Ni and Yin (2018) and Houston et al. (2018) examine the adoption of universal demand laws, which reduced derivative litigation risk for both directors *and* officers and find that those



*decreases* increase the cost of a firm's cost of debt and equity, respectively. Similarly, Donelson and Yust (2014) and Chen et al. (2016) examine a shock to Nevada corporate law that reduced the ex ante litigation risk for directors and officers. Donelson and Yust (2014) find evidence of lower firm value in the post period due to reduced monitoring, and Chen et al. (2016) find a higher cost of capital. On the other hand, Eldar (2018) finds a positive effect of the law change on some Nevada firms. However, the fact that both changes do not *only* affect director litigation risk makes it difficult to disentangle the effect of director-only litigation risk.

Further, the fact that litigation risk decreases appear to lower firm value may suggest that litigation risk increases will have the opposite effect. For example, increased litigation risk may incentivize directors to improve governance, increasing firm value. On the other hand, given that boards are endogenously determined (see Hermalin and Weisbach 2003) and firms appear to choose a level of governance based on the costs and benefits of internal and external governance mechanisms (see Gillan et al. 2011), it remains unclear how an exogenous change in ex ante director litigation risk will affect firm value and the behavior of firms and directors.

### *2.3. Director views of litigation risk*

Given the limited research on director litigation risk, it is useful to examine how directors and the business community view previous perceived shocks to director litigation risk. In 2005, ten WorldCom directors agreed to personally pay \$18 million toward the WorldCom securities class action settlement, and ten Enron directors agreed to personally pay \$13 million toward the Enron securities class action settlement. The directors made those significant contributions, despite sufficient D&O insurance, due to demands by the lead plaintiff and public pressure that directors face meaningful accountability due to lack of quality oversight (Halloran et al. 2005).

In the aftermath of these settlements, numerous press articles reported that the settlements

constituted a significant change in the role and risk of outside directors. In particular, they noted that directors would be required to increase monitoring and the failure to do so could result in significant personal liability. The ultimate result of these concerns was that public companies found it more difficult to obtain and retain directors (Fisher 2005; Lubin et al. 2005).<sup>4</sup> Also consistent with director concern about their personal litigation risk, public companies received a record number of inquiries in the aftermath of these settlements about D&O insurance from potential board members, and companies acquired larger policies (Insurance Journal 2006, 2007). While still extremely rare, the reactions to these settlements show that directors change their behavior due to perceptions that their litigation risk changes, particularly when it increases.

However, others noted that these settlements did not actually indicate directors faced higher litigation risk. For example, one expert noted that Enron and WorldCom “are so distinct, almost iconic, that they aren't necessarily representative of the vast run of securities cases” (Lubin et al. 2005). Jones Day (2005), a large law firm, opined that the Enron and WorldCom settlements “do not suggest the creation of any new substantive laws or obligations... [they] do not suggest a shift in director duties and risk.” Consistent with that, D&O insurance premiums dropped each year from 2004-2006 (Insurance Journal 2007). Thus, it is unclear whether most directors believe these or other settlements affect their personal litigation risk.

#### *2.4. Derivative litigation background*

Directors owe fiduciary duties to the firm and its shareholders to ensure they oversee the firm's affairs properly (e.g., Del. Code, Title 8, Sec. 102(b)(7)). If it appears those duties are breached, directors may face shareholder litigation under state corporate law and federal

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<sup>4</sup> For example, Robert Kidder, who served on several boards, said that “I would view it as a tremendous injustice if I had to give up a percentage of my net worth... If that's the case, I'm going to resign.” Betsy Atkins resigned shortly after being appointed to the HealthSouth board when their D&O insurance was canceled. She said firms need to provide insurance coverage “that's dedicated to the director, adequate and nonrescindable” (Lubin et al. 2005).

securities law. Despite receiving limited attention in the academic literature, more derivative cases are filed than securities class actions (Erickson 2010). In theory, derivative litigation serves an important role by addressing misconduct not targeted by securities class actions. Derivative litigation is unique because it is not designed to compensate investors. Thus, in the rare event of a monetary settlement, the recovery goes to the corporation itself. Also, unlike other types of litigation, derivative suits mainly target individuals, rather than the corporation (Erickson 2011).

Thus, it is unclear whether derivative litigation is effective (Erickson 2010, 2011). Derivative litigation is viewed as the third most important type of enforcement, behind SEC enforcement and securities class actions, and is “a distant third, often ending with settlements composed of cosmetic corporate governance reforms” (Erickson 2011, 54). In contrast, securities class actions result in larger monetary settlements (Erickson 2011) and may damage directors’ reputations (Helland 2006; Brochet and Srinivasan 2014). SEC enforcement results in small monetary penalties (see Call et al. 2018), but can cause reputational issues for directors and officers, including bans from serving in such capacities at public firms (Karpoff et al. 2008).

Further, it is rare for a derivative case to be filed *without* concurrent SEC enforcement or a parallel securities class action. In fact, approximately 95 percent of derivative cases have at least one concurrent case or government investigation (Erickson 2011). Derivative cases are also viewed as relatively low quality as roughly 60 percent of the cases are dismissed (Erickson 2011). Finally, relatively few settlements involve meaningful financial consideration other than attorneys’ fees (Romano 1991; Erickson 2010). Many legal scholars consider derivative litigation to have limited accountability effects on firms (Erickson 2010, 2011; Bainbridge 2017). Thus, Erickson (2011, 53) questions, “*given the panoply of litigation options... what additional deterrence does a shareholder derivative suit provide?*” As a result, it is unclear whether a change

in derivative litigation risk alone would affect director behavior and firm value.

## 2.5. *Delaware standards of review for directors' decisions and Investors Bancorp*

### 2.5.1. *State corporate law*

Corporations are subject to the corporate law of the state in which they are incorporated. Most U.S. public corporations are incorporated in Delaware, with Nevada a distant second place (Barzuza and Smith 2014).<sup>5</sup> While Delaware's prominence was once controversial, the state is now regarded as having the highest quality corporate law and the most sophisticated business-related courts in the nation, including a dedicated Chancery Court (see Daines 2001).<sup>6</sup> Thus, reversals of the Chancery court by the Delaware Supreme Court are significant events.

### 2.5.2. *Business judgment rule*

Under Delaware law, the vast majority of decisions by directors fall under the deferential standard of the business judgment rule.<sup>7</sup> However, the business judgment rule only applies when directors are disinterested in the transaction and thus cannot be applied to cases where the director does business with the corporation. In such cases, the entire fairness standard applies.

### 2.5.3 *Entire fairness standard*

Due to their unique positions in overseeing companies, officers and (especially) directors face heightened scrutiny when they transact with the corporation they manage. This is known as self-dealing because the director is on both sides of the transaction. Under the entire fairness standard, directors must prove fairness in both the bargaining process and transaction terms.

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<sup>5</sup> Nevada offers the highest protection from liability for directors and officers (Barzuza 2012). Amendments lowering litigation risk in Nevada were met with reduced firm valuation through higher cost of capital (Chen et al. 2016), with negative returns concentrated in firms with higher expected agency costs (Donelson and Yust 2014).

<sup>6</sup> That *Investors Bancorp* is a Delaware Supreme Court decision is important because Delaware is viewed as having the highest quality corporate law in the U.S. (see Coffee 2012). Most public firms are incorporated in Delaware based on the benefits of its corporate law, including a long-established, dedicated Chancery Court (Daines 2001); a corporate code with detailed, but flexible, rules (Welch and Saunders 2008); and well-known rules that serve as a "lingua franca" of business transactions (Broughman et al. 2014).

<sup>7</sup> Under this standard, directors do not need to make the best decision. Rather, they must only be (1) disinterested and (2) informed. The intuition is that it would be impossible for the board to manage the corporation if shareholders could easily have their decisions overturned in court (*Aronson v. Lewis*, 473 A.2d 805 (Del. 1984)).

Entire fairness is thus sometimes referred to as “fair dealing and fair price” (*Investors Bancorp*).

Importantly, the entire fairness review is fact-intensive and transactions with directors, such as compensation, are necessary. Thus, courts recognize an exception to the entire fairness standard in the form of shareholder ratification for equity compensation plans. Prior to *Investors Bancorp*, if shareholders ratified a director compensation plan, directors would not be subject to second-guessing by shareholders, and would not face legal risk from compensation packages.

#### 2.5.4. *Holding of Investors Bancorp*

*Investors Bancorp* involved a dispute over equity compensation that directors granted to themselves. Under an equity plan ratified by stockholders, up to 30 percent of the equity compensation was to be awarded at the discretion of the directors. The primary focus in the case was on the discretion retained by the board, which the court contrasted with two scenarios from prior cases. Delaware law clearly allowed the ratification defense when there was: 1) shareholder approval of specific grants or 2) shareholder approval of a self-executing formula. In the primary holding of the case, the court stated that even “when stockholders have approved an equity incentive plan that gives the directors discretion to grant themselves awards within general parameters, and a stockholder properly alleges that the directors inequitably exercised that discretion, then the ratification defense is unavailable to dismiss the suit, and the directors will be required to prove the fairness of the awards to the corporation” (*Investors Bancorp*, p. 1211).

While many commentators were surprised by this ruling, the alleged case facts were relatively severe. Further, the language in the equity plan implied that awards would be for future performance, but using other mutual-to-stock conversions as comparable firms implied that the directors were compensated for past performance. The complaint stated that *Investors Bancorp* is a bank holding company that completed a mutual-to-stock conversion, and that the directors used only holding companies that performed such conversions as comparable firms for compensation

purposes and selected the most advantageous comparables (*Investors Bancorp*). For a motion to dismiss (and appeals of such decisions), courts assume that the facts stated in the complaint are true. In the year in question, the directors were paid more than any independent directors on Wall Street with compensation of over \$2 million each. Thus, the ruling may indicate the court believed the issue was important for future cases.

## 2.6. Hypotheses

One seemingly intuitive expectation when the law changes is that the number of violations of that underlying standard should change. However, this may not occur. As a simple example, consider drivers entering construction zones where speed limits change. Most drivers do not continue at their prior speed, but instead they adjust behavior toward the new standard. The rate of compliance is heightened when enforcement is present, such as a police car nearby.

For public firms, enforcement is always present due to monitoring by plaintiffs' lawyers. Also, while *Investors Bancorp* has affected case outcomes, the relative rarity of equity-related derivative litigation makes it unlikely that we will be able to detect changes in litigation.<sup>8</sup> Thus, we formulate testable predictions of market, firm and director outcomes related to the decision.

First, we examine market reactions around the decision. While the decision appeared to be a surprise, it is unclear whether it would drive a significant reaction. This is particularly true due to the relatively low cost of derivative shareholder cases, which may have resulted in investors paying limited attention to *Investors Bancorp*. We state H1 in the alternative:

H1: Delaware firms will have a negative market reaction at the announcement of the *Investors Bancorp*.

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<sup>8</sup> Consistent with this, Steven Haas, a partner at law firm Hunton & Williams, predicted "this ruling will likely cause companies to rethink the terms of future equity plans," but he did not expect to see a wave of related lawsuits (DiPietro 2018). In contrast, due to the large number of securities class actions filed in the Ninth Circuit, when *In Re Silicon Graphics, Inc. Securities Litigation*, 183 F.3d 970 (9th Cir. 1999), was decided, the rate of securities litigation in the Ninth Circuit declined significantly relative to the other federal circuits (Houston et al. 2019).

Second, the decision may affect independent directors' perceived personal litigation risk. In particular, the directors most exposed to derivative shareholder litigation as a result of *Investors Bancorp* (i.e., those most likely to be named in cases dealing with compensation issues) are those on the compensation committee, who have responsibility to set the compensation level for directors. We state H2 in the alternative:

H2: Delaware firms will have more independent director compensation committee composition changes after *Investors Bancorp*.

Third, the issue that initially drove scrutiny of the firm in *Investors Bancorp* was relatively high levels of equity compensation relative to its peers. Thus, directors may exchange compensation, and particularly equity-based compensation, for reduced litigation risk. However, this prediction is less clear because directors may alternatively demand higher compensation, particularly in the form of higher salaries, to compensate them for the increased risk that they now face. Thus, we state H3 in the null due to these countervailing predictions:

H3: Delaware firms will not change independent director total compensation or equity-based compensation after *Investors Bancorp*.

Fourth, directors of Delaware firms may adjust their trading behavior in response to *Investors Bancorp*. Similar to compensation, this prediction is not without tension. Directors may increase insider trading despite additional litigation risk to offset the loss of compensation under the theory of Manne (1966). Roulstone (2003) finds some evidence that directors use insider trading profits as a substitute for other compensation. However, abnormal insider trading is often used as evidence of intent in litigation (e.g., Erickson 2011), and firms may limit such trading given that it can attract litigation (Billings and Cedergren 2015). Thus, we state H4 in the null:

H4: Delaware firms' independent directors will not change their insider trading behavior after *Investors Bancorp*.

### 3. Sample

#### 3.1. Sample composition

The sample is from the intersection of Compustat and CRSP from 2016-2018. We require firms to have at least one firm-year observation before and after the event to ensure any changes are due to *Investors Bancorp*, rather than sample composition. We obtain board and committee information from BoardEx, compensation data from ExecuComp and insider trading data from Thomson Reuters. We require firms to have assets greater than zero and at least six months of returns data. We identify yearly incorporation and headquarter states using the SEC filing header data at Bill McDonald's website in February 2019. If historical data is unavailable, we use the incorporation and headquarter state from Compustat, which is based on the current locations.

The sample size differs for each test depending on data availability. For brevity, we report descriptive statistics for control variables for the matched sample relating to the board composition analysis (Table 4). This sample has 7,829 unique firm-years, comprised equally of Delaware and non-Delaware incorporated firms. The *Investors Bancorp* case was decided on December 13, 2017, so the post-period has firm-years with fiscal year ends after this date.

A key feature of our design is matching each Delaware-incorporated firm to a non-Delaware firm in the same 2-digit SIC industry, year and U.S. Census region with the nearest neighbor size, measured as the log of total assets.<sup>9</sup> We match with replacement and require the absolute size difference to be within 15 percent of the size of the Delaware firm. Thus, it is unlikely that local-, industry- or year-economic conditions explain our results. Further, our sample of Delaware firms includes firms headquartered in 48 different states, the District of

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<sup>9</sup> There are four census regions: Northeast (Connecticut, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont), Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin), South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia) and West (all remaining states). Firms headquartered outside the U.S. are classified as foreign and considered a fifth region.



Columbia and three foreign countries, as well as 54 different 2-digit SIC codes. As a result, unlike many natural experiments, our sample includes a large cross-section of industries and locations, which minimizes concerns of correlated, omitted variables.

### *3.2. Descriptive statistics*

Table 1, Panel A presents the sample statistics for the matched sample that correspond to the tests on the compensation committee. All variables are defined in the Appendix. Size is not statistically different between the Delaware and non-Delaware incorporated firms, consistent with a successful match. Delaware firms have busier, younger and less tenured directors and have slightly larger and more independent boards. Delaware firms also have higher R&D, leverage and standard deviation of returns (i.e., volatility) and lower ROA. Further, Delaware firms have fewer additions to the compensation committee, and those additions are less qualified, in the pre-event period, compared to non-Delaware firms. However, Delaware firms have more additions in the post-event period, and those additions are more qualified. Delaware directors are more highly compensated than non-Delaware firms in both the pre- and post-event periods. Finally, Delaware directors do not engage in different levels of insider trading in the pre-period, but engage in more insider trading in the post-period, compared to non-Delaware directors.

Table 2 reports the Pearson univariate correlations between Delaware incorporation (*DE*, an indicator variable equal to one if the firm is incorporated in Delaware and zero otherwise) and control variables. Consistent with Table 1, *DE* is significantly related to many firm characteristics, so we control for these variables and use matched samples in our analyses.

## **4. Research design and empirical results**

### *4.1. Market awareness*

Given the prior discussion that investors and other market participants may not have been aware of *Investors Bancorp*, particularly because it is a derivative suit, as opposed to the higher-

profile securities class actions or SEC enforcement, we use Google Trends data to examine whether search interest changed around the issuance of the Investors Bancorp ruling. Google Trends tracks Google users' search volume for a given search term over time and scales it by the total searches of the geography and time range that it represents to compute the relative popularity of the term at any given date (Google 2019). Because Google Trends measures the number of daily searches for a given term, it provides a direct and timely proxy for attention to a specific topic on a given day (Da et al. 2011; Drake et al. 2012).

We first examine U.S. searches for “Investors Bancorp” from December 3 through December 23, 2017 to have ten days of data before and after the court ruling was filed. We download this data on twenty separate days and use the averages of each daily value because the Google Trends results can change from day-to-day.<sup>10</sup> Results are graphically shown in Figure 1.

As shown in Figure 1, the three dates with the largest search interest for “Investors Bancorp” over this period are, in descending order, December 19, 14 and 12. The Delaware Supreme Court issued a revised filing on December 19, but the change was not substantive.<sup>11</sup>

December 14 is the first date we observe public references to the opinion with a tweet from Justia.com, a legal organization that focuses on educating the public, and a law firm news release (McNally 2017). The large spike on the day of opinion revision is consistent with interest in the case, even though the modification turned out not to affect the substance of the ruling. Finally, December 12 is the day before the ruling was released, consistent with it being anticipated or partially leaked one day early. The average daily search interest level from

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<sup>10</sup> Rather than use all Google search data to compute the Google Trends figures, Google uses an unbiased sample that is a percentage of all search data (Google 2019). While this appears to result in minimal changes for relatively popular terms, it can result in larger day-to-day changes with relatively less common search terms. Google Trends only shows data for popular search terms, so search terms with low volume will return values of zero.

<sup>11</sup> The only change was to modify the beginning of a sentence from “Demand is futile when (1) a majority of the board is disinterested and independent...” to “Demand is futile when, under the particular facts alleged, a reasonable doubt is created that (1) a majority of the board is disinterested and independent...”

December 3–11 was 5.4 as compared to 23.9 from December 12–23, an increase of over 340 percent ( $p < 0.01$ , untabulated). This percentage increase likely understates the interest in the case because Investors Bancorp issued an 8-K during the pre-period related to restructuring. Thus, Google Trends results are consistent with substantial interest in *Investors Bancorp*.<sup>12</sup>

#### 4.2. Market reaction

Our first test examines the market reaction to the *Investors Bancorp* decision. To do this, we estimate the following ordinary least squares (OLS) model with robust standard errors:

$$AbRet_{it} = a_0 + a_1 DE_{it} + \varepsilon_{it} \quad (1)$$

*AbRet* is the abnormal returns over the event window adjusted for size, market-to-book and market movement following Fama and French (1993). We use four different windows to capture the market reaction: one-day returns at the event date and three-, four- and five-day returns starting the day prior to the event date. The one-day returns minimize the influence of any confounding events, while the longer windows allow for both potential market anticipation and delayed reactions. To mitigate the influence of outliers, we follow Jiang et al. (2015) and exclude observations with absolute value of the studentized residuals greater than two.<sup>13</sup>

While the opinion was posted online and circulated to law firms (and other entities) that subscribe to the court’s efilings system at 12:43PM EST on December 13, the longer window may be needed for the opinion to be sufficiently visible to be fully impounded into price, particularly because we do not observe public discussion of the ruling until the following day.

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<sup>12</sup> We also examine whether market participants appeared to recognize the implications of the case. Specifically, we conduct the same analysis using the term “director liability.” Unsurprisingly, this term is more popular, but we observe an increase in daily search interest from 27.6 in the pre-period to 36.5 in the post-period, a 32 percent increase ( $p < 0.01$ , untabulated). While the magnitudes are smaller, we also observe significant increases in search interest for both search terms if we include December 12 in the pre-period ( $p < 0.05$ , untabulated).

<sup>13</sup> Untabulated inferences are similar for two-, three- and four-day returns starting at the event date or five- and seven-day returns centered at the event date. Additionally, inferences are similar using alternative outlier treatments including winsorizing at the 1 and 99 percent, using robust regression and without excluding outliers.

Results of the event study are presented in Table 3. As shown in Panel A, we find that there is a negative market reaction to Delaware firms over the event period for all event windows in both the full sample and the matched sample. Thus, on average, the market appears to believe the ruling is negative for firm value. Additionally, the decrease is economically significant. For example, the announcement date return in the full sample results in the average Delaware firm losing approximately \$11 million in market value and the economy losing over \$16 billion in the aggregate due to the widespread prevalence of Delaware-incorporated firms (untabulated).

To investigate whether the decision affected some firms more strongly, we examine firms that investors most likely expect to be affected. Investors are likely to focus on firms similar to those that engaged in misconduct around equity compensation in the option backdating scandal. Most backdating firms were technology firms with high stock return volatility, high levels of intangibles and high valuations (see Heron and Lie 2009; Chyz 2013; Collins et al. 2009).

We first partition the sample by median stock return volatility, as measured by the standard deviation of stock returns. Equity compensation is important to such firms as higher volatility increases option-based compensation value, and backdating firms overwhelmingly had high return volatility (Heron and Lie 2009). Thus, investors would likely expect firms with above median return volatility to be disproportionately affected by *Investors Bancorp*.

Second, we use above median R&D intensity as a measure of high technology firms, an additional measure of firms where the *Investors Bancorp* decision is likely material. In addition to many firms with R&D being implicated in the backdating scandal, firms with higher R&D intensity use a large amount of stock-based compensation (Hanlon et al. 2003; Cheng 2004) and have high information asymmetry (Huddart and Ke 2007). Thus, investors would likely expect

firms with above median R&D intensity to be more affected by *Investors Bancorp*.<sup>14</sup>

We estimate the following OLS model:

$$AbRet_{it} = a_0 + a_1DE_{it} + a_2SubgroupIndicator_{it} + a_3DE_{it} * SubgroupIndicator_{it} + \varepsilon_{it} \quad (2)$$

The *SubgroupIndicator* is first equal to one if the firm has above median R&D, where R&D is defined as R&D expense scaled by total assets, and zero otherwise (*R&D DV*).

Alternatively, *SubgroupIndicator* is equal to one if the firm has above median return volatility, where return volatility is defined as the standard deviation of stock returns over the twelve months from the prior fiscal year, and zero otherwise (*Volatility DV*).

Table 3 Panel B and C present the results from the cross-sectional analysis for matched samples using these cross-sectional splits. Specifications using the return volatility split indicates an incrementally negative and statistically significant market reaction for firms with above median return volatility. This represents a loss of \$4 million for the average high return volatility Delaware firm over the (0,0) window. Similarly, the R&D split shows a negative and significant market reaction for firms with above median R&D in all specifications. This represents a loss of \$31 million for the average high R&D Delaware firm over the (0,0) window. We obtain similar inferences with untabulated alternative measures of high-tech firms, including negative operating cash flow firms (Denis and McKeon 2018) and high-tech industries (Heron and Lie 2009).

Further, results are most concentrated in firms with the most extreme characteristics.<sup>15</sup> Overall,

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<sup>14</sup> In addition to the splits on R&D and return volatility, in untabulated analyses we split on size, both because smaller firms were also more likely to have engaged in backdating (Coughlin et al. 2006; Narayanan and Seyhun 2008) and size would affect a director's ability to monitor and thus their responses to litigation risk (Laux 2010). We find similar inferences for small firms as for high stock volatility and R&D intensity firms.

<sup>15</sup> That is, returns are strongest in firms with the most volatile returns or highest R&D. When we compare only the highest quartile of return volatility to those below the median, the coefficient on the interaction between DE and high volatility is stronger at -0.37 percent (t = -2.11) for the (0,0) window. When we compare high R&D firms (above median R&D intensity for firms with non-zero R&D), and compare those firms to firms with no R&D, results are again significantly stronger as the coefficient on the interaction between DE and high R&D intensity is -0.72 percent (t = -4.06) for the (0,0) window (untabulated).

the evidence is consistent with investors viewing *Investors Bancorp* as bad news for the firms it will most affect, despite it ostensibly being designed to protect shareholders.

#### 4.3. Firm and director reaction

Given that investors perceive that this law change will be bad for firm behavior, we next test how firms and directors respond. To do this, we use a difference-in-difference design comparing the change in outcome of Delaware incorporated firms to the change in outcomes of non-Delaware incorporated firms before and after the decision. For brevity, we only report the matched sample results in these analyses and perform cross-sectional analyses based on the standard deviation of stock returns. We obtain similar cross-sectional inferences for all tests splitting on R&D intensity (untabulated). We estimate the following equation using OLS:

$$Outcomes_{it} = a_1 DE_{it} + a_2 Post_{it} + a_3 DE_{it} * Post_{it} + Controls_{it} + IndustryFE + \varepsilon_{it} \quad (3)$$

We estimate the equation above including Fama-French 17 industry fixed effects and clustering standard errors by firm to account for correlation across observations. All continuous variables are winsorized at the 1st and 99th percentiles.

##### 4.3.1. Compensation committee composition

We first test director-level outcomes by examining independent director additions to the compensation committee, as this committee is most likely to be affected by the *Investors Bancorp* decision. These directors have the most direct responsibility for equity grant decisions, so they may expect to face higher litigation risk in the post period. As a result, some directors may want to leave the committee. However, any directors that leave likely need to be replaced. Additionally, boards may respond to *Investors Bancorp* by adding new positions to the committee to increase the knowledge and experience on the committee to mitigate litigation risk.

We measure additions as indicator variables equal to one if an independent director is on the current year's proxy statement as a director on the compensation committee but was not on

the committee in the prior year's proxy statement following Gao et al. (2017).<sup>16</sup> We also examine the number of qualifications and network size of the directors added as proxies for their expertise. Qualifications represent certifications or professional trainings a director has received, and network size represents the number of other directors or executives the director is connected to through prior employee, education, clubs, etc. in the BoardEx database. The measures are aggregated at the committee-level and scaled by the number of directors added to the committee.

Table 1, Panel B presents the sample means for the variables separately in the matched sample cross-sectional split on stock return volatility. Additions to the compensation committee for Delaware high return volatility firms increased 15.4 percent, while additions for non-Delaware high return volatility firms decreased -17.4 percent. Further, additions for Delaware low return volatility firms increased 7.7 percent, while additions for non-Delaware low return volatility firms decreased -4.7 percent. Thus, the additions to the compensation committee in Panel A are driven by the Delaware firms most likely to be affected by the ruling.

Table 4, Panel A shows the committee-level composition regression results, and Panel B shows the results after splitting the sample into the firms most likely to be affected by *Investors Bancorp*. As expected, we find significant effects on the compensation committee.<sup>17</sup> Panel A shows the average firm adds directors to compensation committees and these directors are more qualified in terms of qualifications and network sizes. Panel B shows results are concentrated in firms with higher return volatility. Further, the changes are economically significant. For example, the increased number of independent director additions for firms with high return volatility is equal to roughly 45 percent of pre-period average values, and the amount of

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<sup>16</sup> Gao et al. (2017) examine departures from the compensation committee during fraud periods. We instead focus on additions, as we expect this to be more applicable in our setting.

<sup>17</sup> We also examine effects on independent directors at the full board level and find similar, but weaker, results, likely indicating the full board results are a side effect of the compensation committee effects (untabulated).

qualifications and network size increased by roughly 49 percent and 63 percent, respectively.

Collectively, results are consistent with the firms that are most likely to be affected by the decision increasing their quality of oversight by adding more qualified directors, particularly on the compensation committee where they are most needed. These results are broadly consistent with the predictions in Laux (2010) that smaller and less complex firms for which oversight is more possible will respond to increased litigation risk by increasing monitoring by directors.

#### 4.3.2. *Director compensation*

We next examine independent director compensation. In the aftermath of *Investors Bancorp*, we expect a possible shift away from equity-based compensation because this type of compensation was the focus of *Investors Bancorp* and would thus likely be scrutinized by investors relatively more after the decision. Legal experts also expected companies to change the terms of future equity-compensation plans to reduce the risk that compensation appears unfair or excessive (DiPietro 2018). However, this prediction is not without tension because it is possible that directors would demand additional compensation after *Investors Bancorp* to pay them for the increased litigation risk that they now face. Absent increases to total compensation, Delaware firms may have difficulty attracting or retaining directors given the heightened risk, consistent with the fears expressed after prior director litigation shocks (Fisher 2005; Lubin et al. 2005).

We measure total director compensation reported in SEC filings following Dah and Frye (2017). This captures the accumulation of the director's cash fees (director cash compensation), stock awards, option awards, non-equity incentive plan compensation, change in pension value and nonqualified deferred compensation earnings, and all other compensation. Equity compensation is the difference between director total compensation and director cash compensation. Compensation variables are expressed in thousands of dollars, on a per-director basis, but results are similar if compensation is logged or deflated by size (untabulated).



Univariate results from Table 1 show Delaware director equity (total) compensation grew slower after *Investors Bancorp* compared to non-Delaware firms. That is the mean equity (total) compensation for Delaware independent directors grew from \$141,892 (\$226,548) to \$146,200 (\$234,639), a growth rate of 3.0 (3.6) percent. In comparison, equity (total) compensation for independent directors at non-Delaware firms grew at rates of 5.4 (6.4) percent, respectively.

In contrast to the compensation committee results, univariate results from Table 1, Panel B are stronger for firms that we would expect to be less affected by *Investors Bancorp*. That is, total and equity compensation increases significantly less for firms with lower return volatility. Mean equity (total) compensation for Delaware independent directors at firms with lower returns volatility shrank from \$152,937 (\$242,716) to \$147,747 (\$242,044), a decreasing rate of -3.4 (-0.3) percent, respectively. Equity (total) compensation for independent directors at non-Delaware lower returns volatility firms grew at rates of 8.1 (7.5) percent, respectively, indicating that compensation increases at low R&D intensity Delaware firms fell behind their non-Delaware peers following the decision. In contrast, mean equity (total) compensation for Delaware independent directors at firms with higher returns volatility grew from \$133,635 (\$213,793) to \$146,804 (\$230,127), a growth rate of 9.9 (7.6) percent compared to a growth rate of 3.4 (4.4) percent for non-Delaware independent directors at firms with higher returns volatility, respectively. This indicates that higher risk Delaware firms kept up with, if not exceeded compensation growth in higher risk non-Delaware firms.

Table 5 presents the compensation results for all firms and in the cross-sectional split discussed previously. Unlike the univariate results, we find only a marginally significant relative decrease to average total compensation for Delaware firms following the decision when examining the entire sample. However, as with the prior analysis, we find stronger results cross-

sectionally with relative decreases to both total and equity compensation. Specifically, the relative decrease to Delaware equity (total) compensation for firms with low return volatility is equal to roughly 15 percent (10 percent) of pre-period average values, respectively. Thus, while non-Delaware firms with low return volatility have increases in compensation in the post period, Delaware firms with low return volatility do not significantly change their compensation levels.

It is possible these firms reduce compensation as an alternative way to lower director litigation risk because larger firms are harder to monitor. Thus, these firms can lower litigation risk by reducing compensation incentives to engage in misconduct (Laux 2010). On the other hand, directors of other high risk firms may have been unwilling to accept a compensation decrease, potentially because higher compensation was needed to attract the more qualified directors or because the board thought the decrease unnecessary due to the increased oversight.

#### *4.3.3. Director insider trading*

Finally, we examine independent director insider trading. In a somewhat counterintuitive way, directors may be expected to increase insider trading in the aftermath of *Investors Bancorp*, despite the additional litigation risk, particularly to offset the loss of compensation that we observe in Table 5. Manne (1966) suggests that corporate directors and officers could use profits from insider trading to replace other compensation, and Roulstone (2003) finds that this occurs in some situations. On the other hand, insider trading may only exacerbate the increased litigation risk faced by directors because abnormal insider trading is frequently used as evidence of intent in litigation (e.g., Erickson 2011), as such, firms may respond to litigation by limiting insiders' trading (Billings and Cedergren 2015).

We create insider trading variables following Roulstone (2003), Rogers et al. (2016) and Agrawal and Cooper (2015). As we can directly observe trade timing, we aggregate trades one year before and after the event date. We use insider trades filed under Form 4, a report filed by

an insider to report changes in ownership position.<sup>18</sup> We examine the number of independent directors trading (*Num\_Traders*) and the percentage of total equity traded (*Per\_EqTraded*).<sup>19</sup>

Table 6 presents the insider trading results for firms on average and the cross-sectional split. On average, directors of Delaware firms do not alter their insider trading patterns following the decision. However, similar to the compensation analysis, the evidence suggests firms with lower return volatility reduce insider trading in terms the magnitude of independent directors' total trades, consistent with directors reducing insider trading in the face of higher litigation risk. These effects are also economically significant as directors for low returns volatility firms decrease the magnitude of their insider trading by an amount equal to 32 percent of their average percent of equity traded in the pre-period. This suggests directors either voluntarily decrease trading due to concerns of their own litigation risk or are dissuaded from trading by their firms.

## 5. Conclusion

It is unclear whether and how director litigation risk affects firm value. The exogenous increase in director litigation risk from *Investors Bancorp* helps address this issue. This increase in risk lowered firm value and had significant director labor market consequences. Specifically, the firms most likely to be affected by the ruling added new, more qualified independent directors to the compensation committee, consistent with increasing oversight to deal with higher litigation risk. However, lower risk firms lowered total and equity-based compensation, as well as insider trading, potentially to reduce directors' incentives to engage in misconduct. Also, some

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<sup>18</sup> This form may be filed for a purchase, sale, option grant, option exercise, gift, etc. We use Form 4 because this is the most commonly used form and other forms have been shown to contain high measurement error (Agrawal and Cooper 2015). Further, we follow Agrawal and Cooper (2015) by limiting the transaction type to open-market purchases and sales as these transactions are director-initiated. We limit insider trading to non-officer directors and excluded observations with cleanse codes "S" and "A" following Rogers et al. (2016) as these forms contain errors.

<sup>19</sup> Variables with missing values are set equal to zero following prior literature. Agrawal and Cooper (2015) find that in 67 percent of managers make no insider trades during the restatement period. In our pre-matched sample, 54 percent of firm-year observations contain zero director insider trades, similar to Agrawal and Cooper (2015).

higher risk firms increased insider trading, potentially to compensate for increased litigation risk.

Litigation is designed to protect shareholders, but in practice recoveries are small and simply transfer funds from current to past shareholders (Fisch 2009). Thus, the only true potential benefit is in deterring misconduct and any deviation from an optimal level of litigation risk will produce inefficiencies. Our findings suggest that the *Investors Bancorp* decision by the Delaware Supreme Court, which was designed to protect shareholders by *increasing* director accountability through increased litigation risk, actually harmed shareholder value. When coupled with prior findings that *decreasing* director and officer litigation risk *also* lowers firm value, these findings suggest that an optimal level of litigation risk exists. This is similar to findings that firms choose the optimal governance structures to support their objectives based on firm characteristics (see Larcker et al. 2011; Gillan et al. 2011). Thus, *any* exogenous, “one-size-fits-all” change to director litigation risk may result in suboptimal outcomes.

## Appendix

<b>Variable</b>	<b>Description</b>
<i>Addition</i>	A count of the number of independent directors listed as directors on the compensation committee on the current year's proxy statements who were not listed as directors on the compensation committee in the prior year's proxy statements.
<i>Addition Qualifications</i>	The sum of the number of qualifications of independent directors who were added to the compensation committee, deflated by the number of independent directors who were added to the compensation committee. Qualifications are considered educational degrees (e.g., Bachelor's, Master's or Doctoral degrees) or professional certifications (e.g., CPA, CFA or JD) as documented in BoardEx.
<i>Addition Network</i>	The sum of the number of connections of independent directors who were added to the compensation committee, deflated by the number of independent directors who were added to the compensation committee. Connections are defined as other directors and executives the director is connected to through employment, education, clubs, etc. as documented in BoardEx.
<i>Age</i>	The average age of each director on the board from BoardEx.
<i>Board Size</i>	The total number of directors on the board from BoardEx.
<i>Busy</i>	The total number of independent directors who serve on three or more other boards divided by the total number of independent directors on the board from BoardEx following Masulis and Zhang (2019).
<i>DE</i>	An indicator variable equal to one if the firm is incorporated in the state of Delaware and zero otherwise.
<i>Equity Compensation</i>	Total independent director equity compensation is calculated as the difference between total independent director compensation and independent director cash compensation from Execucomp following Dah and Frye (2017), expressed in thousands of dollars on a per-director basis.
<i>Indep%</i>	The total number of non-executive board members divided by the total size of the board from BoardEx.
<i>Lev</i>	Total current and long term debt divided by assets at the end of the year from Compustat.
<i>Num_Traders</i>	The total number of different independent directors who traded company shares over a one-year period from Thomson Reuters.
<i>Per_EqTraded</i>	The total value of the company shares traded by independent directors (SH\$) divided by the total equity outstanding for the company at the trade date over a one-year period from Thomson Reuters. The variable is multiplied by 1000 for readability purposes.

<i>Post</i>	An indicator variable equal to one if the firm's fiscal year end is after the event date and zero otherwise.
<i>R&amp;D</i>	R&D expense, which is set to zero if missing, divided by assets at the end of the year from Compustat.
<i>R&amp;D DV</i>	An indicator variable equal to one if <i>R&amp;D</i> is greater than the yearly median and zero otherwise.
<i>ROA</i>	Net income during the fiscal year divided by assets at the end of the year from Compustat.
<i>Size</i>	The natural logarithm of assets in millions from Compustat.
<i>Std Returns</i>	The standard deviation of monthly returns over the fiscal year from CRSP. We require a minimum of six monthly returns to compute this variable.
<i>Tenure</i>	The average tenure of each board member from BoardEx.
<i>Total Compensation</i>	Total independent director compensation is the total amount reported in SEC filings from Execucomp, expressed in thousands of dollars on a per-director basis. It is the accumulation of the independent director's cash compensation, stock awards, option awards, non-equity incentive plan compensation, change in pension value and nonqualified deferred compensation earnings and all other compensation following Dah and Frye (2017).
<i>Volatility DV</i>	The volatility of returns is equal to one if the firm has above median return volatility, where return volatility is defined as the standard deviation of stock returns over the twelve months from the prior fiscal year, and zero otherwise.

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**Figure 1**

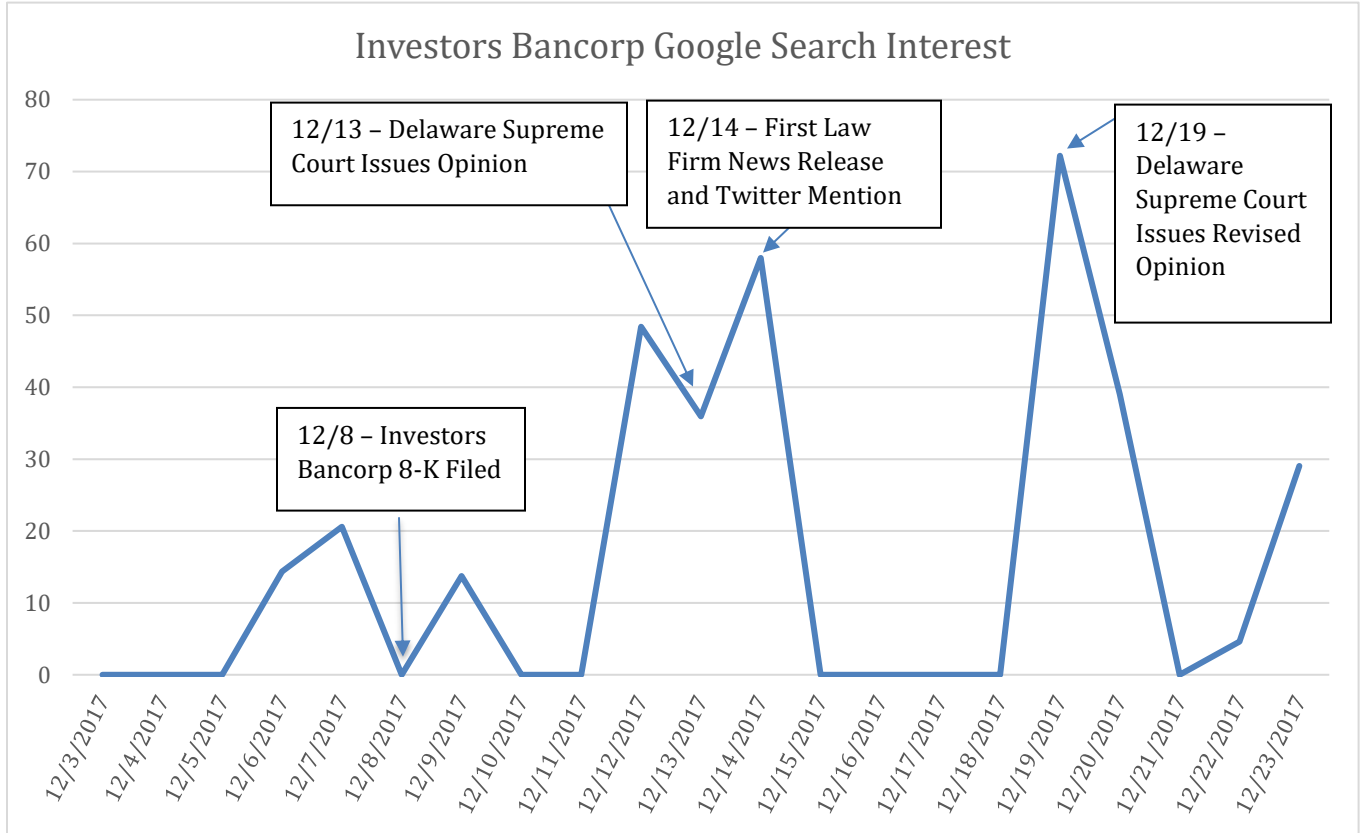


Figure 1 presents the results of Google Trends searches based on the period December 3, 2017 through December 23, 2017 of the phrase “Investors Bancorp.” Searches were conducted daily over 21 days and averaged due to the relatively low search numbers for the phrase and changes in results with repeated searches.

**Table 1**  
**Descriptive Statistics**

*Panel A: Descriptive Statistics for Full Sample*

	Delaware Firms						Non-Delaware Firms					
	N	Mean	Q1	Med	Q3	SD	N	Mean	Q1	Med	Q3	SD
<b>Pre-period</b>												
Size	1567	6.81	5.32	6.85	8.26	2.06	1567	6.75	5.33	6.85	7.98	2.01
Busy	1567	0.52	0.33	0.50	0.71	0.26	1567	<b>0.43</b>	0.25	0.43	0.60	0.25
Tenure	1567	6.95	3.03	6.25	9.76	4.55	1567	<b>9.13</b>	5.42	8.50	12.43	5.06
Board size	1567	8.37	7.00	8.00	10.00	2.13	1567	<b>8.14</b>	7.00	8.00	9.00	2.28
Indep%	1567	0.84	0.80	0.86	0.89	0.08	1567	<b>0.83</b>	0.80	0.86	0.89	0.09
Age	1567	66.15	59.60	63.67	68.75	10.33	1567	<b>67.56</b>	61.80	65.24	69.64	9.16
ROA	1567	-0.10	-0.12	0.01	0.05	0.29	1567	<b>-0.04</b>	-0.02	0.02	0.06	0.24
Lev	1567	0.26	0.03	0.21	0.41	0.25	1567	0.24	0.03	0.20	0.34	0.24
Std Returns	1567	0.13	0.08	0.11	0.16	0.08	1567	<b>0.12</b>	0.07	0.09	0.14	0.09
R&D	1567	0.10	0.00	0.02	0.12	0.18	1567	<b>0.06</b>	0.00	0.00	0.06	0.14
Addition	1567	0.39	0.00	0.00	1.00	0.64	1567	0.44	0.00	0.00	1.00	0.67
Addition Qualifications	1567	0.67	0.00	0.00	1.50	1.13	1567	<b>0.78</b>	0.00	0.00	2.00	1.22
Addition Network	1567	532.1	0.0	0.0	504.0	1119.	1567	631.9	0.0	0.0	867.0	1338.6
Total Compensation	625	226.5	163.0	220.8	274.6	100.6	625	213.2	153.9	202.3	257.9	95.2
Equity Compensation	625	141.9	88.0	127.2	179.9	88.1	625	131.2	86.0	113.8	166.7	83.1
Num_Traders	1687	2.21	0.00	2.00	3.00	2.08	1687	2.24	0.00	2.00	4.00	2.06
Per_EqTraded	1687	1.58	0.00	0.21	0.84	5.28	1687	1.21	0.00	0.21	0.65	4.80
<b>Post-period</b>												
Size	2348	7.05	5.61	7.12	8.50	2.05	2347	6.98	5.58	7.06	8.35	2.01
Busy	2348	0.52	0.33	0.50	0.71	0.25	2347	<b>0.43</b>	0.25	0.43	0.60	0.24
Tenure	2348	7.05	3.76	6.17	9.44	4.23	2347	<b>8.84</b>	5.09	8.36	11.60	4.73
Board size	2348	8.45	7.00	8.00	10.00	2.15	2347	<b>8.38</b>	7.00	8.00	10.00	2.31
Indep%	2348	0.85	0.83	0.88	0.89	0.08	2347	<b>0.84</b>	0.80	0.88	0.89	0.09
Age	2348	66.45	60.10	63.90	68.65	10.09	2347	67.00	61.94	64.86	68.90	8.96
ROA	2348	-0.09	-0.10	0.01	0.06	0.28	2347	<b>-0.03</b>	-0.03	0.02	0.07	0.22
Lev	2348	0.27	0.05	0.23	0.41	0.25	2347	<b>0.24</b>	0.04	0.18	0.37	0.25
Std Returns	2348	0.12	0.07	0.10	0.15	0.07	2347	<b>0.10</b>	0.06	0.09	0.12	0.07
R&D	2348	0.09	0.00	0.01	0.12	0.16	2347	<b>0.05</b>	0.00	0.00	0.05	0.12
Addition	2348	0.44	0.00	0.00	1.00	0.70	2347	0.40	0.00	0.00	1.00	0.69
Addition Qualifications	2348	0.74	0.00	0.00	2.00	1.21	2347	0.67	0.00	0.00	1.50	1.18
Addition Network	2348	586.8	0.0	0.0	732.0	1181.	2347	520.8	0.0	0.0	488.0	1115.7
Total Compensation	931	234.6	181.3	232.4	284.5	89.5	931	226.9	163.9	218.0	268.5	100.1
Equity Compensation	931	146.2	98.7	132.7	187.1	81.3	931	138.3	87.5	124.1	165.4	88.3
Num_Traders	2500	0.99	0.00	0.00	2.00	1.42	2500	0.89	0.00	0.00	1.00	1.33
Per_EqTraded	2500	0.38	0.00	0.00	0.17	1.33	2500	0.24	0.00	0.00	0.11	0.90

**Table 1, Continued**

*Panel B: Descriptive Statistics for Cross-sectional Split on Stock Return Volatility (Std Returns)*

	Delaware		Non-Delaware	
	Split on Stock Return Volatility (Std Returns)			
	High Mean	Low Mean	High Mean	Low Mean
<b>Pre-period</b>				
Size	5.95	7.66	5.93	7.57
Std Returns	0.19	0.07	<b>0.14</b>	<b>0.10</b>
Addition	0.39	0.39	0.46	0.43
Addition Qualifications	0.69	0.66	0.83	0.73
Addition Network	501.3	562.8	<b>699.1</b>	565.0
Total Compensation	213.8	242.7	206.1	<b>220.3</b>
Equity Compensation	133.6	152.9	127.7	<b>133.5</b>
Num_Traders	1.79	2.63	2.03	2.45
Per_EqTraded	1.96	1.19	1.72	<b>0.71</b>
<b>Post-period</b>				
Size	6.02	8.07	5.99	7.98
Std Returns	0.17	0.07	<b>0.13</b>	<b>0.08</b>
Addition	0.45	0.42	<b>0.38</b>	0.41
Addition Qualifications	0.79	0.70	<b>0.65</b>	0.70
Addition Network	550.8	623.0	476.9	564.5
Total Compensation	230.1	242.0	215.2	236.9
Equity Compensation	146.8	147.7	132.1	144.3
Num_Traders	0.74	1.25	0.77	<b>1.02</b>
Per_EqTraded	0.45	0.31	<b>0.27</b>	<b>0.21</b>

Table 1, Panel A presents the descriptive statistics for the matched sample of firms that are incorporated in Delaware and those that are incorporated in other states. Panel B presents the averages for variables separately for the cross-sectional split on stock return volatility for Delaware and non-Delaware incorporated firms in the pre- and post-event periods. The sample is split at the median for Std. Returns in the cross-sectional splits. Firms are matched on nearest neighbor size in the same 2-digit SIC industry, year and region. The table separately reports the descriptive statistics in the pre- and post-periods. Bold means indicate that the mean is significantly different for Delaware and non-Delaware firms at the 1 percent level based on two-tailed t-tests. All continuous variables are winsorized at the 1 and 99 percent levels. Variables are defined in the Appendix.

**Table 2**  
**Correlation Matrix**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) DE	1.000										
(2) Size	0.015	1.000									
(3) Busy	<b>0.181</b>	<b>0.189</b>	1.000								
(4) Tenure	<b>-0.206</b>	<b>0.153</b>	<b>-0.230</b>	1.000							
(5) Board Size	<b>0.019</b>	<b>0.642</b>	<b>0.175</b>	<b>0.074</b>	1.000						
(6) Indep%	<b>0.033</b>	<b>0.262</b>	<b>0.172</b>	<b>-0.111</b>	<b>0.393</b>	1.000					
(7) Age	<b>-0.054</b>	<b>0.481</b>	<b>0.034</b>	<b>0.340</b>	<b>0.321</b>	<b>0.125</b>	1.000				
(8) ROA	<b>-0.098</b>	<b>0.495</b>	<b>-0.138</b>	<b>0.315</b>	<b>0.250</b>	<b>0.045</b>	<b>0.248</b>	1.000			
(9) Lev	<b>0.052</b>	<b>0.222</b>	<b>0.076</b>	<b>-0.072</b>	<b>0.054</b>	<b>0.069</b>	<b>0.065</b>	0.005	1.000		
(10) Std Returns	<b>0.092</b>	<b>-0.455</b>	<b>0.098</b>	<b>-0.292</b>	<b>-0.299</b>	<b>-0.082</b>	<b>-0.278</b>	<b>-0.520</b>	<b>0.043</b>	1.000	
(11) R&D	<b>0.120</b>	<b>-0.466</b>	<b>0.168</b>	<b>-0.231</b>	<b>-0.215</b>	-0.013	<b>-0.172</b>	<b>-0.757</b>	<b>-0.148</b>	<b>0.385</b>	1.000

Table 2 presents the pairwise correlations between Delaware incorporation and key control variables. Bolded correlations indicate the correlation between the two variables is significant at the 10 percent level based on two tailed tests. All continuous variables are winsorized at the 1 and 99 percent levels. Variables are defined in the Appendix.

**Table 3**  
**Event Study**

Event		(0,0)	(-1,1)	(-1,2)	(-1,3)
<i>Panel A: All</i>					
<u>Full Sample</u>	<b>DE</b>	<b>-0.18%***</b> (-3.222)	<b>-0.21%*</b> (-1.900)	<b>-0.64%***</b> (-5.136)	<b>-0.69%***</b> (-4.817)
	Observations	3,608	3,670	3,653	3,660
<u>Matched</u>	<b>DE</b>	<b>-0.13%**</b> (-2.000)	<b>-0.20%*</b> (-1.789)	<b>-0.32%**</b> (-2.507)	<b>-0.27%*</b> (-1.746)
	Observations	3,090	3,102	3,086	3,111
<i>Panel B: Split on Stock Return Volatility (Std Returns)</i>					
<u>Matched</u>	DE	-0.01% (-0.154)	0.12% (0.973)	-0.04% (-0.262)	-0.01% (-0.0434)
	Volatility	0.14% (1.604)	0.36%** (2.438)	-0.47%*** (-2.793)	-0.78%*** (-3.826)
	<b>DE*Volatility</b>	<b>-0.24%*</b> (-1.900)	<b>-0.67%***</b> (-2.993)	<b>-0.66%***</b> (-2.578)	<b>-0.74%**</b> (-2.408)
	Observations	3,130	3,143	3,130	3,156
<i>Panel C: Split on R&amp;D Intensity</i>					
<u>Matched</u>	DE	0.14%** (1.986)	0.27%** (1.997)	-0.01% (-0.0870)	0.05% (0.239)
	R&D DV	0.19%** (2.175)	0.75%*** (5.004)	0.08% (0.487)	0.38% (0.186)
	<b>DE*R&amp;D DV</b>	<b>-0.56%***</b> (-4.486)	<b>-1.00%***</b> (-4.501)	<b>-0.52%**</b> (-2.078)	<b>-0.88%***</b> (-2.949)
	Observations	3,229	3,249	3,230	3,254

Table 3 presents results from the event study of the *Investors Bancorp* Delaware Supreme Court decision on 12/13/2017, using the full sample and a sample of firms matched on industry, year, headquarter region and size. Coefficients are presented in percentage points. We also test whether the reaction is stronger for firms with higher standard deviation of returns or R&D intensity by creating indicator variables equal to one if those variables are greater than or equal to their median and zero otherwise. The constant is not reported for brevity. Variables are defined in the Appendix. We report t-statistics in parenthesis based on robust standard errors. To mitigate the impact of outliers, we eliminate observations with absolute studentized residuals greater than two. \*\*\*, \*\* and \* denote significance at the 0.01, 0.05, and 0.10 level for the two-tailed test of coefficients, respectively.

**Table 4**  
**Compensation Committee Composition**

*Panel A: Full Matched Sample*

Dependent Variable:	Addition	Addition Qualifications	Addition Network
Post	-0.068 (-1.391)	-0.142* (-1.651)	-140.473 (-1.393)
DE	-0.126*** (-3.009)	-0.217*** (-2.877)	-209.526** (-2.346)
<b>DE*Post</b>	<b>0.114**</b> <b>(2.139)</b>	<b>0.204**</b> <b>(2.184)</b>	<b>181.478*</b> <b>(1.652)</b>
Size	-0.005 (-0.524)	-0.007 (-0.365)	23.684 (0.954)
Busy	0.022 (0.444)	0.083 (0.774)	249.909** (2.554)
Tenure	-0.028*** (-10.850)	-0.042*** (-8.598)	-35.778*** (-5.608)
Board Size	0.021*** (2.831)	0.033** (2.274)	15.905 (0.972)
Indep%	0.540*** (3.560)	0.907*** (3.708)	649.748** (2.577)
Age	-0.002 (-1.366)	-0.001 (-0.220)	3.094 (0.874)
R&D	-0.206 (-1.492)	0.033 (0.141)	-130.072 (-0.714)
ROA	-0.038 (-0.558)	0.066 (0.449)	-23.821 (-0.208)
Lev	-0.021 (-0.366)	-0.024 (-0.253)	59.896 (0.419)
Std. Returns	-0.220 (-0.945)	-0.587 (-1.626)	-320.910 (-0.849)
Industry Fixed Effects	Yes	Yes	Yes
Observations	7,829	7,829	7,829
Adjusted R-squared	0.052	0.040	0.037
Total Change in Delaware (Post + DE*Post)	0.046**	0.062*	41.005
T-test	(2.06)	(1.65)	(1.11)



**Table 4, Continued**

*Panel B: Cross-sectional Split on Stock Return Volatility (Std Returns)*

Dependent Variable:	High	Low	High	Low	High	Low
	Addition		Addition Qualification		Addition Network	
Post	-0.108*	-0.026	-0.242**	-0.051	-263.077*	-27.695
	(-1.748)	(-0.466)	(-2.058)	(-0.562)	(-1.697)	(-0.276)
DE	-0.170***	-0.075	-0.295***	-0.128	-360.155**	-58.413
	(-2.778)	(-1.485)	(-2.622)	(-1.506)	(-2.474)	(-0.685)
<b>DE*Post</b>	<b>0.177**</b>	<b>0.048</b>	<b>0.340***</b>	<b>0.071</b>	<b>316.073*</b>	<b>57.286</b>
	<b>(2.536)</b>	<b>(0.770)</b>	<b>(2.609)</b>	<b>(0.686)</b>	<b>(1.890)</b>	<b>(0.493)</b>
Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,917	3,912	3,917	3,912	3,917	3,912
Adjusted R-squared	0.056	0.050	0.048	0.034	0.049	0.035
Total Change in Delaware (Post + DE*Post)	0.068*	0.022	0.099*	0.020	52.996	29.591
T-test	(2.10)	(0.73)	(1.74)	(0.39)	(1.05)	(0.53)
Difference in DE*Post	0.129		0.269*		258.787	
F-test	(2.66)		(3.54)		(2.16)	
Difference in (Post + DE*Post)	0.046		0.079		23.405	
F-test	(1.09)		(1.08)		(0.10)	

Table 4 presents the results of the difference-in-difference test of the effect of the *Investors Bancorp* ruling on compensation committee composition in a sample of firms matched on industry, year, headquarter region and size. Panel A reports results using the full matched sample; Panel B presents results in subsamples split at the median of the standard deviation of returns. Firms with above (below) median standard deviation of returns should be more (less) likely to be affected by *Investors Bancorp*, respectively. Control variables are not reported for brevity in Panel B. We use simultaneous estimation to test for differences in the interaction and total change across the subsamples. We report t-statistics in parenthesis based on standard errors clustered by firm. Variables are defined in the Appendix. To minimize the influence of outliers, all variables are winsorized at the 1 percent and 99 percent levels. \*\*\*, \*\* and \* denote significance at the 0.01, 0.05, and 0.10 level for the two-tailed test of coefficients, respectively.

**Table 5**  
**Director Compensation**

*Panel A: Full Matched Sample*

Dependent Variable:	Total Compensation	Equity Compensation
Post	15.090** (2.535)	10.208* (1.868)
DE	8.857 (1.259)	6.973 (1.052)
<b>DE*Post</b>	<b>-11.774*</b> <b>(-1.723)</b>	<b>-9.106</b> <b>(-1.469)</b>
Size	27.497*** (8.585)	19.613*** (6.633)
Busy	16.888 (1.201)	8.870 (0.667)
Tenure	-0.431 (-0.468)	-0.228 (-0.274)
Board Size	-1.365 (-0.781)	-0.853 (-0.569)
Indep%	-68.736 (-1.160)	-86.755 (-1.561)
Age	1.246*** (3.981)	0.968*** (3.403)
R&D	587.406*** (6.251)	576.978*** (6.679)
ROA	107.943*** (2.820)	101.943*** (2.958)
Lev	28.570* (1.870)	21.902 (1.470)
Std. Returns	31.078 (0.557)	24.399 (0.467)
Industry Fixed Effects	Yes	Yes
Observations	3,092	3,092
Adjusted R-squared	0.366	0.338
Total Change in Delaware (Post + DE*Post)	3.316	1.102
T-test	(1.06)	(0.39)

**Table 5, Continued**

*Panel B: Cross-sectional Split on Stock Return Volatility (Std Returns)*

	<b>High</b>	<b>Low</b>	<b>High</b>	<b>Low</b>
Dependent Variable:	Total Compensation		Equity Compensation	
Post	8.375 (1.043)	21.473*** (3.358)	3.388 (0.458)	17.400*** (2.994)
DE	3.648 (0.407)	15.200* (1.881)	4.217 (0.487)	13.514* (1.837)
<b>DE*Post</b>	<b>-0.599</b> <b>(-0.061)</b>	<b>-21.262***</b> <b>(-2.687)</b>	<b>0.989</b> <b>(0.110)</b>	<b>-19.642***</b> <b>(-2.718)</b>
Controls Included	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,664	1,662	1,664	1,662
Adjusted R-squared	0.326	0.402	0.306	0.371
Total Change in Delaware (Post + DE*Post)	7.776	0.211	4.377	-2.242
T-test	(1.52)	(0.05)	(0.93)	(-0.58)
Difference in DE*Post	20.663*		20.631*	
F-test	(2.76)		(3.32)	
Difference in (Post + DE*Post)	7.565		6.619	
F-test	(0.86)		(0.73)	

Table 5 presents the results of the difference-in-difference test of the effect of the *Investors Bancorp* ruling on director compensation in a sample of firms matched on industry, year, headquarter region and size. Panel A reports results using the full matched sample; Panel B presents results in subsamples split at the median of the standard deviation of returns. Firms with above (below) median standard deviation of returns should be more (less) likely to be affected by *Investors Bancorp*, respectively. Control variables are not reported for brevity in Panel B. We use simultaneous estimation to test for differences in the interaction and total change across the subsamples. We report t-statistics in parenthesis based on standard errors clustered by firm. Variables are defined in the Appendix. To minimize the influence of outliers, all variables are winsorized at the 1 percent and 99 percent levels. \*\*\*, \*\* and \* denote significance at the 0.01, 0.05, and 0.10 level for the two-tailed test of coefficients, respectively.

**Table 6**  
**Insider Trading**

*Panel A: Full Matched Sample*

Dependent Variable:	Num_Traders	Per_EqTraded
Post	-1.400*** (-11.532)	-0.895** (-2.501)
DE	0.071 (0.573)	0.248 (0.572)
<b>DE*Post</b>	<b>0.131</b> <b>(0.990)</b>	<b>-0.219</b> <b>(-0.530)</b>
Size	0.079*** (2.643)	-0.068 (-0.973)
Busy	-0.552*** (-3.404)	1.024 (1.623)
Tenure	0.027*** (2.974)	-0.006 (-0.621)
Board Size	0.148*** (7.022)	0.048* (1.759)
Indep%	-0.165 (-0.375)	0.424 (0.582)
Age	0.007 (1.533)	-0.013** (-2.305)
R&D	0.999*** (2.901)	-2.536 (-1.322)
ROA	0.570*** (2.758)	-0.963 (-1.309)
Lev	-0.422*** (-3.107)	-0.347 (-0.603)
Std. Returns	-0.938* (-1.867)	5.330 (1.178)
Industry Fixed Effects	Yes	Yes
Observations	8,373	8,373
Adjusted R-squared	0.221	0.065
Total Change in Delaware (Post + DE*Post)	-1.269***	-1.115***
T-test	(-24.11)	(-8.12)

**Table 6, Continued**

*Panel B: Cross-sectional Split on Stock Return Volatility (Std Returns)*

Dependent Variable:	High	Low	High	Low
	Num_Traders		Per_EqTraded	
Post	-1.295*** (-8.431)	-1.510*** (-10.746)	-1.342** (-1.998)	-0.464*** (-3.831)
DE	-0.115 (-0.726)	0.198 (1.335)	-0.210 (-0.209)	0.474** (2.483)
<b>DE*Post</b>	<b>0.205</b> <b>(1.213)</b>	<b>0.083</b> <b>(0.516)</b>	<b>-0.041</b> <b>(-0.052)</b>	<b>-0.380*</b> <b>(-1.899)</b>
Controls Included	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	4,187	4,186	4,187	4,186
Adjusted R-squared	0.213	0.228	0.097	0.034
Total Change in Delaware (Post + DE*Post)	-1.09***	-1.427***	-1.383***	-0.844***
T-test	(-15.21)	(-18.13)	(-5.97)	(-5.27)
Difference in DE*Post	0.122		0.339	
F-test	(0.38)		(0.17)	
Difference in (Post + DE*Post)	0.337***		-0.539*	
F-test	(9.66)		(3.38)	

Table 6 presents the results of the difference-in-difference test of the effect of the *Investors Bancorp* ruling on director insider trading in a sample of firms matched on industry, year, headquarter region and size. Panel A reports results using the full matched sample; Panel B presents results in subsamples split at the median of the standard deviation of returns. Firms with above (below) median standard deviation of returns should be more (less) likely to be affected by *Investors Bancorp*, respectively. Control variables are not reported for brevity in Panel B. We use simultaneous estimation to test for differences in the interaction and total change across the subsamples. We report t-statistics in parenthesis based on standard errors clustered by firm. Variables are defined in the Appendix. To minimize the influence of outliers, all variables are winsorized at the 1 percent and 99 percent levels. \*\*\*, \*\* and \* denote significance at the 0.01, 0.05, and 0.10 level for the two-tailed test of coefficients, respectively.