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**Essays on the Economic Consequences of Legal Frictions in the  
Market for Corporate Control**

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Doctor of Philosophy

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Doctor of Philosophy

## ABSTRACTS

### **Essay 1: Appraisal Risk and Corporate Disclosure During Mergers and Acquisitions**

Christopher R. Stewart

This study examines whether and how target managers alter their disclosure behavior in response to heightened appraisal risk during mergers and acquisitions. Appraisal laws give target shareholders the right to receive a judge's determined value in lieu of the acquirer's offer. Target-firm disclosures play a critical role in the valuation decisions of judges; and valuation decisions pose a substantial risk to acquirers. Using a landmark court ruling that significantly strengthened appraisal rights in Delaware, I show that target managers strategically withhold good news during mergers when the risk of appraisal is heightened. I further document that this observation is driven by target managers who are aligned with acquirers, and that acquirers benefit in the form of a lower likelihood of appraisal and higher post-acquisition returns. My findings suggest that acquirer-provided incentives play a key role in determining target managers' disclosure strategies during mergers, and that retaining target managers can provide an important benefit to acquirers in the form of control over the information environment in mergers.

### **Essay 2: Materiality, Adverse Selection, and Merger Activity: Evidence on the Economic Consequences of *IBP v. Tyson***

Ian D. Gow, Stefan F. Schantl, and Christopher R. Stewart

The landmark court ruling of *IBP v. Tyson* under New York law in 2001 and its affirmation by the *Hexion v. Huntsman* ruling under Delaware law in 2007 led to a clarification of the scope

of material adverse event provisions, which allow acquirers to terminate deals based on adverse events impacting target firms' economic substance. Using a sample of mergers with large public targets between 1997 and 2018, we study the economic consequences of these rulings and find that the rulings led (i) to a lower likelihood of acquirer-initiated renegotiations and terminations, (ii) to narrower merger arbitrage spreads, (iii) to acquirers being less likely to acquire smaller or riskier targets, (iv) to a decline in deal premiums of mergers with smaller, riskier targets, and (v) to a decline in post-acquisition returns of public acquirers of smaller, riskier targets. Our results are consistent with the argument that the rulings tightened materiality standards and weakened acquirers' ability to renegotiate and terminate mergers. Ex ante this exacerbated merger adverse selection and resulted in a truncation of merger activity along the dimensions of target size, risk, and quality.

## DECLARATIONS

This is to certify that

- (i) this thesis comprises only my original work towards the Doctor of Philosophy except where indicated in the preface;
- (ii) due acknowledgement has been made in the text to all material used; and
- (iii) the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Signature .....

Christopher R. Stewart

## **PREFACE**

Chapter three of this thesis is a collaborative study carried out with Professor Ian D. Gow and Dr. Stefan F. Schantl. My contribution to the study consists of co-developing the research idea and the research design, collecting and analyzing the data, co-interpreting the results and writing the ‘Data’, ‘Analysis’, and ‘Robustness’ sections, and contributing to the writing of the ‘Institutional Background’ and ‘Conclusion’ sections. I also assisted with editing.

## ACKNOWLEDGEMENTS

If not for the unwavering support of so many people, my Ph.D. experience would certainly have been much less fulfilling and not nearly as memorable. Foremost, I am deeply indebted to Professor Ian Gow, who, as my advisor and mentor, has enriched my life in countless ways. Ian's brilliant and witty approach to research, academia, and life in general, has positively influenced my development as a researcher and as a person, and has made these past few years as his student thoroughly enjoyable. I will endeavor to continue to learn and grow from his invaluable advice and guidance, with the hope that my career will reward him for the many sacrifices he has made for the benefit of both my family and myself.

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I am also extremely grateful to Professor Vic Naiker and Dr. Gladys Lee, my talented co-authors and friends, for their incredible support, patience, and encouragement during these past few years. Thanks also to the incredible staff, faculty, and students in the Department of Accounting at the University of Melbourne. Particularly helpful to me during this time were my fellow Ph.D. students: Hrishikesh Desai, Yanhua Dong, Yunhe Dong, Sabutay Fatullayev, Jingru Gao, Anson Jiang, James Kavourakis, Ra-Pee Pattanapanysat, Ajanee Ranasinghe, Ruidi Shang, Feilian Wang, Mark Wallis, Xing Yang, and Kerui Zhai.

This thesis, my research program, and my visit to Stanford University, would not have been possible without the generous financial support from the University of Melbourne and especially from the Department of Accounting.

Finally, this thesis is dedicated to my loving and supportive partner, Hyun Ha; to our two amazing children, Audrey and Quinn; and to my wonderful mother.

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# CHAPTER 1

## Introduction

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The economic consequences of legal and regulatory frictions are important for policymakers, practitioners, and academics to understand, due to the critical role the legal and regulatory environment plays in the development of capital markets and thus resource allocation (La Porta et al., 1997). This thesis, comprised of two essays, explores the economic consequences of landmark court rulings that affect the US market for corporate control—a market which represents over \$1 trillion in annual transaction value—shedding new light on how legal frictions impact target managers’ disclosure decisions in mergers (in Essay 1) and on how legal frictions affect merger activity (in Essay 2).

Specifically, in my first study, I examine whether and how managers of acquired firms alter their disclosure behavior after a seminal Delaware court ruling that substantially strengthened shareholder appraisal rights in mergers—i.e., a shareholder’s the right to seek a judicial appraisal of their shares—such that nearly one in three acquisitions of large Delaware firms were subject to appraisal lawsuits in recent years. This rapidly emerging phenomenon is being driven by a new class of hedge fund that uses appraisal rights as a lucrative but controversial investment strategy known as “appraisal arbitrage.” Appraisal arbitrageurs acquire shares of the target firm just prior to the deal being consummated principally to seek an appraisal. In the wake of this new threat, an interesting question arises: What actions, if any, do managers take to counter the risk of appraisal?

In the second study, co-authored with Professor Ian D. Gow and Dr. Stefan F. Schantl, we investigate the economic consequences of a landmark court ruling that helped clarify the scope of material adverse event provisions in merger agreements; i.e., provisions that allow

acquirers to terminate deals based on adverse events impacting acquired firms. Adverse events are the primary reason for acquirer-initiated deal renegotiations and terminations, which helps explain why a noteworthy portion of merger negotiations is spent specifying such provisions. Yet, there is little systematic evidence on whether limiting acquirers' ability to invoke such provisions has economic consequences for mergers and if so, what are they? We investigate the consequences to acquirers' ability to renegotiate or terminate deals; and on the consequences to acquirers' ex ante target selection decisions and the premiums they pay for acquired firms.

Summaries of each study, including research design and findings, are in the subsections that follow.

### *1.1 Summary of Essay 1*

Enacted long ago in all US states, appraisal laws give shareholders of acquired firms the right to reject the merger price, seek a court's valuation of their shares, and receive this appraised value in lieu of the acquirer's offer. Disclosures of acquired firms play a critical role in judicial appraisals; and appraisals pose a substantial risk to acquirers. This study examines whether managers of acquired firms withhold positive news—between the announcement and closing dates of mergers—as a response to heightened appraisal risk.

Important features of appraisal laws provide a channel for heightened appraisal risk to increase target managers' propensity to withhold positive news in the period between these two dates, which is on average four months in my study. First, appraisal rights are exercised well after a merger is announced, giving investors the opportunity to observe the information environment before seeking appraisal. Second, appraisal laws grant judges the flexibility to consider all value-relevant information that arrives up to the closing date of the merger when determining the value of a share. Thus, positive news that arrives after the announcement of a

merger directly influences both the likelihood that shareholders file a lawsuit and the judge's determination of value.

To address my main research question, I exploit a landmark 2007 Delaware court ruling that substantially strengthened appraisal rights for shareholders of Delaware-incorporated firms. In the years since the ruling, the number of appraisal lawsuits in Delaware and the size of claims have increased dramatically, such that approximately one in three acquisitions of large Delaware firms have been subject to at least one appraisal lawsuit in recent years.

This new phenomenon is being driven by hedge funds that use appraisals as a new investment strategy known as "appraisal arbitrage." Appraisal arbitrageurs acquire shares of target firms well after deals are announced and file appraisal lawsuits. The strategy is successful if either the hedge fund reaches a profitable settlement with the acquirer or the judge appraises the shares at a level above the price at which the shares were acquired. The 2007 court ruling effectively allows hedge funds to wait until the very last minute to acquire shares; this then (1) substantially lengthens the amount of time these funds have to observe new information about the target firm and (2) all but eliminates deal-completion risk (i.e., the risk the hedge funds are holding target-firm shares and the deal is cancelled).

Employing a difference-in-differences research design that uses mergers that include target firms incorporated in all other US states as a control group, i.e., firms not affected by the Delaware ruling, I show that managers in Delaware systematically withhold positive news when appraisal risk is heightened in the years after 2007.

Why do target managers withhold positive news if appraisal risk poses a threat to acquirers? To answer this question, I look to the literature in finance that shows that target managers are susceptible to acquirer-provided incentives (e.g., future employment with the acquiring firm). Consistent with this conjecture, I further show that my main observation is

being driven by those target managers who are retained by acquirers—a finding that suggests that acquirer-provided incentives play a key role in determining target managers’ disclosure strategies during mergers.

To provide more direct evidence of a change in disclosure behavior in the years after the court ruling, I examine the specific disclosure channels that are available to target managers after a merger is announced. I find that target managers use more negative narrative in their press releases and SEC filings; that they reduce the number of press releases; and, that the cumulative abnormal returns around these news events are on average more negative. In combination, these results provide additional, direct support to the conjecture that managers withhold positive when appraisal risk is heightened.

Does withholding positive news provide benefits to acquirers? Yes. Acquirers are 31 percent less likely to face an appraisal lawsuit when managers of the acquired firm withhold positive news. In addition, acquirers also benefit from target managers’ disclosure strategies in the form of higher post-acquisition abnormal returns, suggesting that this positive news eventually surfaces in the acquirers’ financials. Finally, acquirers are 6.5 percent more likely to establish economic ties with target managers in the years after the court ruling—a finding which suggests that acquirers recognize the benefits of having control over the information environment during mergers.

Why don’t hedge funds figure out this disclosure strategy? To address this question, I examine the disclosures of ‘conflicts of interest’ in SEC merger-related filings. Conditional on target managers having economic ties with acquirers, I find the likelihood of Delaware target managers disclosing such ties before the merger closes is roughly 18 percent lower after the court ruling. In other words, appraisal arbitrageurs cannot easily unwind this disclosure strategy after the court ruling.

I contribute to several strands of literature. First, my study adds to the literature that examines how managers' personal incentives influence voluntary disclosure behavior (e.g., Nagar, 1999; Aboody and Kasznik, 2000; Nagar et al., 2003; Richardson et al.; 2004; Cheng and Lo, 2006; Brockman et al., 2008; Edmans et al., 2018; Baginski et al., 2018). A novel finding in my study is that target managers distort the information environment of their current employers so as to benefit their future employers. In this way, my paper also broadens our understanding of why acquirers retain managers of the firms they acquire (e.g., Wulf, 2004; Hartzell et al., 2004; Ishii and Xuan, 2014).

My study is also related to the well-established literature that examines the impact of shareholder litigation risk on voluntary disclosure choices (e.g., Skinner, 1994, 1997; Francis et al., 1994; Johnson et al., 2001; Field et al., 2005; Rogers and Stocken, 2005). My study expands this literature by providing the first look at how voluntary disclosure choices are affected by appraisal risk, which differs in several ways from the litigation risk studied in prior work. Moreover, the litigation risk in my setting is substantially higher—30 percent for large Delaware firms—as compared to the litigation risk in the extant literature (e.g., generally 1 to 2 percent).

My paper also adds to the literature that examines incentives to withhold good news and/or disclose negative news (e.g., Skinner, 1994; Aboody and Kasznik, 2000). My study contributes to this literature by showing that managers have incentives to withhold good news after the announcement of a merger when doing so reduces the litigation costs of their future employer (i.e., the acquiring firm).

Finally, my paper adds to a growing literature in law and economics that studies the effects of appraisal risk on mergers and acquisitions (e.g., Callahan et al., 2018; Boone et al., 2019). By providing new evidence on the impact of heightened appraisal risk on the disclosure

choices of target managers, I shed new light on the unintended consequences of appraisal risk for corporate transparency in the market for corporate control.

## *1.2 Summary of Essay 2*

Merger agreements typically include provisions that specify the conditions under which a deal can be renegotiated or terminated, due to adverse selection problems arising between acquirers and target firms. One such provision is the Material Adverse Event (MAE) clause, which provides acquirers with an exit opportunity should an adverse event impact the acquired firm after a deal is announced (but before it is consummated). Adverse events are the primary reason behind acquirer-initiated renegotiations and deal terminations, suggesting that MAEs are critical provisions in merger contracts. In this paper, we study the economic consequences of a seminal court ruling under New York law, which is later affirmed in a ruling under Delaware law, that effectively reduced acquirers' ability to invoke MAE clauses in deals involving firms incorporated in those states.

To examine the impact of this legal friction, we exploit the staggered nature of these rulings—and the fact that they only impacted firms incorporated in New York and Delaware—to conduct our inquiry. Our research design thus takes on generalized difference-in-differences approach in the spirit of Bertrand and Mullainathan (2003).

We begin by showing that the court rulings had the conjectured effect of substantially reducing acquirer-initiated renegotiations and terminations in deals involving target firms incorporated in these two states. In placebo tests, we provide additional support by documenting that target-initiated renegotiations and terminations, and regulator-initiated terminations exhibit no change in likelihood after the court rulings. Moreover, we document a narrowing of merger arbitrage spreads soon after the rulings, indicating that investors assign

lower deal-completion risk when acquirers cannot easily renegotiate or terminate deals due to this friction.

A natural question thus arises: Does reducing acquirers' ability to invoke MAE clauses impact the types of deals they enter into? To address this question, we examine the size and risk (i.e., return volatility) of target firms in deals announced after the rulings. Our findings indicate that New York and Delaware targets are more likely to be in the highest quartile of size and the lowest quartile of risk (i.e., larger and less risky targets) after the rulings. This finding is consistent with the conjecture that the rulings had the effect of changing the composition of large New York and Delaware mergers.

Next, we examine the implications for the premium that acquirers are willing to pay. For this test, we focus on two samples of target firms: larger and less risky vs. smaller and riskier. Our results show that after the court rulings, acquirers reduce the premium they are willing to pay for small and risky Delaware and New York targets.

Because we still observe acquisitions of small, risky target firms in the affected states, we are interested in examining whether there is a difference in how these mergers perform relative to similar types of mergers in unaffected states and relative to acquisitions of large and less risky firms in the affected states. If acquirers pay lower premiums for small, risky targets then we might expect that shareholders of "good" targets will be unwilling to sell, but for shareholders of "lemons" this may not hold true. Indeed, consistent with the development of a lemons problem, we find that acquirers of small, risky New York and Delaware targets realize lower post-acquisition performance after the court rulings.

Our paper contributes to the general literature in law and finance (La Porta et al., 1998) by highlighting the impact that contract law can have on the market for corporate control. We add to this literature by documenting that weakening acquirers' ability to invoke important

MAE clauses vis-à-vis higher materiality thresholds has economic consequences for merger activity. Overall, our results show that this weakening has the additional effect of exacerbating the adverse selection problem in mergers and slows down the market for corporate control.

## CHAPTER 2

### Appraisal Risk and Corporate Disclosure During Mergers and Acquisitions

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#### Abstract

This study examines whether and how target managers alter their disclosure behavior in response to heightened appraisal risk during mergers and acquisitions. Appraisal laws give target shareholders the right to receive a judge's determined value in lieu of the acquirer's offer. Target-firm disclosures play a critical role in the valuation decisions of judges; and valuation decisions pose a substantial risk to acquirers. Using a landmark court ruling that significantly strengthened appraisal rights in Delaware, I show that target managers strategically withhold good news during mergers when the risk of appraisal is heightened. I further document that this observation is driven by target managers who are aligned with acquirers, and that acquirers benefit in the form of a lower likelihood of appraisal and higher post-acquisition returns. My findings suggest that acquirer-provided incentives play a key role in determining target managers' disclosure strategies during mergers, and that retaining target managers can provide an important benefit to acquirers in the form of control over the information environment in mergers.

## 2.1 Introduction

Effective investor protection laws are crucial to capital market development and thus resource allocation (e.g., La Porta et al., 1997). One specific law that is intended to protect minority shareholders is the right to a court appraisal in mergers and acquisitions. Appraisal laws, enacted in all U.S. states long ago, give individual target shareholders the right to reject an acquirer's offer, seek a court's appraisal of their shares, and receive this appraised value in lieu of the original deal price. Appraisal laws have received widespread attention since a landmark 2007 court ruling significantly strengthened appraisal rights in Delaware, such that nearly one in three acquisitions of Delaware firms were subject to shareholder appraisals in recent years.

This rapidly emerging phenomenon is being driven by a new class of hedge funds that uses appraisals as a lucrative but controversial investment strategy known as "appraisal arbitrage" (e.g., Korsmo and Myers, 2015; Jiang et al., 2016). Appraisal arbitrageurs buy shares of the target just before the merger closes principally to seek appraisal. The investment strategy is successful when either a profitable settlement is reached with the acquirer or the judge appraises the shares above the deal price. In the wake of this new threat, an interesting question arises: What actions, if any, do target managers take to counter the risk of appraisal?

In this study, I examine whether and how target managers alter their disclosure behavior in response to heightened appraisal risk. Target-firm disclosures play a critical role in appraisals. Appraisal arbitrageurs rely on information, including firm disclosures, to support their claim that the target firm was undersold. This information then forms the basis of judicial appraisals, as judges consider all value-relevant information about the target firm up to the closing date of the merger when appraising a share; and judicial appraisals pose a substantial risk to acquirers.

I focus on target managers' disclosure behavior before and after a landmark 2007 Delaware Court of Chancery ruling *In Re Appraisal of Transkaryotic Therapies, Inc.* (hereafter, "Transkaryotic"), which significantly strengthened appraisal rights in Delaware—the state where most target firms are incorporated.<sup>1</sup> The ruling, which was largely unexpected but received widespread attention, substantially increased the risk of appraisal for Delaware-incorporated target firms (e.g., Callahan, Palia, and Talley, 2018; Subramanian, 2019). The number and economic significance of appraisal claims in Delaware have rapidly increased since Transkaryotic (e.g., Korsmo and Myers, 2015; Jiang, Li, Mei, and Thomas, 2016).<sup>2</sup> At the same time, appraisal awards in Delaware have also increased in size, with some recent high-profile appraisals having added as much as 30 percent to takeover prices.<sup>3</sup>

I exploit this ruling to examine whether heightened appraisal risk influences target managers' disclosure choices between the date a merger is announced and the date the deal closes, an average period of 114 days in my sample. Important features of appraisal laws provide a channel for heightened appraisal risk to significantly influence target managers' disclosure behavior between these two dates. First, appraisal rights are exercised well after a merger is announced, which allows appraisal arbitrageurs to observe the information environment in the post-announcement period before acquiring shares and seeking appraisal.<sup>4</sup> Second, appraisal laws grant judges the flexibility to consider all value-relevant information that arrives up to the closing date of the merger when determining the value of a share. Thus,

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<sup>1</sup> See <https://courts.delaware.gov/opinions/download.aspx?ID=91460> for a transcript of the decision.

<sup>2</sup> A 2014 article from the American Bar Association links the rise in Delaware appraisal cases to the Transkaryotic ruling, noting that "[m]ost of this increased activity is due primarily to the rise of appraisal arbitrage... The basic arbitrage opportunity presented by appraisal rights stems from the Court of Chancery's 2007 Transkaryotic decision... This decision provided the foundation for activists and hedge funds to emerge as 'appraisal investors'..." (American Bar Association, 2014).

<sup>3</sup> *In Re Appraisal of Dell, Inc.*, the Delaware Court of Chancery ruled that the fair value of Dell's common stock at the effective time of the merger was \$17.62 per share, approximately 28% higher than the original merger price.

<sup>4</sup> Legal experts claim that delaying the purchase of shares until the last possible moment means that appraisal arbitrageurs can "fully assess the economics of appraisal based on the company's disclosures" (Kesten, 2017, p. 102).

positive news that is disclosed by target managers in the post-announcement period of a merger directly influences both the likelihood that appraisal arbitrageurs acquire shares and seek appraisal and the judge's determination of fair value.

I examine whether Delaware target managers strategically withhold good news as a response to heightened appraisal risk. I employ a difference-in-differences research design to capture the post-Transkaryotic changes in disclosure behavior between target firms incorporated in Delaware and those target firms incorporated in all other U.S. states. I use cumulative abnormal returns, tone, and frequency of voluntary and mandatory disclosures to examine target managers' disclosure strategies between the announcement and completion dates of mergers. My analyses are based on a sample of 1,732 appraisal-eligible completed mergers involving U.S.-incorporated public target firms from 1998 to 2016.

I start by investigating target firms' market-adjusted cumulative abnormal returns (CAR), calculated between the date the merger is announced and the date the deal closes (hereafter, merger window).<sup>5</sup> Using CAR allows me to examine the markets' perception of all information revealed to the capital markets by target firms, and is a method commonly employed in the prior literature.<sup>6</sup> I find that CAR is on average 3.3% lower for Delaware-incorporated targets relative to non-Delaware targets in post-Transkaryotic mergers. Overall, this finding is consistent with managers of target firms withholding good news during the merger window in response to an increase in appraisal risk attributed to Transkaryotic. This result is robust to controlling for other determinants of stock returns, as well as to the inclusion

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<sup>5</sup> As I detail later in the Research Design section, target firms discontinue conducting conference calls and issuing management forecasts after a merger is announced. This leaves only press releases and SEC 8-K filings as disclosure channels for examination. However, due to data limitations, I can only obtain press releases beginning in 2004; thus, I conduct my main analysis using CAR and supplement this with additional analysis using a sample of press releases and 8-K disclosures.

<sup>6</sup> Examples of studies that use CAR to observe information disclosed to the market through various channels include Aboody and Kasznik (2000), which observes CAR over a 60-day window centered on CEO stock option award dates, and Kothari, Shu, and Wysocki (2009), which observes CAR beginning 60 days before dividend change announcements and management earnings forecasts.

of a comprehensive set of firm- and deal-level controls and industry, year, and state fixed effects. My inferences are not affected by removing mergers announced in 2008 and 2009 (i.e., financial crisis years) or when I rely on a control group of mergers that solely includes target firms incorporated in states with appraisal laws like those of Delaware.

In my next set of tests, I exploit cross-sectional variation in firm and deal characteristics that are likely to be associated with a higher risk of appraisal (e.g., deal size, deal premiums, and deal length). I find that the effect of the Delaware court ruling is more pronounced for higher-value mergers, mergers with lower deal premiums, and mergers that take longer to complete—all of which are proxies for higher appraisal risk. Finally, I find that CAR during the merger window is more positive in post-Transkaryotic Delaware mergers that were later subject to at least one appraisal action—a finding that is consistent with the idea that disclosing positive news after the announcement date of a merger is associated with higher appraisal risk.

I next examine why target managers withhold good news to the benefit of acquirers. The literature in mergers and acquisitions has long recognized that target managers are susceptible to acquirer-provided incentives (e.g., Morck, Shleifer, and Vishny, 1988; Fich, Cai, and Tran, 2011; Fich, Rice, and Tran, 2016). I predict that being retained or holding equity in the acquirer after the merger closes provides incentives for a target manager to withhold good news and negatively bias disclosures. Consistent with this prediction, I show that CAR is 8% lower during the merger window for Delaware target managers who have future economic ties to the acquirer relative to those Delaware target managers who do not. My findings suggest that acquirer-provided incentives induce target managers to withhold good news and negatively bias the information environment when appraisal risk increases after Transkaryotic.

To provide more direct evidence of a change in disclosure behavior after Transkaryotic, I next examine specific channels through which managers have discretion with which to bias

the information environment during mergers. Specifically, I investigate the tone and frequency of target-firm initiated press releases and discretionary 8-K filings released in the post-announcement period. My results indicate that, in mergers occurring after *Transkaryotic*, Delaware target firm managers with economic ties to the acquirer release fewer disclosures, and those disclosures they do release use more negative narrative. Moreover, further analysis using the three-day CAR around these disclosures shows that the market reacts more negatively.

Next, I examine whether acquirers benefit from establishing future economic ties with target managers. First, I examine whether Delaware targets whose managers are retained by acquirers face a lower likelihood of being appraised after the merger closes. Consistent with this prediction, I find that retaining a target manager reduces the likelihood of an appraisal by 31 percent relative to not retaining the target manager after *Transkaryotic*. Next, I investigate whether withholding good news has economic consequences, as measured by the post-merger performance of the acquirer. If target managers with economic ties withhold positive news to reduce the expected costs of appraisal, then the market should eventually learn the content of such news after the merger closes (e.g., in the form of higher post-acquisition acquirer returns). Consistent with this prediction, I find that acquirer returns are 4.6% higher in the 180-day window after the merger closes when target managers with economic ties to the acquirer withhold good news during the merger.

Finally, I examine whether acquirers of Delaware firms are more likely to establish economic ties with target managers after *Transkaryotic*. If establishing such ties provide benefits in the form of a lower likelihood of appraisal and higher post-acquisition returns then I expect to find an increase in the likelihood of economic ties after the court ruling. Consistent with this prediction, I show an approximate 6.5 percent higher likelihood that an acquirer

establishes economic ties with the manager of a Delaware target (relative to acquirers of targets from all other states) after Transkaryotic.

My paper is directly related to several strands of literature. First, my study adds to the literature that examines how managers' personal incentives influence voluntary disclosure behavior. Prior studies show that voluntary disclosure choices are related to managers' compensation incentives (e.g., Aboody and Kasznik, 2000; Nagar et al., 2003; Richardson et al, 2004; Cheng and Lo, 2006; Brockman et al., 2008; Edmans et al., 2018), and career concerns (Nagar, 1999; Baginski et al, 2018). I extend this literature by providing new evidence that target managers' ties to acquirers influence their disclosure strategies during mergers. A novel finding in my study is that target managers distort the information environment of their current employers so as to cater to their future employers. In this way, my paper also broadens our understanding of why acquirers retain target managers (e.g., Wulf, 2004; Hartzell, Ofek, and Yermack, 2004; Ishii and Xuan, 2014). I shed new light on this topic by documenting that retaining the target manager can provide a key benefit to the acquirer in the form of control over the information environment in a merger, which can help reduce appraisal risk and in turn enhance post-acquisition performance.

My study is also related to the well-established literature that examines the impact of shareholder litigation risk on voluntary disclosure choices (e.g., Skinner, 1994, 1997; Francis, Philbrick, and Schipper, 1994; Johnson, Kasznik, and Nelson, 2001; Field, Lowry, and Shu, 2005; Rogers and Stocken, 2005). My study expands this literature in two important ways. First, I provide the first look at how voluntary disclosure decisions are impacted by appraisal laws. These laws are state-level investor protection laws, are particular to mergers and acquisitions, are not enforced by class-action lawsuits, and do not require shareholders to prove fraud or breach of fiduciary duty; therefore, the nature of the litigation risk I investigate differs in many ways from the litigation risk in the extant literature. My study thus adds to our

understanding of how various investor protection laws influence voluntary disclosure decisions across different settings. Second, the risk of litigation in my setting is substantially higher (e.g., nearly 30% in recent years) than the risk of litigation in the extant literature (e.g., generally 1% to 2%), which suggests that my setting provides a more powerful test of the effects of litigation risk on voluntary disclosure.

My study also adds to the literature that examines incentives to voluntarily withhold good news and/or disclose negative news. That literature shows that managers disclose negative news when it reduces shareholder litigation risk (Skinner, 1994) or increases their compensation (Aboody and Kasznik, 2000). In my setting, target managers have incentives to withhold good news after the announcement date of a merger when doing so reduces the litigation costs of their future employer (i.e., the acquiring firm). My study also complements the literature in accounting and finance that examines how disclosure and accounting choices influence mergers and acquisitions (e.g., DeAngelo, 1986; Erickson and Wang, 1999; Perry and Williams, 1994; Ahern and Sosyura, 2014; Kim, Verdi, and Yost, 2019).

Finally, my paper adds to a growing literature in law and economics that studies the effects of heightened appraisal risk on mergers and acquisitions (e.g., Callahan et al. 2018; Boone, Broughman, and Macias 2019). By showing that increased appraisal risk prompts those target managers with acquirer-provided incentives to withhold good news during a merger, I shed new light on the unintended consequences of appraisal risk for corporate transparency in mergers. These findings thus contribute to the ongoing discussion over the efficacy of appraisal laws.

The rest of the paper is organized as follows. Section 2 provides the institutional background. In section 3, I describe the research design and sample selection. I present the main results in section 4 and additional analyses in section 5. Section 6 concludes the paper.

## 2.2 Institutional Background

### 2.2.1 Overview of appraisal rights

In response to rapid economic expansion in the late 1800s and early 1900s, U.S. state legislatures amended corporate statutes to accommodate transactions such as mergers and acquisitions. One such amendment—the ‘majority voting’ rule—eased voting restrictions in mergers by requiring only a majority of shareholder support for a deal to move forward. Prior to this rule, corporations needed unanimous shareholder consent to approve such transactions—meaning that even a single shareholder could stand in the way of a merger (Geis, 2011). While the new amendment was successful in reducing hold-up problems, the change nonetheless led to new concerns that easing voting restrictions would result in the expropriation of minority shareholders; for example, by enabling controlling shareholders to acquire the firm at a price below fair value, so long as they received majority approval (Thompson, 1995).

To address these concerns, all 50 U.S. states enacted appraisal laws, which give shareholders the right to dissent to a merger offer, seek a court’s appraisal of their shares, and receive the judge’s appraised value from the acquirer in lieu of the original merger price. Appraisal laws thus provided minority shareholders with a liquidity option in a merger—allowing them to exit the firm at a price set by an independent observer, and not by those with a controlling interest (Thompson, 1995).

Today’s appraisal laws are very different from the laws enacted over 100 years ago. Most states (37 of 50) now confer appraisal rights to public company shareholders in deals that include at least some cash in the payment terms but not to stock-only deals.<sup>7</sup> State legislatures have also added strict procedural requirements for the exercise of appraisal rights, but even

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<sup>7</sup> State lawmakers asserted that the open market is the most appropriate liquidity option for dissenting shareholders of public companies in stock-only mergers. Notably, in 2016, 90% of U.S. mergers included cash in the payment terms.

after meeting these requirements shareholders must still wait a lengthy and costly period for the courts to address their claims.<sup>8</sup> Recent evidence, however, suggests that most lawsuits (approximately 80 percent) are settled well before trial (e.g., Thomas, 2000; Jiang et al., 2016).

For those cases that proceed to trial, a judge determines the fair value of a share. In doing so, the court requests that each side submit a valuation and provide evidence to support its claim. Importantly, however, a dissenting shareholder is not required to prove fraud or breach of fiduciary duty by the board of directors or managers. That is, a dispute over the value of a single share is the only issue addressed by the courts. If, however, no one can prove their claims, as is often the case, the judge will at her sole discretion determine the fair value of the share (Geis, 2011). As part of this determination, judges can consider all value-relevant information when deciding fair value, including news that arrives up to the closing date of the merger. Whatever the outcome, however, only those shares held by dissenters are eligible to receive the judge's appraised value from the acquirer. Those shareholders who did not dissent cannot, after learning of the court's decision, retroactively exercise their appraisal rights and file a lawsuit.

Until only in the last forty years, relatively few public mergers were ever subject to a judicial appraisal (Seligman, 1984); arguably because appraisal laws provided courts with very little flexibility in determining the fair value of a public company share.<sup>9</sup> Indeed, prior to the early 1980s, judges strictly deferred to the pre-merger market price or the merger price as the best measure of fair value in a public company appraisal, a fact that likely deterred shareholders from ever pursuing appraisal claims. It was not until 1983, when the Delaware Supreme Court

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<sup>8</sup> As part of exercising appraisal rights, state laws require a shareholder to forgo selling their shares until a settlement is reached or the trial concludes. This means that dissenting shareholders do not have the benefit of using the proceeds from selling their shares to cover their legal costs. Jiang et al. (2016) estimate the average costs of appraisal litigation at \$2.86 million. For more complex cases, legal costs can average \$4-\$7 million.

<sup>9</sup> Seligman (1984) finds, for a sample of 16,479 U.S. mergers completed between 1972 and 1981, only twenty involved an appraisal valuation.

provided Delaware judges with the flexibility to look beyond market prices in public mergers, that appraisal became a viable option for dissenting shareholders of Delaware public companies. Other states have since followed Delaware's lead and have amended their laws to provide their courts with similar flexibility to that in Delaware (Mahoney and Weinstein, 1999). Nevertheless, until only recently, appraisal rights in public mergers were seldomly exercised.

### 2.2.2 *The rise of appraisal lawsuits in Delaware*

Much changed in Delaware in the early 2000s, however, when hedge funds (seeing appraisal as an investment opportunity) began acquiring shares of, and initiating appraisal claims against, target firms that they believed they could convince a judge should be appraised at a higher value (Jiang et al., 2016).<sup>10</sup> This strategy takes advantage of two appealing features of appraisal laws to hedge funds: (1) a dissenting shareholder is not required to hold shares of the target firm on the date of the merger announcement, and (2) judges can consider all value-relevant information up to the closing date of the merger in their determination of fair value. In other words, appraisal laws let hedge funds observe the merger price, acquire large blocks of shares well after the deal is announced, and then seek appraisal—an investment strategy more commonly referred to as “appraisal arbitrage.” But exploiting this opportunity still requires hedge funds to abide by Delaware's strict procedural requirements.

Specifically, Delaware appraisal law stipulates that a shareholder who exercises her appraisal rights must (1) notify the corporation by written demand (prior to the shareholder vote) of her intention to withhold shares and exercise her appraisal rights; (2) not vote in favor of the merger; (3) hold her shares continuously until the effective completion date of the merger; and (4) file an appraisal lawsuit in the Delaware courts within 120 days of the effective

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<sup>10</sup> One explanation for the sudden rise in Delaware appraisals is Delaware's status as an important state for corporate law. As such, a majority of U.S. public corporations are incorporated in Delaware, and this in turn means that Delaware is the jurisdiction for most U.S. public mergers (and hence, appraisal activity).

completion date of the deal (Figure 1 provides a timeline of the procedural process). Hence, substantial risks confronting hedge funds (hereafter, appraisal arbitrageurs) in mergers are the risks that a majority of shareholders reject the merger or the acquirer terminates the deal (i.e., deal-completion risk), leaving appraisal arbitrageurs holding shares that are effectively not appraisable (Jetley and Ji, 2016).<sup>11</sup> Furthermore, because target firms' share prices usually decrease to their pre-merger levels when deals are cancelled (Asquith, 1983), a cancelled merger can result in significant capital losses for appraisal arbitrageurs who acquired shares after the announcement date.<sup>12</sup>

### 2.2.3 Impact of the 2007 Delaware court ruling

But a landmark 2007 Delaware Court of Chancery ruling *In Re Appraisal of Transkaryotic Therapies, Inc.* effectively eliminated deal-completion risk for appraisal arbitrageurs and, as a consequence, heightened appraisal risk for Delaware-incorporated target firms. As evidence of this, prominent legal scholars point to the significant post-Transkaryotic increase in appraisal lawsuits—driven almost exclusively by appraisal arbitrageurs—from approximately 2% of eligible Delaware public mergers in 2004 to nearly 30% in recent years (Jiang et al., 2016).<sup>13</sup><sup>14</sup> By comparison, about 4% of companies listed on U.S. exchanges were the subject of a traditional class-action lawsuit in 2016 and far fewer (about 1%) were the subject of a merger-related class-action lawsuit (Cornerstone Research, 2016). Total annual appraisal claims have also significantly increased since Transkaryotic, which for 2013 to 2016

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<sup>11</sup> Since Delaware appraisal law stipulates that a dissenting shareholder cannot vote in favor of the merger, appraisal arbitrageurs cannot both vote for the deal, to ensure the deal moves forward, and seek appraisal.

<sup>12</sup> Consistent with deal-completion risk being a critical consideration for appraisal arbitrageurs, Jiang et al. (2016) finds only a small group of hedge funds engaging in appraisal arbitrage in the early 2000s, despite the evidence that this strategy is estimated to have generated mean (median) annualized returns exceeding 30 percent (19 percent). Jiang et al (2016) also document that only 2 to 3 percent of eligible Delaware mergers were subject to appraisal claims during the early 2000s. I find a similar proportion (2 to 5 percent) during the same period for my sample of Delaware mergers (see Figure 2).

<sup>13</sup> A list of appraisal lawsuits for 2016 is available in Appendix 3

<sup>14</sup> By “eligible”, I mean that the deal must include at least some cash as a portion of the payment terms for Delaware to confer appraisal rights to shareholders. To put this into perspective, in 2016 alone, about 90% of Delaware public mergers were eligible for appraisal.

ranged between \$1.5 to \$2.0 billion per year, a more than tenfold increase since 2004 (Korsmo and Myers, 2015; Subramanian, 2019).<sup>15</sup>

The lawsuit involved Transkaryotic Therapies, Inc., a public biopharmaceutical company that was acquired in 2005, and a group of appraisal arbitrageurs, who in combination held 11 million shares (or nearly 24 percent of the firm). After the shareholder record date, but before the shareholder vote, Transkaryotic released positive news about test results for an important new drug. Claiming that the test results indicated the merger price substantially undervalued the firm, appraisal arbitrageurs responded to the news by acquiring shares and notifying the firm of their intention to withhold the shares and seek appraisal. Transkaryotic argued that shares purchased after the record date were, according to Delaware appraisal law, ineligible for appraisal because the arbitrageurs did not hold the shares as of the record date. This last point is important because, by not having held the shares at the record date, the group of arbitrageurs could not demonstrate how the shares were voted. For example, if the previous shareholders had voted ‘yes’ to the deal then according to Delaware appraisal law those shares would forfeit their appraisal rights.

In an unexpected ruling that received widespread attention, the Delaware Court of Chancery ruled in favor of the appraisal arbitrageurs, thereby conferring appraisal rights for the disputed shares (see Geis (2011) for a more comprehensive discussion of the ruling).<sup>16</sup> The implication of the ruling is significant: appraisal arbitrageurs can now acquire shares well after the shareholder record date in a merger and still seek appraisal, an advantage which in effect reduced their deal-completion risk almost entirely. Legal experts also note that the ruling means that appraisal arbitrageurs can, in practice: (1) acquire even a single share, (2) then notify the

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<sup>15</sup> A list of the ten largest appraisal claims is provided in Appendix 4.

<sup>16</sup> The decision allowed shares acquired well after the record date to retain their appraisal rights, so long as the total number of shares put up for appraisal were equal to or less than the total number of votes against the merger.

target firm of their intention to seek appraisal, (3) then view the outcome of the shareholder vote and, if the deal is approved or is not terminated, acquire additional shares at the very last minute before the deal closes and add those shares to their appraisal claims (Jetley and Ji, 2016; Kesten, 2017).

The ruling had the critical effect of also extending the time that appraisal arbitrageurs can use to acquire additional information about the value of the target firm relative to the merger price (e.g., Geis, 2011; Jetley and Ji, 2016). This additional time is not trivial; for example, Jetley and Ji (2016) estimate an average of 74 extra days (or an increase of 137 percent) in their sample of mergers.<sup>17</sup> Information acquired during this period can directly increase the probability of a successful appraisal claim, i.e., the likelihood of an early settlement with the acquirer or a net positive judicial valuation. Indeed, Kesten (2017; p. 102) notes, “[p]ost-Transkaryotic, . . . , arbitrageurs have the luxury of waiting until at least the date of the shareholder vote to acquire shares; they can assess the economics of appraisal based on the company’s disclosures.”

To summarize, by allowing appraisal arbitrageurs to acquire target firm shares just before the closing of a merger, the Delaware ruling effectively increased the likelihood that a Delaware-incorporated target firm is subject to an appraisal claim. Since acquirers bear the entirety of the costs of appraisal claims (including legal fees; settlement costs; or the costs to acquire the shares at a higher appraised price), the 2007 ruling substantially increased appraisal risk and costs for acquirers of Delaware targets.

#### *2.2.4 Appraisal risk and corporate disclosure*

In response to heightened appraisal risk, acquirers are likely to employ various mechanisms that act in concert to mitigate risk, including deal premiums (Callahan et al, 2018;

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<sup>17</sup> Figure 1 shows the effect of the Transkaryotic ruling on the extension of time.

Boone et al., 2019), and “appraisal out” clauses in the merger agreement (Boone et al., 2019). Information disclosure—namely target firm disclosure—is also a mechanism that is likely to be central to mitigating appraisal risk. Reducing the flow of positive information about the target firm can decrease both the threat of appraisal and the expected costs of a settlement, or the costs of a high appraisal. This is because target firm information is of paramount importance to appraisal arbitrageurs, and especially news that arrives after the announcement date that informs about an increase in target firm value. Indeed, a prominent narrative since the *Transkaryotic* ruling is that appraisal arbitrageurs now have the luxury of waiting on company disclosures to assess the likelihood of a successful appraisal claim (e.g., Kesten, 2017).

The question then arises: Why would target firm managers withhold positive news to the benefit of acquirers? That target managers are susceptible to acquirer-provided incentives is long since established in the literature (e.g., Morck et al. 1988; Fich et al., 2011; Fich et al., 2016). One such incentive is a future economic tie with the acquirer; specifically, the promise of future employment and/or equity (Wulf, 2004; Hartzell et al., 2004). Such incentives are likely to be powerful forces that can induce managers to alter their firm’s disclosure behavior in a merger to the benefit of an acquirer, given that other important disclosure incentives (e.g., compensation-related; meeting and/or beating analyst forecasts) do not perpetuate once a merger is announced.<sup>18</sup> Moreover, the idea that target managers might want to disclose *more* positive news to entice additional bids after the announcement date does not accord with contracting in mergers, as exiting a deal is costly to the target firm (in the form of termination fees) and is nonetheless relatively uncommon (Officer, 2003).

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<sup>18</sup> Target firms discontinue providing earnings and/sales forecasts once a merger is disclosed. Target firm managers’ compensation agreements are finalized at the disclosure of the deal and therefore, additional future payments are no longer tied to firm performance metrics.

Evidence from court documents in the 2018 appraisal lawsuit involving AOL Inc. sheds important light on what type of information might be withheld by target firm managers and the economic magnitude of non-disclosure (*In Re Appraisal of AOL Inc.* C.A. No. 11204-VCG).<sup>19</sup> In that case, appraisal arbitrageurs uncovered three value-accretive transactions that arose during the merger but were not disclosed to the public until the merger was closed. Of the three transactions, the judge accepted that one should be included in the appraised value and therefore added approximately 5.7% to the fair value of the AOL share.<sup>20</sup>

Given the above discussion, my main prediction is that heightened appraisal risk induces target firm managers with future economic ties to the acquirer to withhold good news and negatively bias disclosures during the merger window. I test this prediction in the analyses that follows.

## 2.3 Research Design and Sample Construction

### 2.3.1 Research design

To examine whether an increase in appraisal risk impacts target firm's disclosure behavior during a merger, I estimate the following difference-in-differences (DiD) regression model:

$$CAR = \beta_0 + \beta_1 Delaware + \beta_2 Post + \beta_3 Delaware \times Post + Controls \\ + Industry FE + State FE + Year FE + \varepsilon \quad (1)$$

The dependent variable, *CAR*, is the market-adjusted cumulative abnormal returns for the target firm measured from three days after the announcement date to one day after the effective completion of the merger (hereafter, merger window). Following prior studies, I use cumulative abnormal returns (*CAR*) to capture firms' disclosure behavior (e.g., Aboody and Kasznik,

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<sup>19</sup> See <https://courts.delaware.gov/Opinions/Download.aspx?id=269440> for a transcript of the decision.

<sup>20</sup> AOL executives and directors were not sued for non-disclosure. One potential explanation is that Delaware courts have consistently denied post-closing disclosure claims in mergers (e.g., see <https://bit.ly/32b7buk>).

2000; Kothari, Shu, and Wysocki, 2009). Using merger-window CAR allows me to examine the markets' perception of all information during the merger window; thus, it is a comprehensive measure of a firm's disclosure policy.<sup>21</sup> In subsequent analyses, however, I also examine the specific channels through which managers can manage investors' expectations. Specifically, I follow prior literature and examine the tone, frequency, and abnormal returns of target-firm-initiated press releases and discretionary 8-K filings.<sup>22</sup> I also conduct placebo tests using firms' mandatory disclosures issued during the merger window (e.g., Bourveau, Lou, and Wang, 2018). Collectively, these additional measures provide more direct evidence of changes in disclosure behavior in response to an increase in appraisal risk.

The independent variable of interest,  $Delaware \times Post$ , is an interaction term where *Delaware* is an indicator variable that assumes the value of 1 if the target firm's state of incorporation is Delaware (and 0 otherwise), and *Post* is an indicator variable that assumes the value of 1 if the announcement date of the merger is in a year after the 2007 Transkaryotic ruling (and 0 otherwise). The coefficient on  $Delaware \times Post$ ,  $\beta_3$ , captures the average effect of the Transkaryotic ruling on disclosure behavior in Delaware appraisal-eligible mergers (i.e., the treatment group) relative to non-Delaware appraisal-eligible mergers (i.e., the control group).

In my baseline specification, I follow recent studies (e.g., Bourveau et al., 2018) and exclude firm-level controls that vary over time, because recent work in finance shows that their inclusion can produce inconsistent estimates (Gormley and Matsa, 2014). In subsequent specifications, however, I re-estimate Equation (1) with state, industry, and year fixed effects, and include a set of firm and deal characteristics that may affect returns during the event

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<sup>21</sup> Malmendier, Opp, and Saidi (2016) argue that comparing cumulative abnormal returns across merger windows of difference lengths is valid for relatively short event windows. The average length of Delaware and non-Delaware merger windows in my sample is comparable to other short-window return studies.

<sup>22</sup> Ideally, I would also examine the properties of management forecasts and conference calls; however, target firms discontinue providing forecasts and hosting conference calls once the merger is announced.

window. Specifically, I include control variables for target firm size (*Size*), return on assets (*ROA*), book-to-market ratio (*BTM*), leverage (*Leverage*), and an indicator variable (*Loss*), which captures firm performance. I also control for target firms' abnormal returns around the announcement date (*AnnounceRet*) to account for the market's assessment of the merger, abnormal returns over a twelve-month window prior to the merger (*PreAnnounceRet*) to control for pre-merger stock performance, and stock return volatility (*Volatility*) to control for uncertainty.

My choice of deal-level controls follows prior literature (e.g., Malmendier et al., 2016; Gogineni and Puthenpurackal, 2017). I control for the type of deal (*Tender*), the time (in days) between announcement date and completion date (*DealLength*), the premium paid by the acquirer (*DealPremium*), and an indicator variable (*GoShop*) for whether the target firm is contractually permitted to seek other bids after the announcement date.

Since appraisal laws are enacted at the state level and only apply to target firms incorporated in that state, I cluster standard errors by the target firm's state of incorporation throughout my analyses.<sup>23</sup> All continuous variables are winsorized at the 1 and 99 percent levels. Complete definitions of all variables are provided in Appendix 1.

### 2.3.2 *Sample construction and additional variables*

I start with a sample of all friendly completed mergers involving U.S.-incorporated public target firms in the Securities Data Company (SDC) Mergers and Acquisitions database announced between January 1, 1998 and December 31, 2016 that satisfy the following criteria: (1) the merger is eligible for appraisal; (2) the transaction value is at least \$100 million; (3) the buyer acquires more than 50% of the outstanding shares; and (4) if there is data in the CRSP, Compustat, and Thompson Reuters databases to compute stock returns and other variables in

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<sup>23</sup> Untabulated results show that my main inferences are not affected when clustering by year, or by state and year.

the regression models. Finally, since SDC sometimes records a “rumor” date as the announcement date for a merger, I drop mergers when the announcement date and the definitive agreement date are more than one calendar day different (Mulherin and Simsir, 2015).<sup>24</sup> The selection process, summarized in Table 1, Panel A, results in a final sample of 1,732, which I use for my main analysis. Descriptive statistics about the sample are discussed in section 3.6.

Next, I use the final sample to collect data on company disclosures for my additional tests, which are used to complement my main analysis. Specifically, I obtain target firm-initiated press releases from RavenPack News Analytics Press Release Edition, and SEC filings from Wharton Research Data Services (WRDS) SEC Analytics Suite. The sample construction and additional measures are discussed in the following sections.

### 2.3.3 *Press releases*

Following prior literature (e.g., Shroff, Sun, White, and Zhang, 2013; deHaan, Shevlin, and Thornock, 2015), I use firm-initiated press releases to directly examine the discretionary disclosure behavior of target firms in my sample. I obtain data on press releases from the RavenPack PR Edition database. The sample begins in 2004, when firm-initiated press releases first become available in the RavenPack database, and ends in 2016. RavenPack constructs a relevance score (0=low relevance and 100=high relevance) for each article. The score indicates how strongly related the firm is to the underlying story. Following Bushman, Williams, and Wittenberg-Moerman (2017), I restrict the sample to press releases with a relevance score of 75 and above.<sup>25</sup> RavenPack also codes each press release with a 32-character similarity key

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<sup>24</sup> Schwert (1996) documents a pre-announcement “runup” in the target’s stock price that, on average, begins 21 days prior to the announcement date. Because such runups can confound the inferences in my study, I remove mergers when SDC has used a “rumor” date as the announcement date. Since SDC does not explicitly state whether they have used a rumor date, I make the assumption that announcement dates in the database greater than 1 day different from the definitive agreement dates are such rumor dates.

<sup>25</sup> My sample of press releases remains unchanged if I tighten the inclusion level to a relevance score of 100, because I find that there no press releases in the final sample with relevance scores below 100 when inclusion is set at 75.

that identifies similar stories. I treat identical similarity keys as the same story and drop all duplicates from the sample, keeping only the earliest version of the article according to RavenPack's timestamp feature. I use press releases issued during the merger window to construct my measures of interest, as well as press releases issued over the twelve months prior to the announcement date to construct firm-level control variables.

For my first measure (*PRSentiment*), I use RavenPack's *Composite Sentiment Score (CSS)*, which is a proprietary measure that is calculated for each press release. Ideally, I would also examine the tone of the press release, but RavenPack does not make public the original article in its raw form. In place of tone, RavenPack measures the sentiment of a press release with a score from 0 to 100. A score above 50 indicates positive sentiment, below 50 indicates negative sentiment, and exactly 50 indicates neutral sentiment. I follow Bushman et al. (2017) and generate a linear transformation of the sentiment score  $((CSS - 50)/50)$ , which serves as my measure of positive or negative sentiment for a press release during the merger window. I also calculate a firm-level average sentiment score (*PRLaggedSentiment*) for all press releases issued during the twelve-month window prior to the merger announcement date. The lagged average sentiment serves as a firm-level control variable in my regressions.

Prior research shows that firms can also use the frequency of press releases as a mechanism to influence the information environment (e.g., Shroff et al., 2013). I construct my measure of press release frequency (*PRFrequency*) by scaling the number of press releases issued during the merger window by the length (in days) of the merger window. Scaling by the number of days allows me to compare the frequency of press releases across merger windows of different lengths. For firms without a press release during the window, I follow Shroff et al. (2013) and set the value to zero. I also construct a firm-level measure of press releases per day calculated over the twelve months prior to the announcement date, which I use as proxy for a firm's fixed disclosure policy and include in my regressions as a control variable.

Finally, to capture the market effects of disclosures during the merger window, I construct the variable *PRCAR*, which is the three-day market-adjusted cumulative abnormal returns [-1,1] for each press release.

Descriptive statistics for all of my press release-related variables are provided in Table 2, Panel D.

#### 2.3.4 *Discretionary 8-K filings*

A growing literature examines the contents of specific item numbers in 8-K filings to study discretionary disclosure behavior (e.g., Bourveau et al., 2018; Nagar, Schoenfeld, and Wellman, 2018). Specifically, Cooper, He, and Plumlee (2016) identify three such item numbers (5, 9, and 12) before SEC rule changes to 8-K item numbers were adopted in 2004, and three items (2.02, 7.01, and 8.01) after 2004, which they argue firms have more discretion over. I obtain data on 8-K item numbers from WRDS SEC Analytics Suite.<sup>26</sup>

I focus on three dimensions of 8-K items numbers: tone, frequency, and the cumulative abnormal returns around the release date. I follow Loughran and McDonald (2011) and use the level of negative tone (*Vol8ktone*) in the narrative of the filing. Examining the tone of these disclosures allows me to observe whether firms try to manage investors' expectations with narrative. To control for average firm-level tone, I construct a variable (*Volk8kLaggedTone*), which is the average negative tone for all discretionary 8-K filings released during the twelve-month window prior to the merger announcement date. I follow the same process to construct measures of frequency (and lagged frequency) and abnormal returns for 8-K filings issued during the merger window as I used to construct the same measures for press releases. Descriptive statistics for all of my measures for 8-K filings are presented in Table 2, Panel D.

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<sup>26</sup> I exclude items 2.02 and 12 from the sample, because they are related to earnings announcements and some mergers with longer (shorter) deal lengths contain more (fewer) earnings periods.

### 2.3.5 *Mandatory merger filings*

To ensure that my analyses of press releases and discretionary 8-K filings capture changes in firms' disclosure behavior related to an increase in appraisal risk and are unrelated to an overall disclosure policy change that impacts treated firms, I conduct placebo tests using firms' mandatory disclosures issued during the merger window. Finding results for this additional analysis that are weaker or insignificant helps alleviate the concern that my discretionary disclosure proxies are picking up unobservable factors, unrelated to the court ruling, which influence the overall information environment for treated firms.

Specifically, I obtain data on the merger-related mandatory disclosures that target firms are required to file after the announcement date of the merger. In the case of a tender offer, target firms must file a response to the acquirer's offer on form SC 14D9 (even if the deal has been approved by the board). In the case of a shareholder vote on a merger, the target firm must file a merger proxy statement on form DEFM14A.<sup>27</sup> Data to construct a measure of tone (*ProxyTone*) are collected from WRDS SEC Analytics Suite. I also calculate market-adjusted cumulative abnormal returns for the three-day window around the filing date (*ProxyCAR*). Descriptive statistics for these variables are presented in Table 2, Panel D.

### 2.3.6 *Descriptive statistics*

Table 2, Panel A, presents the summary statistics for Delaware and non-Delaware mergers. In terms of target firm characteristics, Delaware firms are on average larger than non-Delaware firms (\$843.9 million vs. \$712.7 million), have lower return-on-assets (-0.011 vs. 0.017), have lower book-to-market ratios (0.509 vs. 0.569), have higher return volatility (0.508 vs. 0.423), and have a higher proportion of institutional ownership (0.637 vs. 0.588). There is

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<sup>27</sup> Both types of filings contain specific details about (1) the acquirer's offer, (2) the regulatory approvals that are required, (3) the background of the negotiations, (4) the fairness opinion(s) from the investment bank(s), and (5) the shareholders' appraisal rights, to name just a few items.

also a higher proportion of Delaware loss firms (0.328) as compared to non-Delaware (0.212) in the full sample. Finally, the announcement returns for Delaware targets are, on average, higher relative to non-Delaware targets (0.294 vs. 0.255).

With respect to deal characteristics, a higher proportion of Delaware mergers are structured as tender offers (0.319 vs. 0.184) and, consistent with tender offers generally being shorter in length, Delaware mergers take, on average, 18 days less to complete (107 days vs. 125 days). In addition, Delaware targets receive, on average, a higher deal premium as compared to non-Delaware targets (33.8 percent vs. 29.3 percent).

Table 2, Panel B, provides summary statistics for the pre- and post-Transkaryotic samples for only Delaware mergers. The mean value of CAR for the post period sample of mergers is 0.005 as compared to 0.029 for the pre period sample. This difference, which is statistically significant ( $p$ -value  $< 0.05$ ), implies that merger-window CAR for Delaware targets after Transkaryotic are, on average, approximately 82.8% lower  $((0.005-0.029)/0.029)$  than before Transkaryotic. Post period target firms also differ, on average, in terms of size (\$1,042.1 million vs. \$717.7 million), return-on-assets (-0.031 vs. 0.005), book-to-market ratio (0.479 vs. 0.533), leverage (0.210 vs. 0.248), return volatility (0.488 vs. 0.523), institutional ownership (0.723 vs. 0.570), and proportion of loss firms (0.388 vs. 0.281). Announcement returns are also higher after Transkaryotic (0.341 vs. 0.258).

In terms of deal characteristics, mergers require 7 fewer days to complete after Transkaryotic (103 days vs. 110 days). Deal premiums are also higher (0.392 vs. 0.297). Moreover, a higher proportion of mergers include a “go shop” clause after Transkaryotic (0.108 vs. 0.026).

## 2.4 Main Results

### 2.4.1 Impact of Delaware court ruling on disclosure behavior

Table 3 presents the results from estimating Equation (1) to test whether heightened appraisal risk affects target firms' disclosure behavior during the merger window. In columns (1) to (5), the dependent variable is the market-adjusted cumulative abnormal returns of the target firm (*CAR*) calculated between the time the merger is announced and the deal closing. Recent work in finance suggests that including time-varying control variables, which might also be affected by the intervention, can produce inconsistent estimates and distort inferences of the main variable of interest (Gormley and Matsa, 2014). To address this concern, I first estimate Equation (1) without time-varying controls in columns (1) and (2). In addition, I estimate Equation (1) both with (in column (1)) and without (in column (2)) fixed effects. The results show that the coefficient on my main variable of interest, *Delaware*  $\times$  *Post*, is negative and both economically and statistically significant (p-value < 0.05 or better). These findings indicate that a Delaware target firm in the post-Transkaryotic period has merger-window *CAR* that is, on average, 2.6% lower than a non-Delaware target. This result suggests that Transkaryotic increases the costs of disclosing positive news after the announcement date of a merger to the point that Delaware target managers systematically withhold such news to reduce appraisal risk.

In columns (3) and (4), I estimate Equation (1) again, but this time I include firm- and deal-level control variables that may be associated with returns. In both columns, the coefficient on *Delaware*  $\times$  *Post* is negative and statistically significant at the one percent level. Notably, the coefficient on *Delaware*  $\times$  *Post* decreases from -0.026 in column (2) to -0.033 in

column (4). That is, even after controlling for other possible determinants of returns, the effect of the court ruling on disclosure remains economically significant and of a similar magnitude.<sup>28</sup>

Since the 2007 Delaware court ruling coincides with the beginning of the 2008-09 financial crisis, one potential concern is that my *Delaware*  $\times$  *Post* variable is correlated with other unobservable factors that affect Delaware mergers during the crisis, and these transactions might be driving my results. To alleviate this concern, I remove all mergers with an announcement date in 2008 and 2009, resulting in a reduced sample of 1,614 observations, and then estimate Equation (1) again. The results, presented in column (5), are consistent with the previous estimates. After excluding the financial crisis years, the coefficient on *Delaware*  $\times$  *Post* remains negative and both economically and statistically significant (p-value < 0.01). Taken together, the results in Table 3 are consistent with my prediction that Delaware target managers respond to an increase in appraisal risk by withholding good news during the merger window.

A second concern with my research design is that the observed change in treatment-firm returns after the court ruling is an artifact of a pre-existing trend. To address this concern, I follow prior studies (e.g., Bertrand and Mullainathan, 2003; Bourveau et al., 2018; Glaeser, 2018) and construct lead-lag variables, which capture the trend in Delaware target firm merger-window CAR across time relative to non-Delaware CAR. Specifically, I replace the *Delaware*  $\times$  *Post* variable in Equation (1) with separate indicator variables for Delaware target firms if the merger announcement date was in the year prior (2006), the year of (2007), the year after (2008), and two or more years after the court ruling (2009 to 2016). I include the same set of controls and fixed effects as in Table 3. The results, reported in column (1) of Table 4, do not

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<sup>28</sup> Based on the estimates in column (4), my results suggest that, on average, a Delaware target manager withholds roughly \$34 million (i.e., 3.3%  $\times$  \$1,042 million = \$34.4 million) in positive news during the, on average, 103-day merger window in a post-Transkaryotic merger.

provide evidence of a pre-existing trend in the returns of Delaware target firms. The coefficients on  $Delaware^{-1(2006)}$ ,  $Delaware^{0(2007)}$ , and  $Delaware^{+1(2008)}$  are all statistically insignificant, while the coefficient on  $Delaware^{\geq 2(2009 \text{ to } 2016)}$  is statistically significant at the five percent level.

In column (2) of Table 4, I re-estimate the same equation, but remove observations with announcement dates in the financial crisis years, and add new indicator variables for three years after (2010), four years after (2011), and five or more years after the court ruling (2012 to 2016). While the coefficients on  $Delaware^{-1(2006)}$  and  $Delaware^{0(2007)}$  remain statistically insignificant, the coefficients for the years after the court ruling are all significant at the five percent level. Moreover, the relative similarity in the magnitude of the coefficients (e.g., -0.040, -0.061, and -0.032) suggests that my results are not being driven by mergers in a single year. Taken together, the results in Table 4 provide evidence that Delaware target firms do not begin to change their disclosure behavior until after the 2007 court ruling, and that the effect persists over time.<sup>29</sup>

#### 2.4.2 Cross-sectional analysis

If, as I conjecture, the Delaware ruling affects the disclosure behavior of at-risk target firms, then I should find the magnitude of this effect to be more pronounced for firms that face higher appraisal risk. I posit that target firms in larger value mergers are likely to be more at risk of an appraisal for several reasons. First, acquiring large blocks of shares, at lower transaction costs, will be easier for appraisal arbitrageurs in deals of higher value. Second,

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<sup>29</sup> Another potential concern is that my results are being driven by acquirers' returns during the merger window. To help alleviate this concern, I calculate acquirers' merger-window CAR whenever a merger has a public acquirer and include this new variable as a control in my fully-specified model from column (4) of Table 3. The untabulated results reveal a similar magnitude and statistical significance (p-value < 0.01) for the main explanatory variable,  $Delaware \times Post$ , as those reported in Table 3. Next, I estimate the same model but use only a smaller sample of mergers (303 observations) where the acquirer specifically includes a portion of stock in the payment terms (e.g., cash plus stock). The untabulated results are again similar in magnitude and remain statistically significant (p-value = 0.067) despite the smaller sample.

while we cannot observe the outcomes of pre-trial settlements, larger mergers are likely to involve firms with deeper pockets who might be more willing to settle. Finally, larger mergers are likely to involve firms that have a higher analyst following and receive more media attention; hence, information acquisition costs for appraisal arbitrageurs should be lower in larger mergers. In columns (1) and (2) of Table 5, I compare the results of estimating Equation (1) for subsamples of target firms split into above (High) and below (Low) the median transaction value. Consistent with my prediction, I find that the coefficient on *Delaware*  $\times$  *Post* for the High sample, column (1), is negative and statistically at the one percent level, while the coefficient on the Low value mergers, column (2), is statistically insignificant. Furthermore, a test of the difference in coefficients between columns (1) and (2) is statistically significant at the five percent level.

Mergers with lower deal premiums are also likely to face higher appraisal risk. Appraisal arbitrageurs search for undervalued deals, and an important factor will be the premium paid by the acquirer. A low deal premium will thus increase the level of appraisal risk in a transaction, which I expect will create incentives for target managers to withhold information that suggests the acquisition price undervalues the firm. In columns (3) and (4) of Table 5, I compare the estimates of Equation (1) for subsamples of target firms split into above (High) and below (Low) the median deal premium. While the coefficient on *Delaware*  $\times$  *Post* for the Low deal premium mergers is negative and economically (-0.040) and statistically significant (p-value < 0.01), I do not find evidence that the disclosure behavior between High and Low deal premium mergers differs significantly. The coefficients are not statistically different at any conventional level.

Mergers that take longer to complete will provide appraisal arbitrageurs with additional time to scrutinize the deal, including the opportunity to acquire more information. I expect that this should increase appraisal risk for such transactions. Columns (5) and (6) of Table 5 report

the results of my analysis of mergers split into above (Long) and below (Short) the median deal length. Consistent with the idea that longer merger windows invite higher appraisal risk, leading managers to withhold good news, the coefficient on *Delaware*  $\times$  *Post* in column (5) is negative (-0.054) and statistically significant at the one percent level, while the corresponding coefficient in column (6) is insignificant. A test of the difference in the two coefficients is significant at the five percent level.

Finally, if appraisal risk increases in the amount of positive news disclosed during the merger window, then I expect to find a relationship between positive news and appraisal lawsuits. To test this prediction, I collect data on appraisals filed in state courts over the years 2003 to 2016 and match these with mergers in my sample.<sup>30</sup> I code a merger as subject to an appraisal if there is at least one appraisal filed. In columns (7) and (8) of Table 5, I compare the estimates of Equation (1) for subsamples of target firms split into whether the merger was subject to an appraisal lawsuit (*Yes*) or not (*No*). Consistent with my expectation, the coefficient on *Delaware*  $\times$  *Post* for mergers that are subject to a future appraisal claim is positive (0.023) and statistically significant. Notably, the coefficient on *Delaware*  $\times$  *Post* for mergers that are not subject to a future appraisal claim is negative (-0.025) and statistically significant. Moreover, a test of the difference in coefficients is statistically significant at the one percent level.

### 2.4.3 *Managerial incentives*

Thus far, I have shown that Delaware target managers respond to higher appraisal risk by negatively biasing the information environment. However, for target managers to engage in

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<sup>30</sup> I obtain court dockets from the Thomson Reuters Westlaw Next database, which begins coverage in October 2003. Notably, I do not find any cases for non-Delaware mergers that match my sample of mergers. I further investigate this outcome by speaking with legal practitioners who specialize in appraisal litigation and they confirm that, prior to Transkaryotic, appraisals of public company targets were uncommon, and in the time since Transkaryotic, only Delaware appraisals have increased in volume.

disclosure behavior that benefits acquirers, these managers should have incentives to do so. Prior literature shows that target managers are susceptible to acquirer-provided incentives (e.g., Morck et al. 1988; Fich et al., 2011; Fich et al., 2016). One such incentive is a future economic tie with the acquirer; specifically, the promise of future employment with the acquirer (Wulf, 2004; Hartzell et al., 2004) and/or equity in the acquirer. Such economic ties can induce target managers to behave opportunistically to the benefit of acquirers, because loss of personal wealth is a significant concern of target managers when considering a takeover (Hartzell, et al., 2004).

To test whether such incentives induce target managers to engage in disclosure behavior to the benefit of acquirers, I follow Hartzell et al. (2004) and track the career paths of target-firm CEOs after the completion date of the merger. I begin with my full sample of 1,732 mergers and then use SEC filings, media articles, and LinkedIn pages to follow CEOs' careers over time. Of the full sample, I successfully identify the career paths of 1,618 (or 93.4%) CEOs. Additional details of this search process are provided in Appendix 2.

I code a CEO as *Stay* if they are retained in an executive role, and/or on the board, and/or have equity in the acquirer after the merger. Conversely, I code a CEO as *Leave* if they depart the target firm when the deal is completed or are only retained in a temporary advisory role, such as when they are retained to help facilitate the transition. Of the 1,618 CEOs I locate data for, 728 (or 45%) stay with the acquirer. This proportion is generally consistent with the evidence in prior studies (e.g., Hartzell et al., 2004; Agrawal and Walking, 1994). Descriptive statistics for the sub-samples of *Stay* and *Leave* CEOs are presented in Table 2, Panel C.

Table 6 presents the results of estimating Equation (1) for those CEOs who stay (column (1)) or leave (column (2)). For those CEOs who stay with the acquirer, the coefficient on  $Delaware \times Post$  is negative (-0.08) and significant at the one percent level; whereas, for

those who leave, the coefficient is not statistically different from zero. The coefficients are statistically different at the one percent level.

These results reveal that, conditional upon a CEO staying with the acquirer, Delaware target firms' merger-window cumulative abnormal returns are 8% lower than non-Delaware targets in the Post period. Overall, the results in Table 6 are consistent with the notion that acquirer-provided incentives induce target managers to adopt a disclosure policy to the benefit of acquirers.<sup>31</sup>

#### 2.4.4 *Disclosure channels*

I have shown that an increase in appraisal risk prompts target managers to adopt an asymmetric disclosure policy, such that they withhold good news in the merger window. Moreover, I have shown that this effect is driven by target managers with acquirer-provided incentives. However, I have not yet provided direct evidence on *how* managers influence the information environment. In this section, I examine the channels through which managers influence investors' expectations of the target firm.

Prior literature suggests that managers have significant control over voluntary disclosures, including press releases (e.g., Lang and Lundholm, 2000; Shroff et al., 2013), discretionary SEC filings (e.g., Bourveau et al., 2018; Nagar et al., 2018), management forecasts (see Healy and Palepu (2001) for a review of the earlier literature), and conference calls (e.g., Frankel, Johnson, and Skinner, 1999; Bushee, Matsumoto, and Miller, 2003; Brown, Hillegeist, and Lo, 2004), and that these disclosure decisions have implications for firm value. Since nearly all target firms stop providing forecasts and hosting conference calls after a merger

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<sup>31</sup> I repeat my analysis, but this time include the 124 target managers that I cannot confirm are either Stay or Leave. I re-run my regressions assuming all 124 are Stay=1, and my results hold. I then repeat this test, but assume all 124 are Stay=0, and again my results hold.

is announced, I focus my analysis on the observable properties of press releases, discretionary 8-K filings, and mandatory merger-related SEC filings (e.g., forms DEFM14A and SC 14D9).

Specifically, I follow prior studies and examine the sentiment (for press releases), tone (for 8-Ks and mandatory filings), and frequency (for press releases and 8-Ks) of disclosures, because prior studies show that managers have direct influence over these properties. To complement this analysis, I also examine the three-day cumulative abnormal returns around the disclosure dates to identify market conditioning.

To test whether target managers negatively bias disclosures, I re-specify Equation (1), replacing the dependent variable *CAR* with one of either: *PRSentiment*, *Vol8kTone*, *ProxyTone*, *PRFrequency*, *Vol8kFrequency*, *PRCAR*, *Vol8kCAR*, or *ProxyCAR*. I also include additional disclosure-related control variables. Specifically, to control for time-invariant firm-specific disclosure policies, I include the lagged dependent variable for sentiment, tone, and frequency.<sup>32</sup> I also control for the proportion of institutional ownership of the target firm (Ajinkya, Bhojraj, and Sengupta, 2005). Finally, for my tests of the frequency of 8-K disclosures, I include an indicator variable, *Post2004*, which captures whether the filing is on or after August 23, 2004, the date when the SEC implemented new rules for 8-K item numbers and disclosure rules. Complete definitions of all variables are provided in Appendix 1.

Table 7, Panel A, presents the results of tests of the effect of the court ruling on target firms' sentiment in press releases, tone in discretionary 8-K filings, and tone in mandatory merger-related filings. In columns (1), (4), and (7), I present the results of pooled regressions for all target firms.

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<sup>32</sup> I include the lagged dependent variable as a control because I cannot specify regressions with firm fixed effects, as target firms appear only once in the sample.

My results reveal that Delaware press releases and discretionary 8-K filings contain more negative sentiment and tone, respectively, after Transkaryotic. The coefficient on my main variable of interest, *Delaware*  $\times$  *Post*, in columns (1) and (4) is negative and statistically significant (p-value < 0.05). This finding is consistent with the idea that managers of at-risk firms use more negative narrative in their voluntary disclosures as a response to an increase in appraisal risk. Notably, the results for mandatory filings in column (7) show no such changes to tone after the court ruling. This last result helps alleviate the concern that changes in disclosure behavior are being driven by unobservable factors that affect all Delaware disclosures.

To provide additional insights, I present the results for subsamples of target firms based on whether the target manager is coded as *Stay* or *Leave*. Consistent with my earlier findings, the disclosure behavior I observe is being driven solely by target managers who have future economic ties with the acquirer. The coefficient on *Delaware*  $\times$  *Post* is negative and statistically significant at the one percent level in both columns (2) and (5); whereas, the coefficient for target managers who leave is insignificant in columns (3) and (6). Importantly, tests of the difference in coefficients shows that, for press releases, the behavior is significantly different between those target managers who stay and those who leave (p-value < 0.01).

I next examine whether the court ruling has an effect on the frequency of discretionary disclosures. Target managers might reduce the volume of disclosures to increase the level of information asymmetry or, conversely, increase the volume of negatively biased disclosures to influence investors' expectations. Results for these tests are presented in Table 7, Panel B. Note that I exclude mandatory filings from my analysis because a firm is required to file only one per merger.

The pooled regression results for press releases, presented in column (1), document no significant change in the frequency of disclosures after Transkaryotic. However, when I divide the sample based on *Stay* or *Leave*, I find that Delaware target managers who stay with the acquirer reduce the frequency of press releases in the Post period. The coefficient on *Delaware*  $\times$  *Post* is negative and statistically significant at the one percent level (in column (2)). Moreover, the magnitude of the change is noteworthy: Delaware target managers issue approximately 1.5 fewer press releases on average during the merger window after Transkaryotic relative to before.<sup>33</sup> By contrast, the results for target managers who leave, shown in column (3), suggest that they do not significantly alter their disclosure behavior. A test of the difference in coefficients is statistically significant at the one percent level.

The results for discretionary 8-K filings are presented in columns (4) to (6). These findings suggest that target managers increase the volume of discretionary 8-K filings after Transkaryotic. The coefficient on *Delaware*  $\times$  *Post* is positive and statistically significant in columns (4) to (6). Given that my earlier tests on the tone of 8-Ks revealed that Delaware target managers use more negative narrative after Transkaryotic, the findings for frequency are consistent with Delaware managers issuing more 8-Ks that contain, on average, more negative tone.

Collectively, the results of my tests of frequency are generally consistent with managers of Delaware target firms altering their disclosure behavior to reduce the threat of appraisal after Transkaryotic.

Finally, I examine the market reactions around the dates of target firm disclosures. If Delaware target managers use discretionary disclosures to negatively bias the information

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<sup>33</sup> The dependent variable, PRFrequency, is the average number of press releases per day. Given that the average deal length for a Delaware target after Transkaryotic is 103 days, the results suggest that at-risk firms reduce the volume of press releases by 1.5 (or,  $0.013 * 103 = 1.47$ ).

environment, then I should observe the returns around the disclosure dates to be on average more negative relative to non-Delaware targets.

Table 7, Panel C, presents the results of these tests. For the pooled regressions shown in columns (1) and (4), I find the coefficient on *Delaware*  $\times$  *Post* to be negative and statistically significant for press releases but not for discretionary 8-K filings. Moreover, as evidenced in column (2), the result for press releases is largely attributable to target managers who stay with the acquirer: the coefficient on *Delaware*  $\times$  *Post* is negative and statistically significant at the one percent level and approximately six times the magnitude of the coefficient for the same variable in column (3) (-0.018 vs. -0.03). Notably, a test of the difference in coefficients for my main variable of interest is statistically significant (p-value < 0.01). Overall, the findings of these tests suggest that a substantial portion (approximately 55%) of the negative abnormal returns revealed earlier in Table 3 are explained by the market reactions around firm-initiated press releases issued by target managers with future economic ties to the acquirer.

Furthermore, the results of my placebo tests of mandatory filings shown in columns (7) to (9) are generally consistent with the idea that the change in behavior I observe is explained by changes in discretionary disclosures, and is not the result of systematic changes across all types of firm disclosures. That is, I do not find a significant difference in the returns around mandatory disclosures for Delaware targets in the Post period relative to non-Delaware targets in subsample tests in columns (8) and (9).

#### 2.4.5 *Benefits to acquirers*

In this section, I investigate the potential benefits to acquirers. First, I examine whether Delaware target firms, whose managers have future economic ties to the acquirer, are subject to an appraisal lawsuit. If the strategy of withholding good news and negatively biasing disclosures is successful, I should find that they face a lower likelihood of appraisal relative to

those target firms whose managers are not retained. To test this, I respecify Equation (1), changing the dependent variable to an indicator variable that assumes the value of 1 if the target firm was the defendant in at least one appraisal lawsuit after the merger closed, and zero otherwise. I employ the same sample of 1,618 CEOs I used for my earlier test in Table 6.<sup>34</sup>

Table 8 presents the results from this analysis. The first observation is that the coefficient on *Delaware* × *Post* is positive and statistically significant in both columns (1) and (2), which is consistent with Delaware targets facing a higher likelihood of appraisal after Transkaryotic. The next observation is that the coefficient on *Delaware* × *Post* in column (2) is larger than the corresponding variable in column (1), which indicates that those firms whose target managers are not retained by or have economic ties with the acquirer have a higher likelihood (13.1% as compared to 9.4%) of being appraised after Transkaryotic. A test of the difference in the two coefficients is significant at the five percent level. The results indicate that acquirers who retained the CEO reduce their appraisal risk by an economically meaningful 31%  $((0.131-0.094)/0.131)$  after Transkaryotic. Overall, this finding suggests that acquirers benefit from establishing economic ties with the managers of the firms they acquire.

I next examine acquirers' 180-day window returns after the deal closes, to gauge whether they benefit from target managers' disclosure behavior. If heightened appraisal risk prompts target managers to withhold positive news, then I expect such news to be observed in acquirer returns after the deal closes. The intuition is that if, for example, the target manager has information about better-than-expected sales, new business partnerships, or positive research results, which causes her to privately revise earnings projections upward, then these upward revisions will be captured by the acquirer after the deal closes, but not priced in the acquisition.

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<sup>34</sup> Lechner (2011) shows that estimates of a non-linear DiD model leads to an inconsistent estimator and suggests, as an alternative, a linear specification; thus, I follow this suggestion for all tests in Table 8.

To test this, I estimate the following regression model:

$$\begin{aligned}
 AcqCAR = & \beta_0 + \beta_1 TargetNegativeRet + \beta_2 Size + \beta_3 DealPremium \\
 & + \beta_4 AnnounceRet + \beta_5 AppraisalLawsuit \\
 & + \beta_6 AcqMergerWindowRet + \text{Industry FE} + \text{State FE} + \text{Year FE} \\
 & + \varepsilon
 \end{aligned} \tag{2}$$

The dependent variable, *AcqCAR*, is the acquirer's market-adjusted cumulative abnormal returns measured from three days after the effective completion date of the merger to 180 days after the completion date. The independent variable of interest, *TargetNegativeRet*, is an indicator variable that assumes the value of 1 if the target firm's merger window CAR is negative (and 0 otherwise). My choice of control variables is based on findings from the prior literature (e.g., Agrawal et al. 1999). I control for the size of the target firm (*Size*), the deal premium (*DealPremium*), and the acquirer's announcement returns (*AnnounceRet*). I also control for the acquirer's market-adjusted abnormal returns measured over the merger window (*AcqMergerWindowRet*), and include an indicator variable (*AppraisalLawsuit*) that assumes a value of 1 if an appraisal is filed (and 0 otherwise). To control for time-invariant factors that may affect acquirers' returns, I include industry, state, and year fixed effects.

Of the 1,732 mergers in my full sample, only 1,127 (or 65%) have public acquirers. My sample is then further reduced to 832 observations after I drop mergers with missing data required to construct my dependent and control variables. To compensate for the small sample, which might lack sufficient power to detect an effect, I conduct two sets of tests. First, I estimate Equation (2) for only mergers in the *Post* period. The intuition is that if target managers are withholding positive news when appraisal risk is higher, I should find a relation between disclosure behavior and acquirer returns in the high-risk period. Next, I estimate Equation (2) again, but replace the main variable of interest, *TargetNegativeRet*, with an

interaction term,  $TargetNegativeRet \times Post$ . The coefficient on the interaction term captures the average effect of negative merger-window returns on acquirer returns after Transkaryotic.

Table 9 presents the results of this analysis. In columns (1) to (3), I show the results for only mergers announced in the years after Transkaryotic, and in columns (4) to (6), I show the results for mergers announced before and after Transkaryotic. In column (1), in the pooled regression, I find no statistically significant association between my main variable of interest,  $TargetNegativeRet$ , and acquirers' post-merger returns. However, after splitting the sample based on whether the target manager is coded as *Stay* or *Leave*, I find results consistent with my prediction. That is, when target firms, whose managers have economic ties to the acquirer, exhibit negative abnormal returns during the merger window, acquirers' 180-day post-merger abnormal returns are on average 4.6 percent higher (p-value < 0.01). This result supports the notion that acquirers benefit from target managers' asymmetric disclosure behavior during the merger. By contrast, I find that when target firms, whose managers have no economic ties to acquirer, exhibit negative abnormal returns during the merger window, acquirers' 180-day returns are on average -6.7 percent lower (p-value < 0.01). A test of the difference in coefficients on  $TargetNegativeRet$  is statistically significant at the one percent level.

The results in columns (4) to (6), while weaker, are also consistent with the idea that Transkaryotic prompts at-risk target managers to withhold positive news to the benefit of acquirers. Specifically, in column (5), for target managers who stay, the coefficient on  $TargetNegativeRet \times Post$  is positive and statistically significant; whereas the corresponding coefficient in column (6), for target managers who leave, is negative but statistically insignificant. Importantly, despite the small sample, a test of the difference in the coefficients is statistically significant (p-value < 0.10).

#### 2.4.6 *Likelihood of economic ties with acquirers after Transkaryotic*

Next, I examine whether acquirers of Delaware firms are more likely to establish economic ties with target managers after Transkaryotic. If establishing such ties provide benefits in the form of a lower likelihood of appraisal and higher post-acquisition returns then I should find a higher likelihood of economic ties after the court ruling. Consistent with this conjecture, the results reported in columns (1) and (2) of Table 10 reveal an approximate 6.5 percent higher likelihood that an acquirer establishes economic ties with the manager of a Delaware target (relative to acquirers of targets from all other states) after Transkaryotic.

However, the benefits of economic ties with a target CEO might be weakened if appraisal arbitrageurs eventually recognize that such ties are associated with a change in disclosure behavior for Delaware target managers after Transkaryotic. One way in which Delaware target managers might respond is to conceal these ties (e.g., delay the announcement of an employment contract) until the deal is closed. To investigate whether this is the case, I examine the *“Interests of Certain Officers and Directors in the Merger”* section of tender offers and merger proxy statements for the disclosure of target manager-acquirer conflicts of interest in the transaction. I also examine the merger agreement and additional SEC filings for relevant disclosures. If Delaware target managers conceal such ties then I should find a decrease in the likelihood that those Delaware target managers who have post-closing ties with acquirers after Transkaryotic disclose such ties before the deal closes. Consistent with this conjecture, the results in columns (1) and (2) of Table 11 show that, conditional on target managers having economic ties with an acquirer, the likelihood of a Delaware target manager disclosing such ties during the merger window is approximately 18 percent lower after Transkaryotic.

## 2.5 Additional Analyses

### 2.5.1 Sensitivity analysis

In this section, I perform sensitivity tests to check the robustness of my analyses. First, I re-estimate Equation (1) using a control group of mergers that includes only target firms incorporated in states with appraisal laws most like those of Delaware. This tighter restriction reduces my sample to 1,359 mergers. The results, reported in column (1) of Table 12, are similar in magnitude and statistical significance to those reported in Table 3. Next, I respecify Equation (1) and include indicator variables, *RenegotiatedUp* and *RenegotiatedDown*, which assume the value of 1 if the closing price is higher (*RenegotiatedUp*) or lower (*RenegotiatedDown*) relative to the announcement price, and 0 otherwise.<sup>35</sup> The results, reported in column (2) of Table 12, are similar to those reported in Table 3.

## 2.6 Conclusion

In this paper, I examine whether and how target managers alter their disclosure behavior in response to increased appraisal risk in mergers and acquisitions. Appraisal laws have received widespread attention since a landmark 2007 court ruling significantly strengthened appraisal rights for shareholders of Delaware target firms, such that one in three acquisitions of Delaware firms were subject to shareholder appraisals in recent years. I exploit this court ruling to identify how target managers' disclosure strategies respond to increased appraisal risk. I show that at-risk target managers significantly alter their disclosure behavior after the ruling in that they strategically withhold good news to reduce the threat of appraisal during mergers. I further document that this observation is driven by those target firms whose managers have future economic ties with the acquiring firm, and that acquirers benefit from

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<sup>35</sup> I follow Officer (2004) and collect additional data on renegotiations that result in higher or lower closing prices.

these ties in the form of a lower likelihood of an appraisal lawsuit and higher post-merger returns after the ruling.

My findings highlight the important role that target managers' personal incentives play in determining the disclosure strategies of their firms during mergers and acquisitions. My study also shows that acquirers can obtain benefits from retaining target managers in the form of control over the information environment in takeovers, which allows acquirers to reduce appraisal risk and in turn enhance post-acquisition performance. Although I show that target-CEO retention can assist acquirers in mitigating appraisal risk in Delaware mergers, target CEO-acquirer ties might influence target firm disclosure strategies that benefit acquirers in other meaningful ways in the takeover market. This is an important topic that I leave for future research to explore.

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## Appendix 1: Variable definitions

Variable	Definition	Source
<i>Variables of interest</i>		
Delaware	Indicator variable equal to 1 if the state of incorporation is Delaware, 0 otherwise.	SDC
Post	Indicator variable equal to 1 if the announcement date of the merger is after December 31, 2007 and 0 otherwise.	SDC
Delaware <sup>-1</sup> (2006)	Indicator variable equal to 1 if the state of incorporation is Delaware and the merger announcement date is in the year prior to the court ruling.	SDC
Delaware <sup>0</sup> (2007)	Indicator variable equal to 1 if the state of incorporation is Delaware and the merger announcement date is in the year of the court ruling.	SDC
Delaware <sup>+1</sup> (2008)	Indicator variable equal to if the state of incorporation is Delaware and the merger announcement date is in the year immediately after the court ruling.	SDC
Delaware <sup>≥2</sup> (2009 to 2016)	Indicator variable equal to if the state of incorporation is Delaware and the merger announcement date is in the period starting 2 years after the court ruling.	SDC
Delaware <sup>+3</sup> (2010)	Indicator variable equal to if the state of incorporation is Delaware and the merger announcement date is three years after the court ruling.	SDC
Delaware <sup>+4</sup> (2011)	Indicator variable equal to if the state of incorporation is Delaware and the merger announcement date is four years after the court ruling.	SDC
Delaware <sup>≥5</sup> (2012 to 2016)	Indicator variable equal to if the state of incorporation is Delaware and the merger announcement date is in the period starting 5 years after the court ruling.	SDC
TargetNegativeRet	Indicator variable equal to 1 if the target firm's cumulative abnormal returns during the merger window are negative, 0 otherwise.	CRSP
<i>Dependent variables</i>		
CAR	Market-adjusted cumulative abnormal returns calculated over the merger window, beginning three days after the announcement date and ending one day after the completion date of the merger.	CRSP
PRSentiment	RavenPack's Composite Sentiment Score for firm-initiated press releases, which has a range of 0 to 100. A score greater than 50 indicates positive sentiment, a score less than 50 indicates negative sentiment, and a score of exactly 50 indicates neutral sentiment. Following Bushman et al. (2017), I apply a linear transformation $((CSS-50)/50)$ so that the press release has a sentiment score ranging from -1 to 1, where a score of zero is equivalent to neutral sentiment.	RavenPack PR Edition

## Appendix 1 (Continued)

Variable	Definition	Source
Vol8kTone	Loughran and McDonald (2011) measure of the proportion of negative words (FIN-NEG) in the 8-K filing. I multiply the value by -1 to be consistent with the measure of sentiment.	WRDS SEC Analytics
ProxyTone	Loughran and McDonald (2011) measure of the proportion of negative words (FIN-NEG) in the 8-K filing. I multiply the value by -1 to be consistent with the measure of sentiment.	WRDS SEC Analytics
PRFrequency	Number of firm-initiated press releases during the merger window divided by the number of days between announcement date and completion date of the merger (i.e., the deal length).	RavenPack PR Edition
Vol8kFrequency	Number of firm-initiated 8-K filings during the merger window divided by the number of days between announcement date and completion date of the merger (i.e., the deal length).	WRDS SEC Analytics
PRCAR	Market-adjusted cumulative abnormal returns of firm-initiated press releases, calculated over three days [-1,+1] centered on the date of the press release disclosure.	CRSP
Vol8kCAR	Market-adjusted cumulative abnormal returns of 8-K filings, calculated over three days [-1,+1] centered on the date of the 8-K disclosure.	CRSP
ProxyCAR	Market-adjusted cumulative abnormal returns of DEFM14A and SC 14D9 filings, calculated over three days [-1,+1] centered on the date of the filing.	CRSP
AcquirerCAR	Acquirer's market-adjusted cumulative abnormal returns calculated over the post-acquisition 180-day window, measured beginning three days after the completion of the merger and ending 180 days after the completion date.	CRSP
<i>Control variables</i>		
Size	Natural logarithm of the value of the merger transaction measured at the announcement date of the merger.	SDC
ROA	Income before extraordinary items (ib) divided by total assets (at) of the target firm, measured at the end of the most recent fiscal year.	Compustat
BTM	Book value of equity as at the end of the most recent fiscal year divided by the market value of equity of the target firm, measured at four weeks prior to the announcement date of the merger.	SDC
Leverage	Total long-term debt (dltt) + debt in current liabilities (dlc) divided by total assets (at) of the target firm, measured at the end of the most recent fiscal year.	Compustat
Loss	Indicator variable equal to 1 if net income (ni) is less than zero, for the target firm, at the end of the most recent fiscal, 0 otherwise.	Compustat

### Appendix 1 (Continued)

Variable	Definition	Source
AnnounceRet	Market-adjusted cumulative abnormal returns of the target firm, calculated over the five days [-2,+2], centered on the merger announcement date.	CRSP
PreAnnounceRet	Market-adjusted cumulative abnormal returns of the target firm over the 200 days prior to the merger announcement date, calculated from 200 days prior to the merger announcement date to 3 days prior to the merger announcement date [-200,-3].	CRSP
Volatility	Standard deviation of daily returns over the twelve months prior to the announcement date, then multiplied by the square root of 252.	CRSP
Tender	Indicator variable equal to one if the acquirer makes a tender offer, and 0 otherwise.	SDC
DealLength	Number of days between the announcement date and the completion date of the merger.	SDC
DealPremium	Stock price premium offered by the acquirer, calculated as the ((offer price - target firm's share price four weeks prior to the announcement)/target firm's share price four weeks prior to the announcement).	SDC
GoShop	Indicator variable equal to 1 if the merger agreement includes a provision that allows the target firm to seek other offers after the announcement date of the merger, 0 otherwise.	SDC
PRLaggedSentiment	Mean sentiment of firm-initiated press releases over the twelve months prior to the merger announcement date, calculated as the sum of PRSentiment for all press releases divided by the number of press releases.	RavenPack PR Edition
Vol8kLaggedTone	Mean tone of 8-K filings over the twelve months prior to the merger announcement date, calculated as the sum of Vol8kTone divided by the number of 8-K filings.	WRDS SEC Analytics
Log(Wordcount)	Natural logarithm of one plus the number of words in the SEC filing.	WRDS SEC Analytics
InstOwn	Proportion of common shares outstanding held by institutions, measured at the most recent quarter prior to the merger announcement date.	Thomson Reuters 13F
PRLaggedFreq	Number of firm-initiated press releases per day over the twelve months prior to the merger announcement date, calculated as the total number of press releases during the previous twelve months divided by 365.	RavenPack PR Edition

### Appendix 1 (Continued)

Variable	Definition	Source
Vol8kLaggedFreq	Number of 8-K filings per day over the twelve months prior to the merger announcement date, calculated as the total number of 8-K filings during the previous twelve months divided by 365.	WRDS SEC Analytics
AppraisalLawsuit	Indicator variable equal to 1 if there is at least one appraisal lawsuit filed, 0 otherwise.	Westlaw Next
Post2004	Indicator variable equal to 1 if the 8-K disclosure date is after August 23, 2004 (i.e., the date after which the new SEC rules pertaining to 8-K item numbers are implemented), 0 otherwise	SEC
RenegotiatedUp	Indicator variable equal to 1 if the final closing price is greater than the announcement price, 0 otherwise.	SDC
RenegotiatedDown	Indicator variable equal to 1 if the final closing price is less than the announcement price, 0 otherwise.	SDC
AcqMergerWindowRet	Acquirer's market-adjusted cumulative abnormal returns calculated over the merger window, beginning three days after the announcement date and ending one day after the completion date of the merger.	CRSP
RetainedCEO	Indicator variable equal to 1 if the target CEO is retained by the acquirer in a prominent role (e.g., executive and/or board member) and/or has equity in the acquirer, 0 otherwise.	Hand collected from SEC filings/Linked/Google searches/Media articles/Archive.org

## Appendix 2: Target firm manager data collection process

### *Step 1: Identify target firm CEO*

For each target firm in my sample, I identify the CEO (as at the announcement date of the merger) using SEC filings. Specifically, for a transaction that is structured as a tender offer, I read through form SC 14D9 (i.e., Schedule 14D9), and for a merger that requires a shareholder vote, I read through the form DEFM14A (i.e., the Definitive Merger Proxy Statement). To illustrate, I use Verity Inc., which was acquired by Autonomy Corp PLC in 2005.

### *Step 2: Code each CEO*

From the DEFM14A filing, I identify the CEO of Verity Inc as Anthony J. Bettencourt. To identify whether Mr. Bettencourt has a future economic tie to the acquirer, I read through the filing, searching for information about his future employment with the acquirer, investment in the acquirer, and/or membership on the acquirer's board of directors. I code Stay=1 if there is sufficient information to determine that he has at least one of the aforementioned economic ties; and, Stay=0 if there is sufficient information to determine that he has zero economic ties.

### *Step 3: Verify using other resources*

Finally, I verify whether he is retained or not using other online tools. I begin with keyword searches at Google. For Mr. Bettencourt, I start with the keywords **Anthony Bettencourt Verity**. From the search results, I read through press releases, media articles, LinkedIn profiles, and corporate webpages to determine Mr. Bettencourt's post-acquisition status. The following press release confirms that Mr. Bettencourt served in an executive role with the acquirer, and that his role was not temporary in nature (such as a transition consultant):

Mr. Bettencourt has over twenty-five years of experience building fast-growth, market leading technology companies. Prior to Imperva, Mr. Bettencourt served as the chief executive officer of Coverity Inc., a privately held company that develops and markets development testing solutions that assist software developers in detecting and fixing quality and security problems, leading the company through its successful acquisition by Synopsys, and Verity Inc., a leader in enterprise search, leading the company through its acquisition by Autonomy Corp. plc in 2005. After the successful acquisition of Verity by Autonomy, Mr. Bettencourt was instrumental in Autonomy's growth, serving as CEO of Autonomy Zantaz and Autonomy Interwoven. Mr. Bettencourt currently serves on the boards of Proofpoint, Blinkx and Formation Data Systems.

Source: <https://www.businesswire.com/news/home/20140818005588/en/Imperva-Appoints-Anthony-J.-Bettencourt-New-President>

Other articles confirm that Mr. Bettencourt was retained by the acquirer. Based on this evidence, I change Mr. Bettencourt to Stay=1.

### Appendix 3: Delaware court appraisal filings in 2016

This table presents a list of Delaware court appraisal filings for 2016 (by date (descending)).

<b>Plaintiff/Filing</b>	<b>Defendant</b>	<b>Filing date</b>	<b>Plaintiff/Filing</b>	<b>Defendant</b>	<b>Filing date</b>
Alta Fundamental Advisers Master LP	Diamond Resorts International, Inc.	12/16/2016	Verition Partners Master Fund LTD.	Jarden Corporation	8/12/2016
Hudson Bay Master Fund Ltd.	Press Ganey Holdings, Inc.	12/15/2016	Arbitrage Fund	Examworks Group, Inc.	8/5/2016
Driehaus Appraisal Litigation Fund, L.P.	Everyday Health, Inc.	12/13/2016	Lycurgus LLC	Rouse Properties, Inc.	8/2/2016
Blueblade Capital Opportunities LLC	Polycom, Inc.	12/9/2016	Hudson Bay Master Fund Ltd.	Rouse Properties, Inc.	8/1/2016
IN RE STARZ APPRAISAL	Starz	12/8/2016	IN RE APPRAISAL OF ROUSE PROPERTIES, INC.	Rouse Properties, Inc.	8/1/2016
Brookdale International Partners, L.P.	Examworks Group, Inc.	11/23/2016	Brookdale International Partners, L.P.	Rouse Properties, Inc.	7/11/2016
Driehaus Appraisal Litigation Fund, L.P.	TiVo, Inc.	11/15/2016	Fir Tree Value Master Fund, LP	Jarden Corporation	7/8/2016
IN RE APPRAISAL OF TIVO, INC.	TiVo, Inc.	11/15/2016	Quadre Investments, LP	United Online, Inc.	7/5/2016
IN RE APPRAISAL OF QLIK TECHNOLOGIES, INC.	Qlik Technologies, Inc.	11/14/2016	Blueblade Capital Opportunities LLC	Diamond Foods, LLC	6/27/2016
Blueblade Capital Opportunities LLC	Nortek, Inc.	11/7/2016	Dunham Monthly Distribution Fund	Jarden Corporation	6/14/2016
Blueblade Capital Opportunities LLC	Relypsa, Inc.	11/1/2016	In re Appraisal of Jarden Corporation	Jarden Corporation	6/14/2016
Magnetar Capital Master Fund, Ltd, et al.	Examworks Group, Inc.	10/28/2016	Blueblade Capital Opportunities LLC	Atmel Corporation	5/31/2016
IN RE APPRAISAL OF PRESS GANEY HOLDINGS, INC.	Press Ganey Holdings, Inc.	10/27/2016	Merlin Partners LP	Crown Media Holdings, Inc.	5/27/2016
Blueblade Capital Opportunities LLC	SciQuest, Inc.	10/18/2016	IN RE APPRAISAL OF THE FRESH MARKET, INC.	The Fresh Market, Inc.	5/23/2016
Pentwater Equity Opportunities Master Fund Ltd.	Diamond Resorts International, Inc.	9/29/2016	Verition Partners Master Fund Ltd.	Blount International, Inc.	5/2/2016
Highbridge International LLC	Diamond Resorts International, Inc.	9/28/2016	Blueblade Capital Opportunities LLC	Altera Corporation	4/15/2016
Pivot Point Capital Master LP	Examworks Group, Inc.	9/27/2016	College Retirement Equities Fund	Towers Watson & Co.	3/23/2016
Verition Multi-Strategy Master Fund Ltd.	Ruckus Wireless, Inc.	9/22/2016	Fir Tree Value Master Fund, L.P.	Solera Holdings, Inc.	3/10/2016

IN RE APPRAISAL OF DIAMOND RESORTS INTERNATIONAL, INC.	Diamond Resorts International, Inc.	9/20/2016
Brookdale International Partners, L.P.	Columbia Pipeline Group, Inc.	9/15/2016
IN RE APPRAISAL OF COLUMBIA PIPELINE GROUP, INC.	Columbia Pipeline Group, Inc.	9/9/2016
Sunrise Partners Limited Partnership	Examworks Group, Inc.	8/30/2016
Lord Abbett Series Fund, Inc. - Value Opportunities Portfolio	Examworks Group, Inc.	8/26/2016
IN RE EXAMWORKS GROUP INC. STOCKHOLDER APPRAISAL LITIGATION	Examworks Group, Inc.	8/25/2016
Gabelli Securities, Inc., et al.	Crown Media Holdings, Inc.	8/23/2016
Verition Multi-Strategy Master Fund Ltd.	The Fresh Market, Inc.	8/22/2016
Levcap Alternative Fund, LP, et al.	Rouse Properties, Inc.	8/18/2016

IN RE APPRAISAL OF SOLERA HOLDINGS, INC.	Solera Holdings, Inc.	3/7/2016
Blueblade Capital Opportunities LLC	Remy International, Inc.	3/4/2016
Rangeley Capital LLC	Towers Watson & Co.	3/3/2016
IN RE APPRAISAL OF TOWERS WATSON & CO.	Towers Watson & Co.	3/3/2016
IN RE APPRAISAL OF GFI GROUP, INC.	GFI Group, Inc.	2/23/2016
Lion Cash, LLC	Synergetics USA, Inc.	2/12/2016
Lion Cash, LLC	Blyth, Inc.	2/11/2016
VN Capital Fund I LP	Breeze-Eastern Corporation	2/10/2016
Acme Monitor, LLC	OM Group, Inc.	1/21/2016

#### Appendix 4: Top 10 appraisal claims

This table presents the top 10 largest appraisal claims (as of December 31, 2016), calculated as the total number of shares being appraised multiplied by the original deal price.

Target name	Value of claims (in millions)	% of outstanding shares	Year
Petsmart	\$889	11%	2015
Safeway	\$618	7%	2015
Dell	\$505	2%	2013
BMC Software	\$353	5%	2013
Starz	\$299	9%	2016
AOL	\$267	7%	2015
Dole	\$230	31%	2013
Diamond Resorts	\$207	10%	2016
Examworks	\$198	14%	2016
Lender Processing	\$195	6%	2014

## Appendix 5: Target manager-acquirer conflicts of interest data collection

For each merger in my sample where a target firm manager is coded as  $Stay=1$  (as per the instructions provided in Appendix 2), I confirm whether the target firm has disclosed a conflict of interest between the target manager and the acquirer. Specifically, for a transaction that is structured as a tender offer, I read through form SC 14D9 (i.e., Schedule 14D9), and for a merger that requires a shareholder vote, I read through the form DEFM14A (i.e., the Definitive Merger Proxy Statement). Whenever I cannot locate these documents, I read the merger agreement. To illustrate, I use (1) Serena Software, which was acquired in 2006; and (2) BMC Software, which was acquired in 2013.

### Serena Software

#### *DEFM 14A: Interests of the Company's Directors and Executive Officers in the Merger*

According to Serena Software's merger proxy statement below, Mark E. Woodward, Chief Executive Officer will (1) serve as directors of the surviving corporation; (2) serve as Chief Executive Officer of the surviving corporation; (3) receive equity grants in the surviving corporation; and (4) retain at least 66% of the aggregate value of existing equity interests in Serena (which will convert into an equity investment in the surviving corporation). Based on this information, I code this as Disclosed=1.

#### **Interests of the Company's Directors and Executive Officers in the Merger**

In considering the recommendations of the special committee and the board of directors, you should be aware that certain of our directors and executive officers have interests in the transaction that are different from, and/or in addition to, the interests of Serena stockholders generally. As a result of these differing interests, the board of directors appointed the special committee to represent the interests of our unaffiliated stockholders. The members of the special committee are not officers or employees of Serena and will not have an economic interest in Serena following the merger. The members of the special committee evaluated and negotiated the merger agreement and evaluated whether the merger is in the best interests of Serena's unaffiliated stockholders. The members of the special committee were aware of these differing interests and considered them, among other matters, in evaluating and negotiating the merger agreement and the merger and in recommending to the stockholders that the merger agreement be adopted.

#### *Positions with the Surviving Corporation*

Douglas D. Troxel, our founder, Chairman of the Board and Chief Technology Officer, and Mark E. Woodward, our President and Chief Executive Officer and one of our directors, will serve as directors of the surviving corporation. The service of our directors other than Mr. Troxel and Mr. Woodward will end on the completion of the merger. Mr. Woodward will serve as Chief Executive Officer and President of the surviving corporation. Robert I. Pender, Jr., our current Chief Financial Officer and Senior Vice President, Finance and Administration and one of our directors, will serve as Chief Financial Officer and Senior Vice President, Finance and Administration, but not as a director, of the surviving corporation. Following the merger, we expect that most of our other current executive officers will continue as executive officers of the surviving corporation, although

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Mr. Troxel will no longer serve as Chief Technology Officer. Mr. Woodward and Mr. Pender will enter into employment and related agreements with the surviving corporation and will receive new incentive equity grants in the surviving corporation, effective upon completion of the merger, the terms of which are described below under "Other Agreements—Management Agreements." We do not anticipate that our other executive officers who will continue as executive officers of the surviving corporation in the merger will enter into new employment agreements with us and we do not anticipate that the salaries or cash incentive compensation of such other executive officers will change in connection with the merger. We expect that Messrs. Woodward and Pender and the other management participants, other than Mr. Troxel, will enter into definitive agreements in connection with their equity investments in the surviving corporation and equity incentive grants following the merger as described below.

Mr. Woodward and Mr. Pender have agreed to retain at least 66% and 60%, respectively, of the aggregate value of their existing equity interests in Serena after completion of the merger. This equity investment will consist of the contribution by them of a portion of the shares of Serena restricted common stock beneficially owned by them to Spyglass Merger Corp. in exchange for shares of common stock of Spyglass Merger Corp., which restricted shares will convert into restricted shares of Serena upon completion of the merger, and the retention of a portion of their existing options to acquire Serena common stock, which options will be amended and remain outstanding after the merger. The shares of Serena common stock to be contributed by Messrs. Woodward and

### BMC Software

#### *DEFM 14A: Interests of the Company's Directors and Executive Officers in the Merger*

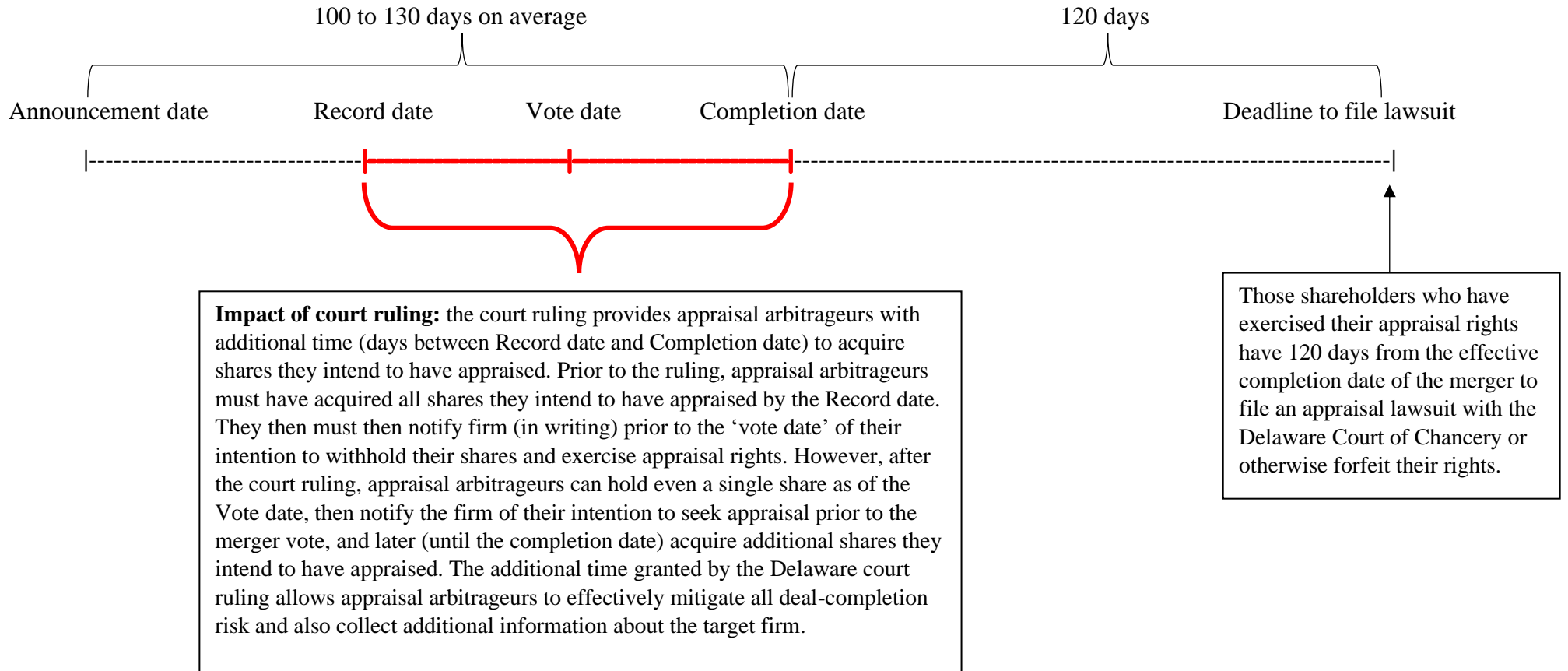
According to BMC Software's merger proxy statement below, as of the date of the proxy statement, no employment agreements or arrangements between Robert Beauchamp, Chief Executive Officer, were finalized. Based on this information, I code this as Disclosed=0.

#### *New Management Arrangements*

Prior to the consummation of the merger, some or all of the Company's executive officers may discuss or enter into agreements, arrangements or understandings with Parent or its affiliates regarding the executive officers' continuing employment or compensation and benefits, including equity incentive arrangements, on a going-forward basis following completion of the merger. No such agreements, arrangements and understandings have been finalized as of the date of this proxy statement.

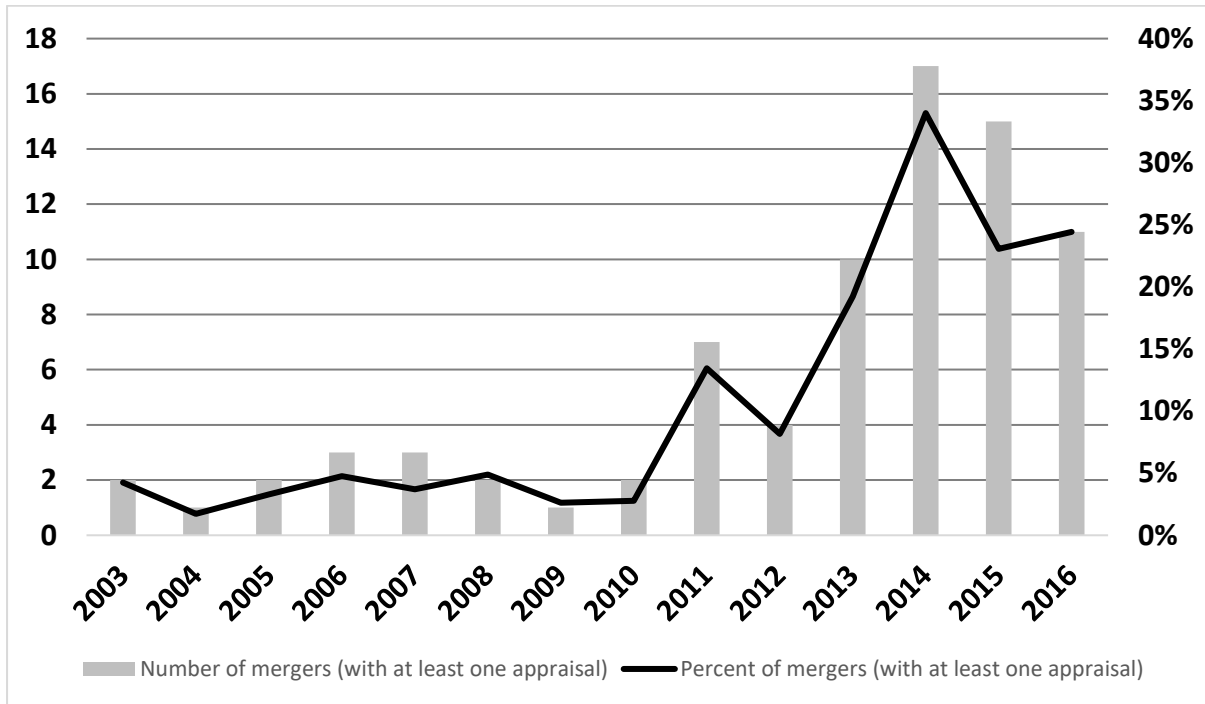
**Figure 1: Delaware appraisal procedural process**

This figure shows the timeline for the Delaware appraisal procedural process. The *Average days* are based on the average deal length for my sample of Delaware mergers. The red dotted line indicates the effect of the 2007 Delaware court ruling on the appraisal process: prior to the ruling, appraisal arbitrageurs must have held shares in the acquirer as of the record date in order to be conferred appraisal rights but after the ruling they can acquire shares up until the completion date of the merger.



**Figure 2: Delaware mergers with at least one appraisal**

This figure plots, by year, the number of Delaware mergers in the final sample with at least one appraisal (on the left axis); and the percentage of Delaware appraisal-eligible mergers in the final sample with at least one appraisal (on the right axis).



**Table 1**  
**Sample Selection and Distribution by Announcement Year**

*Panel A: Sample Selection Procedure*

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All U.S. public mergers (1998 to 2016)	6,781
Less stock-for-stock mergers	(1,129)
Less mergers that are not completed	(1,143)
Less mergers < \$100 million	(1,608)
Less mergers < 51% shares acquired	(5)
Less mergers where Announcement date – Agreement date > 1	(541)
Number of mergers before merging with CRSP and COMPUSTAT	2,355
Less mergers with missing returns data	(548)
Less mergers with missing COMPUSTAT data	(22)
Less mergers with missing institutional ownership data	(36)
Less mergers with a single observation in one state or one industry	(17)
<b>Sample mergers</b>	<b>1,732</b>

**Table 1 (Continued)***Panel B: Sample Distribution by Announcement Year*

Year	Number of Mergers	% of Sample	Delaware Mergers	Non-Delaware Mergers	
1998	109	6.29	67	42	
1999	160	9.24	83	77	
2000	116	6.70	75	41	
2001	76	4.39	44	32	
2002	47	2.71	25	22	
2003	58	3.35	47	11	Pre-
2004	73	4.21	58	15	Transkaryotic
2005	114	6.58	61	53	
2006	131	7.56	63	68	
2007	137	7.91	81	56	
Total	1021	58.95	604	417	
2008	65	3.75	41	24	
2009	52	3.00	38	14	
2010	110	6.35	72	38	
2011	91	5.25	52	39	
2012	82	4.73	49	33	Post-
2013	79	4.56	52	27	Transkaryotic
2014	71	4.10	50	21	
2015	100	5.77	65	35	
2016	61	3.52	45	16	
Total	711	41.05	464	247	
<b>Total</b>	<b>1,732</b>	<b>100.00</b>	<b>1,068</b>	<b>664</b>	

Notes: Panel A presents the composition of my sample. As discussed in the text, a merger is included in the final sample if the announcement date is between January 1, 1998 and December 31, 2016. Panel B presents the distribution of the final sample by year, by target firm state of incorporation (Delaware or non-Delaware), and by pre-event or post-event.

**Table 2**  
**Summary Statistics**

*Panel A: Delaware and Non-Delaware Mergers*

Variable	Delaware						Non-Delaware						Diff. in Means (Del. - Non-Del.)
	N	Mean	SD	P25	Median	P75	N	Mean	SD	P25	Median	P75	
CAR	1,068	0.02	0.16	-0.04	0.00	0.05	664	0.02	0.13	-0.05	0.00	0.06	0.001
Size	1,068	6.74	1.37	5.61	6.57	7.70	664	6.57	1.34	5.45	6.36	7.44	0.169**
ROA	1,068	-0.01	0.16	-0.02	0.03	0.07	664	0.02	0.12	0.01	0.03	0.07	-0.028***
BTM	1,068	0.51	0.46	0.23	0.43	0.68	664	0.57	0.38	0.33	0.51	0.73	-0.060***
Leverage	1,068	0.23	0.24	0.00	0.18	0.38	664	0.25	0.23	0.02	0.20	0.42	-0.015
Loss	1,068	0.33	0.47	0.00	0.00	1.00	664	0.21	0.41	0.00	0.00	0.00	0.115***
Volatility	1,068	0.51	0.25	0.34	0.44	0.61	664	0.42	0.22	0.27	0.38	0.52	0.084***
InstOwn	1,068	0.64	0.29	0.41	0.68	0.89	664	0.59	0.28	0.38	0.62	0.82	0.049***
AnnounceRet	1,068	0.29	0.28	0.12	0.24	0.40	664	0.26	0.24	0.10	0.21	0.35	0.039***
PreAnnounceRet	1,068	0.08	0.49	-0.21	-0.01	0.28	664	0.09	0.40	-0.16	0.03	0.24	-0.008
Tender	1,068	0.32	0.47	0.00	0.00	1.00	664	0.18	0.39	0.00	0.00	0.00	0.136***
DealLength	1,068	107.14	67.14	54.00	90.00	136.00	664	125.10	81.03	72.00	101.00	150.00	-17.960***
DealPremium	1,068	0.34	0.29	0.16	0.28	0.44	664	0.29	0.25	0.13	0.26	0.38	0.045***
GoShop	1,068	0.06	0.24	0.00	0.00	0.00	664	0.06	0.24	0.00	0.00	0.00	0.002

**Table 2 (Continued)**

*Panel B: Delaware (Pre) and Delaware (Post)*

Variable	Delaware (Pre)						Delaware (Post)						Diff. in Means (Post - Pre)
	N	Mean	SD	P25	Median	P75	N	Mean	SD	P25	Median	P75	
CAR	604	0.03	0.19	-0.04	0.01	0.07	464	0.00	0.10	-0.05	-0.01	0.04	-0.024**
Size	604	6.58	1.35	5.45	6.38	7.49	464	6.95	1.38	5.90	6.83	7.92	0.373***
ROA	604	0.00	0.14	-0.01	0.03	0.07	464	-0.03	0.19	-0.04	0.02	0.06	-0.035***
BTM	604	0.53	0.47	0.25	0.45	0.70	464	0.48	0.46	0.19	0.39	0.68	-0.054*
Leverage	604	0.25	0.24	0.01	0.20	0.40	464	0.21	0.23	0.00	0.14	0.34	-0.038**
Loss	604	0.28	0.45	0.00	0.00	1.00	464	0.39	0.49	0.00	0.00	1.00	0.106***
Volatility	604	0.52	0.26	0.34	0.45	0.64	464	0.49	0.23	0.34	0.43	0.57	-0.034**
InstOwn	604	0.57	0.28	0.34	0.60	0.81	464	0.72	0.27	0.57	0.80	0.95	0.152***
AnnounceRet	604	0.26	0.25	0.09	0.20	0.37	464	0.34	0.31	0.14	0.28	0.42	0.083***
PreAnnounceRet	604	0.06	0.46	-0.22	-0.01	0.29	464	0.10	0.52	-0.20	0.00	0.28	0.038
Tender	604	0.30	0.46	0.00	0.00	1.00	464	0.34	0.48	0.00	0.00	1.00	0.041
DealLength	604	110.19	64.64	61.00	98.00	141.00	464	103.17	70.13	48.50	84.00	129.50	-7.020*
DealPremium	604	0.30	0.26	0.13	0.24	0.40	464	0.39	0.31	0.21	0.33	0.50	0.095***
GoShop	604	0.03	0.16	0.00	0.00	0.00	464	0.11	0.31	0.00	0.00	0.00	0.081***

**Table 2 (Continued)**

*Panel C: CEOs (Stay) and CEOs (Leave)*

Variable	CEOs (Stay)						CEOs (Leave)						Diff. in Means (Stay - Lave)
	N	Mean	SD	P25	Median	P75	N	Mean	SD	P25	Median	P75	
CAR	728	0.00	0.17	-0.06	-0.02	0.04	890	0.03	0.11	-0.03	0.01	0.07	-0.029***
Size	728	6.77	1.33	5.67	6.63	7.73	890	6.66	1.38	5.58	6.44	7.60	0.105
ROA	728	0.02	0.11	0.01	0.03	0.07	890	-0.02	0.17	-0.02	0.03	0.06	0.036***
BTM	728	0.52	0.40	0.27	0.46	0.69	890	0.53	0.44	0.25	0.47	0.70	-0.009
Leverage	728	0.24	0.24	0.02	0.19	0.38	890	0.23	0.24	0.00	0.18	0.40	0.008
Loss	728	0.22	0.42	0.00	0.00	0.00	890	0.33	0.47	0.00	0.00	1.00	-0.104***
Volatility	728	0.46	0.24	0.30	0.40	0.56	890	0.48	0.25	0.31	0.42	0.60	-0.023*
InstOwn	728	0.62	0.29	0.39	0.67	0.86	890	0.63	0.28	0.42	0.66	0.87	-0.003
AnnounceRet	728	0.26	0.23	0.10	0.21	0.37	890	0.29	0.29	0.12	0.23	0.38	-0.035***
PreAnnounceRet	728	0.07	0.44	-0.19	0.01	0.24	890	0.09	0.46	-0.18	0.01	0.28	-0.016
Tender	728	0.23	0.42	0.00	0.00	0.00	890	0.29	0.45	0.00	0.00	1.00	-0.055**
DealLength	728	120.00	74.76	65.00	104.00	152.00	890	108.56	71.97	58.00	88.50	131.00	11.448***
DealPremium	728	0.31	0.25	0.14	0.26	0.41	890	0.33	0.29	0.15	0.27	0.42	-0.024*
GoShop	728	0.08	0.27	0.00	0.00	0.00	890	0.04	0.21	0.00	0.00	0.00	0.036***

**Table 2 (Continued)**

*Panel D: Sentiment, Frequency, and Announcement Returns*

Variable	Delaware						Non-Delaware						Diff. in Means (Del. - Non-Del.)
	N	Mean	SD	P25	Median	P75	N	Mean	SD	P25	Median	P75	
<i>Press releases</i>													
PRSentiment	1,534	0.030	0.051	0.000	0.020	0.040	885	0.029	0.058	0.000	0.020	0.040	0.001
PRFrequency	745	0.035	0.048	0.000	0.023	0.049	440	0.030	0.037	0.000	0.021	0.043	0.005*
PRCAR	1,534	0.004	0.039	-0.011	-0.001	0.012	885	0.001	0.024	-0.010	-0.001	0.010	0.003**
PRLaggedFrequency	745	0.056	0.055	0.016	0.047	0.077	440	0.046	0.043	0.015	0.038	0.066	0.009***
PRLaggedSentiment	1,534	0.030	0.018	0.020	0.029	0.039	885	0.030	0.022	0.016	0.030	0.042	0.000
<i>Voluntary 8k</i>													
Vol8kTone	2,367	-0.008	0.010	-0.013	-0.005	0.000	1,729	-0.008	0.011	-0.012	-0.004	0.000	0.000
Vol8kFrequency	1,068	0.018	0.025	0.000	0.010	0.026	664	0.019	0.026	0.000	0.012	0.028	-0.002
Vol8kCAR	2,367	0.000	0.053	-0.012	0.000	0.014	1,729	0.002	0.044	-0.012	0.000	0.013	-0.001
Vol8kLaggedFrequency	1,068	0.008	0.012	0.000	0.003	0.011	664	0.007	0.012	0.000	0.003	0.011	0.000
Vol8kLaggedTone	2,367	-0.005	0.005	-0.007	-0.003	-0.001	1,729	-0.005	0.006	-0.008	-0.004	-0.001	0.001***
<i>Proxy Filings</i>													
ProxyTone	782	-0.016	0.004	-0.019	-0.017	-0.013	463	-0.017	0.004	-0.020	-0.018	-0.016	0.002***
ProxyCAR	782	0.014	0.108	-0.010	0.001	0.015	463	0.006	0.064	-0.010	0.000	0.011	0.008

Notes: Panel A presents the summary statistics for the dependent and independent variables used in my main analysis, partitioned by Delaware target firms (i.e., the treatment group) and non-Delaware target firms (i.e., the control group). The sample period covers the years 1998 to 2016. Detailed variable descriptions are in Appendix 1. Panel B presents summary statistics for the dependent and independent variables for only Delaware target firms, partitioned by pre-event and post-event. Panel C presents summary statistics for the dependent and independent variables for target firms split by CEOs that stay with acquirer and CEOs that leave. Panel D presents summary statistics for the dependent variables used in my additional tests. The sample period for the additional analysis covers the years 1998 to 2016, except for PRSentiment, PRFrequency, and PRCAR, which start in 2004, since RavenPack does not have press releases for years prior to 2004.

**Table 3**  
**The Impact of the Delaware Court Ruling on Disclosure Behavior**

	<i>CAR (merger window)</i>				
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
Delaware	0.012 (1.54)		0.009 (1.30)		
Post	0.002 (0.20)		0.004 (0.42)		
<b>Delaware × Post</b>	<b>-0.026***</b> <b>(-2.74)</b>	<b>-0.026**</b> <b>(-2.18)</b>	<b>-0.033***</b> <b>(-3.60)</b>	<b>-0.033***</b> <b>(-3.05)</b>	<b>-0.037***</b> <b>(-3.37)</b>
Size			0.008*** (3.50)	0.005*** (2.97)	0.005** (2.45)
ROA			-0.079** (-2.12)	-0.119*** (-2.93)	-0.108** (-2.27)
BTM			-0.005 (-0.61)	-0.006 (-1.20)	-0.013** (-2.30)
Leverage			0.020 (1.18)	0.013 (0.94)	0.007 (0.38)
Loss			-0.018** (-2.49)	-0.012 (-1.48)	-0.008 (-0.86)
AnnounceRet			-0.102** (-2.36)	-0.120*** (-2.84)	-0.156*** (-3.07)
PreAnnounceRet			0.004 (0.54)	0.003 (0.83)	0.002 (0.55)
Volatility			0.040*** (6.09)	-0.019** (-2.64)	-0.010 (-0.70)
Tender			-0.002 (-0.35)	-0.013*** (-2.98)	-0.010* (-1.92)
DealLength			0.000 (1.21)	0.000 (0.50)	0.000 (0.79)
DealPremium			0.138*** (3.15)	0.148*** (3.38)	0.178*** (3.56)
GoShop			-0.022** (-2.09)	-0.012 (-1.43)	-0.009 (-0.83)
Industry FE	NO	YES	NO	YES	YES
State FE	NO	YES	NO	YES	YES
Year FE	NO	YES	NO	YES	YES
Adjusted R <sup>2</sup>	0.002	0.069	0.041	0.104	0.092
No. of Observations	1,732	1,732	1,732	1,732	1,614

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Notes: This table presents the regression estimates for equation (1). The dependent variable is CAR, which is a target firm's cumulative abnormal returns over the merger window, beginning three days after the announcement date and ending one day after the completion date of the merger. All other variables are defined in Appendix 1. Columns (1)-(4) present results for the full sample of mergers. Column (5) presents results excluding mergers announced in 2008 and 2009 (i.e., the financial crisis years). Robust *t*-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 4****Trend Tests of Delaware Court Ruling on Disclosure Behavior**

	<i>CAR (merger window)</i>	
	<i>(1)</i>	<i>(2)</i>
Delaware <sup>-1</sup> (2006)	-0.007 (-0.51)	-0.007 (-0.56)
Delaware <sup>0</sup> (2007)	-0.005 (-0.25)	-0.007 (-0.38)
Delaware <sup>+1</sup> (2008)	-0.038 (-1.02)	
Delaware <sup>≥2</sup> (2009 to 2016)	-0.034*** (-2.82)	
Delaware <sup>+3</sup> (2010)		-0.040** (-2.10)
Delaware <sup>+4</sup> (2011)		-0.061** (-2.62)
Delaware <sup>≥5</sup> (2012 to 2016)		-0.032** (-2.38)
Other Controls	YES	YES
Industry FE	YES	YES
State FE	YES	YES
Year FE	YES	YES
Adjusted R <sup>2</sup>	0.102	0.089
No. of Observations	1,732	1,614

Notes: This table reports trend tests of the effect of the 2007 Delaware court ruling on target firms' cumulative abnormal returns over the merger window, measured from three days after the announcement day of the merger until one day after the completion day of the merger. The variables of interest in column (1), Delaware<sup>-1</sup> (2006), Delaware<sup>0</sup> (2007), Delaware<sup>+1</sup> (2008), and Delaware<sup>≥2</sup> (2009 to 2016), are equal to 1 if the target firm state of incorporation is Delaware and the merger announcement date is in the year prior to the court ruling, the year of the court ruling, the year after the court ruling, and two or more years after the court ruling, respectively. Column (2) excludes mergers with an announcement date in 2008 and 2009 (i.e., the financial crisis years), and replaces Delaware<sup>+1</sup> (2008) and Delaware<sup>≥2</sup> (2009 to 2016) with Delaware<sup>+3</sup> (2010), Delaware<sup>+4</sup> (2011), and Delaware<sup>≥5</sup> (2012 to 2016), which equal 1 if the target firm's state of incorporation is Delaware and the merger announcement date is in the third year after the court ruling, in the fourth year after the court ruling, and in the fifth or more years after the court ruling, respectively. The same set of control variables from Table 3 are included in both columns. All other variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 5**  
**Cross-sectional Analysis**

	<i>CAR (merger window)</i>							
	<i>Transaction Value</i>		<i>Deal Premium</i>		<i>Deal Length</i>		<i>Appraisals</i>	
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>	<i>(7)</i>	<i>(8)</i>
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>Long</i>	<i>Short</i>	<i>Yes</i>	<i>No</i>
<b>Delaware × Post</b>	<b>-0.049***</b>	<b>-0.011</b>	<b>-0.028*</b>	<b>-0.040***</b>	<b>-0.054***</b>	<b>-0.013</b>	<b>0.023*</b>	<b>-0.025**</b>
	<b>(-3.67)</b>	<b>(-0.89)</b>	<b>(-1.85)</b>	<b>(-3.58)</b>	<b>(-3.23)</b>	<b>(-1.32)</b>	<b>(1.83)</b>	<b>(-2.44)</b>
Size	0.014***	0.001	0.006**	0.008**	0.010***	0.000	0.005***	0.006**
	(4.03)	(0.21)	(2.38)	(2.50)	(4.19)	(0.13)	(8.35)	(2.33)
ROA	-0.104***	-0.103*	-0.153**	-0.042	-0.185	-0.063**	-0.026***	-0.017
	(-2.68)	(-1.72)	(-2.34)	(-1.46)	(-1.54)	(-2.21)	(-12.65)	(-0.75)
BTM	-0.024	-0.000	-0.01	0.002	-0.022***	0.015***	-0.013*	-0.005
	(-1.58)	(-0.06)	(-1.51)	(0.20)	(-2.65)	(2.88)	(-1.84)	(-0.72)
Leverage	0.019	-0.007	0.013	0.002	-0.021	0.034***	0.030***	0.001
	(1.53)	(-0.33)	(0.42)	(0.16)	(-0.92)	(8.06)	(22.92)	(0.08)
Loss	-0.006	-0.023**	-0.004	-0.017	-0.005	-0.013	-0.022***	-0.007
	(-0.48)	(-2.23)	(-0.39)	(-1.44)	(-0.28)	(-1.27)	(-8.86)	(-1.07)
AnnounceRet	-0.042***	-0.181***	-0.121*	-0.1201**	-0.173**	-0.019	-0.005	-0.028
	(-2.86)	(-2.61)	(-1.76)	(-2.03)	(-2.50)	(-0.69)	(-0.56)	(-0.86)
PreAnnounceRet	0.021***	-0.005	-0.011*	0.017**	0.021**	-0.002	-0.007	-0.002
	(2.87)	(-0.95)	(-1.93)	(2.09)	(2.23)	(-0.22)	(-1.45)	(-0.32)
Volatility	-0.066***	0.020	-0.022	-0.033	-0.009	0.001	0.004	-0.007
	(-5.20)	(1.50)	(-1.22)	(-0.19)	(-0.46)	(0.11)	(0.18)	(-0.54)
Tender	-0.023***	-0.007	-0.018***	-0.003	-0.028	0.001	0.011	-0.007*
	(-3.37)	(-0.95)	(-3.45)	(-0.23)	(-1.75)	(0.21)	(0.29)	(-1.74)
DealLength	0.000	-0.000	0.000**	-0.000	-0.000	0.000	-0.000***	-0.000
	(0.05)	(-0.42)	(2.52)	(-0.96)	(-0.43)	(0.89)	(-11.61)	(-0.93)

DealPremium	0.077*** (5.43)	0.198*** (2.78)	0.133* (1.74)	0.196*** (3.15)	0.219*** (3.44)	0.026 (1.20)	0.041** (2.04)	0.056** (2.15)
GoShop	-0.015 (1.26)	-0.022** (-2.25)	-0.018 (-1.22)	-0.012 (-1.08)	-0.013 (-1.01)	-0.020*** (-2.90)	-0.022*** (-5.81)	-0.018 (-1.42)
Difference in coef.	5.01**		0.55		3.90**		6.95***	
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	NO	NO	NO	NO	NO	NO	NO	NO
Year FE	YES	YES	YES	YES	YES	YES	NO	NO
Adjusted R <sup>2</sup>	0.092	0.152	0.107	0.116	0.134	0.124	-0.019	0.011
No. of Observations	866	866	866	866	865	867	85	1,139

Notes: This table presents regression estimates of equation (1) for the subsamples of mergers. Column (1) and (2) are subsamples of high versus low transaction value; columns (3) and (4) are subsamples of high versus low deal premiums; columns (5) and (6) are subsamples of long versus short merger windows; and, columns (7) and (8) are subsamples of mergers with (Yes) and without (No) an appraisal lawsuit. Subsamples are created using above/below the median value, except for columns (7) and (8), which are partitioned based on an indicator variable. The dependent variable is CAR, which is a target firm's cumulative abnormal returns over the merger window, beginning three days after the announcement date and ending one day after the completion date of the merger. All other variables are defined in Appendix 1. For presentation purposes, the main effects are not tabulated (but are calculated). Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 6**  
**Disclosure Behavior and Managerial Incentives**

	<i>CAR (merger window)</i>	
	<i>(1)</i> <i>Stay</i>	<i>(2)</i> <i>Leave</i>
<b>Delaware × Post</b>	<b>-0.080***</b> <b>(-5.97)</b>	<b>-0.011</b> <b>(-1.31)</b>
Size	0.012*** (4.27)	0.006*** (2.61)
ROA	-0.127*** (-2.71)	-0.053** (-2.49)
BTM	-0.034*** (-3.21)	0.015** (2.18)
Leverage	0.009 (0.39)	0.017* (1.68)
Loss	-0.004 (-0.33)	-0.017** (-2.49)
AnnounceRet	-0.085*** (-4.03)	-0.088*** (-4.19)
PreAnnounceRet	0.028*** (4.55)	-0.012 (-1.55)
Volatility	-0.027 (-1.54)	0.004 (0.36)
Tender	-0.028* (-1.86)	-0.004 (-0.73)
DealLength	-0.000* (-1.75)	0.000 (1.06)
DealPremium	0.139*** (6.36)	0.080*** (3.24)
GoShop	-0.008 (-0.92)	-0.025** (-2.37)
Difference in coef.		20.50***
Industry FE	YES	YES
State FE	NO	NO
Year FE	YES	YES
Adjusted R <sup>2</sup>	0.098	0.193
No. of Observations	728	890

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Notes: This table presents regression estimates of equation (1) for subsamples of mergers partitioned on whether the CEO stays with the acquirer or leaves as at the completion date of the merger. The sample period is the same as Table 3, but the sample size is reduced to 1,618 observations due to data limitations. The dependent variable is CAR, which is a target firm's cumulative abnormal returns over the merger window, beginning three days after the announcement date and ending one day after the completion date of the merger. All other variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

Table 7

## The Impact of Delaware Court Ruling on Disclosure Behavior

Panel A: Sentiment and Tone							<i>Placebo Test</i>		
	<i>Sentiment (Press Releases)</i>			<i>Tone (Discretionary 8-Ks)</i>			<i>Tone (Mandatory Merger Filings)</i>		
	Full sample	CEO stays	CEO leaves	Full sample	CEO stays	CEO leaves	Full sample	CEO stays	CEO leaves
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Delaware × Post</b>	<b>-0.008**</b> <b>(-2.60)</b>	<b>-0.017***</b> <b>(-4.96)</b>	<b>-0.000</b> <b>(-0.06)</b>	<b>-0.001**</b> <b>(-2.29)</b>	<b>-0.003***</b> <b>(-2.57)</b>	<b>-0.001</b> <b>(-1.48)</b>	<b>-0.000</b> <b>(-0.51)</b>	<b>0.000</b> <b>(0.05)</b>	<b>-0.000</b> <b>(-0.35)</b>
Size	0.000 (0.40)	-0.000 (-0.36)	0.002* (1.73)	0.000* (1.84)	0.000 (0.21)	0.000*** (3.23)	0.000*** (4.37)	0.000** (1.97)	0.000*** (4.16)
ROA	0.007 (0.75)	0.012 (0.78)	0.002 (0.15)	-0.005*** (-3.88)	-0.002 (-0.59)	-0.006*** (-4.35)	-0.002*** (-4.15)	-0.003*** (-2.68)	-0.001* (-1.75)
BTM	-0.006** (-2.28)	-0.008*** (-3.06)	-0.005** (-1.91)	0.001** (2.54)	0.00 (0.00)	0.002*** (4.79)	-0.000 (-0.35)	-0.000* (-1.74)	0.000 (0.84)
Leverage	-0.008* (-1.76)	-0.007 (-1.42)	0.001 (0.15)	0.002** (2.51)	0.002*** (3.33)	0.003** (2.29)	-0.000 (-1.60)	-0.000 (-0.80)	0.000 (0.27)
Loss	0.004** (2.13)	0.003 (0.83)	0.002 (0.87)	-0.001 (-1.65)	-0.000 (-0.30)	-0.001** (-2.21)	-0.000 (-1.47)	-0.000 (-0.03)	-0.002** (-1.34)
AnnounceRet	0.008 (1.50)	-0.020 (-1.59)	0.029*** (4.62)	-0.001 (-0.46)	0.003 (1.54)	-0.003*** (-2.58)	-0.001* (-1.88)	-0.000 (-0.48)	-0.001* (-1.83)
PreAnnounceRet	0.004 (1.61)	0.003 (0.97)	0.002 (0.60)	0.000 (0.65)	0.001 (1.53)	0.000 (0.00)	-0.000 (-1.53)	0.000** (2.20)	-0.000*** (-4.15)
Volatility	0.004	-0.005	0.009	-0.001*	-0.003	0.001	0.000	0.001**	-0.000

	(0.75)	(-0.85)	(1.26)	(-1.97)	(-1.23)	(0.40)	(0.15)	(2.00)	(-0.58)	
PRLaggedSentiment	0.495***	0.476***	0.479***							
	(14.57)	(8.70)	(11.70)							
Vol8kLaggedTone				0.231***	0.331***	0.216***				
				(6.35)	(3.80)	(4.79)				
Log(WordCount)				-0.006***	-0.005***	-0.006***	-0.002***	-0.002***	-0.002***	
				(-29.68)	(-17.28)	(-20.16)	(-22.91)	(-13.94)	(-20.18)	
Tender	-0.003	0.003	-0.006**	0.000	0.002***	-0.001	0.003***	0.003***	0.004***	
	(-0.86)	(-0.79)	(-2.30)	(0.13)	(4.12)	(-1.25)	(7.50)	(6.22)	(7.87)	
DealLength	-0.000	-0.000	-0.000	-0.000	0.000*	-0.000	0.000	0.000***	-0.000	
	(-0.65)	(-1.13)	(-0.85)	(-0.31)	(1.70)	(-0.36)	(1.35)	(2.80)	(-0.88)	
DealPremium	-0.001	0.027**	-0.023***	0.000	-0.002	0.002	0.000	0.000	0.000	
	(-0.27)	(2.48)	(-4.85)	(0.33)	(-1.06)	(1.62)	(0.80)	(0.30)	(0.62)	
GoShop	-0.002	0.003	-0.002	-0.000	-0.001	0.001*	0.000	0.001**	-0.001	
	(-0.41)	(0.48)	(-0.77)	(-1.00)	(-1.23)	(1.73)	(0.69)	(2.35)	(-0.88)	
Diff. in coef.		9.34***			1.29			0.09		
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	
State FE	YES	NO	NO	YES	NO	NO	YES	NO	NO	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Adjusted R <sup>2</sup>	0.034	0.052	0.034	0.267	0.273	0.256	0.547	0.522	0.587	
No. of Observations	2,290	985	1,309	3,873	1,775	2,100	1,156	504	659	

Notes: This table presents regression estimates of the effect of the Delaware court ruling on the sentiment of press releases, the tone of discretionary 8-K filings, and the tone of mandatory merger filings. Columns (1), (4), and (7) present results for all firms. Columns (2) and (3), (5) and (6), and (8) and (9) present results for subsamples of firms based on whether the target CEO is retained by the acquirer (i.e., CEO stays) or not (i.e., CEO leaves). The dependent variable is PRSentiment in columns (1) to (3), Vol8kTone in columns (4) to (6), and ProxyTone in columns (7) to (9). All variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 7 (Continued)**

	<i>Frequency (Press Releases)</i>			<i>Frequency (Discretionary 8-Ks)</i>		
	Full sample	CEO stays	CEO leaves	Full sample	CEO stays	CEO leaves
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Delaware × Post</b>	<b>-0.003</b> <b>(-1.25)</b>	<b>-0.013***</b> <b>(-4.73)</b>	<b>0.000</b> <b>(0.11)</b>	<b>0.005***</b> <b>(2.87)</b>	<b>0.006**</b> <b>(2.44)</b>	<b>0.004*</b> <b>(1.89)</b>
Size	0.003*** (5.13)	0.004*** (9.34)	0.003*** (3.29)	0.000 (0.84)	0.001** (2.31)	0.001 (1.33)
ROA	-0.006 (-1.05)	-0.019*** (-3.02)	-0.003 (-0.47)	-0.001 (-0.18)	0.009 (1.37)	-0.001 (-0.18)
BTM	0.004*** (3.64)	0.004** (4.68)	0.005* (1.72)	0.001 (0.72)	0.001 (1.02)	0.004* (1.69)
Leverage	0.005* (1.99)	0.000 (0.20)	0.009* (1.95)	-0.004** (-2.05)	-0.002 (-0.48)	0.000 (0.06)
Loss	-0.005* (-1.88)	-0.002 (-0.86)	-0.008** (-2.15)	0.002 (1.13)	-0.001 (-0.37)	0.004*** (2.99)
InstOwn	-0.009*** (-5.01)	-0.019*** (-7.79)	-0.005* (-1.75)	0.008*** (4.82)	0.004*** (2.88)	0.009*** (4.10)
AnnounceRet	-0.003 (-1.02)	0.004 (0.58)	-0.014*** (-3.19)	0.003* (1.87)	0.002 (0.50)	0.003 (1.14)
PreAnnounceRet	-0.001 (-0.84)	0.004** (2.25)	-0.003 (-1.56)	-0.001 (-1.04)	0.001 (0.54)	-0.002*** (-3.57)
Volatility	-0.007 (-1.63)	-0.010* (-1.89)	0.000 (0.04)	0.002 (0.93)	0.002 (0.79)	0.002 (0.72)

LaggedFrequency	0.562*** (37.79)	0.610*** (31.08)	0.554*** (29.83)	0.825*** (15.53)	0.896*** (7.21)	0.794*** (13.74)
Tender	-0.000 (-0.05)	0.001 (0.42)	-0.001 (-0.42)	-0.008*** (-9.68)	-0.006*** (-6.46)	-0.010*** (-7.12)
DealLength	0.000*** (3.89)	0.000 (1.44)	0.000** (2.50)	-0.000*** (-6.37)	-0.000*** (-5.16)	-0.000*** (-5.53)
DealPremium	0.002 (0.72)	-0.003 (-0.81)	0.007** (2.02)	-0.005*** (-5.18)	0.004 (1.16)	-0.009** (-2.28)
GoShop	-0.002 (-0.77)	0.002 (1.05)	0.001 (0.12)	-0.004** (-1.93)	-0.001 (-0.35)	-0.008*** (-2.86)
Post2004				-0.006*** (-2.85)	0.004 (1.52)	-0.009*** (-3.72)
Diff. in coef.			8.06***			0.59
Industry FE	YES	YES	YES	YES	YES	YES
State FE	YES	NO	NO	YES	NO	NO
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R <sup>2</sup>	0.476	0.525	0.447	0.233	0.210	0.216
No. of Observations	1,117	478	650	1,616	728	890

Notes: This table presents regression estimates of the effect of the Delaware court ruling on the frequency of press releases and discretionary 8-K filings. Columns (1) and (4) present the results for all firms. Columns (2) to (3) and (5) to (6) present results for subsamples of firms based on whether the target CEO is retained by the acquirer (i.e., CEO stays) or not (i.e., CEO leaves). The dependent variable is PRFrequency in columns (1) to (3), and Vol8kFrequency in columns (4) to (6). All variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 7 (Continued)**

<b>Panel C: CAR</b>							<i>Placebo Test</i>		
	<i>CAR (Press Releases)</i>			<i>CAR (Discretionary 8-Ks)</i>			<i>CAR (Mandatory Merger Filings)</i>		
	Full sample	CEO stays	CEO leaves	Full sample	CEO stays	CEO leaves	Full sample	CEO stays	CEO leaves
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>Delaware × Post</b>	<b>-0.006**</b> <b>(-2.24)</b>	<b>-0.018***</b> <b>(-5.50)</b>	<b>-0.003*</b> <b>(-1.66)</b>	<b>0.000</b> <b>(0.01)</b>	<b>0.002</b> <b>(0.50)</b>	<b>0.011</b> <b>(1.45)</b>	<b>-0.010*</b> <b>(-1.89)</b>	<b>0.000</b> <b>(0.08)</b>	<b>-0.011</b> <b>(-1.10)</b>
Size	-0.002*** (-6.71)	0.000 (0.25)	-0.002*** (-5.34)	0.000 (0.35)	0.003** (2.49)	-0.000 (-0.32)	-0.000 (-0.69)	0.002*** (2.90)	-0.001 (-0.96)
ROA	0.020*** (3.54)	0.087*** (7.48)	0.004 (1.09)	-0.013** (-2.35)	0.017 (1.28)	-0.030*** (-3.71)	-0.007 (-1.00)	0.041*** (3.03)	0.001 (0.10)
BTM	0.001 (0.73)	0.008*** (3.51)	-0.001 (-0.40)	-0.003 (-1.07)	0.001 (0.42)	0.002 (0.90)	-0.007 (-0.75)	0.007** (2.30)	-0.009 (-0.71)
Leverage	0.009*** (3.07)	0.022** (2.47)	0.006*** (4.85)	0.002 (0.45)	0.002 (0.26)	0.009* (1.68)	0.010* (1.83)	0.013** (2.10)	0.007 (0.93)
Loss	0.004** (2.31)	0.015*** (5.53)	0.001 (0.75)	0.001 (0.32)	0.010** (2.31)	-0.003 (-1.48)	0.001 (0.36)	0.010 (1.61)	-0.003 (-0.64)
AnnounceRet	-0.012 (-1.19)	-0.006 (-0.75)	-0.014 (-1.38)	-0.043*** (-6.94)	-0.034*** (-2.93)	-0.038*** (-4.65)	0.019 (0.72)	-0.039 (-1.21)	0.049** (2.06)
PreAnnounceRet	0.003** (2.43)	0.005*** (3.47)	-0.001 (-0.30)	0.006*** (2.83)	0.012*** (3.57)	-0.000 (-0.04)	-0.004 (-0.79)	0.001 (0.26)	-0.006 (-0.92)
Volatility	0.010** (2.35)	0.037*** (5.00)	-0.004 (-1.48)	-0.003 (-0.69)	0.001 (0.26)	-0.031*** (-3.56)	0.026*** (7.21)	0.004 (0.52)	0.047*** (4.71)

Tender	0.006*** (5.59)	0.017*** (5.05)	0.002 (1.20)	0.011*** (5.78)	0.014*** (3.79)	0.008*** (2.57)	0.020 (5.22)	0.015*** (3.18)	0.021*** (3.35)
DealLength	0.000 (0.68)	-0.000* (-1.80)	0.000 (1.55)	-0.000 (-1.07)	0.000 (0.68)	-0.000 (-0.68)	-0.000 (-0.28)	-0.000 (-1.55)	0.000 (0.06)
DealPremium	0.015** (2.19)	0.023*** (2.83)	0.013** (2.06)	0.043*** (8.01)	0.035*** (3.46)	0.033*** (6.25)	0.030 (1.49)	0.058** (1.97)	0.010 (0.42)
GoShop	-0.004** (-2.03)	-0.009*** (-6.39)	-0.007 (-1.44)	-0.005 (-1.32)	0.001 (0.12)	-0.026*** (-2.59)	-0.001 (-0.42)	-0.002 (-0.66)	-0.007 (-0.74)
Diff. in coef.		14.88***			1.13			1.29	
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	NO	NO	YES	NO	NO	YES	NO	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R <sup>2</sup>	0.038	0.097	0.022	0.067	0.060	0.068	0.042	0.042	0.053
No. of Observations	2,290	985	1,309	3,873	1,775	2,100	1,156	504	659

Notes: This table presents the regression estimates for equation (1). Columns (1), (4), and (7) present the results for all firms. Columns (2) to (3), (5) to (6), and (8) to (9) are subsamples of firms based on whether the target CEO is retained by the acquirer (i.e., CEO stays) or not (i.e., CEO leaves). In columns (1) to (3) the dependent variable is PRCAR, in columns (4) to (7) the dependent variable is Vol8kCAR, and in columns (7) to (9) the dependent variable is ProxyCAR. All variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 8**  
**Retained Target CEOs and Likelihood of Appraisals**

	<i>Appraisal Lawsuit = 1</i>	
	<i>(1)</i>	<i>(2)</i>
	<i>Stay</i>	<i>Leave</i>
<b>Delaware × Post</b>	<b>0.094***</b>	<b>0.131***</b>
	<b>(5.67)</b>	<b>(10.57)</b>
Size	0.007**	-0.002
	(2.32)	(-1.11)
ROA	0.013	-0.007
	(0.78)	(-0.41)
BTM	0.005	0.019
	(0.52)	(1.55)
Leverage	-0.024	0.010
	(-1.26)	(1.08)
Loss	0.037***	0.012
	(3.33)	(1.60)
AnnounceRet	-0.025	-0.083**
	(-1.03)	(-2.52)
PreAnnounceRet	0.010	-0.025**
	(1.53)	(-2.55)
Volatility	-0.039**	-0.005
	(-2.56)	(-0.18)
Tender	-0.031**	0.006
	(-2.42)	(0.58)
DealLength	-0.000***	-0.000
	(-3.00)	(-0.70)
DealPremium	-0.041**	-0.037**
	(-2.39)	(-2.45)
GoShop	0.140***	0.038
	(2.88)	(1.47)
Difference in coef.		5.64**
Industry FE	YES	YES
State FE	NO	NO
Year FE	YES	YES
Adjusted R <sup>2</sup>	0.072	0.074
No. of Observations	728	890

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Notes: This table presents regression estimates of a linear probability equation for subsamples of mergers partitioned on whether the CEO stays with the acquirer or leaves (as at the completion date of the merger). The sample period is the same as Table 3, but the sample size is reduced to 1,618 observations due to data limitations. The dependent variable is an indicator variable that assumes the value of 1 if there is at least one appraisal lawsuit. All remaining variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 9**  
**Post-Acquisition Performance of the Acquirer**

	<i>Acquirer 180-day CAR</i> <i>Post-Transkaryotic Mergers Only</i>			<i>Acquirer 180-day CAR</i> <i>All Mergers</i>		
	(1) <i>All CEOs</i>	(2) <i>Stay</i>	(3) <i>Leave</i>	(4) <i>All CEOs</i>	(5) <i>Stay</i>	(6) <i>Leave</i>
<b>TargetNegativeRet</b>	<b>-0.039</b> <b>(-1.17)</b>	<b>0.046***</b> <b>(3.13)</b>	<b>-0.067***</b> <b>(-3.15)</b>			
<b>TargetNegativeRet × Post</b>				<b>0.017</b> <b>(0.66)</b>	<b>0.067*</b> <b>(1.93)</b>	<b>-0.034</b> <b>(-0.52)</b>
Size	0.031** (2.68)	0.054*** (4.49)	0.020 (1.55)	0.004 (0.81)	0.010 (0.91)	0.008 (1.36)
DealPremium	0.027 (0.83)	0.136 (1.13)	0.052 (0.98)	0.019 (0.47)	-0.031 (-0.46)	0.125** (2.16)
AnnounceRet	-0.113*** (-4.95)	-0.021 (-0.32)	-0.197*** (-3.85)	-0.034 (-0.85)	0.066 (0.95)	-0.140*** (-2.64)
AppraisalLawsuit	-0.084*** (-4.63)	-0.048 (-1.54)	-0.073*** (-2.84)	-0.050*** (-3.27)	-0.020 (-1.10)	-0.054** (-2.47)
AcqMergerWindowRet	-0.349*** (-2.84)	0.081 (0.50)	-0.492*** (-4.81)	-0.027 (-0.90)	0.002 (0.06)	-0.113** (-2.56)
Difference in coef.			27.66***			2.87*
Industry FE	YES	YES	YES	YES	YES	YES
State FE	YES	NO	NO	YES	NO	NO
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R <sup>2</sup>	0.085	0.044	0.181	0.034	0.062	0.061
No. of Observations	269	106	192	832	326	512

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Notes: This table presents results from estimating the association between target's CAR during the merger window and acquirer's post-acquisition CAR. The dependent variable is the acquirer's post-acquisition 180-day CAR, measured beginning 3 days after the deal closing. TargetNegativeRet is an indicator variable that assumes the value of 1 if the target firm's merger-window returns are negative (and 0 otherwise). Columns (1) to (3) present results for mergers announced after Transkaryotic (i.e., 2008-2016). Column (1) presents results for all firms. Columns (2) and (3) present results based on whether the CEO is retained by the acquirer (i.e., Stay) or is not retained (i.e., Leave). Columns (4) to (6) presents results for all mergers (i.e., 1998-2016). All remaining variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 10**  
**Likelihood of Economic Ties with Target CEO**

<i>Retained = 1</i>		
	<i>(1)</i>	<i>(2)</i>
<b>Delaware × Post</b>	<b>0.058**</b>	<b>0.065**</b>
	<b>(2.15)</b>	<b>(2.27)</b>
Controls	YES	YES
Industry FE	NO	YES
State FE	NO	YES
Year FE	NO	YES
Adjusted R <sup>2</sup>	0.044	0.069
No. of Observations	1,618	1,616

Notes: This table presents regression estimates of a linear probability equation. The dependent variable is an indicator variable that assumes the value of 1 if the CEO stays with the acquirer; and 0 otherwise. Industry, state, and year fixed effects are excluded (included) in column 1 (2). Control variables include target size (Size), target ROA (ROA), target BTM (BTM), an indicator variable for whether the target is a loss firm (Loss), target pre-announcement day returns (PreAnnounceRet), target return volatility (Volatility), an indicator variable for whether the deal is structured as a Tender offer (Tender), an indicator variable for whether the target is going private (GoingPrivate), and an indicator variable for whether the deal is a management buyout offer (MBO). All variables are defined in appendix 2. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 11**

**Likelihood of Disclosing Target CEO Economic Ties with Acquirer**

	<i>Disclosed = 1</i>	
	(1)	(2)
<b>Delaware × Post</b>	<b>-0.212***</b> <b>(-3.66)</b>	<b>0.183**</b> <b>(-2.91)</b>
Controls	YES	YES
Industry FE	NO	YES
State FE	NO	YES
Year FE	NO	YES
Adjusted R <sup>2</sup>	0.053	0.055
No. of Observations	723	712

Notes: This table presents regression estimates of a linear probability equation. The dependent variable is an indicator variable that assumes the value of 1 if the target firm discloses (prior to the closing date) that the CEO stays with the acquirer; and 0 otherwise. Industry, state, and year fixed effects are excluded (included) in column 1 (2). Control variables include target size (Size), target ROA (ROA), target BTM (BTM), an indicator variable for whether the target is a loss firm (Loss), target pre-announcement day returns (PreAnnounceRet), target return volatility (Volatility), an indicator variable for whether the deal is structured as a Tender offer (Tender), an indicator variable for whether the target is going private (GoingPrivate), and an indicator variable for whether the deal is a management buyout offer (MBO). All variables are defined in appendix 2. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 12**  
**Sensitivity Analysis**

	<i>CAR(merger window)</i>	
	States with Appraisal Laws Similar to Delaware <i>(1)</i>	Control for Renegotiations <i>(2)</i>
<b>Delaware × Post</b>	<b>-0.032**</b> <b>(-2.29)</b>	<b>-0.033***</b> <b>(-3.09)</b>
Size	0.002*** (4.90)	0.005*** (2.97)
ROA	-0.094*** (-6.84)	-0.116*** (-2.73)
BTM	-0.005 (-1.06)	-0.005 (-1.08)
Leverage	0.028*** (5.41)	0.013 (0.97)
Loss	-0.014** (-2.45)	-0.011 (-1.42)
AnnounceRet	-0.087*** (-5.18)	-0.108** (-2.40)
PreAnnounceRet	-0.001 (-0.30)	0.003 (0.84)
Volatility	-0.009 (-1.00)	-0.018** (-2.11)
RenegotiatedUp		0.043** (2.67)
RenegotiatedDown		-0.055*** (-2.94)
Tender	-0.014*** (-3.42)	-0.014*** (-3.21)
DealLength	-0.000 (-0.04)	0.000 (0.72)
DealPremium	0.111*** (5.88)	0.135*** (2.95)
GoShop	-0.019*** (-5.85)	-0.013 (-1.53)
Industry FE	YES	YES
State FE	YES	YES

Year FE	YES	YES
Adjusted R <sup>2</sup>	0.075	0.110
No. of Observations	1,359	1,732

Notes: This table presents regression estimates of equation (1). The dependent variable is the target firm's cumulative abnormal returns, calculated over the merger window. Column (1) presents estimates of a subsample of mergers, where the state of incorporation is a state with appraisal laws similar to Delaware (inclusive of Delaware). Column (2) presents results where controls for whether the deal was renegotiated up or down in price, relative to the announcement day price. All variables are defined in appendix 2. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the state of incorporation level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

## CHAPTER 3

### **Materiality, Adverse Selection, and Merger Activity: Evidence on the Economic Consequences of *IBP v. Tyson***

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#### **Abstract**

The landmark court ruling of *IBP v. Tyson* under New York law in 2001 and its affirmation by the *Hexion v. Huntsman* ruling under Delaware law in 2007 led to a clarification of the scope of material adverse event provisions, which allow acquirers to terminate deals based on adverse events impacting target firms' economic substance. Using a sample of mergers with large public targets between 1997 and 2018, we study the economic consequences of these rulings and find that the rulings led (i) to a lower likelihood of acquirer-initiated renegotiations and terminations, (ii) to narrower merger arbitrage spreads, (iii) to acquirers being less likely to acquire smaller or riskier targets, (iv) to a decline in deal premiums of mergers with smaller, riskier targets, and (v) to a decline in post-acquisition returns of public acquirers of smaller, riskier targets. Our results are consistent with the argument that the rulings tightened materiality standards and weakened acquirers' ability to renegotiate and terminate mergers. Ex ante this exacerbated merger adverse selection and resulted in a truncation of merger activity along the dimensions of target size, risk, and quality.

### 3.1 Introduction

Mergers and acquisitions are significant transactions for both targets and acquirers. Due to the risks arising from mergers, contracting assumes a central role in the risk allocation between both parties. For this purpose, a merger agreement typically includes a number of provisions that specify the circumstances under which a deal can be renegotiated or terminated. An important type of provision in this regard relates to *material adverse events or changes* (“MAE provisions”). Adverse events are the primary reason for acquirer-initiated renegotiations and terminations and mutual terminations,<sup>1</sup> explaining why merger agreements usually specify MAE provisions and why a noteworthy portion of merger negotiations involves specifying MAE provisions.<sup>2</sup> While prior research by Gilson and Schwartz (2005) and Denis and Macias (2013) emphasizes the importance of MAE provisions in protecting acquirers from merger-related moral hazard problems, it is not clear whether and how these provisions affect adverse selection in mergers. This is important insofar as adverse selection due to pre-contract information asymmetry is a crucial determinant of merger activity, a subject of great interest for academics, practitioners, and regulators (e.g., Harford 2005; Bhagwat et al., 2016; Bonaime et al., 2018).

An important institutional feature of MAE provisions is that, while other crucial provisions such as termination fees or earnouts are well specified in contracts, MAE provisions are generally not, thus leaving a substantial part of the contract to the contract law in a state or country (Somogie, 2009; Choi and Triantis, 2010). In common law countries, where contract law evolves on a case-by-case basis, this lack of specificity can lead to overall uncertainty about the legal definition of materiality. Unsurprisingly, in such legal jurisdictions, adverse events during mergers are a

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<sup>1</sup> This is also corroborated in our sample. See Table 3 Panel A.

<sup>2</sup> Denis and Macias (2013) report that 99.3% of merger agreements in their sample specify MAE provisions.

common source of disagreements between targets and acquirers, motivating merger-related litigation. The resulting court rulings then set precedents for future mergers and clarify materiality standards underlying the enforceability of MAE provisions. In the U.S., *IBP, Inc. v. Tyson Foods, Inc.* (2001) is *the* landmark case which established a very high materiality standard for invoking a MAE provision under New York state law. Further, the case of *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.* (2008) affirmed the materiality standard of *IBP, Inc. v. Tyson Foods, Inc.* under Delaware law.

We study the effects of these court rulings for mergers and acquisitions. We collect data for large mergers with public targets in the U.S. between 1997 and 2018. First, to show that the rulings weakened acquirers' ability to renegotiate and terminate deals based on adverse events, we study their impact on the likelihood of renegotiations and terminations. We conjecture that the non-affirmative court rulings reduced the likelihood of acquirer-initiated renegotiations and terminations, because less significant adverse events cannot be used as leverage for renegotiations and terminations any longer. Further, we expect that the rulings did not affect target-initiated renegotiations and terminations. In addition, we conjecture that following the court rulings, merger arbitrage spreads decrease, implying a reduction in target investors' assessment of deal completion risk. Our results are generally consistent with our conjectures, supporting our position that the court rulings weakened acquirers' ability to renegotiate and terminate deals in New York and Delaware as compared to other states.

In our main analyses, we study how the composition of merger activity in the affected states changes after the court rulings. We conjecture that because of their increased commitment towards a merger, acquirers price-protect more and submit lower bids. Due to price protection, some mergers never materialize because target shareholders are not willing to undersell a firm they

believe has higher intrinsic value. Moreover, the impact of the court rulings should be more pronounced for riskier targets, since they are more prone to experience an adverse event. In addition, smaller firms tend to be less diversified and thus also face higher fundamental risk (Cheung and Ng, 1992; Duffee, 1995).<sup>3</sup> Consistent with our conjecture, we find that mergers with smaller or riskier targets become less likely in New York and Delaware after the court rulings. In addition, we document that deal premiums paid for smaller, riskier targets decrease after the rulings.

In addition, we study whether deal quality declines. Our assertion here is that target shareholders or insiders of smaller, riskier targets may continue to pursue the sale of the firm if their private information indicates a low intrinsic value. In subsample analyses, we study the effects of the court rulings on post-acquisition cumulative abnormal returns of public acquirers. We find that post-acquisition performance declines only for mergers with smaller, riskier firms, implying lower deal quality for this type of target firm.

To provide additional support for our main argument that adverse-event-related court rulings affect acquirers' ability to renegotiate and terminate deals based on adverse events, we next study the effects associated with a prominent and more recent Delaware court ruling, *Akorn Inc. v. Fresenius KABI AG* (2018). This ruling is widely considered to be another landmark case with similar importance as *IBP, Inc. v. Tyson Foods, Inc.* (Gooding et al., 2018); yet, contrary to the latter ruling, this more recent one was the first case in Delaware history in which a court affirmed the claim that an adverse event was sufficiently material to terminate a merger agreement. We

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<sup>3</sup> This pattern also arises in our sample.

conjecture and find that this ruling loosened the materiality standard such that, in contrast to the two rulings used in our main analysis, merger arbitrage spreads widened.

Our paper contributes to the general literature in law and finance (La Porta et al., 1998), by highlighting the impact contract law can have on important features of mergers and acquisitions. To date, this literature has identified the impact of a number of factors influencing the risk between deal initiation and completion (i.e., interim risk) and how this risk affects merger activity. Examples of factors include industry shocks (Mitchell and Mulherin, 1996; Harford, 2005), political uncertainty about tax and financial regulation (Bonaime et al., 2016), and general market uncertainty (Bhagwat et al., 2016). We add to this literature by documenting that it is not only the interim risk per se but also the definition of materiality which affects merger activity. Our results support the assertion that the non-affirmative court rulings changed materiality standards for invoking MAE provisions, severely altering acquirers' ability to renegotiate and terminate deals; this then affects their level of price protection, which in turn influences merger activity. We further show that merger activity is truncated along the dimensions of target size, risk, and quality. Overall, we conclude that weakening acquirers' ability to renegotiate and terminate deals exacerbates adverse selection and slows down the market for corporate control for a segment of the merger market.

## **3.2 Institutional Background and Hypothesis Development**

### *3.2.1 Merger contracting and renegotiations and terminations*

Merger agreements typically contain fundamental details about the merger, including the names of the contracting parties, the offer price, and the percentage of target firm shares acquired by the acquiring party. A number of contractual devices are used to govern the rights and

obligations for specific events, which are most important when the abandonment option can be exercised. Standard clauses govern the following cases: (1) both parties provide written consent to terminate the deal; (2) shareholders of either firm vote against the deal; and (3) regulatory approval of a merger is not granted.

Two more specific types of provisions address a wide variety of other circumstances. A first type of provision specifies termination fees payable either by the target or the acquirer. Such provisions therefore regulate situations in which one party seeks to exit a deal without consent from the other party or if a party breached the terms of the contract (e.g., if the deal is not consummated prior to a specified date). In such situations, the party aiming to exit the deal or breaching the contract is required to pay a termination fee to the other party (Bates and Lemmon, 2003; Officer, 2003; Boone and Mulherin, 2007). Most mergers specify target-payable termination fees (Officer, 2003), whereas relatively fewer mergers specify acquirer-payable termination fees.

A second type of provision is related to so called Material Adverse Events, Effects, or Changes (“MAE”). A MAE is “*any change, occurrence or state of facts that is materially adverse to the business, financial condition or results of operations*” of the target (Freund, 1975, p. 259). These provisions cover economic, industry, regulatory, or firm-specific changes. Common examples for MAEs are cases in which targets’ financial performance substantially declines or when the target is under investigation or prosecuted for regulatory noncompliance. Conceptually, MAE provisions are intended to protect both targets and acquirers from changes in the circumstances arising between deal announcement and deal closing in that they allocate the various risks arising from the deal between target and acquirer. A notable issue covered by MAE provisions is target moral hazard, implying that MAE provisions especially protect acquirers (Gilson and Schwartz, 2005). In practice, MAE provisions are the subject of extensive negotiations

during the contracting stage because adverse events are the main reason for deal renegotiations and terminations.<sup>4</sup> Another contract consideration that receives attention during the contracting stage are exclusions, that is, types of events that can never constitute a MAE under the terms of the agreement. Such exclusions often rule out events in the macroeconomy or the financial market but may also revolve around changes in a target's industry (Denis and Macias, 2013).

MAE provisions, however, are only exercisable when a material adverse event has indeed occurred. Somewhat surprisingly, it is not common practice that merger agreements specify what constitutes a material event, e.g., by explicitly stating materiality thresholds. For example, a MAE provision could state that the acquirer has the right to terminate the deal if the target's year-over-year quarterly EBITDA decreases by more than 50 percent. As mentioned, such specificity is uncommon—which is why there is significant uncertainty about whether an adverse event is “material” (Gilson and Schwartz, 2005; Somogie, 2009; Choi and Triantis, 2010). Further, since MAE provisions offer an appealing abandonment option for acquirers because they may be able to exit the deal without payment of a termination fee, and due to a high level of uncertainty about the applicable definition of materiality, adverse events and MAE provisions are a common source of legal disputes. Consequently, judgement on whether deals can be terminated based on the occurrence of a MAE is usually left to the courts. In common law countries such as the U.S., these court rulings then set a precedence for future mergers.

### 3.2.2 *Landmark court rulings and materiality standards*

Two landmark court rulings in the U.S. are believed to have resolved uncertainty about the scope of MAE provisions in the states of New York and Delaware, namely *IBP, Inc. v. Tyson*

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<sup>4</sup> This is corroborated by Table 3 Panel A.

*Foods, Inc.* (2001) and *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.* (2008), respectively. The first—and widely regarded by legal scholars and practitioners to be most significant—is *IBP, Inc. v. Tyson Foods, Inc.* (2001). On January 1, 2001, Tyson Foods, Inc., a major poultry producer, entered into an agreement to acquire IBP, Inc. (at that time the largest beef and second largest pork producer in the U.S.) for US\$3.2 billion in a cash and stock deal after winning a bidding war with Smithfield Food, Inc. The merger agreement specified the applicability of New York contract law with Delaware as the location for settling any legal disputes.

Shortly after the agreement was signed, several accounting issues emerged that cast doubt on the actual profitability of IBP. The major issue concerned theft and manipulation of records at IBP's appetizer unit, DFG Foods, which later led to a nonrecurring pretax charge of US\$60.4 in the fourth quarter of 2001. The SEC had informed IBP in a letter on December 29<sup>th</sup> but IBP only officially disclosed these concerns to Tyson on January 10<sup>th</sup>. At that point, Tyson postponed the closing of the deal and pushed to renegotiate. Around the same time, the beef industry was adversely affected by consumers' concerns over 'mad cow' disease and by a severe winter that negatively affected livestock supplies, such that IBP's first quarter 2001 earnings dropped 64 percent year-over-year. At the end of March 2001, Tyson unilaterally terminated the deal by claiming that the accounting irregularities, as well as the decline in financial performance, would have established a MAE. IBP contested this claim and went to court, arguing that the agreement should be honored, as Tyson officials had been briefed on IBP's accounting issues during Tyson's due diligence process.

In June 2001, the court sided with IBP by denying Tyson's request to invoke the MAE provision specified in the merger agreement. Moreover, the court made several holdings, which legal experts argue contributed to defining materiality in MAE provisions under New York law

(e.g., Clar and Foss, 2017). Specifically, apart from Tyson already being aware of IBP's accounting irregularities, the court did not find that Tyson had met its burden to prove that IBP's short-term drop in earnings constituted a MAE, when viewed from the longer-term perspective as the cyclical nature of IBP's business introduces significant volatility into IBP's financial performance. In its memorandum, the court stated (*In re IBP, Inc. Shareholders Litigation*, 789 A2d 14 Del Ch 2001, p. 68):

*“Merger contracts are heavily negotiated and cover a large number of specific risks explicitly. As a result, even where a Material Adverse Effect condition is as broadly written as the one in the Merger Agreement [between Tyson and IBP], that provision is best read as a backstop protecting the acquiror from the occurrence of unknown events that substantially threaten the overall earnings potential of the target in a durationally significant manner. A short-term hiccup in earnings should not suffice; rather the Material Adverse Effect should be material when viewed from the longer-term perspective of a reasonable acquiror.”*

Therefore, the materiality standard the court established is such that a short-term drop in target profitability is not sufficient to invoke a MAE provision; thus, by interpretation, events that significantly impair the target's profitability in the long run would be required to invoke a MAE provision. That IBP's Q1 2001 earnings declined by 64 percent is seen as a consequence of the cyclical nature of the company's business. In the end, the court ordered the completion of the merger.<sup>5</sup>

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<sup>5</sup> Although the dispute was settled in a Delaware court applying New York contract law, the judge who presided over the case (Judge Leo Strine) noted that had Delaware law been applied the acquirer (Tyson) would have won the case (e.g., see [https://katten.com/files/21933\\_Tyson-IBP%20Decision.pdf](https://katten.com/files/21933_Tyson-IBP%20Decision.pdf)). Specifically, Judge Strine states, “[i]f I am incorrect and IBP bore the burden to prove the absence of a Material Adverse Effect by clear and convincing evidence”, which is not required under New York law but is mandatory under Delaware law, then IBP “would not have met that burden.” As such, we rely on this as evidence which strongly suggests that the ruling impacts mergers applying New York contract law while leaving mergers under other state laws unaffected.

The IBP ruling was affirmed under Delaware law with the case of *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.* in 2008. Specifically, on July 12, 2007, Hexion, Inc., a chemical company, entered into a merger agreement to acquire Huntsman Corp., a manufacturer of chemical products, for US\$10.6 billion after the latter had already signed an agreement with a competitor. The agreement specifically stated that Hexion had to use “reasonable best efforts” to secure financing and Credit Suisse and Deutsche Bank committed to finance the merger. Further the agreement specified exclusions for changes in general economic, industry, and financial market conditions due to disproportionate effects.

However, early in 2008, the credit crisis limited Hexion’s ability to secure funding and Hexion grew increasingly concerned about a potential solvency issue of the business combination. Hexion sought a Delaware court declaration that would not oblige the company to follow through with the deal, as arguably the combined firm would be insolvent. At the same time, Huntsman’s first quarter 2008 results were released and showed a decline in year-over-year EBITDA by 7 percent between 2007 and 2008. In addition, the EBITDA was significantly below Huntsman’s own projections. These facts provided the basis for Hexion to claim that Huntsman had suffered a MAE. The court rejected Hexion’s claim and concluded that Huntsman’s change in operating performance in the midst of the merger was not material when evaluated over a longer term. In addition, Huntsman’s earnings projections were disclosed with a standard disclaimer for warranties and representations. Overall, the court established a high materiality standard and affirmed the court ruling of *IBP, Inc. v. Tyson Foods, Inc.* (Somogie, 2009).

We assert that the court rulings in *IBP, Inc. v. Tyson Foods, Inc.* and *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.* clarified the scope of MAE provisions and therefore resolved uncertainty about the enforceable materiality standard necessary to invoke a MAE provision in

New York and Delaware, respectively. To better convey this association, Figure 1 provides a visual representation of a simple example. Any adverse event which may occur after a deal is signed and may provide incentives for the acquirer to renegotiate or terminate a deal is denoted by  $x$ . The actual enforceable materiality standard courts employ is denoted by  $s$ ; that is, if an event  $x \geq s$  occurs, the court considers it to be material. To the public (the population of acquirers and targets)  $s$  is uncertain as courts cannot credibly convey the standard. The uncertainty revolving around the materiality standard is captured by random variable  $\tilde{s}$  which, for the sake of our example in Figure 1, follows a Gaussian distribution. Without precedence, the expectation of the enforceable materiality standard is  $E[\tilde{s}]$  in that if an event  $x$  occurs with magnitude  $x > E[\tilde{s}]$ , then acquirers believe that subsequent deal termination is enforceable in court.

The two court rulings sided with the target firms and rejected acquirers' claims of existence of a MAE, implying that they represent non-affirmative cases (i.e., they are based on adverse events that are not material enough to be classified as a MAE according to the courts). A court ruling like this may be denoted with  $c_l < s$ . It is straightforward to show that conditional on  $c_l$  the public's expectation of the materiality standard increases, i.e.,  $E[\tilde{s}|c_l] > E[\tilde{s}]$ . This increase then in expectation weakens the position of the acquirer to renegotiate or terminate a deal. The example is also useful to explain why we focus on *landmark* court rulings: any additional court ruling about a less significant case  $c_0 \leq c_l$  does not influence the public's beliefs regarding the materiality standard, i.e.,  $E[\tilde{s}|c_l, c_0] = E[\tilde{s}|c_l]$ . Such weaker cases should therefore not drive any behavior.<sup>6</sup> In our selection of court rulings, we rely on legal scholars and business law practitioners who frequently point to the rulings we selected as being seminal to the respective state's law in that

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<sup>6</sup> We note that there are other court rulings that also revolved around MAE provisions. One example is *Frontier Oil Corp. v. Holly Corp.* (2005). However, such court rulings did not receive a lot of attention by law practitioners, leaving them with limited usefulness for our purposes. Our negligence of these cases simply biases against finding results.

both rulings reportedly set high materiality standards for acquirers who seek to terminate a deal by invoking a MAE provision (Toub, 2002; Gilson and Schwartz, 2005; Davis Polk & Wardwell, 2007; Somogie, 2009; Garrett, 2009). Officer (2004, p. 2722) also emphasizes the significance of the *IBP, Inc. v. Tyson Foods, Inc.* court ruling: “[T]he June 15, 2001 decision in *IBP v. Tyson Foods, Inc.* casts considerable doubt on the prerogative of a merging firm to back out of a proposed deal by, for example, invoking a material adverse change clause.”

### 3.2.3 Hypothesis development

We assert that the identified court rulings tightened the expected materiality standards for invoking a MAE provision in New York and Delaware. The rulings should have the effect that, in future mergers in the affected states, acquirers’ ability to pursue renegotiations or terminations weakens. We therefore conjecture that the court rulings should lead to a lower likelihood of acquirer-initiated renegotiations and terminations, while leaving the likelihood of target-initiated renegotiations and terminations unaffected. The latter is the case because such renegotiations and terminations are typically driven by competing offers of other bidders rather than adverse events (see Table 3 Panel A). A second test to support our claim is that target shareholders anticipate the resulting reduction in deal completion risk, leading to a narrowing of merger arbitrage spreads (Larcker and Lys, 1987; Mitchell and Pulvino, 2001; Baker and Savasoglu, 2002). Hence, in a first step we study whether the ex post likelihood of acquirer-initiated renegotiations and terminations decreases and whether merger arbitrage spreads narrow.

It is worth noting that there are several conceivable reasons why we may not find the conjectured associations. While the court rulings may limit the scope of MAE provisions, merger agreements may be adjusted such that MAE provisions feature fewer exclusions, outweighing the reduction in scope. Denis and Macias (2013) document that deals with fewer exclusions have a

higher deal completion risk and acquirers are willing to pay higher premiums. Additionally, acquirers may increase their due diligence efforts and deal agreements may become more complete in that they specify their own materiality thresholds, making external judgements by courts obsolete (Gilson and Schwartz, 2005).

Nevertheless, if the rulings indeed weakened acquirers' renegotiation and termination ability, this may have important ex ante implications, which are generally reminiscent of the "lemons problem" as first described by Akerlof (1970). Since target investors anticipate a lower deal completion risk because it is not as easy for acquirers to terminate a deal ex post, acquirers may also consider this in their ex ante decision making. Common intuition dictates that acquirers may price protect more ex ante, e.g., by making lower bids. Facing lower offers, target shareholders might be more likely to reject a merger offer, if they believe that the intrinsic value of the target firm is higher than the price that is offered; these mergers then never materialize. In contrast, shareholders of "lemons" may still be willing to approve mergers even for lower prices.

In designing our tests, we posit that different target firms and thus mergers may be impacted differently by the court rulings such that in deals involving targets with higher levels of fundamental risk, acquirers' ability to renegotiate and terminate is relatively more important than in deals with low risk targets. A common measure for fundamental risk is target firm return volatility (Officer et al., 2009; McNichols and Stubben, 2015). In addition, there is a notable relationship between firm size and risk in that larger firms often show a lower volatility because they are better able to diversify their operating risk (Cheung and Ng, 1992; Duffee, 1995). Hence, we conjecture that the composition of mergers changes or more precisely merger activity is truncated in that the court rulings lead to a lower likelihood of mergers with smaller, riskier firms. For these types of targets, we also expect to find a decline in deal premiums. In addition, we expect

a decline in the deal quality in mergers with smaller, riskier targets. A common measure of deal quality is post-acquisition cumulative abnormal returns of the combined firm (Asquith, 1983; Agrawal and Jaffe, 2000; Bonaime et al., 2016). Therefore, we conjecture that for the subsample of mergers with public acquirers, post-acquisition returns decline if they merge with a smaller, riskier firm.

### **3.3 Data**

Our sample of completed and terminated mergers is obtained from the Securities Data Company (SDC) Mergers and Acquisitions database. A merger is included in our final sample if it is announced between January 1, 1997 and December 31, 2018, and if it satisfies all of the following criteria: (1) the deal value is at least \$50 million; (2) the target status is “Public”; (3) the acquirer holds less than 50% of the voting stock of the target before the announcement date and intends to hold at least 50% following completion of the deal; (4) the deal status is “Completed” or “Withdrawn”; and (5) there is non-missing CRSP and SDC data to construct our set of dependent and control variables. Finally, we exclude “Withdrawn” deals when the target firm is also the target in a “Completed” deal within 12 months of the “Withdrawn” date.<sup>7</sup> The selection process, summarized in Table 1, Panels A and B, results in a final sample of 4,756 (195) completed (terminated) mergers.

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<sup>7</sup> SDC considers a deal to be “Withdrawn” if (1) a non-binding offer was declined by the target or (2) a consummated deal was terminated after the definitive agreement date. Moreover, multiple offers declined by the same target firm (for the same deal) are sometimes coded as multiple “Withdrawn” observations. Because we are interested in studying only deals that are consummated, we exclude 238 “Withdrawn” observations from our final sample whenever the target is also a target in a new (completed) deal within 12 months of the “Withdrawn” date.

### 3.3.1 *Renegotiations and terminations*

Whether a deal is renegotiated or terminated after the definitive agreement date is not obvious in the SDC database. To address this issue, we apply a rigorous process to define each merger as (1) renegotiated up; (2) renegotiated down; (3) terminated; or (4) unamended, based on contractual amendments (or terminations) publicly announced in the period between the definitive agreement date and the effective completion or termination date.

Specifically, to identify renegotiated deals, we use SDC's "Initial offer," "Final price," "Deal synopsis," and "% change between initial offer and final price" variables to find mergers that were likely renegotiated. We also use the first publicly disclosed merger agreement filed with the SEC to hand-collect the agreement price, which is the first contracted price per target share.<sup>8</sup> We begin by ignoring deals when SDC shows a % change between the initial offer and the final price, but the agreement price and final price are the same.<sup>9</sup> We also ignore deals when the % change is less than 1% because this is likely explained by either a change in the acquirer's stock price or errors in the SDC database (Officer, 2004). For each remaining deal where the agreement price and final price are different, we check every SEC filing related to the merger—from the announcement date to the effective completion date—for any announcements about renegotiated deal terms that are specifically related to the deal price, while ignoring any announcements about price changes attributed to precontracted terms. When the acquirer's stock or a combination of stock and cash is the payment consideration, we verify that the price change is due to renegotiated

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<sup>8</sup> When stock (or stock plus cash) is the form of payment consideration, we read through corporate press releases or news articles for mention of the implied agreement day offer per share. Thus, we collect the price of the target's shares in terms of the acquirer's share value on the definitive agreement date.

<sup>9</sup> We initially focus on renegotiations, which we define as changes to contracted deal terms that occur after the deal is publicly announced and the merger agreement is in place. This is in contrast to a change in the price between the initial offer and the agreement price as part of the initial negotiation process. See Liu and Officer (2019) for a detailed investigation of the latter.

deal terms and is not due to a change in the acquirer's stock price. Finally, after identifying a renegotiated deal, we check SEC filings, company press releases, and news media articles for an explanation for the renegotiation. This process yields 94 (56) deals that we classify as renegotiated up (renegotiated down). Appendix 2 provides an example of a renegotiated deal.

To identify terminated deals, we examine mergers coded as "Withdrawn" in the SDC database. First, to ensure that a deal was indeed terminated after the definitive agreement date, we read SEC filings, company press releases, and news media articles that discuss the deal.<sup>10</sup> Next, after confirming a deal termination, we use corporate disclosures and news media articles to determine who terminated the deal (e.g., target, acquirer, mutually agreed, regulator, or shareholder vote). Finally, we determine the specific reason for the termination (e.g., adverse event, deadline expired, shareholder dissent, etc.). This process yields 195 terminated deals, which we classify by who terminated the deal in Table 1, Panel C. We further provide the reason for termination in Table 1, Panel D. Appendix 3 provides an example of a terminated deal.

Table 1 Panel C shows that renegotiations and terminations occur in roughly 3% and 3.9% of our sample, respectively.<sup>11</sup> Table 1, Panel D, provides additional details of the underlying reasons for renegotiated and terminated deals. Our findings illustrate important differences in the explanations for renegotiated-up vs. renegotiated-down deals and terminated-by-target vs. terminated-by-acquirer deals. In particular, adverse events are the predominant reason for renegotiations down (63%), terminations by the acquirer (43%), and mutually agreed terminations

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<sup>10</sup> We exclude mergers where SDC has coded the deal as "Withdrawn" but a merger agreement is not filed with the SEC, since these are not deal terminations.

<sup>11</sup> In contrast to our evidence, prior literature finds (in some studies, substantially) higher rates of renegotiations. We attribute the substantial difference to measurement differences. For example, relying on SDC's "% change from initial offer to final price" as an indicator of a renegotiation (as is the case in much of the prior literature) overestimates the number of renegotiations, since oftentimes the initial offer is non-binding and can differ from the contracted price.

(48%). Targets only terminate agreements as a result of an adverse event in 18% of all cases.<sup>12</sup> Typically targets renegotiate up due to competing offers (54%) or shareholder dissent (26%). Further targets largely rely on breaches of contract terms (35%) or the expiration of contract deadlines (29%) to terminate a deal.

### 3.3.2 *Other data*

We rely on SDC data for many of our firm and merger level variables. We use CRSP daily data for returns, return volatility, and merger arbitrage spread calculations, and to construct some of our deal premium variables. For our macroeconomic level data, we use Robert Shiller's Cyclically Adjusted Price Earnings Ratio (CAPE), which we obtain from his Web site: <http://www.econ.yale.edu/~shiller/data.htm>. Shiller's CAPE ratio is a proxy for the relative valuation of the market and is used in the prior literature to control for periods of high equity valuations, which might explain merger activity (e.g., Bonaime et al., 2018). We also obtain data on Aaa corporate bond yields and federal funds rates from FRED (at <https://fred.stlouisfed.org/series/AAA> and <https://fred.stlouisfed.org/series/FEDFUNDS>) to calculate rate spreads, which we employ as a proxy for overall market-level capital liquidity. Finally, we obtain data on the stock market's expectation of volatility (i.e., VIX) from the Chicago Board Options Exchange (CBOE) Web site: <http://www.cboe.com/products/vix-index-volatility/vix-options-and-futures/vix-index/vix-historical-data>. Appendix 1 provides a detailed description of all variables included in our study.

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<sup>12</sup> Our finding that MAE provisions are used relatively less by targets to terminate a deal is also consistent with our findings that the number (and percent) of deals that are terminated by the target is similar across the pre-court and post-court rulings periods.

### 3.3.3 *Summary statistics*

Table 2 presents summary statistics (reported separately for completed, renegotiated, and terminated deals) for variables used in our analysis. Overall, there are 4,606 completed deals (not including renegotiated deals) for the years 1997-2018 representing over \$10 trillion in transaction value and 345 renegotiated and terminated deals representing nearly \$1.3 trillion in transaction value.<sup>13</sup>

## 3.4 **Analysis**

### 3.4.1 *General determinants of renegotiations and terminations*

Before highlighting the economic effects of the two landmark court rulings, we derive the general determinants underlying renegotiations and terminations. Our descriptive evidence in Table 1 Panel A suggests that there are important differences in the determinants of renegotiated-down, renegotiated-up, and terminated deals. In particular, it is apparent that competing offers or target shareholder dissent are crucial for upward renegotiations, whereas MAEs are crucial for downward renegotiations and terminations by acquirers.

To derive other more general determinants, we employ a multivariate approach. Because our dependent variables are binary indicators and the prior literature provides relatively few predictions of the covariates that we should include in our models, we follow Hosmer et al. (2013) and apply a stepwise logistic regression model, with a significance threshold set at the 10 percent

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<sup>13</sup> Thus, while renegotiations and terminations represent just 6.9% of our entire sample, they account for an economically important proportion (12%) of the total value of transactions since 1997.

level, to conduct our analysis and report the results in Table 3. Using a stepwise approach allows to select the best set of predictors for further analysis.<sup>14</sup>

We draw on prior work to build our list of covariates. Officer (2004) finds that the inclusion of a collar in the merger agreement reduces the probability of renegotiations; thus, we include an indicator variable (*Collar*) that assumes the value of 1 if the stock bid includes a collar and 0 otherwise. Next, following Bhagwat et al. (2016), we include a measure of the target's post-announcement return volatility (*Target Ret. Volatility Post-Announce*), which captures changes in the risk of the target after the definitive agreement date. We also control for the target's pre-merger return volatility (*Target Ret. Volatility Pre-Merger*) because overall firm-level risk might explain the likelihood of post-announcement renegotiations and terminations. To control for macroeconomic level risk that might affect deals during a given period, we include an annualized measure of the volatility of VIX (*VIX Volatility*). Specifically, we use daily changes in the VIX starting 1 day after the deal is announced and ending on the effective completion date of the deal to calculate the volatility of the market's expectation of risk.

We also expect that deal-specific characteristics will impact the likelihood of renegotiations and terminations. Thus, we include several indicator variables that assume the value of 1 when the deal is structured as a tender offer (*Tender Offer*), is cash only (*Cash Only*), or has a "go shop" provision (*GoShop*) and 0 otherwise. We also control for the deal premium (*Deal Premium*), the deal value (*Log(Deal Value)*), the size of the target (*Log(Target Size)*), and the ratio

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<sup>14</sup> Hosmer et al. (2013, p.125) note that "...there are times when the outcome being studied is relatively new and the important covariates may not be known and associations with the outcome not well understood. In these instances, most studies collect many possible covariates and screen them for significant associations. Employing a stepwise selection procedure can provide a fast and effective means to screen a large number of variables, and to fit a number of logistic regression equations simultaneously."

of the acquirer's and target's termination fee to the deal value (*Acquirer Term. Fee Ratio* and *Target Term. Fee Ratio*).

It is also possible that pre-agreement factors might predict future renegotiations and terminations. For example, we try to capture the overall demand for a target firm by using the number of pre-agreement bidders disclosed in the SDC database as a proxy for future post-announcement demand ( $\text{Log}(\text{Number of Bidders})$ ). Finally, we include an indicator variable set to 1 if the acquirer has a toehold (*Toehold*) and 0 otherwise, and a separate [0,1] continuous variable (*Toehold Prop.*) that measures the proportion of the target held by the acquirer before the definitive agreement date (Betton and Eckbo, 2000; Betton et al., 2009).

Columns 1 to 3 of Table 3 Panel B present the parameter estimates of the significant coefficients retained in the stepwise procedure. These results strongly support our conjecture that renegotiations downwards, renegotiations upwards, and terminations are explained by different economic drivers, and that the relationships with those drivers (positive or negative) also differ across renegotiation types and terminations.<sup>15</sup>

### 3.4.2 *Likelihood of renegotiations and terminations*

We now examine how the court rulings impact the frequency of renegotiated-down and terminated-by-acquirer mergers. To do so, we employ a difference-in-differences (DiD) research design wherein we follow prior work (e.g., Bertrand and Mullainathan, 2003) and exploit the staggered dates of the court rulings and use states affected (and not affected) by the judicial decisions to identify the causal impact of the rulings on the frequency of renegotiations and terminations. The critical identifying assumption in this design is that, absent the court rulings, the

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<sup>15</sup> Our reported areas under the ROC curves for each column (0.723, 0.705, and 0.821) indicate acceptable to excellent discrimination per Hosmer et al. (2013, p. 177).

frequency of renegotiated-down and terminated-by-acquirer deals would evolve similarly over time for our treated and control states, i.e., a parallel trend assumption. While this assumption is not directly testable, we provide evidence in Table 5 that suggests that prior to the court rulings there was no statistically significant difference in the trends of renegotiations down and terminations by acquirers in treated and control states. Thus, following prior literature, we estimate the following generalized DiD logistic regression model:

$$Y = \beta_0 + \beta_1 TREATEDSTATES + \beta_2 POST + \beta_3 TREATEDSTATES \times POST + \beta_4 CONTROLS + INDUSTRY\_FE + \varepsilon \quad (1)$$

where  $Y$  is a 1/0 indicator variable for all specifications of the model (i.e.,  $Y$  equals 1 for deals renegotiated down, renegotiated up, terminated by the acquirer, or terminated by the target and 0 otherwise). The independent variable of interest,  $TREATEDSTATES \times POST$ , is an interaction term that assumes the value of 1 if the target firm's state of incorporation is New York (Delaware) and the merger's announcement date is in a year after the New York (Delaware) court ruling. Our estimate of the impact of the rulings on the likelihood of renegotiations and terminations is captured in  $\beta_3$ . Our set of controls for each specification of equation (1) are chosen based on our tests of the predictors of renegotiations and terminations in Table 4. We also include a time trend variable and industry fixed effects across all specifications. Finally, since the court rulings are at the state level, we cluster standard errors at the target firm's state of incorporation level to address concerns of autocorrelation.

The results reported in Table 4 are consistent with the idea that the court rulings have an impact on the likelihood of acquirer-initiated renegotiations and terminations. In columns 1 and 2 we find a statistically significant decrease in the likelihood that a deal is renegotiated down or terminated by the acquirer for mergers announced in affected states in the years after the court

rulings. The marginal effects associated with the coefficient of interest suggest that the impact is economically meaningful: in the years after the court rulings, there is a 1.5% (1%) decrease in the likelihood of a downward renegotiation (termination by acquirer). Given that the mean unconditional probability is 1.1% (0.7%) for the entire sample period, our results indicate a 136% (143%) decrease in the likelihood of a renegotiated-down (terminated-by-acquirer) deal.

In columns 3 and 4, we present results for placebo tests where the dependent variable is renegotiated-up and terminated-by-target, respectively. Because the court rulings limit acquirers' ability to claim the applicability of MAE provisions, which are rarely used by target firms to terminate deals and never used in deals that are renegotiated up, we do not expect to find a significant effect of the judicial decisions on these deals. Consistent with this conjecture, the coefficient of interest in both columns is insignificant. In Panel B, we repeat our analysis using OLS regression models and cluster by year and target firms' state of incorporation to account for both cross-sectional and time series dependence (Gow et al., 2010). Our results hold, and the magnitudes of the coefficients are nearly identical to our earlier estimates.

### 3.4.3 Trend analysis

One potential concern is that the observed decrease in renegotiated-down and terminated deals is an artifact of a pre-existing trend in New York and Delaware. Such a trend would need to impact the likelihood of New York and Delaware renegotiations and terminations, while having no impact on renegotiations and terminations in all other states. To address this issue, we follow Bertrand and Mullainathan (2003) and construct lead-lag variables, which capture the trend in our dependent variables for treated states relative to non-treated states. Specifically, we replace the  $TREATEDSTATES \times POST$  variable in equation (1) with separate indicator variables if a New York or Delaware merger was announced in the 2-year window before the court ruling ( $Pre-event(t-1$  to

$t-2$ )), in the 3-year window beginning in the year after the court ruling ( $Post-event(t+1 \text{ to } t+3)$ ), in the 3-year window beginning 4 years after the court ruling ( $Post-event(t+4 \text{ to } t+6)$ ), or in the window beginning 7 years after the court ruling ( $Post-event(beyond 6 \text{ years})$ ).<sup>16</sup> We also include indicator variables that equal 1 if a merger was completed in 2000-2001 (*Dotcom Crisis*) or 2007-2008 (*Financial Crisis*) and 0 otherwise, to control for the effects the crises might have on the likelihood of renegotiations and terminations. Finally, we exclude mergers announced in the years of the court rulings (2001 and 2008), because these deals will be at different stages of completion when a ruling is announced, making it difficult to interpret the impact of the rulings on these ongoing mergers. We include the same set of controls used in our earlier specifications and cluster standard errors by year and target firms' state of incorporation.

Panel A of Table 5 reports the estimates of OLS specifications. In column 1, the coefficient for the 2-year pre-event window is not statistically significant, suggesting that there is no difference in the likelihood of a deal being renegotiated down in New York and Delaware relative to all other states. However, the coefficients for the windows after the court ruling are all negative and statistically significant, which is consistent with the court rulings reducing the likelihood of observing a renegotiated-down deal in the affected states.

Next, in column 2 we examine terminated deals. One problem we face is that there are relatively few terminated-by-acquirer observations in our sample (35). Fewer observations make it difficult to examine trends over windows of time, because some windows may have zero observations for affected states. This would make the impact of the court rulings appear larger. To address this shortcoming, we pool mutually terminated and terminated-by-acquirer deals and

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<sup>16</sup> Since the first court ruling is in 2001, and we require an excluded category with more than one year of observations, we specify our model with a 2-year window before each court ruling. Thus, for the first (second) court ruling, the excluded category is 1997 to 1998 (1997 to 2005).

create a new dependent variable that includes both. We note that MAE provisions are invoked in 48% of mutually terminated deals, which is slightly higher than the 43% we observe for terminated-by-acquirer deals, suggesting that the court rulings should also reduce the likelihood of observing such terminations. Confirming this, we report a negative coefficient for all three windows after the court ruling, with two of those coefficients being statistically significant. In contrast, the coefficient for the pre-event window is not statistically different from zero.

In Panel B of Table 5, we conduct placebo tests using deals—renegotiated-up, terminated-by-target, and terminated-by-regulator—that we posit should be unaffected by the court rulings. Our results, reported in columns 1, 2, and 3, are consistent with this conjecture. Specifically, we show that the likelihood a merger being renegotiated up (column 1), terminated by the target (column 2), or terminated by a regulator (column 3) is not statistically different in Delaware and New York relative to all other states in the pre-event and post-event windows.

#### *3.4.4 Assessment of deal-completion risk: Merger arbitrage spreads*

Prior literature documents that investors' uncertainty over whether a merger will be successful (i.e., completed) produces a positive spread between the deal price and the market price on the merger's announcement date, such that wider spreads suggest a lower likelihood of completion (Larcker and Lys, 1987; Mitchell and Pulvino, 2001; Baker and Savasoglu, 2002). In our setting, if the court rulings reduce acquirers' ability to terminate or renegotiate down a deal, then the risk that deals will fail (or that the offer price will be lowered) should decrease and merger spreads should narrow as the market impounds this new information into prices.<sup>17</sup>

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<sup>17</sup> For instance, Officer (2007) finds that merger arbitrage spreads for pending deals increase in the days after the failure of another deal, i.e., when deal completion risk increases.

To examine whether the market prices the impact of the court rulings on deal completion risk, we specify the following OLS DiD regression model:

$$Y = \beta_0 + \beta_1 TREATEDSTATE + \beta_2 POST + \beta_3 TREATEDSTATE \times POST + \beta_4 CONTROLS + INDUSTRY\_FE + STATE\_FE + \varepsilon \quad (2)$$

where  $Y$  is the merger arbitrage spread, calculated as the agreement price less the target's stock price 1 day after the definitive agreement date, scaled by the target's stock price 1 day after the definitive agreement date. The independent variable of interest,  $TREATEDSTATE \times POST$ , is an interaction term that equals 1 if the target firm's state of incorporation is New York (Delaware) and the merger's announcement date is in the defined window (which we discuss below) after the New York (Delaware) court ruling. To allow for the impact of the court rulings to manifest, we set our  $POST$  variable equal 1 if a deal was announced at least 20 trading days after the court opinion was made public and 0 otherwise.<sup>18</sup>

A merger is included in this analysis if (1) it was announced within a window beginning 1 year before and 3 months (or approximately 60 trading days) after a court ruling; and (2) the SDC deal status is "Completed".<sup>19</sup> We exclude deals when the definitive agreement date and the announcement date are different, because SDC sometimes records the announcement date as the date when even the rumor of a merger first surfaces (Mulherin and Simsir, 2015). We also exclude the two mergers that are directly involved in the court rulings. Thus, our model aims to capture the

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<sup>18</sup> Officer (2007) shows that it takes on average 7 days trading days for spreads to fully impound the impact of "arbitrage disasters". We allow 20 trading days for the court's ruling to manifest in merger spreads; however, in untabulated tests we find that our results hold if we code the  $POST$  variable as 1 when a merger was announced at least 7 days after the court ruling.

<sup>19</sup> We use an unbalanced window for two important reasons. First, we do not have enough observations to obtain estimates of our model when using a narrower window (e.g., 3 months before and after a court ruling). Second, we follow Officer (2007) and study the impact of our events on mergers announced within 40 trading days after the court rulings but, due to sample size issues, we need to extend the window to 60 trading days after a ruling.

pricing of deal completion risk at the announcement of a definitive agreement, while also trying to mitigate potential measurement errors. We follow prior literature for our choice of control variables. Our model also includes a time trend variable because Jetley and Ji (2010) shows that merger arbitrage spreads are declining over time. Finally, we include state and industry fixed effects and cluster standard errors by year-month and target firm's state of incorporation. We present the results of our analysis in Table 6.

Our estimates in columns 1 and 2 in Table 6 offer evidence of an impact of the court rulings on merger arbitrage spreads. We find that newly announced mergers involving New York (column 1) and Delaware (column 2) targets have narrower spreads shortly after the court rulings as compared to targets in unaffected states, suggesting that investors impound this new information into prices relatively quickly. However, we are cautious in our interpretation of the magnitude of the effects. given our small sample size in these tests. Nevertheless, the results indicate that the court rulings had a profound effect on acquirers' ability to ex post renegotiate or terminate mergers based on the application of MAE provisions. Thus, we believe that the court rulings capture a notion of contract enforceability in that they enhance targets' position to enforce the initial agreement in court.

Overall, we provide evidence that the two court rulings reduce the likelihood of acquirer-initiated renegotiations and terminations and investors' assessment of deal completion risk. Both sets of results are consistent with the argument that the two court rulings weakened acquirers' ability to renegotiate and terminate mergers.

### 3.4.5 Composition of the merger market: Target firm size and risk

In this section, we investigate how the court rulings ex ante affect the composition of the merger sample. In particular, we examine whether and how size and risk of target firms in New York and Delaware change after the court rulings in comparison to the size and risk of target firms in other states. For our main measure of target size, we use the market value of the target firm 4 weeks before the definitive agreement date and construct within-year quartiles, where 1 (4) captures small (large) target size. For our main measure of target firm risk, we follow prior literature and use the pre-merger stock return volatility of the target firm (Officer et al., 2009; McNichols and Stubben, 2015). We then construct within-year quartiles, where 1 (4) captures low (high) risk. Since we employ ordinal dependent variables, we estimate the following ordered logistic DiD regression model:

$$\begin{aligned} Y = & \beta_0 + \beta_1 TREATEDSTATES + \beta_2 POST + \beta_3 PREEVENT_{t-1 \text{ to } t-2} + \\ & \beta_4 POSTEVENT_{t+1 \text{ to } t+3} + \beta_5 POSTEVENT_{t+4 \text{ to } t+6} + \\ & \beta_6 POSTEVENT_{Beyond 6 \text{ years}} + \beta_7 CONTROLS + STATE\_FE + \\ & INDUSTRY\_FE + \varepsilon \end{aligned} \quad (3)$$

where  $Y$  is an ordinal variable that assumes a value of 1 to 4 (e.g., low to high risk; or, small to large target size).<sup>20</sup> To remain consistent with our earlier analysis, we use pre-event and post-event window variables and construct these variables in the same way as we did for our earlier tests. In all our specifications, we include a set of target firm-level, deal-level, and macro-level control variables, state and industry fixed effects, a time trend variable, and cluster standard errors at the

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<sup>20</sup> Therefore, we interpret the signs on the coefficients of interest as the likelihood of a New York or Delaware target firm being in a lower quartile (negative sign) or higher quartile (positive sign) relative to target firms in all other states within a given window of time.

state level. Although our specifications include three post-event windows, based on our earlier analysis, we expect our effects to manifest within the first window and thus for presentation purposes we report coefficients on *Pre-Event* ( $t-1$  to  $t-2$ ) and *Post-event* ( $t+1$  to  $t+3$ ) in the tables. Results of this analysis are reported in Panel A of Table 7, and marginal effects for our main variables of interest are reported in Panels B and C.

In columns 1 and 2 of Panel A, we examine target size. No statistically significant difference exists in the years prior to the court ruling. However, we find that New York and Delaware target firms have a statistically significant likelihood ( $p$ -value  $< 0.01$ ) of being in a higher quartile (i.e., larger in size) in the 3-year window after the court rulings. Marginal effects for column 1 presented in panel B reveal that New York or Delaware targets have an 8.1% (7.9%) higher (lower) probability of being in the highest (lowest) quartile of target firm size as compared to unaffected states in the 3-year window after the judicial decisions. Our estimates in column 2, in the OLS specification, show qualitatively similar effects.

In column 3 of Panel A, we present estimates where target firm volatility is the dependent variable. In the 2-year window before the court rulings, we find no statistically significant difference in the risk of target firms for New York and Delaware mergers as compared to target firms incorporated in other states. However, in the 3-year window after the court rulings, we find that target firms in New York and Delaware have a statistically significant likelihood ( $p$ -value  $< 0.01$ ) of being in a lower quartile (i.e., lower risk) in a given year. Marginal effects presented in Panel C suggest that New York or Delaware targets have a 6% (6.4%) higher (lower) probability of being in the lowest (highest) quartile of risk in the 3 years after the court rulings as compared to target firms in unaffected states.

In column 4, we repeat our analysis but this time we specify an OLS model and construct an indicator variable that assumes the value of 1 if the target firm's risk is above the median risk within a year. For robustness, we cluster standard errors at the year and state level.<sup>21</sup> We find that New York and Delaware target firms are likely to have lower risk as compared to target firms in unaffected states in the 3 years after the court rulings.

Taken together, our analysis in Table 7 reveals that the composition of large New York and Delaware mergers changes in that mergers are less likely to be smaller and riskier and more likely to be larger and less risky.

#### *3.4.6 The pricing of mergers: Deal premiums*

We further examine the impact of the court rulings on the premiums that acquirers are willing to pay. Given our findings that after the court rulings New York and Delaware mergers are less likely to involve smaller and riskier targets and more likely to involve larger and less risky targets, we focus our deal-premiums analysis on these two subsamples of mergers. Specifically, we construct two subsamples where the first is based on whether the target firm is both below the median in terms of size and above the median in terms of return volatility (i.e., small and riskier) and the second is based on whether the target firm is both above the median in terms of size and below the median in terms of return volatility (i.e., large and less-riskier).

For our main measure of deal premiums, we follow the prior literature (e.g., Fich et al. 2011) and use the offer price scaled by the target's stock price as of 4 weeks prior to the

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<sup>21</sup> Note that our results hold (and increase in statistical significance) if we cluster at only the state or year level.

announcement date and then subtract 1.<sup>22</sup> We also follow prior studies (e.g., Officer, 2003; Fich et al., 2011) that restrict this premium measure to two (or 200%) to avoid extreme outliers.

Our estimates of changes in deal premiums after the court rulings are obtained from running a generalized DiD OLS model where the main variables of interest are the pre-event and post-event windows we have used in our earlier analysis. We again follow prior literature in our selection of control variables. We also include a time trend variable, state and industry fixed effects, and cluster standard errors by year and state. Table 8 presents the results of our analysis.

In both columns 1 and 2 of Table 8, we find for the pre-event window positive and statistically significant differences in deal premiums for Delaware and New York mergers relative to mergers in other states. This result is consistent with the findings in Daines (2001) who documents that Delaware law generally improves firm value and facilitates takeovers (e.g., higher likelihood of a takeover and more bidders). Hence it can be concluded there seems to be a “Delaware premium.” However, after the court rulings, we find that the positive difference in deal premiums for Delaware and New York targets only persists in the sample of large, less risky firms; whereas, the difference in deal premiums for small, riskier targets (in column 1) remains positive (albeit slightly lower than in the pre-event period) in the first post-event window and then is not statistically different beyond the fourth year. These findings are consistent with price-protecting acquirers reducing their willingness to pay for smaller, riskier Delaware and New York firms after the court rulings, while not changing their willingness to pay for larger, less-riskier firms.

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<sup>22</sup> We substitute the contractual agreement price, which we have hand-gathered, for the offer price when the two are different.

### 3.4.7 Profitability of mergers: Post-acquisition returns

We next examine the post-acquisition returns of public acquirers. Since we still observe (but to a much smaller likelihood) mergers with smaller, riskier targets, we ask whether such merger targets are effectively “lemons” a la Akerlof (1970). More specifically, if the court rulings induced a strong price protection effect such that, for “good” small and risky firms, target shareholders become unwilling to sell, then for “lemons” this may not hold true. In line with an asymmetric truncation of merger activity this implies that mergers with such firms should lead to significant declines in subsequent performance.

To test this, we begin with our full sample of completed mergers (4,756 observations) and then retain all mergers that meet the following two requirements: (1) the acquirer is publicly listed; and (2) there is available CRSP data to construct post-acquisition and pre-closing cumulative abnormal returns for the acquirer. After dropping mergers that do not satisfy these criteria, we are left with 2,702 completed deals.

Because prior literature identifies problems with long-run (i.e., one to three years) abnormal return methodologies (e.g., Barber and Lyon, 1997), we restrict our analysis to acquirers’ post-acquisition performance during the 180-day window beginning one day after the acquisition closes [1, 180]. Specifically, we estimate the following OLS DiDiD model:

$$\begin{aligned} Y = & \beta_0 + \beta_1 TREATEDSTATES + \beta_2 POST + \beta_3 SMALLHIGHVOL \\ & + \beta_4 TREATEDSTATES \times POST + \beta_5 TREATEDSTATES \times SMALLHIGHVOL \\ & + \beta_6 POST \times SMALLHIGHVOL \\ & + \beta_7 TREATEDSTATES \times POST \times SMALLHIGHVOL + \beta_8 CONTROLS \\ & + INDUSTRY\_FE + \varepsilon \end{aligned} \tag{4}$$

where  $Y$  is the acquirer's market-adjusted cumulative abnormal returns. Our main variable of interest,  $TREATEDSTATES \times POST \times SMALLHIGHVOL$ , is an interaction term that assumes the value of 1 if the target firm's state of incorporation is New York (Delaware) and the merger's announcement date is in a year after the New York (Delaware) court ruling and the target firm is both below the median in terms of size and above the median in terms of return volatility (i.e.,  $SMALLHIGHVOL$ ); and 0 otherwise. Our estimate of the conjectured lemons problem is captured in  $\beta_7$ . Our set of controls for equation (4) are chosen based on findings from the prior literature. See Agrawal and Jaffe (2000) for a review of the literature.

Specifically, we include an indicator variable,  $CASHONLY$ , which assumes the value of 1 if the terms of payment comprise only cash; and 0 otherwise. We also include an indicator variable,  $TENDER$ , which assumes the value of 1 if the deal is structured as a tender offer; and 0 otherwise. We include additional controls for the size of the target ( $TARGETSIZE$ ), deal size ( $\text{Log}(DEALVALUE)$ ), target-firm pre-merger return volatility ( $TARGETRETURNVOL\_PRE$ ), and acquirer's pre-closing market-adjusted cumulative abnormal returns. We also include a time trend variable and industry fixed effects. Finally, we cluster standard errors at the deal's year of announcement level.

Column 1 of Table 10 presents the results of our analysis of acquirers' post-acquisition performance. Consistent with the lemons' problem argument, we find a negative and statistically significant coefficient ( $p < 0.01$ ) on the main variable of interest. The magnitude of the coefficient is also economically meaningful: on average, an acquirer of smaller, riskier Delaware or New York

target firms after the court ruling realizes 15.1 percent lower abnormal returns in the first 180 days after the acquisition.<sup>23,24</sup>

We next respecify equation (4) as an OLS DiD regression model, such that our dependent variable is still the acquirers' post-acquisition performance but our main variable of interest is the interaction term  $TREATEDSTATES \times POST$ , which assumes the value of 1 if the target firm's state of incorporation is New York (Delaware) and the merger's announcement date is in a year after the New York (Delaware) court ruling; and 0 otherwise. For this analysis, we take our full sample of 2,702 deals and create two subsamples. Subsample one is based on whether the target firm is both below the median in terms of size and above the median in terms of return volatility (i.e., small and riskier). Subsample two is based on whether the target firm is both above the median in terms of size and below the median in terms of return volatility (i.e., large and less-riskier). We include the same controls, fixed effects, and retain the same clustering procedure as we did in column 1.

Columns 2 and 3 of Table 10 present the results of this analysis. We find that acquirers of smaller, riskier Delaware or New York targets after the court rulings realize, on average, negative post-acquisition cumulative abnormal returns (-19.5 percent); whereas, acquirers of larger, less-riskier Delaware or New York targets after the court rulings realize, on average, cumulative abnormal returns that are not statistically different from zero. A test of the difference of the coefficients is significant at the five-percent level.

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<sup>23</sup> Coefficient magnitudes (-15.1 to -19.5 percent) for our main variables of interest throughout Table 10 are generally in line with prior studies that examine acquirers' post-merger performance (e.g., see Agrawal and Jaffe (2000) for a review of this literature).

<sup>24</sup> Our results continue to hold, and the magnitude of the coefficient is nearly identical (-15.2 percent), if we follow Asquith (1983) and examine acquirer CAR over the 240 days following the close of the merger.

Overall, the results in Table 10 support our conjecture that the court rulings effectively created a lemons problem for the segment of mergers with smaller, riskier target firms, such that only shareholders of “bad” smaller, riskier targets are willing to accept offers from price-protecting acquirers. This then leads to significant declines in the subsequent post-acquisition performance of these acquirers.

### 3.5 Robustness test

In this section, we conduct an additional test to help alleviate potential concerns regarding the robustness of our results. First, although we employ a generalized DiD research design, which makes use of two court rulings, it still may be the case that an omitted variable—correlated with both the timing of our state-level events and our outcome variables—is driving our results. To address this concern, we exploit a recent 2018 Delaware court of Chancery ruling in the matter of *Akorn Inc. v. Fresenius KABI AG*.<sup>25</sup> In contrast to the two rulings we utilize in our main analysis, the 2018 decision found evidence of a MAE and rejected the target’s (Akorn) demands to have the acquirer (Fresenius) complete the deal. This makes it the first time that a Delaware court released an acquirer from its contractual obligation to consummate a merger due to the occurrence of a MAE, i.e., it is the first affirmative court ruling on MAE provisions (Leinwand et al., 2018; Micheletti and Bookout, 2018). The case has received considerable attention, with some legal

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<sup>25</sup> We exclude this ruling from our main research design for several important reasons. First, because the ruling occurred in October 2018, we cannot construct post-event windows like those in our main tests. Second, because the date of the ruling is well distanced from other macro-level events, we can use the ruling to more clearly observe the impact of changes in contract enforceability on deal pricing and merger contract design without concerns about the confounding effects of other crises. This would not be the case if we aggregated all three rulings into one test. Finally, and most importantly, our paper’s main insight is that MAE-related rulings have a profound impact on acquirers’ ability to renegotiate and terminate deals, inducing a strong price protection effect which truncates the merger activity in the affected states in an asymmetric manner. However, it is not feasible to believe that acquirers (in the middle of merger negotiations) will observe the October 2018 ruling, withdraw from negotiations, and choose new targets between October and December 31, 2018 because this would need to occur for us to explain the results of any target selection tests around this event.

practitioners suggesting it is a seminal ruling in the body of Delaware mergers and acquisitions law and as influential as *IBP, Inc. v. Tyson Foods, Inc.* (Gooding et al., 2018).<sup>26</sup>

The case of *Akorn Inc. v. Fresenius KABI AG* is such that in April 2017 Fresenius, a German pharmaceuticals company, entered into an agreement to acquire Akorn, a US generic drug manufacturer, for US\$4.75 billion. Over the course of 2017, Akorn's business collapsed with a decline of Akorn's revenues by more than a quarter and a drop in its quarterly operating performance between 84 and 292 percent year-over-year. The root causes of this drop in financial performance were misrepresentations made by Akorn regarding its compliance with Food and Drug Administration regulations in that a whistleblower leaked information about Akorn manufacturing data in its FDA drug approval filings to Fresenius. As the scandal unfolded Fresenius considers the misrepresentations an MAE and terminated the deal under reference to the agreement's MAE provision. Akorn filed a lawsuit accusing Fresenius of breaching the terms of their agreement. The Delaware court sided with Fresenius as the misrepresentations can be considered to have a significant impact on Akorn's business and its value in the long run.

Conceptually, the court rulings impact on the expected materiality standard can again be best explained by means of a simple example. Figure 2 continues our example from subsection 2.2., where we considered the effects of a non-affirmative court ruling  $c_I$  on the perceived materiality standard. Through the court ruling the expected materiality standard tightened from  $E[\tilde{s}]$  to  $E[\tilde{s}|c_I]$ . We shall denote an affirmative court ruling such as *Akorn Inc. v. Fresenius KABI*

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<sup>26</sup> We read the "Background of the Merger" section included in the target's SEC filings (DEFM14A for mergers; and SC 14D9 for tender offers) for all 11 Delaware mergers in our sample that are announced between November 1, 2018 and December 31, 2018. Several of the involved legal firms have published online opinions on the Akorn v. Fresenius ruling, and in one merger (Centerbridge Partners' acquisition of Civitas Solutions Inc) the acquirer was represented by Goodwin Procter LLP, who also represents Fresenius. This suggests that acquirers will be well aware of the ruling and its implications for deal terms.

AG with  $c_{II}$ . The affirmative ruling  $c_{II}$  in addition to the non-affirmative ruling  $c_I$  should lead to a loosening of the expected materiality standard since  $E[\tilde{s}|c_I, c_{II}] < E[\tilde{s}|c_I]$ . Hence such a ruling may therefore strengthen acquirers' ability to renegotiate and terminate deals.

This latest judicial decision provides a powerful setting to test whether the court ruling loosened the perceived materiality standard and we conjecture that, counter to the non-affirmative rulings, merger arbitrage spreads widen, implying larger deal completion risk. We use a sample of completed and withdrawn mergers with announcement dates beginning one year before the October 2018 decision and employ the following OLS DiD regression model:

$$Y = \beta_0 + \beta_1 DELAWARE + \beta_2 POST + \beta_3 DELAWARE \times POST + \beta_4 CONTROLS + \\ INDUSTRY\_FE + STATE\_FE + \varepsilon \quad (5)$$

where the dependent variable  $Y$  and the set of control variables are the same as in Table 6. Our main variable of interest,  $DELAWARE \times POST$ , is again an interaction term that takes the value of 1 if a target firm's state of incorporation is Delaware and the announcement date of the merger is at least 30 days (i.e., approximately 20 trading days) after the court ruling. We include a time trend variable, industry and state fixed effects, and cluster standard errors by year-month and target firm's state of incorporation. We report the results of this analysis in Table 10. Consistent with our conjecture, we find that merger arbitrage spreads widen.<sup>27</sup>

Our robustness analysis provides additional support for the argument that MAE-related court rulings prove to be useful in capturing acquirers' ability to renegotiate and terminate deals and further corroborate our findings in our main analyses.

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<sup>27</sup> Anecdotal evidence suggests that risk arbitrageurs expected the Akorn/Fresenius merger to be successfully completed (e.g., <https://seekingalpha.com/article/4178606-akorn-fresenius-merger-arbitrage>) and thus it is likely that similar to what Officer (2007) finds, risk arbitrageurs incorporate the ruling into market prices relatively quickly.

### 3.6 Conclusion

Merger agreements typically include provisions that allow contracting parties to renegotiate or terminate deals in the presence of MAEs (i.e., MAE provisions). Legal scholars and practitioners have increasingly cast doubt on the efficacy of such provisions, given the growing evidence that courts consistently deny acquirers' demands to invoke such clauses. Two such cases, one in New York and the other in Delaware, are widely considered as seminal to the case law involving MAE provisions. They are believed to clarify the scope of MAE provisions and resolve uncertainty about enforceable materiality standards. We study the effects of these non-affirmative court rulings. We document that the likelihood of acquirer-initiated renegotiations and terminations declines after these rulings, and that investors anticipate lower deal completion risk when pricing target firms' stock. Overall, these findings are consistent with the rulings weakening acquirers' ability to renegotiate and terminate deals.

We further show that weakening the ability of acquirers to renegotiate or terminate deals has important consequences for merger activity. Specifically, we show that after the court rulings the likelihood of mergers with smaller or riskier targets—the ones that are more likely to be affected by adverse events—decreases in the affected states. Moreover, deal premiums and post-acquisition returns of acquirers decline for mergers with smaller, riskier targets. Thus, our results are consistent with the argument that the court rulings weakened acquirers' ability to renegotiate and terminate deals. Ex ante acquirers price protect more, leading to a truncation of the merger activity in the affected states along the dimensions of firm size, risk, and quality due to a worsening of adverse selection in the market for corporate control.

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## Appendix 1: Variable descriptions

Variable	Definition	Source
<i>Variables of interest</i>		
Treated_States × Post	Interaction term equal to 1 if the target firm's state of incorporation is New York or Delaware and the deal's year of announcement is in or after 2002 for a New York merger and in or after 2009 for a Delaware merger; 0 otherwise.	SDC
Pre-event (t-1 to t-2)	Interaction term equal to 1 if the target firm's state of incorporation is New York or Delaware and the deal's year of announcement is in 1999 or 2000 for a New York merger and in 2006 or 2007 for a Delaware merger; 0 otherwise.	SDC
Post-event (t+1 to t+3)	Interaction term equal to 1 if the target firm's state of incorporation is New York or Delaware and the deal's year of announcement is any year from 2002 to 2004 for a New York merger and is any year from 2009 to 2011 for a Delaware merger; 0 otherwise.	SDC
Post-event (t+4 to t+6)	Interaction term equal to 1 if the target firm's state of incorporation is New York or Delaware and the deal's year of announcement is any year from 2005 to 2007 for a New York merger and is any year from 2012 to 2014 for a Delaware merger; 0 otherwise.	SDC
Post-event (beyond 6yrs)	Interaction term equal to 1 if the target firm's state of incorporation is New York or Delaware and the deal's year of announcement is in any year after 2007 for a New York merger and is in any year after 2014 for a Delaware merger;	SDC
Delaware × Post	Interaction term equal to 1 if the target firm's state of incorporation is Delaware and the deal is announced on or after November 1, 2018.	SDC
<i>Dependent variables</i>		
Renegotiated Up	Indicator variable equal to 1 if the contracted price per share for the target firm is revised upward by an agreement between both parties in the period after the original agreement date and prior to the closing of the deal and 0 otherwise.	Constructed by hand using SEC filings

Renegotiated Down	Indicator variable equal to 1 if the contracted price per share for the target firm is revised downward by an agreement between both parties in the period after the original agreement date and prior to the closing of the deal and 0 otherwise.	Constructed by hand using SEC filings
Terminated by target	Indicator variable equal to 1 if the deal is terminated by the target firm after a definitive merger agreement is publicly announced and 0 otherwise.	Constructed by hand using SEC filings
Terminated by acquirer	Indicator variable equal to 1 if the deal is terminated by the acquirer after a definitive merger agreement is publicly announced and 0 otherwise.	Constructed by hand using SEC filings
Mutually terminated	Indicator variable equal to 1 if the deal is mutually terminated after a definitive merger agreement is publicly announced and 0 otherwise.	Constructed by hand using SEC filings
Terminated by regulator	Indicator variable equal to 1 if the deal is terminated due to regulatory reasons and 0 otherwise.	Constructed by hand using SEC filings
Terminated by shareholder vote	Indicator variable equal to 1 if the deal is terminated by shareholder vote and 0 otherwise.	Constructed by hand using SEC filings
Terminated for undisclosed reason	Indicator variable equal to 1 if the deal is terminated but the reason is not disclosed and 0 otherwise.	Constructed by hand using SEC filings
Target's stock return volatility (quartiled within year)	Annualized return volatility calculated over a 365-day window beginning 1 day before the merger's announcement date. We then generate return volatility quartiles within a year for each year from 1997 to 2018.	CRSP
Target size (quartiled within year)	Natural logarithm of 1 + the target firm's market value as of 4 weeks prior to the merger's announcement date. We then generate target size quartiles within a year for each year from 1997 to 2018.	SDC
Deal Premium	Stock price premium offered by the acquirer, calculated as the ((agreement day price - target firm's share price four weeks prior to the announcement)/target firm's share price four weeks prior to the announcement).	SDC
Acquirer's termination fee ratio	Calculated as the acquirer's termination fee (in \$ millions) scaled by the transaction value (in \$ millions).	SDC

Target's termination fee ratio	Calculated as the target's termination fee (in \$ millions) scaled by the transaction value (in \$ millions).	SDC
Acquirer termination fee (Yes)	Indicator variable equal to 1 if the deal includes an acquirer termination fee.	SDC
Target termination fee (Yes)	Indicator variable equal to 1 if the deal includes a target termination fee.	SDC
Difference in termination fees	Calculated as acquirer termination fee ratio minus target termination fee ratio.	SDC
Risk arbitrage spread	Spread between the publicly announced agreement day deal price and the target firm's stock price one day after the announcement date divided by the target firm's stock price one day after the announcement date.	SDC
<b><i>Control variables</i></b>		
Deal Premium	Stock price premium offered by the acquirer, calculated as the ((agreement day price - target firm's share price four weeks prior to the announcement)/target firm's share price four weeks prior to the announcement).	SDC
Log (Deal Value)	Natural logarithm of the value of the merger transaction measured at the announcement date of the merger.	SDC
Target Return Vol (Pre)	Annualized return volatility calculated over a 365-day window beginning 1 day before the merger's announcement date.	CRSP
Target Return Vol (Post)	Annualized return volatility calculated over a window beginning 1 day after the deal is announced and ending on the effective completion date.	CRSP
VIX Volatility	Annualized volatility of the CBOE Volatility Index (VIX) calculated using daily closing prices beginning 1 day after the deal is announced and ending on the effective completion date.	CBOE website
VIX	Calculated as the closing price of the CBOE Volatility Index (VIX) on the last day of the month before the deal's announcement date. As an example, for a deal announcement date of April 9, 2004, the VIX closing price on March 31, 2004 is used.	CBOE website
CAPE	Calculated as the 12-month average of Shiller's cyclically adjusted price earnings (CAPE) ratio. The average is calculated beginning t-13 months to t-1 months, where t=0 is the month in which the deal is announced.	Robert Shiller's Website
Rate Spread	Calculated as the difference between the Moody's seasoned Aaa yield and the federal funds rate. Both obtained from <a href="https://fred.stlouisfed.org/">https://fred.stlouisfed.org/</a>	FRED Website

Log (Target size)	Natural logarithm of the target firm's market value measured as at 4 weeks prior to the announcement date.	SDC
Acquirer's termination fee ratio	Calculated as the acquirer's termination fee (in \$ millions) scaled by the transaction value (in \$ millions).	
Target's termination fee ratio	Calculated as the target's termination fee (in \$ millions) scaled by the transaction value (in \$ millions).	SDC
Cash Only	Indicator variable equal to 1 if the method of payment is entirely cash and 0 otherwise.	SDC
Toehold	Indicator variable equal to 1 if the acquirer holds common stock of the target prior to the announcement date of the merger and 0 otherwise.	SDC
Toehold Prop.	Proportion of target firm's outstanding shares owned by the acquirer prior to the announcement date.	SDC
Log (Prior Bidders)	Natural logarithm of 1 + number of bidders prior to the announcement date.	SDC
GoShop	Indicator variable equal to 1 if the agreement includes a "go shop" provision and 0 otherwise.	SDC
Collar	Indicator variable equal to 1 if the agreement includes a collar and 0 otherwise.	SDC
Tender Offer	Indicator variable equal to 1 if the deal is structured as a tender offer and 0 otherwise.	SDC
Financial Crisis (2007-2008)	Indicator variable equal to 1 if the deal is announced, completed, or withdrawn on any date between January 1, 2007 and December 31, 2008.	SDC
Dotcom Crisis (2000-2001)	Indicator variable equal to 1 if the deal is announced, completed, or withdrawn on any date between January 1, 2000 and December 31, 2001.	SDC

## Appendix 2: An example of a renegotiated merger

Dear Employees,

Following our public announcement today, I wanted to let you know that we have revised the terms of our merger agreement with CSR and now we are ready to move on with the remainder of the integration planning and closing process.

As you know, we have been busy reviewing the impact of recent events, such as the earthquake in Japan, Cisco's announcement that it is closing the Flip business, and the subsequent lowered guidance for our Q2 financial expectations. Having completed that assessment, CSR and Zoran have entered into an Amended and Restated Agreement and Plan of Merger.

Please review the details of this Agreement in the joint news release sent early today and note that completion of the transaction is expected in the third quarter of 2011.

We remain convinced of the strategic rationale of this merger. During the past few months, customers of both companies have expressed positive feedback on the potential combination of our market-leading technologies to establish new product platforms for a broad range of connected and location-based consumer electronics devices for audio, automotive, cameras, DTVs, STBs, handsets, home entertainment, printers and other growing markets.

Together, both companies have a tremendous opportunity to continue to provide valuable service and support to our customers, as well as improve operations and reduce costs. Going forward, we need to deliver on all fronts - technologically, financially and operationally - to build an even stronger company.

I realize that this transaction and related integration activities add to our already heavy workload. I thank each of you for your hard work and commitment to keeping our business on track to meet and exceed our goals and to strengthening the combined company.

A live webcast was scheduled for 9am BST/1am Pacific Time today. An On Demand version of the video webcast will be available later today on Zoran's web site. Over the next few days, we will schedule employee communications meetings to explain the revised agreement and update you on the integration planning and closing process.

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With best regards,

Levy

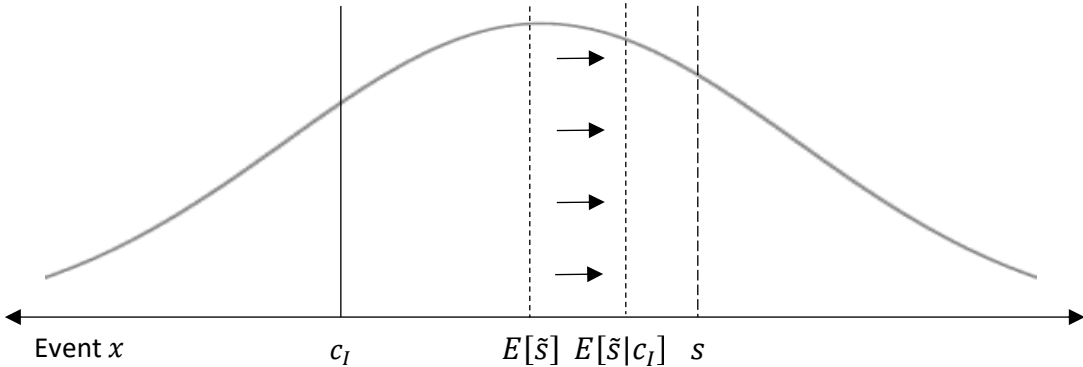
Levy Gerzberg,  
President and CEO

### **Appendix 3: An example of a terminated merger**

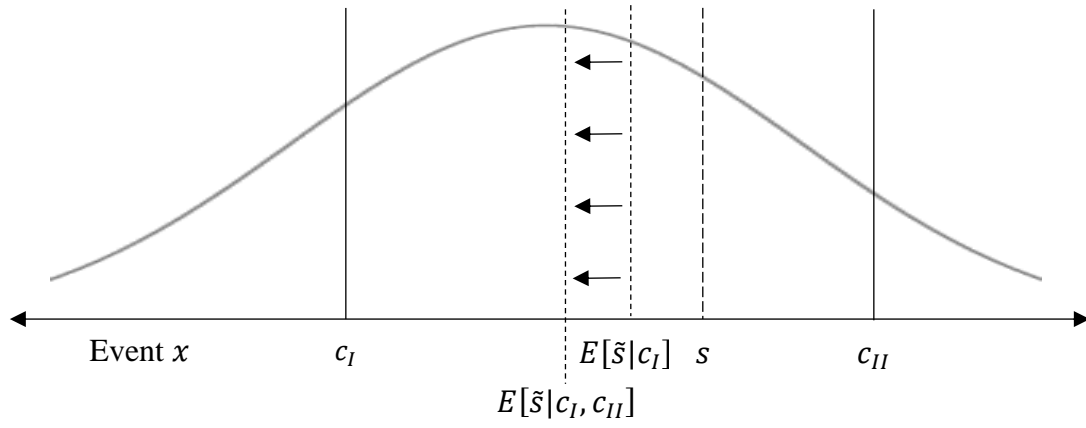
SEGUIN, Texas, February 23, 1999 - Alamo Group Inc. (NYSE: ALG) today announced that WEC Company, a subsidiary of Woods Equipment Company, has advised Alamo that it would not consummate its acquisition of Alamo. As a result, Alamo and WEC have mutually agreed to terminate their merger agreement.

As previously reported by the Company in a filing with the Securities and Exchange Commission on November 20, 1998, WEC had advised the Company that, in WEC's view, a material adverse effect had occurred with respect to the Company which would result in a closing condition under the merger agreement being unsatisfied. While Alamo denied the substance of WEC's claims, Alamo decided to pursue continuing discussions with representatives of WEC in order to determine whether a revised transaction that remained in the best interests of Alamo's stockholders could be achieved. In February, representatives of Alamo and WEC met several times to discuss the terms of such a transaction, as well as to review Alamo's recent operating results. On February 19, 1999, WEC's representatives advised Alamo that, based on their review of Alamo's most recent financial results and after consulting with their financing sources, WEC would not proceed with a transaction to acquire Alamo.

**Figure 1. Materiality standards and non-affirmative court rulings**



**Figure 2. Materiality standards and affirmative court rulings**



**Table 1**  
**Sample Selection**

*Panel A: Sample selection procedure for completed deals (including renegotiated deals)*

Completed U.S. public mergers and acquisitions (1997 to 2018)		5,898
Less: Deals without a price change between agreement date and closing date		(5,157)
Less: Deals with price changes that are not renegotiations		(393)
Less: Deals with price changes between +1% and -1%		(176)
<b>Number of deals with renegotiations</b>		<b>172</b>
Renegotiated up		108
Renegotiation down		64
Total renegotiated deals		172
	<b>Completed</b>	<b>Renegotiated</b>
<i>Final sample of completed deals (including renegotiations)</i>	<b>deals</b>	<b>deals</b>
	5,898	172
Less: Deals with less than 50% shares acquired	(204)	(11)
Less: Deals with missing data to construct target firm return volatility	(745)	(10)
Less: Deals with missing data to construct VIX volatility	(11)	0
Less: Deals with missing data to construct deal premiums	(145)	(1)
Less: Deals with missing target firm size	(37)	0
<b>Number of observations</b>	<b>4,756</b>	<b>150</b>
Renegotiated up		94
Renegotiated down		56
Total renegotiated deals		150

**Table 1 (Continued)***Panel B: Sample selection for terminated deals*

	Terminated deals
Terminated U.S. public mergers and acquisitions (1997 to 2018)	491
Less: Deals terminated due to a competing offer (which became a completed deal)	(238)
Less: Deals with missing data to construct target firm return volatility	(33)
Less: Deals with missing data to construct VIX volatility	(2)
Less: Deals with missing data to construct deals premiums	(21)
Less: Deals with missing target firm size	(2)
<b>Number of observations</b>	<b>195</b>
Terminated by target	34
Terminated by acquiror	35
Mutually terminated	82
Terminated due to regulatory requirement	26
Terminated due to shareholder vote	12
Terminated for undisclosed reason	6
Total terminated deals	195

**Table 1 (Continued)**

*Panel C: Distribution of all deals, renegotiations, and terminated deals*

	(1)	(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)	
	All deals	Reneg. Up		Reneg. Down		All reneg.		Term. by target		Term. by acquirer		Mutually term.		Term. by regulator		Term. by vote		Undiscl. term		All term.	
Years	N	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals	N	% of deals
1997 - 2001	1970	25	1.3%	27	1.4%	52	2.6%	11	0.6%	19	1.0%	47	2.4%	10	0.5%	0	0.0%	6	0.3%	93	4.7%
2002 - 2008	1445	31	2.1%	22	1.5%	53	3.7%	13	0.9%	13	0.9%	19	1.3%	6	0.4%	9	0.6%	0	0.0%	60	4.2%
2009 - 2018	1536	38	2.5%	7	0.5%	45	2.9%	10	0.7%	3	0.2%	16	1.0%	10	0.7%	3	0.2%	0	0.0%	42	2.7%
Total	4951	94	1.9%	56	1.1%	150	3.0%	34	0.7%	35	0.7%	82	1.7%	26	0.5%	12	0.2%	6	0.1%	195	3.9%

**Table 2**  
**Summary Statistics**

*Panel A: Completed deals*

Variable	N	Mean	SD	P25	Median	P75
Deal Premium	4,606	0.414	0.477	0.182	0.333	0.534
Log (Deal Value)	4,606	6.344	1.528	5.117	6.149	7.396
Target Return Vol (Pre-merger)	4,606	0.516	0.307	0.313	0.439	0.623
Target Return Vol (Post-announcement)	4,606	0.625	0.697	0.271	0.457	0.761
VIX Vol	4,606	1.037	0.332	0.824	0.965	1.189
Log (Target size)	4,606	5.931	1.570	4.695	5.739	6.998
Acquirer Term. Fee Ratio	4,606	0.010	0.026	0.000	0.000	0.000
Target Term. Fee Ratio	4,606	0.025	0.017	0.014	0.029	0.036
Cash Only	4,606	0.450	0.498	0.000	0.000	1.000
Toehold	4,606	0.039	0.194	0.000	0.000	0.000
Toehold Prop.	4,606	0.009	0.052	0.000	0.000	0.000
Log (Prior bidders)	4,606	0.712	0.093	0.693	0.693	0.693
GoShop	4,606	0.038	0.191	0.000	0.000	0.000
Collar	4,606	0.063	0.244	0.000	0.000	0.000
Tender Offer	4,606	0.217	0.412	0.000	0.000	0.000

*Panel B: Renegotiated deals*

	N	Mean	SD	P25	Median	P75
Deal Premium	150	0.359	0.368	0.162	0.289	0.453
Log (Deal Value)	150	6.370	1.682	5.000	6.074	7.406
Target Return Vol (Pre-merger)	150	0.526	0.270	0.334	0.466	0.639
Target Return Vol (Post-announcement)	150	0.508	0.365	0.286	0.385	0.617
VIX Vol	150	1.052	0.292	0.848	0.970	1.215
Log (Target size)	150	5.984	1.747	4.673	5.633	7.097
Acquirer Term. Fee Ratio	150	0.015	0.044	0.000	0.000	0.022
Target Term. Fee Ratio	150	0.026	0.017	0.018	0.028	0.034
Cash Only	150	0.507	0.502	0.000	1.000	1.000
Toehold	150	0.080	0.272	0.000	0.000	0.000
Toehold Prop.	150	0.019	0.075	0.000	0.000	0.000
Log (Prior bidders)	150	0.805	0.189	0.693	0.693	1.099
GoShop	150	0.113	0.318	0.000	0.000	0.000
Collar	150	0.060	0.238	0.000	0.000	0.000
Tender Offer	150	0.187	0.391	0.000	0.000	0.000

**Table 2 (Continued)***Panel C: Terminated deals*

Variable	N	Mean	SD	P25	Median	P75
Deal Premium	195	0.361	0.794	0.077	0.234	0.421
Log (Deal Value)	195	6.512	1.827	4.961	6.171	7.858
Target Return Vol (Pre-merger)	195	0.585	0.360	0.310	0.508	0.760
Target Return Vol (Post-announcement)	195	0.834	0.773	0.403	0.575	0.985
VIX Vol	195	1.047	0.274	0.861	0.997	1.236
Log (Target size)	195	6.149	1.916	4.719	5.820	7.374
Acquirer Term. Fee Ratio	195	0.015	0.026	0.000	0.000	0.027
Target Term. Fee Ratio	195	0.023	0.022	0.000	0.024	0.035
Cash Only	195	0.303	0.461	0.000	0.000	1.000
Toehold	195	0.056	0.231	0.000	0.000	0.000
Toehold Prop.	195	0.024	0.112	0.000	0.000	0.000
Log (Prior bidders)	195	0.719	0.110	0.693	0.693	0.693
GoShop	195	0.067	0.250	0.000	0.000	0.000
Collar	195	0.097	0.297	0.000	0.000	0.000
Tender Offer	195	0.051	0.221	0.000	0.000	0.000

**Table 3****Determinants of Renegotiations and Terminations***Panel A: Reasons for renegotiations and terminations*

<b>Reason</b>	Reneg. up	Reneg. down	Term. by target	Term. by acquirer	Mutually term.
Board dissent (acquirer or target)			3	1	
Breach of terms (acquirer or target)			12	4	1
Competing offer	51				
Contract change	1	3			
Creditor concern		6		5	
Deadline expired			10		3
Due diligence				2	1
Adverse event (acquirer or target)	1	35	6	15	39
Proxy advisor disapproval	3				
Regulator concern		3	3	2	6
Renegotiation unsuccessful					4
Shareholder dissent	24				5
Strategic reason		2			16
Undisclosed reason	14	7		6	7
<b>Total</b>	<b>94</b>	<b>56</b>	<b>34</b>	<b>35</b>	<b>82</b>

**Table 3 (Continued)***Panel B: Economic drivers of renegotiations and terminations*

Dependent variable:	(1)	(2)	(3)
	Y = Renegotiated down	Y = Terminated	Y = Renegotiated up
Deal Premium	0.519** (2.26)	-0.755*** (-2.71)	-1.450*** (-2.98)
Log (Deal Value)	-1.530** (-2.04)		1.226*** (4.13)
Target Ret. Volatility (Pre)	0.551*** (2.73)		
Target Ret. Volatility (Post)		0.753*** (4.27)	-0.473* (-1.65)
VIX Volatility			
Log (Target size)	1.516** (2.05)		-1.266*** (-4.75)
Acquirer Term. Fee Ratio		4.722*** (3.45)	
Target Term. Fee Ratio			
Cash Only		-0.470** (-2.35)	0.594*** (3.37)
Toehold			
Toehold Prop.	-8.647* (-1.88)	3.084*** (3.60)	5.354*** (4.44)
Log (Number of bidders)		1.070*** (1.67)	5.235*** (8.49)
GoShop	0.902** (2.26)		1.277*** (3.78)
Collar			
Tender Offer	-1.047* (-1.79)	-1.898*** (-3.84)	
Constant	-4.163*** (-6.97)	-3.912*** (-8.00)	-7.897*** (-8.98)
No. of observations (Y=1)	56	195	94
No. of observations	4,756	4,951	4,756

Pseudo R <sup>2</sup>	0.037	0.068	0.150
ROC	0.723	0.705	0.821
Probability threshold	10%	10%	10%

Notes: This table presents estimates of equation (1). The dependent variable is an indicator variable equal to 1 if the merger/acquisition was renegotiated down (in column 1), terminated (in column 2) or renegotiated up (in column 3) after the original announcement date. All variables are defined in Appendix 1. Robust z-statistics are reported in parentheses and calculated using standard errors clustered at the merger's year of announcement level. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 4**

**Impact of Court Rulings on Likelihood of Renegotiations and Terminations**

*Panel A: Logistic regression*

Dependent variable:	PLACEBO TESTS							
	(1)		(2)		(3)		(4)	
	Y = Reneg. down	Marginal effects	Y = Term. by acquirer	Marginal effects	Y = Reneg. up	Marginal effects	Y = Term.by target	Marginal effects
Treated_States × Post	-1.323*** (-3.99)	-0.015*** (-4.04)	-1.562*** (-2.69)	-0.010*** (-2.72)	0.074 (0.19)	0.001 (0.19)	-0.207 (-0.53)	-0.001 (-0.54)
Treated_States	1.149*** (4.05)		0.645* (1.65)		-0.175 (-1.04)		0.395 (1.44)	
Post	0.177 (0.55)		-0.199 (-0.31)		0.379 (0.93)		0.340 (0.82)	
Deal Premium	0.684*** (7.88)		-1.485*** (-4.57)		-1.397*** (-6.50)		-0.175 (-0.70)	
Log (Deal Value)	-1.902*** (-8.24)				1.179*** (5.10)			
Target Ret.Volatility (Pre)	0.225 (1.15)							
Target Ret. Volatility (Post)			1.003*** (7.23)		-0.560*** (-2.78)		0.357** (2.54)	
Log (Target size)	1.786*** (7.13)				-1.249*** (-5.57)			
Acquirer Term. Fee Ratio			4.590** (2.30)				3.431*** (3.32)	
Target Term. Fee Ratio								

Cash Only		0.571** (2.04)	0.396** (2.00)	0.103 (0.34)
Toehold Prop.	-9.483*** (-4.94)	1.705*** (3.57)	5.463*** (5.12)	-0.149 (-0.27)
Log (Number of bidders)		1.185** (2.11)	5.245*** (15.51)	
GoShop	1.355*** (3.48)		1.164*** (4.87)	
Tender Offer	-1.177*** (-4.99)	-1.684*** (-3.65)		
Time Trend	-0.052 (-1.19)	-0.040 (-0.61)	0.002 (0.05)	0.009 (0.29)
Constant	99.223 (1.13)	75.046 (0.57)	-13.598 (0.05)	-23.425 (-0.40)
No. of observations	4,685	4,951	4,685	4,806
Industry FE	YES	YES	YES	YES
Cluster by State	YES	YES	YES	YES
Cluster by Year	NO	NO	NO	NO
Pseudo/Adj. R <sup>2</sup>	0.103	0.169	0.162	0.042

**Table 4 (Continued)**

*Panel B: OLS regression*

Dependent variable:	PLACEBO TESTS			
	(1)	(2)	(3)	(4)
	Y = Reneg. down	Y = Term. by acquirer	Y = Reneg.up	Y = Term. by target
Treated_States × Post	-0.015*** (-4.56)	-0.009*** (-3.22)	-0.001 (-0.10)	-0.002 (-0.36)
Treated_States	0.014 (4.94)	0.004 (1.33)	-0.002 (-1.38)	0.003 (1.17)
Post	0.002 (0.78)	-0.002 (-0.51)	0.008 (0.96)	0.002 (0.56)
Deal Premium	0.011*** (6.08)	-0.016** (-2.47)	-0.022*** (-3.89)	-0.001 (-0.23)
Log (Deal Value)	-0.025*** (-5.60)		0.025*** (4.64)	
Target Ret. Volatility (Pre)	0.005 (1.61)			
Target Ret. Volatility (Post)		0.017** (2.28)	-0.000 (-0.23)	0.004 (1.44)
Log (Target size)	0.024*** (5.84)		-0.026*** (-6.06)	
Acquirer Term. Fee Ratio		0.057 (1.26)		0.047*** (2.91)
Target Term. Fee Ratio				
Cash Only		0.003 (0.82)	0.005*** (3.52)	0.001 (0.25)
Toehold Prop.	-0.069*** (-7.47)	0.035 (1.68)	0.165** (2.85)	-0.000 (-0.06)
Log (Number of bidders)		0.018* (1.99)	0.299*** (6.39)	
GoShop	0.018*** (3.16)		0.041*** (3.34)	
Tender Offer	-0.010*** (-4.16)	-0.010*** (-2.95)		
Time Trend	-0.000 (-1.70)	-0.000 (-0.45)	-0.000 (-0.08)	0.000 (0.19)
Constant	0.820* (1.73)	0.270 (0.44)	-0.062 (-0.04)	-0.095 (-0.19)

No. of observations	4,756	4,951	4,756	4,951
Industry FE	YES	YES	YES	YES
Cluster by State	YES	YES	YES	YES
Cluster by Year	YES	YES	YES	YES
Pseudo/Adj. R <sup>2</sup>	0.010	0.016	0.054	0.000

Notes: Panel A of this table presents estimates of a logistic regression model in columns (1) to (4), and Panel B presents estimates of an OLS regression model in columns (5) to (8). The dependent variable is an indicator variable equal to 1 if the merger/acquisition was renegotiated down (in columns 1 and 5), terminated by the acquirer (in column 2 and 6), renegotiated up (in columns 3 and 7), and terminated by the target (in columns 4 and 8) after the original announcement date. The main variable of interest, Post, is an indicator variable that assumes the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger is after the corresponding court ruling for those states. All other variables are defined in Appendix 1. Robust z-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level in Panel A and at the target firm's state of incorporation level and the deal year of announcement in Panel B. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 5**  
**Trend Analysis**

*Panel A*

Dependent variable:	(1) Y = Renegotiated down	(2) Y = Term. by acquirer and mutually term.
Pre-event (t-1 to t-2)	-0.006 (-0.67)	0.005 (0.61)
Post-event (t+1 to t+3)	-0.011* (-2.06)	-0.007 (-1.01)
Post-event (t+4 to t+6)	-0.014** (-2.83)	-0.019** (-2.44)
Post-event (beyond 6yrs)	-0.014*** (-3.57)	-0.013** (-2.57)
Treated_States	0.013** (2.88)	0.006 (1.41)
Post	-0.003 (-0.70)	-0.016 (-1.56)
No. of observations	4,388	4,562
Controls	YES	YES
Time Trend	YES	YES
Industry FE	YES	YES
Cluster by State	YES	YES
Cluster by Year	YES	YES
Adj. R <sup>2</sup>	0.011	0.027

Notes: This table presents estimates of an OLS regression model. The dependent variable is an indicator variable equal to 1 if the deal was renegotiated down (column 1) or terminated (column 2). The main variables of interest are indicator variables that assume the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger occurs in the 2-year window before the event year (Pre-event (t-1 to t-2)), the 3-year window immediately after the event year (Post-event (t+1 to t+3)), the 3-year window beginning 4 years after the event year (Post-event (t+4 to t+6)), and all years beyond the 6th year after the event year (Post-event (beyond 6yrs)), respectively. All other variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the deal year of announcement. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 5 (Continued)***Panel B: Placebo analysis*

	(1)	(2)	(3)
Dependent variable:	Y = Renegotiated up	Y = Terminated by target	Y = Terminated by regulator
Pre-event (t-1 to t-2)	-0.003 (-0.48)	-0.001 (-0.24)	0.002 (1.00)
Post-event (t+1 to t+3)	0.005 (1.25)	-0.001 (-0.14)	-0.001 (-0.22)
Post-event (t+4 to t+6)	-0.007 (-0.88)	-0.004 (1.01)	0.004 (0.72)
Post-event (beyond 6yrs)	-0.009 (-1.17)	0.008 (1.62)	0.018*** (3.13)
Treated_States	-0.000 (-0.14)	0.001 (0.47)	-0.002 (-0.94)
Post	-0.007 (-1.27)	-0.002 (-0.64)	0.007** (2.69)
No. of observations	4,388	4,562	4,562
Controls	YES	YES	YES
Time Trend	YES	YES	YES
Industry FE	YES	YES	YES
Cluster by State	YES	YES	YES
Cluster by Year	YES	YES	YES
Adj. R <sup>2</sup>	0.058	0.003	0.012

Notes: This table presents estimates of an OLS regression model. The dependent variable is an indicator variable equal to 1 if the deal was renegotiated up (column 1), terminated by the target (column 2), or terminated because of a regulatory reason (column 3). The main variables of interest are indicator variables that assume the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger occurs in the 2-year window before the event year (Pre-event (t-1 to t-2)), the 3-year window immediately after the event year (Post-event (t+1 to t+3)), the 3-year window beginning 4 years after the event year (Post-event (t+4 to t+6)), and all years beyond the 6th year after the event year (Post-event (beyond 6yrs)), respectively. All other variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the deal year of announcement. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 6**  
**Impact of Court Rulings on Merger Arbitrage Spreads**

Dependent variable:	(1)	(2)
	New York ruling (2001) Y = Merger arbitrage spread	Delaware ruling (2008) Y = Merger arbitrage spread
Treated_State × Post	-0.224*** (-3.62)	-0.072** (-2.26)
Treated_State	0.011 (0.17)	-0.382*** (-10.32)
Post	0.056 (1.16)	0.374* (2.05)
Deal Premium	-0.036 (-1.38)	-0.228*** (-4.67)
Renegotiated up		
Renegotiated down	0.094 (1.34)	0.095 (1.34)
Log (Deal Value)	0.100*** (3.10)	0.166* (2.13)
Target Ret. Volatility (Pre)	0.093* (1.87)	0.226* (2.02)
Log (Target size)	-0.093** (-2.94)	-0.178** (-2.33)
Public Acquirer	-0.015 (-0.55)	-0.062 (-1.36)
Target Term. Fee Ratio	0.455 (0.39)	-2.462*** (-6.54)
Toehold	-0.031 (-0.50)	-0.084 (-0.55)
Tender Offer	-0.093*** (-3.75)	-0.102*** (-3.14)
Hostile		
Cash Only	-0.012 (-0.51)	0.028 (0.59)
Log (Number of bidders)	0.546*** (4.18)	0.624*** (3.12)
Same Industry	0.000	-0.047

	(0.01)	(-0.99)
VIX	0.003	-0.012*
	(0.78)	(-1.91)
Time Trend	-0.070**	0.039
	(-2.18)	(1.08)
No. of observations	303	104
Industry FE	YES	YES
State FE	YES	YES
Cluster by State	YES	YES
Cluster by Year-Month	YES	YES
Adj. R <sup>2</sup>	0.106	0.433

Notes: This table presents estimates for an OLS regression model. The sample of deals includes all completed cash-only, stock-only, and mixed-consideration deals on any date beginning 1-year before the court ruling and ending 3 months after the court ruling. The dependent variable is the merger arbitrage spread calculated 1 day after the deal's definitive agreement date and is defined as the agreement price (as on the definitive agreement date) minus the target's stock price 1 day after the agreement date, all divided by the target's stock price 1 day after the agreement date. The main variable of interest is the interaction term,  $Treated\_State \times Post$ , which equals 1 if a target firm's state of incorporation is New York (in column 1) or Delaware (in column 2) and the merger is announced 20 trading days after the court ruling. All other variables are defined in Appendix 1. Robust t-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the deal announcement year-month. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 7**

**Impact of Court Rulings on the Composition of Mergers**

*Panel A: Regression output*

Dependent variable:	<i>Ordered logit</i>	<i>OLS</i>	<i>Ordered logit</i>	<i>OLS</i>
	(1)	(2)	(3)	(4)
	Y = Target size (within-year quartiles)	Y = Target size (above median within year)	Y = Target's return volatility (within-year quartiles)	Y = Target's return volatility (above median within year)
Pre-event (t-1 to t-2)	-0.146 (-1.14)	-0.028 (-0.56)	-0.117 (-0.84)	-0.014 (-0.46)
Post-event (t+1 to t+3)	0.480*** (4.00)	0.115*** (3.02)	-0.448*** (-4.55)	-0.090** (-2.28)
Treated_States	-0.321*** (-3.33)	0.007 (0.09)	-1.222*** (-10.16)	-0.212*** (-3.22)
Post	0.300* (1.66)	0.067 (0.09)	0.207* (1.66)	0.043 (0.76)
Log (Deal Value)			0.521*** (3.83)	0.074** (2.38)
Target Ret. Volatility (Pre)	-2.565*** (-10.12)	-0.443*** (-5.72)		
Target MTB	0.000*** (3.22)	-0.000 (-0.10)	-0.000*** (-11.49)	-0.000 (-0.29)
Log (Target size)			-1.035*** (-7.95)	-0.165*** (-4.97)
Public Acquirer	0.516*** (6.42)	0.109*** (3.10)	0.423*** (5.84)	0.081* (2.77)
Cash Only	-0.439*** (-5.94)	-0.108** (-2.86)	-0.037 (-0.67)	-0.010 (-0.44)
Toehold	-0.125 (-0.49)	-0.030 (-0.41)	0.486** (2.57)	0.093 (1.19)
Toehold Prop.	1.123 (1.50)	0.232 (1.18)	0.016 (0.02)	-0.022 (-0.08)
Tender Offer	-0.260*** (-5.99)	-0.063** (-2.44)	-0.041 (-0.72)	0.013 (0.63)
VIX	0.006 (1.16)	0.001 (0.35)	-0.000 (-0.03)	0.000 (0.09)
CAPE	0.019**	0.003	-0.012	-0.002

	(2.51)	(1.00)	(-1.31)	(-0.59)
Rate Spread	4.725	0.450	-13.629***	-2.470**
	(1.23)	(0.50)	(-2.98)	(-2.48)
Financial Crisis (2007-2008)	0.116	0.024	-0.022	-0.018
	(0.51)	(0.60)	(-0.11)	(-0.58)
DotCom Crisis (2000-2001)	0.348***	0.075	0.101	0.018
	(4.82)	(1.60)	(1.42)	(0.67)
Time Trend	-0.036**	-0.006	0.017	0.003
	(-2.35)	(-1.69)	(1.48)	(0.91)
Constant		13.211*		-4.428
		(1.75)		(-0.75)
No. of observations	4,347	4,347	4,347	4,347
Industry FE	YES	YES	YES	YES
State FE	YES	YES	YES	YES
Cluster by State	YES	YES	YES	YES
Cluster by Year	NO	YES	NO	YES
Pseudo/Adj. R <sup>2</sup>	0.068	0.110	0.167	0.273

Notes: This table presents estimates of an ordered logistic regression model (columns 1 and 3) and an OLS regression model (columns 3 and 4). In columns 1 and 3, the dependent variable is an ordinal variable from 1 to 4 (where 1=low and 4=high), which represents within-year quartiles of pre-merger size (column 1) and stock return volatility (column 3) of target firms. In column 2 and 4, the dependent variable is an indicator variable that assumes the value of 1 if the target firm's pre-merger size (in column 2) or stock return volatility (in column 3) is above the median of all mergers within that year. Pre-merger stock return volatility is measured over the 252 trading days prior to the announcement date of the merger. The main variables of interest are indicator variables that assume the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger occurs in the 2-year window before the event year (Pre-event (t-1 to t-2) and the 3-year window immediately after the event year (Post-event (t+1 to t+3))). All other variables are defined in Appendix 1. Robust z-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the deal announcement year (in columns 2 and 4). \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 7 (Continued)**

*Panel B: Marginal effects for target size*

Quartile	Probability	p-value
1	-0.079	p < 0.001
2	-0.026	p < 0.001
3	0.024	p < 0.001
4	0.081	p < 0.001

*Panel C: Marginal effects for target volatility*

Quartile	Probability	p-value
1	0.060	p < 0.001
2	0.019	p < 0.001
3	-0.016	p < 0.001
4	-0.064	p < 0.001

Notes: Panel B presents the marginal effects for target pre-merger size, which corresponds to column 1 of Table 7, and Panel C presents the marginal effects for target pre-merger return volatility, which corresponds to column 3 of Table 7. The reported estimates represent the probability that a New York or Delaware target firm in the post-event period (t+1 to t+3) is within the corresponding quartile in that announcement year.

**Table 8**  
**Impact of Court Rulings on Deal Premiums**

Dependent variable:	(1)	(2)
	<i>Small &amp; High Volatility</i>	<i>Large &amp; Low Volatility</i>
	Y = Deal Premium	Y = Deal Premium
Pre-event (t-2 to t-1)	0.154*** (3.25)	0.051* (2.00)
Post-event (t+1 to t+3)	0.126** (2.61)	0.054* (1.99)
Post-event (t+4 to t+6)	0.091 (1.43)	0.080*** (3.12)
Post-event (beyond 6yrs)	0.062 (0.86)	0.043* (1.88)
Treated_States	-0.336*** (-4.67)	-0.128*** (-3.82)
Post	-0.013 (-0.46)	-0.105*** (-3.27)
Target Ret. Volatility (Pre)	0.069* (1.84)	0.384*** (4.68)
Target MTB	0.002 (0.63)	-0.000*** (-4.25)
Log (Target size)	-0.223*** (-8.66)	0.007 (1.13)
Public Acquirer	0.085** (2.60)	0.006 (0.33)
Cash Only	0.002 (0.04)	0.038* (2.04)
Toehold	0.078 (1.01)	-0.106*** (-5.20)
Target Term Fee (Yes)	0.081** (2.32)	0.030 (1.71)
Acquirer Term fee (Yes)	-0.058 (-1.42)	-0.040*** (-4.22)
Log (Number of bidders)	0.255* (1.95)	0.167** (2.82)
Tender Offer	0.033 (0.77)	0.052*** (2.89)

Same Industry	0.036 (1.36)	0.029** (2.32)
VIX	0.004*** (3.00)	0.002* (1.75)
CAPE	0.010*** (6.06)	-0.003 (-1.06)
Rate Spread	1.050 (1.21)	0.591 (1.01)
Financial Crisis (2007-2008)	-0.013 (-0.29)	-0.012 (-0.83)
DotCom Crisis (2000-2001)	-0.020 (-0.64)	0.055 (1.05)
Time Trend	0.009* (1.81)	-0.000 (-0.02)
Constant	-16.337 (-1.70)	0.168 (0.05)
No. of observations	1,309	1,453
Industry FE	YES	YES
State FE	YES	YES
Cluster by State	YES	YES
Cluster by Year	YES	YES
Adj. R <sup>2</sup>	0.187	0.109

Notes: This table presents estimates of an OLS regression model. The dependent variable (Deal Premium), is calculated as ((agreement day price - target's stock price 4 weeks before)/target's stock price 4 weeks before). The main variables of interest are indicator variables that assume the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger occurs in the 2-year window before the event year (Pre-event (t-1 to t-2), the 3-year window immediately after the event year (Post-event (t+1 to t+3)), the 3-year window beginning 4 years after the event year (Post-event (t+4 to t+6)), and all years beyond the 6th year after the event year (Post-event (beyond 6yrs)), respectively. All other variables are defined in Appendix 1. Robust z-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the deal announcement year. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 9**  
**Impact of Court Rulings on Post-Acquisition Returns**

	(1)	(2)	(3)
	<i>Full sample</i>	<i>Small &amp; High Volatility</i>	<i>Large &amp; Low Volatility</i>
Dependent variable:	Y = Acquirer 180-day Post- acquisition CAR	Y = Acquirer 180-day Post- acquisition CAR	Y = Acquirer 180-day Post- acquisition CAR
Treated_States × Post × Small_Highvol	-0.151*** (-2.87)		
Treated_States × Post	-0.039 (-1.12)	-0.195** (-2.37)	-0.068 (-1.62)
Treated_States × Small_Highvol	0.073* (1.74)		
Post × Small_Highvol	0.003 (0.06)		
Treated_States	-0.000 (-0.01)	0.081 (1.38)	0.036 (1.01)
Post	-0.048 (-0.63)	-0.055 (-0.56)	0.002 (0.03)
Small_Highvol	0.027 (0.63)		
Difference in coef.			4.06**
No. of observations	2,702	814	817
Controls	YES	YES	YES
Time Trend	YES	YES	YES
Industry FE	YES	YES	YES
Cluster by State	YES	YES	YES
Cluster by Year	YES	YES	YES
Adj. R <sup>2</sup>	0.01	0.01	0.03

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Notes: This table presents estimates from OLS DiDiD and DiD regression models that investigate acquirer 180-day post-acquisition cumulative abnormal returns (CAR). Column 1 presents estimates for the full sample; columns 2 and 3 present estimates for samples based on whether the target firm is below the median size and above the median volatility (i.e., Small & High Volatility) and whether the target firm is above the median size and below the median volatility (i.e., Large & Low Volatility). The main variable of interest in column 1 is the interaction term  $Treated\_States \times Post \times Small\_Highvol$ , which is an indicator variable that assumes the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger is after the corresponding court ruling for those states and the target firm is identified as being below the median in terms of size and above the median in terms of volatility; and 0 otherwise. The main variable of interest in columns 2 and 3 is the interaction term  $Treated\_States \times Post$ , which assumes the value of 1 if the target firm's state of incorporation is New York or Delaware and the announcement date of the merger is after the corresponding court ruling for those states; and 0 otherwise. All other variables are defined in Appendix 1. Robust t- and z-statistics are reported in parentheses and calculated using standard errors clustered by year the deal is announced. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.

**Table 10****Robustness Analysis (2018 Delaware Court Ruling)**

Dependent variable:	Y = Merger arbitrage spread
Delaware × Post	0.174*** (6.02)
Delaware	-0.083 (-1.74)
Post	-0.223*** (-6.53)
No. of observations	
	90
Controls	YES
Time Trend	YES
Industry FE	YES
State FE	YES
Cluster by State	YES
Cluster by Year- Month	YES
Adj. R <sup>2</sup>	0.289

Notes: This table presents estimates from DiD OLS regression models that investigate the effect of the 2018 Delaware Court of Chancery ruling on risk arbitrage spreads. The main variable of interest is an interaction term, Delaware × Post, which assumes the value of 1 if a deal is announced on or after November 1, 2018 and the target firm's state of incorporation is Delaware. All other variables are defined in Appendix 1. Robust t- and z-statistics are reported in parentheses and calculated using standard errors clustered at the target firm's state of incorporation level and the year-month of the deal. \*, \*\*, \*\*\* represent significance at the 10%, 5%, and 1% level, respectively.