

# Appraisal Rights: A Use or Abuse of Takeover Law?

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## Abstract

Appraisal rights grant dissenting shareholders in an acquisition the right to petition the court to determine the value of the firm. These rights can protect shareholders from acquisitions below fair value or can be used to extract wealth from acquiring firms by shareholders circumventing the market pricing mechanism. We examine the use of appraisal rights and find the evidence is most consistent with appraisal rights functioning as recourse when the target's board fails to negotiate a fair value price leading to excess value creation at the acquiring firm. We attribute this to the inexperience and busyness of target firm directors.

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## 1. Introduction

On April 21, 2005 Transkaryotic Therapies, Inc. (“Transkaryotic”) announced a definitive merger agreement with Shire Pharmaceuticals Group plc (“Shire”), in which Shire agreed to pay \$37 per share — a 44 percent premium over the average closing price over the prior four weeks. The record date was set for June 10, 2005 and Transkaryotic held a meeting of shareholders on July 27, 2005, at which 52 percent of shareholders approved the merger. A number of dissenting shareholders believed that the \$37 per share was not the fair value of their shares and decided to exercise their appraisal rights and have the Delaware Chancery Court (the “Court”) determine the appropriate merger price. These dissenting shareholders in effect circumvented the capital markets to determine the fair value of an equity claim in the hope that the fair value, as determined by the Court, would be higher than the merger price. Between August 10, 2005 and November 23, 2005, five petitions for appraisal of 10,972,650 shares of Transkaryotic were filed on behalf of the dissenting shareholders of Transkaryotic.

The Transkaryotic case involved unique circumstances. A crucial criterion for petitioning the Court for appraisal is that the shares seeking appraisal must not vote in support of the merger. Under normal circumstances this can be documented by the beneficial owner demonstrating that they had the right to vote, i.e., they were beneficial owners on the record date, and that they did not vote in support of the merger. The Transkaryotic case was special though because on the record date the petitioners were beneficial owners of only 2,901,433 of the 10,972,650 shares that they ultimately petitioned.<sup>1</sup> Despite the beneficial owners of the shares only owning a fraction of the shares petitioned as of the record date — and thus could not demonstrate that those shares were not voted in support of the merger — the Court determined that appraisal rights were available for all the petitioned shares. This decision hinged on the fact that the petitioner of those shares was technically the record holder Cede & Co., which had voted against or abstained from voting more than the 10,972,650 shares being petitioned for appraisal.

This determination opened the door for what has become known as “appraisal arbi-

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<sup>1</sup> The remaining 8,071,217 shares were purchased after the record date but before the effective date.

trage” — a strategy in which specialized investors acquire shares after the record date of a merger with the express intent to exercise their appraisal rights in hope that the Court will determine that the fair value of their shares is higher than the merger price. For the ten cases that have gone through the entire appraisal process, the average premium above the merger price has been an *additional* 41 percent. Furthermore, while the cases are going through the court system the petitioner is entitled to earn interest on their investment at a rate of five percent above the Federal Reserve discount rate. For a typical case — which has a median length of 2.4 years — this would add an estimated additional 13 percent return on investment.<sup>2</sup> The upside potential of this strategy is considerable, while there appears to be limited downside as only one Court determination of fair value has been below the merger price and in that one case, when the accrued interest is taken into consideration, the net loss was approximately three percent.

In this paper we ask two questions: (1) Are appraisal rights being used to remedy a contracting failure in the merger negotiation process such that the target is acquired below fair value or is appraisal being used to extract wealth from the acquiring firm by opportunistic investors? (2) Are the recent developments in the use of appraisal rights expected to have an adverse effect on the reallocation of corporate assets through the market for corporate control.

We find evidence consistent with appraisal rights being used to remedy a failure in contracting. For deals petitioned for appraisal we find significantly lower premiums despite the target firms having similar financial characteristics and deal structures. We also find that the acquirers of targets that are petitioned for appraisal experience a 6.6 percent higher cumulative abnormal return than acquirers of targets in a matched sample. Taken together, these results are consistent with a contracting failure on the part of the target’s board leading to excess value creation accruing to the acquirer’s shareholders. The evidence points to director over-commitment and inexperience as the source of the contracting failure. We find that directors at firms that are petitioned for appraisal are “busy” directors and have less experience at the firm. In examining the totality of the

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<sup>2</sup> During the time period of this study the Federal Reserve discount rate hovered near zero and for simplicity we assume the rate was zero for this calculation.

evidence, we conclude that appraisal rights appear to be acting as a recourse mechanism for a contracting failure.

While our findings suggest that appraisal rights are beneficial to target shareholders, the effects on the broader market for corporate assets are potentially ambiguous. For example, the risk of an appraisal claim may be sufficiently large that potential acquirers forgo an acquisition, which may prevent corporate assets from going to their highest and best use. We fail to find evidence that the benefits of appraisal rights to target shareholders are expected to adversely affect other market participants through introducing inefficiencies in the market for corporate assets. In particular, we examine key events that had an effect on the incentives to petition for appraisal and fail to find evidence that the rise of appraisal litigation is expected by market participants to have an adverse effect on the market for corporate assets. While we are hesitant to draw conclusions from an absence of evidence, our findings suggest that appraisal rights are effectively functioning as recourse for contracting failures with minimal cost to the broader market.

Our work contributes to the literature on shareholder rights and the market for corporate control. While the appraisal remedy has not been well studied in the finance and economics literature, other shareholder rights failures have been studied with the general consensus being that — as expected — target shareholders fare better when they have greater control and more thoroughly enumerated rights. In particular, Hartzell, Ofek, and Yermack (2004) find lower merger premia when target CEOs receive personal benefits in the form of special bonuses, increased golden parachutes, and positions within the acquiring company. They further interpret their findings as suggestive of a wealth transfer from target shareholders to acquiring shareholders. Moeller (2005) finds complementary results — higher target shareholder control is associated with higher merger premia.

This literature speaks broadly to the role that agency problems and reduced shareholder power play in the market for corporate control. Nevertheless, managers and boards have fiduciary duties to their shareholders and failure to fully represent the interests of target shareholders can result in legal liability. Target shareholders have two primary channels to pursue recourse for perceived contracting failures — fiduciary class actions

lawsuits and the exercise of appraisal rights. The literature has found mixed evidence for the effectiveness of these channels in safeguarding shareholders interests. Notably, Korsmo and Myers (2014) find that fiduciary breach litigation does not have merit but that appraisal litigation does, suggesting that only the appraisal channel is functioning as a safeguard for shareholder rights while fiduciary breach class action lawsuits do not provide the same level of recourse. However, Krishnan, Masulis, Thomas, and Thompson (2012) find that the threat of fiduciary breach lawsuits benefits target shareholders through higher completed merger premia by reducing the incentive of an acquirer to make a relatively low offer price. Korsmo and Myers (2015) focus exclusively on appraisal rights, and, consistent with their earlier findings, they find that appraisal is functioning as a protection for target shareholders. In contrast to these findings, Mahoney and Weinstein (1999) find little benefit to the appraisal channel. While Jiang, Li, Mei, and Thomas (2016) examine the likely effect of proposed appraisal reform legislation, and do not directly investigate the effectiveness of the appraisal channel, they find appraisal petitions to be motivated by transactions that may have conflicts of interest. Our work is distinguished from contemporaneous work on appraisal rights as the first to examine the use of appraisal rights in the broader context of the market for corporate assets, as well as the first to examine director level incentives that may be the source of the contracting failure that leads to the use of appraisal rights.

## 2. Background

Appraisal rights allow dissenting shareholders to seek a determination of fair value of their shares by the Court after a merger has occurred. In this study we focus on appraisal rights in Delaware due to the important role that Delaware plays in corporate law and finance and the comparatively narrow scope of appraisal rights in the state.<sup>3</sup> Delaware appraisal rights are established in the Delaware General Corporation Law — primarily in section 262. Section 262(b), however, limits appraisal rights to M&A transaction in which (1) the

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<sup>3</sup> Only mergers trigger appraisal rights in Delaware in contrast to the 24 states that follow the Model Business Corporation Act (MBCA) which allow for appraisal rights in a variety of other corporate actions.

merger consideration either has a cash component or is a stock conversion in which the converted stock is insufficiently liquid; or (2) the shareholder is a minority shareholder in a short-form merger.

Exercising appraisal rights requires navigating procedures that Korsmo and Myers (2015) — summarizing much of the law literature — describe as “Byzantine.” The target firm notifies shareholders of the terms of the proposed merger or acquisition 20 days or more before the vote. Shareholders who oppose the deal and intend to exercise their appraisal rights must notify the firm of their intent to seek appraisal before the date of the vote on the transaction. The shares for which appraisal is sought must not vote in favor of the merger. If the merger is approved, appraisal seeking shareholders have 120 days from the effective date to file an appraisal petition with the Court. The petitioning shareholders do not receive any compensation for their shares until either a settlement is reached or the court reaches a determination of fair value. Once a determination is made, the petitioning shareholders receive the Court determined price plus additional interest on the value of their claim accruing at five percent over the Federal Reserve discount rate.

In addition to Section 262 of Delaware’s General Corporation Law, appraisal rights have been further refined and articulated by case law in the Chancery Court. As was introduced above, the *Transkaryotic* case changed the nature of appraisal rights and opened the door to so-called appraisal arbitrage. The *Transkaryotic* determination has provided the opportunity for specialized investors to purchase shares in an acquired targeted with the express intent to exercise their appraisal rights. As a result of these specialized investors becoming active in this space, appraisal rights are currently under intense scrutiny by legislators and legal experts owing to the notion that they may be being abused by these specialized investors. In particular there have been calls for reforms to the law that would discourage the use of appraisal rights by these specialized investors, but in effect would discourage the use of appraisal rights more generally. Jiang et al. (2016) focus on two proposed reforms to the Delaware appraisal statute: (1) the proposed De Minimis Exception which would limit appraisal rights to larger claims; and (2) the proposed Inter-

est Reduction Amendment which would lower the statutory interest rate associated with appraisal awards. They conclude that these proposed reforms would likely significantly curtail the use of appraisal rights in Delaware.

In this study we examine if appraisal rights are being used as a remedy for a contracting failure in the merger negotiation process or being used as a mechanism to extract wealth from the acquiring firm by opportunistic investors. If the latter interpretation of appraisal rights is not supported, a superficial contradiction arises — if specialized investors are only minimally adversely affected by the failure in the merger negotiation process (because they amass their stakes after the announcement), why are appraisal rights recourse for those investors? We believe that if these specialized investors are not extracting wealth from acquirers, but rather using their expertise in navigating the aforementioned “Byzantine” process to exercise appraisal rights, then the original investors who were adversely affected still reap some benefits from the specialized investors using this recourse channel. The benefits that the adversely effected shareholders receive come from both the ex ante deterrent effect, i.e., if the target board knows there is an increased chance of an appraisal petition (which reveals a failure on their part) if they shirk in the negotiation process, they will exert more effort to secure a higher premium; and from the ex post valuation and liquidity effect, i.e., to the specialized investor the shares are more valuable because they have the option to exercise their appraisal rights and are therefore willing to enter the market and purchase the target’s shares post-announcement. As such, the existence of the appraisal recourse channel benefits those adversely affected, though benefits them only indirectly if those adversely affected investors do not exercise their appraisal rights and instead choose to sell — presumably because they view selling their appraisal rights as having a higher risk adjusted return than directly exercising them.

### 3. Data and Methodology

For this study we gather all appraisal petitions filed with the Court between January 2003 and May 2015 through CourtLink, a LexisNexis database. In total we collect the

275 petitions that were filed on behalf of 622 beneficial shareholders. These petitions identify the parties of the acquisition, the petitioner or petitioners, the date the petition was submitted, and provide background details on the deal. We match these petitions to transactions available in the Securities Data Company (SDC) Platinum database. We limit our attention to transactions in which the target firm is publicly listed with market capitalization greater than \$10 million. This leaves us with a sample of 159 petitions from 116 unique transactions. Table I provides a summary of these data. For petitioned transactions with data in CRSP, the average petitioned claim is valued at \$32 million and represents a two percent ownership share of the target.<sup>4</sup>

[Approximate Location of Table I]

The full sample averages reported in Table I inadvertently hide the rapid evolution in the use of appraisal rights. Figure 1 shows the time evolution of the number of appraisal petitions; Subfigure (a) shows the total dollar value of all shares for which appraisal is sought and subfigure (b) shows the average dollar value of each appraisal petition. The rapid rise in the number and size of the positions being petitioned is the result of specialized investors entering this space and using appraisal rights as an investment strategy. This is highlighted in Table II which lists the top 10 petitioners across the entire sample based on the number of petitions filed.

[Approximate Location of Table II]

[Approximate Location of Figure 1]

We augment the appraisal petition dataset by merging with CRSP, Compustat, and BoardEx. Because our goal is to assess whether appraisal rights are recourse for inefficient contracting or a channel opportunistic investors exploit, we require a counterfactual. We address this by creating a matched sample; we match transactions according to target firm characteristics and the transaction date. Using the full universe of completed M&A transactions in SDC, we create a matched sample of transactions by matching each petitioned target to a non-petitioned target on total assets, three-digit SIC code, and the

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<sup>4</sup> Based on the price on the last day of trading before the merger effective date.



restriction that the matched transaction is announced within one year of the petitioned transaction. This matching process produces a match for 75 percent of our petitioned sample. For transactions that fail to match on these criterion, we relax the industry classification and repeat at the two-digit SIC code level, which results in a match for an additional 21 percent of the petitioned sample. The remaining unmatched transactions are matched using the one-digit SIC code, accounting for the remaining four percent of the petitioned sample. We refer to this subsample of our data as the matched sample.

Examining the results of the matching process, we find that the matched sample is quite similar to the petitioned sample in terms of operating and deal characteristics. As presented in Panel A of Table III, we do not find substantial differences in the financial characteristics of the petitioned and matched samples; the two samples are similar along many dimensions including capital expenditures (CAPEX), research and development (R&D), asset tangibility, leverage, and cash holdings. Further, the petitioned and matched targets are similar in terms of operating performance as measured by Tobin's Q and return on assets (ROA). Despite only matching on size, industry, and time, we do not observe substantial differences in the two samples that are statistically significant at conventional levels.

[Approximate Location of Table III]

In examining deal characteristics, as presented in Panel B of Table III, the most striking difference is the difference in acquisition premia, both initial and final. We find that the petitioned sample receives a 15.7 percent lower premium than the corresponding matched sample. The initial acquisition premium before any revisions is even wider at 17.6 percent. We do not find any systematic difference in the incidence of revision, or the revision amount either unconditionally or conditional upon a revision. These striking differences do not correspond with differences in the observable characteristics presented in Panel A.

In addition to the substantial difference in premia, we do find that petitioned transactions are more likely to be all cash financed and are more likely the result of an unsolicited bid. Because cash considerations are a key criterion for appraisal rights to be preserved,

we would expect to see a higher incidence of all cash transactions in our petitioned sample and, indeed, we see 10.9 percentage points more all cash deals. We also note that the petitioned sample has 6.5 percentage points more unsolicited offers than the matched sample. While statistically significant at conventional levels, the economic significance is unclear.

In summary, for this study we use a matched sample approach to examine if appraisal rights are being used to remedy a contracting failure in the merger negotiation process or are being used to extract rents from the acquiring firm by opportunistic investors. We do this by matching each petitioned transaction to a non-petitioned transaction based on target firm size and industry, as well as time. We find that the petitioned and matched sample are quite similar on observable dimensions — except for substantially different offer premia — and thus provides support that this is a balanced sample and allows us to make meaningful inferences from univariate analysis.

## 4. Analysis

Using our matched sample approach, we examine whether the appraisal process is functioning as intended — as recourse for dissenting shareholders — or if the increasing involvement of specialized investors is leading to an abuse of the channel.

### 4.1. Acquisition Announcement Returns

As documented in Table III, the initial premium offered in the petitioned sample is considerably lower than the matched sample. These initial premia are presumably based on a strategy that the acquirer believes will result in the least costly method to purchase the target. Importantly, these initial offers may be subject to revision should circumstances of the target change or shareholders do not support the acquisition at the offered price. We are interested in how market participants react to the announcement of the acquisition and thus we examine the returns around the announcement.

Panel A of Table IV documents substantial differences in the market reaction to the

announcement of the acquisitions. Based on a -3 to +3 day event window, we find that the average cumulative abnormal return (CAR) for a petitioned target is 19.7 percent while the average CAR is 36.1 percent for the matched sample. Figure 2 visually demonstrates that these differences are neither transient nor are they the result of a delayed incorporation of the acquisition announcement. The 16.5 percent difference in CAR is — as expected — similar to the 17.6 percent difference in the initial premium offered.

[Approximate Location of Table IV]

[Approximate Location of Figure 2]

The clear difference in market reactions (due to the first order importance of the difference in the initial premium offered) does not necessarily indicate that target shareholders have been adversely affected by a failure on the part of the target’s board. Variation in firm or deal characteristics will naturally lead to a distribution in premia and hence announcement returns. If firm or deal characteristics are the drivers of the difference, then we would expect to see significant differences in target firm characteristics. As discussed above, we do not detect differences in observable financial characteristics. We do observe differences in deal characteristics — a higher incidence of all cash offers and a higher incidence of unsolicited bids — but the economic impact of these differences, and how those differences would result in a substantial difference in premia, is unclear.

A potential driver of the difference in premia between the petitioned and the matched sample is that the two samples differ on some dimension unobserved to the econometrician. In considering this possibility, we maintain the assumption that even if firm or deal characteristics are unobservable to the econometrician, financial market participants can observe these characteristics and thus market prices will reflect any value creation or destruction from an acquisition. We tackle the unobservable characteristics problem in two ways.

The first method we use to examine if unobserved characteristics are driving the difference in premia is to examine the market reaction of the acquirers’ stock to the announcement. Maintaining the assumption that market participants incorporate unobserved characteristics of the deal into the stock price, we examine the stock price reaction

of acquirers in order to determine if there is greater than expected value creation upon the announcement. The excess value creation accruing to acquirer shareholders may be indicative of petitioned transactions occurring at a relatively low price for the value of the corporate assets being acquired. If a petitioned target is acquired at an efficient price (with unobserved characteristics driving the relatively low premium) then we would expect that the acquiring firm's stock price reaction would be similar to the stock price reaction of acquirers of a firm in the matched sample. However, if the petitioned acquisition occurs at a low price relative to the value of the corporate assets being acquired, and that lower relative price cannot be attributed to target characteristics, then we would expect the market reaction reflected in the acquiring firms' stock price to be greater for acquirers of firms in the petitioned sample than for acquirers of firms in the matched sample.

Panel B of Table IV presents the market reaction reflected in the acquiring firms' stock prices based on an event study around the announcement of the acquisition. We find evidence that the stock price reaction to the announcement is substantially greater for acquisitions that are petitioned relative to the matched sample. For a -3 to +3 day event window we find an average difference in cumulative abnormal returns of 3.4 percent. Ten trading days after the announcement this difference nearly doubles to 6.6 percent. This stark divergence of average cumulative abnormal returns is visually striking and is illustrated in subfigure (b) of Figure 2.

To ensure the robustness of these inferences we perform a simulation study that explicitly enforces the null hypothesis that there is no difference in the petitioned and matched sample. In this simulation we construct a distribution of CARs by randomly assigning petitioned status for all deals in our sample based on independent draws from a Bernoulli distribution and calculating the average difference in petitioned and matched sample CARs. This procedure is repeated 5,000 times leading to a simulated distribution of the average difference in CARs under the enforced null hypothesis. The results of the simulation are presented in Figure 3. For the -3 to +3 window we find that differences in both target and acquirer CARs are still significant at the one percent and ten percent

levels, respectively. In untabulated results we find that differences in target CARs over the remaining event windows are all significant at the one percent level, while acquirer CARs differ from tabulated results only for the -3 to +5 window, with significance at the 10 percent level, rather than 5 percent.

[Approximate Location of Figure 3]

The excess value creation for the acquiring firm is indicative of the acquirer of a petitioned target purchasing the target's assets at a price below fair value. If we maintain the assumption that market participants can incorporate the value of unobserved characteristics of the firm or deal, then the positive difference in acquirers' CARs provides some evidence that unobserved characteristics are not driving the entire difference in acquisition announcement returns and are not driving the difference in premia.

The second method that we use to investigate the possibility that unobservable characteristics are responsible for the difference in acquisition premia is to compare the market reaction to the announcement with the actual initial premium offered. In addition to the initial premium, the market reaction incorporates information about expected deal completion and expected revisions to the initial offer. We are interested in whether market participants react differently along these dimensions, as a different reaction may be indicative of the petitioned sample and the matched sample differing on some unobserved dimension that may affect the probability of deal completion or offer revision. For example, if a director on a board in the petitioned sample is known for aggressively pursuing offer revisions after the announcement (potentially leading to a lower probability of deal completion), then the acquirer may intentionally offer a low initial acquisition premium with the expectation that it will be revised upward. Since market participants expect this and incorporate the expected revision into the announcement return, the CAR could be much higher than the initial offered premium.

To examine if the petitioned and matched sample differ on unobserved dimensions we examine the magnitude of the CARs relative to the magnitude of the initial acquisition premium. For expositional clarity we present the following stylized decomposition of the cumulative abnormal returns. The CAR incorporates the value of the initial premium,

$Prem_i$ , the probability of deal completion,  $P(C)$ , the expected revision,  $E[Prem_f - Prem_i]$ , and the probability of a revision conditional upon completion,  $P(R|C)$ .<sup>5</sup>

$$CAR \approx Prem_i * P(C) + E[Prem_f - Prem_i] * P(R|C) * P(C) \quad (1)$$

After simplifying, the ratio of the CAR to the initial premium offered is:

$$\frac{CAR}{Prem_i} \approx P(C) + E \left[ \frac{Prem_f}{Prem_i} - 1 \right] * P(R|C) * P(C) \quad (2)$$

Since we are interested in whether the market reacts differently to transactions that are petitioned relative to the matched sample, we examine the difference between the ratio of CAR to initial premium for the two samples:

$$\begin{aligned} \frac{CAR^P}{Prem_i^P} - \frac{CAR^M}{Prem_i^M} &\approx P^P(C) - P^M(C) \\ &+ E \left[ \frac{Prem_f^P}{Prem_i^P} - 1 \right] * P^P(R|C) * P^P(C) - E \left[ \frac{Prem_f^M}{Prem_i^M} - 1 \right] * P^M(R|C) * P^M(C) \end{aligned} \quad (3)$$

where superscript  $P$  denotes a petitioned target and superscript  $M$  denotes a matched target.

The univariate tests of the premia presented in Table III document that the average change in offer premia is not statistically different between the petitioned and the matched sample. If  $E \left[ \frac{Prem_f}{Prem_i} - 1 \right]$  was the same or substantially similar for the petitioned and matched sample, we would expect this result. Additionally, Table III documents that the difference in the incidence of offer revisions for the petitioned and matched sample are not statistically significant at conventional levels. Since we are examining only completed acquisitions, if  $P(R|C)$  was the same or substantially similar for the petitioned and matched sample, we would also expect to this result. While the lack of evidence of a difference is not necessarily indicative of the absence of a difference, it does provide support for the assumption that they are similar. If we make this assumption, then the

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<sup>5</sup> In this stylized decomposition we assume that the pre-announcement probability of being acquired is near zero and that the going concern value of the target is not affected by the deal not being completed.

difference in the ratio of CAR to initial premium is proportional to the difference in the probability of deal completion.

$$\frac{CAR^P}{Prem_i^P} - \frac{CAR^M}{Prem_i^M} \propto P^P(C) - P^M(C) \quad (4)$$

As presented in Panel C of Table IV, we fail to find evidence that the market reaction relative to the announced initial premium for the petitioned sample is different than the matched sample. While we cannot draw strong conclusions from the absence of evidence, these results do not support the hypothesis that there is an unobserved characteristic that is sufficiently economically significant to affect market participants' beliefs about deal completion.

## 4.2. Evidence of Contracting Failure

Thus far we have documented that (1) petitioned targets have substantially lower acquisition premia; (2) the lower acquisition premia is not due to differences in observable target characteristics; (3) acquirers of petitioned targets have substantially higher abnormal returns around the announcement of the acquisitions than acquirers of the matched sample; and (4) the market reaction to the announcement relative to the announced initial premium is similar for the petitioned and matched sample. This set of evidence is consistent with appraisal rights being used as a remedy for a rent being extracted from the target's shareholders due to inefficient contracting. However, this evidence may also be consistent with the hypothesis that there is a distribution of efficient prices that result from good faith negotiations and that specialized investors are selecting acquisitions with low premia to pursue an appraisal claim because they believe their strategy will have the highest expected risk adjusted return by petitioning those acquisitions.

To differentiate between these two interpretations of the evidence, we examine the attributes of target boards and the directors that compose those boards. Among traditional board structure measures such as board size, board independence, and a CEO sitting on the board, we do not find economically meaningful or statistically significant differences.

Further, we do not find a disproportionate incidence of overt conflicts of interest through a director sitting on both the acquirer's and the target's board.

Motivated by the work of Fich and Shivdasani (2006) and Cashman, Gillan, and Jun (2012) on busy boards, we explore the possibility that the low merger premia of petitioned targets is not the result of intentional malfeasance — which for highly litigated events such as acquisitions has a high probability of discovery — but rather a break down due to over-commitment and inexperience. We find that for petitioned targets the board is more likely to be classified as busy<sup>6</sup> (7.2 percent versus 1.3 percent;  $t$ -stat 1.92), the boards have a higher percentage of busy directors (17.9 percent versus 12.1 percent;  $t$ -stat 2.47), and the average tenure of the board is shorter in the petitioned sample (6.3 years versus 7.8 years;  $t$ -stat -2.49). These results are for target firms that have data available in BoardEx and are presented in Panel A of Table V. When we examine director level data in Panel B of Table V, we confirm these results and find that directors at petitioned targets are more likely to be busy (18.3 percent versus 11.5 percent;  $t$ -stat 2.62) and hold more directorships (3.3 versus 2.7;  $t$ -stat 2.80).

[Approximate Location of Table V]

Busy directors have been associated with poor firm performance and weak governance (e.g. Fich and Shivdasani (2006), Cashman et al. (2012)). Field, Lowry, and Mkrtchyan (2013) also find that busy directors are less effective monitors but can enhance value through superior advising capabilities. In light of the work of Field et al. (2013), we examine the alternative explanation that the greater incidence of busy directors at petitioned targets is due to these busy directors being brought on specifically to facilitate the sale of the firm. Under this alternative hypothesis, target shareholders are actually better off with the higher incidence of busy directors — the observed low premia of petitioned targets may actually be higher than it would have been if the busy directors were not added to the board.

We do not believe this alternative hypothesis to be the case. Under this alternative,

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<sup>6</sup> We follow Fich and Shivdasani (2006) and define a busy director as a director that sits on three or more boards, and a busy board as a board that is composed of greater than 50 percent busy directors.



we would expect to see that a busy director at a petitioned target would have a shorter tenure relative to a busy director at a matched target. We do not observe this in these data as the difference in busy director tenure is not statistically significant at conventional levels (5.2 years versus 5.6 years;  $t$ -stat -0.37). Moreover, when we look at the percent of busy directors that were busy when the director joined the target's board we do not find a statistically significant difference between the petitioned sample and the matched sample (39.8 percent versus 42.9 percent;  $t$ -stat -0.37). If there was an initiative for a petitioned target's board to add directors with many other directorships we would expect to see a relatively higher fraction of directors being brought on as busy. This is not supported by these data.

Finally, we do not believe this alternative to be the case because, as demonstrated by the cumulative abnormal returns of the acquirers, the acquirers of petitioned targets are able to create more value than expected through the acquisition. We interpret this evidence as the assets of the petitioned target are indeed being sold at a discount to their value to the acquirer.

In summary, we provide evidence that busyness is associated with low merger premia that dissenting investors believe is inappropriately low. While this is suggestive evidence of busy directors failing to negotiate a merger as effectively as non-busy directors, the economic setting and econometric techniques are not appropriate to advance a causal interpretation.

### 4.3. Market for Corporate Assets

Even if appraisal rights appear to function as recourse for contracting failures, the increase in the number of appraisal petitions — and the size of the underlying positions — by specialist investors may still adversely affect the reallocation of corporate assets by discouraging potential acquirers from initiating acquisitions due to the possibility of the transaction being petitioned for appraisal. We investigate the possibility that the market for corporate assets is expected to be adversely affected by examining key legal events that we assert either increase the probability of a transaction being petitioned for

appraisal or decrease the potential payoff from petitioning a transaction for appraisal.

The first event we examine is the determination associated with Transkaryotic, in which the Court determined that beneficial shareholders that did not own shares on the record date are entitled to petition those shares for appraisal as long as there are sufficient shares eligible for appraisal. We postulate that this determination increases the probability that an appraisal petition would be submitted on a particular transaction. Thus, if appraisal rights adversely affect the market for corporate assets we would expect a negative price reaction upon the announcement of this determination.

The second event we examine is the determination associated with CKx, INC., in which the Court determined that the merger price is a relevant factor that could be considered in determining the fair value of the firm. Prior to this determination, the market price was not considered a factor that could be considered in determining the fair value of a firm and in the words of the ruling judge:

Typically [...] this Court has relied on expert valuation, such as those employing discounted cash flow and comparable company analyses, to determine statutory fair value. Even so, market value — where reliably derived — remains among the “relevant factors” for arriving at fair value. [...] Because neither party has presented a reasonable alternative valuation method, and because I find the sales price here a reliable indicator of value, I find that a use of the merger price to determine fair value is appropriate in this matter.<sup>7</sup>

This determination set precedent such that as long as the process through which a sale price is determined is fair, i.e., an arms-length transaction and a full market canvas, the sale price is a reliable indicator of value. We postulate that this determination reduces the scope for specialized investors to develop pricing models that value the company considerably above the sale price, and thus limits the potential payoff from petitioning a transaction for appraisal. If appraisal rights adversely affect the market for corporate assets we would expect a positive price reaction upon the announcement of this determination.

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<sup>7</sup> <http://courts.delaware.gov/opinions/download.aspx?ID=196960>

The third event we examine is the determination associated with BMC Software, Inc., in which the Court reaffirmed the CKx, INC. determination and expanded the scope of situations in which the petitioner's valuation analysis could be deemed to be unreliable. This allowed for more situations in which the Court could use the sale price as a reliable indicator of value. One law firm described the event as:

Perhaps in a sign that the judicial tide is turning against some of the more abusive manifestations of this [appraisal petition] trend, the Delaware Court of Chancery recently issued its decision in BMC Software, the largest Delaware statutory appraisal action ever to reach a post trial decision. [...] With signs pointing to the possibility that certain investors were beginning to (ab)use the appraisal process as a potentially more lucrative replacement for the now - ubiquitous fiduciary litigation, the BMC court decision strengthens the ability of companies to argue that Delaware courts should reject challenges to a merger price[.]<sup>8</sup>

We interpret this event in the same way as the determination associated with CKx, INC. in that, if appraisal rights adversely affect the market for corporate assets we would expect a positive price reaction upon the announcement of this determination.

In order to assess whether the market for corporate assets is expected to be adversely affected by appraisal rights we perform an event study of the market reaction around these Court determinations. We use non-Delaware domiciled companies as a counterfactual and interpret any difference in abnormal returns during the event window as attributable to the Court determination. In order to interpret any difference in abnormal returns in this way we must make certain identification assumptions, with a few critical assumptions being: (1) the announcement was unexpected; (2) market participants are sufficiently aware that the event occurred; (3) the Court determination changed market participants' expectation on the use of appraisal rights; and (4) there is some uncertainty if non-Delaware courts will interpret their own state-specific appraisal laws (if any) in a similar fashion as the Delaware courts.

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<sup>8</sup> <http://www.law360.com/articles/729363/the-future-of-appraisal-cases-after-bmc-software>

With the aforementioned identification assumptions in mind, Table VI presents the results of these event studies. Similar to the acquisition announcement event studies above, we conduct a simulation that explicitly enforces the null hypothesis that there is no difference in CARs between Delaware and non-Delaware domiciled firms around these event dates. We simulate the distribution of differences in CARs under the null by randomly sampling 1,000 dates from our sample period and computing differences in average CARs around these dates for Delaware and non-Delaware domiciled firms. Statistical significance in Table VI is reported based on this simulated distribution. In general, we fail to find evidence that market participants expect these Court determinations to have an effect on the market for corporate assets. Of course, failing to find evidence does not necessarily imply that there is actually no effect. It is possible that the identification assumptions outlined above are violated or the effect we are trying to measure with this standard econometric methodology is not sufficiently powerful to pick up the effect. This latter point may be particularly salient if it is likely that other courts will adopt Delaware's interpretation of its appraisal law.

[Approximate Location of Table VI]

Outside of the potential for a violation of the identification assumptions, we could fail to pick up an effect due to the fact that we are measuring changes in market participants' expectations about the effect. For example, it may be the case that market participants have a distribution of beliefs about the possible outcomes — some beneficial to the market for corporate assets, and some detrimental — which in expectation is value neutral. If this is the case, we would not expect to observe a value effect from the announcement of the Court's determinations.

The prior three events are determinations related to specific cases: Transkaryotic, CKx, INC., and BMC Software. With these cases it may be difficult for market participants to quickly disentangle the broader implications of the Court determination from the specifics of the actual case. If this occurs then the value implications of the determinations may take time to be incorporated into prices and may not be picked up by the event studies. To remedy the potential for case specific facts confounding the broader

implications we examine a fourth event that would directly modify the appraisal statute in Delaware. The fourth and final event we examine is the announcement of the proposed amendments made by the Corporation Law Council of the Delaware State Bar Association.<sup>9</sup> These amendments, if implemented, would reduce the rate that interest accrues to the petitioner while the case is being adjudicated, and would create an exception that only allows for appraisal rights for shareholders who hold more than one percent of the outstanding shares or more than \$1 million dollars.

We interpret both aspects of the proposed amendment as reducing the incentive to petition for appraisal. Under the current statute the petitioner is entitled to interest accruing at five percent above the prevailing Federal Reserve discount rate compounded quarterly. This is significantly higher than alternative fixed income investments of equivalent risk. Thus if the statutorily set interest rate is reduced, so is the incentive to petition shares for appraisal. If appraisal rights adversely affect the market for corporate assets we would expect a positive price reaction upon the announcement of this proposed amendment.

Table VII presents the results of analyzing the market reaction to the proposed amendments. We follow a similar methodology as before and compare the abnormal returns of firms domiciled in Delaware to firms domiciled in other states. As with the Chancery court decisions, we fail to find evidence that the market expects appraisal rights to adversely affect the market for corporate assets.

[Approximate Location of Table VII]

## 5. Conclusion

The increasing value and frequency of appraisal petitions has attracted the attention of legislators and legal scholars, and has led to a critical evaluation of appraisal rights. In contrast to concerns and criticisms over so-called appraisal arbitrageurs, we find evidence that appraisal rights are being used as a remedy to private contracting failures in the

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<sup>9</sup> [https://www.skadden.com/newsletters/Proposed\\_DGCL\\_Amendments\\_Related\\_Documents.pdf](https://www.skadden.com/newsletters/Proposed_DGCL_Amendments_Related_Documents.pdf)

merger process. Deals that generate appraisal petitions tend to feature low merger premia, have a market reaction to the announcement that is 17.5 percent lower on average than deals that do not generate appraisal petitions, while acquiring firms of petitioned targets see 6.6 percent higher cumulative abnormal returns around the merger announcement relative to a matched sample. We interpret these findings as indicative of inefficient contracting from the perspective of target shareholders.

These failures appear to be driven, at least in part, by busy and inexperienced directors of the target firms. Additionally, we do not find evidence that the benefits of appraisal rights are expected to be costly to market participants more broadly. We examine key events that are plausible shocks to the incentive to petition for appraisal and fail to find evidence that the market expects appraisal rights to have an adverse effect on the market for corporate assets. Taken together, the evidence suggests that appraisal rights are beneficial to target shareholders, while not being detrimental to the market for corporate control more broadly.

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# Appendices

## A. Variable Definitions.

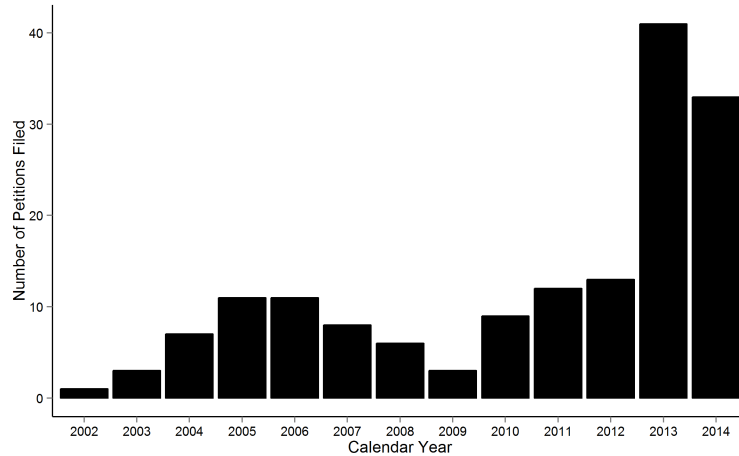
Source	Variable	Description
Compustat	Total Assets	AT
	Market Capitalization	PRCC_F*CSHO
	CAPEX - Scaled	CAPX/AT
	R&D - Scaled	XRD/AT
	Asset Tangibility - Scaled	(INVT+PPEGT)/AT
	Leverage	LT/AT
	Cash - Scaled	CHE/AT
	Tobin's Q	(PRCC_F*CSHO+AT-CEQ-TXDB)/AT
	Market-to-Book	(PRCC_F*CSHO)/(CEQ+TXDB)
	Return on Assets (ROA)	NI/AT
BoardEx	Busy Director	A director that sits on three or more public boards.
	Busy Board	A board that has more than 50 percent busy directors.
SDC Platinum	Initial Premium	Offer at announcement relative to closing price three trading days prior to announcement.
	Final Premium	Final offer relative to closing price three trading days prior to announcement.
	All Cash	An indicator if the deal was all cash.
	Going Private	An indicator if the deal was the target going private.
	Unsolicited	An indicator if the offer was unsolicited.
	Tender Offer	An indicator if the merger was a tender offer.
	Financial Buyer	An indicator if the buyer was a financial entity.
Event Dates	Transkaryotic Therapies	May 2nd, 2007
	CKx, INC.	November 1st, 2013
	BMC Software	October 21st, 2015
	Proposed Amendments	March 6th, 2015



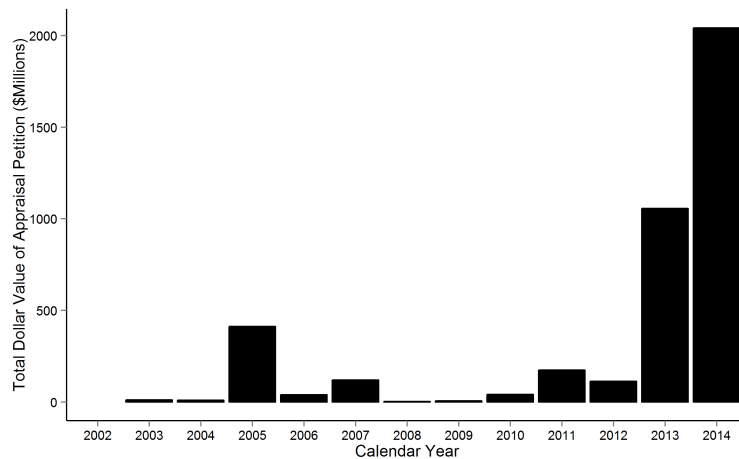
Figure 1: Frequency and Value of Appraisal Petitions

In this figure we present the frequency of petitions for appraisal, the total dollar value of all positions petitioned for appraisal, and the average dollar value of all positions petitioned.

Subfigure (a): The frequency of petitions in each year.



Subfigure (b): The total dollar value of all positions petitioned in each year.



Subfigure (c): The average dollar value of all positions petitioned.

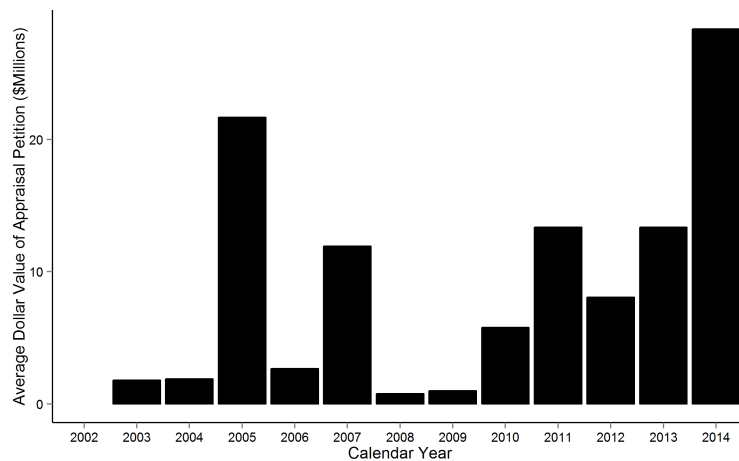
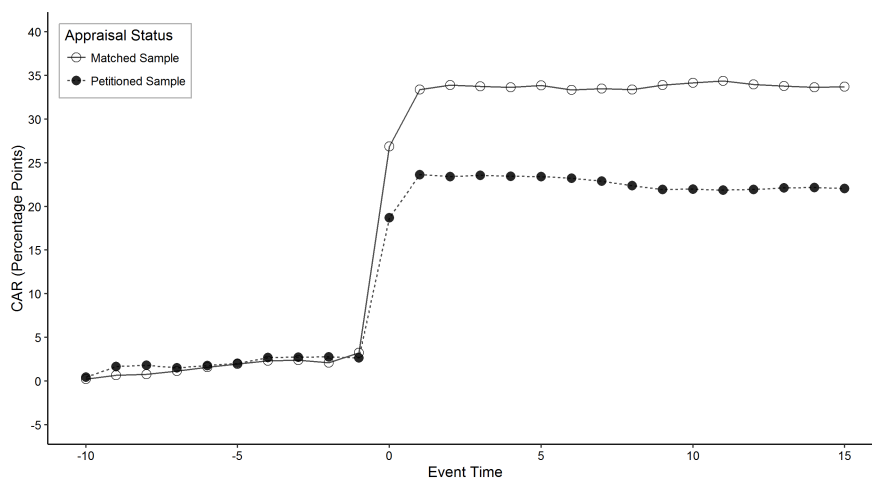


Figure 2: Event Study — Target and Acquirer Stock Price Reaction

This figure presents an analysis of the market reaction to the announcement a petitioned or matched sample firm is being acquired. Subfigure (a) presents the cumulative abnormal returns of the target for a window starting 10 trading days prior to the the announcement and ending 15 trading days after the announcement. Subfigure (b) presents the cumulative abnormal returns of the acquirer for a window starting 10 trading days prior to the the announcement and ending 15 trading days after the announcement. Expected returns are calculated based on a Fama-French-Carhart four factor model estimated over a window that starts 180 trading days prior to the announcement and ends 31 trading days prior to the announcement.

Subfigure (a): Cumulative Abnormal Returns of Acquisition Announcement (Target)



Subfigure (b): Cumulative Abnormal Returns of Acquisition Announcement (Acquirer)

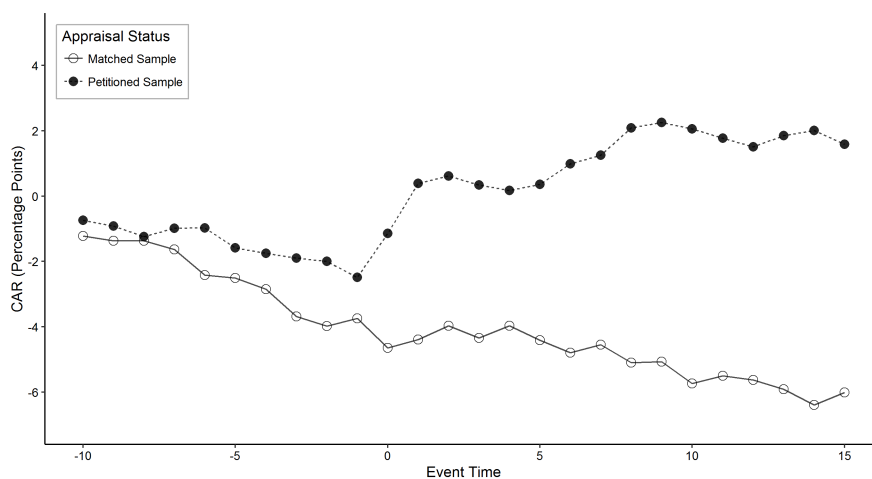
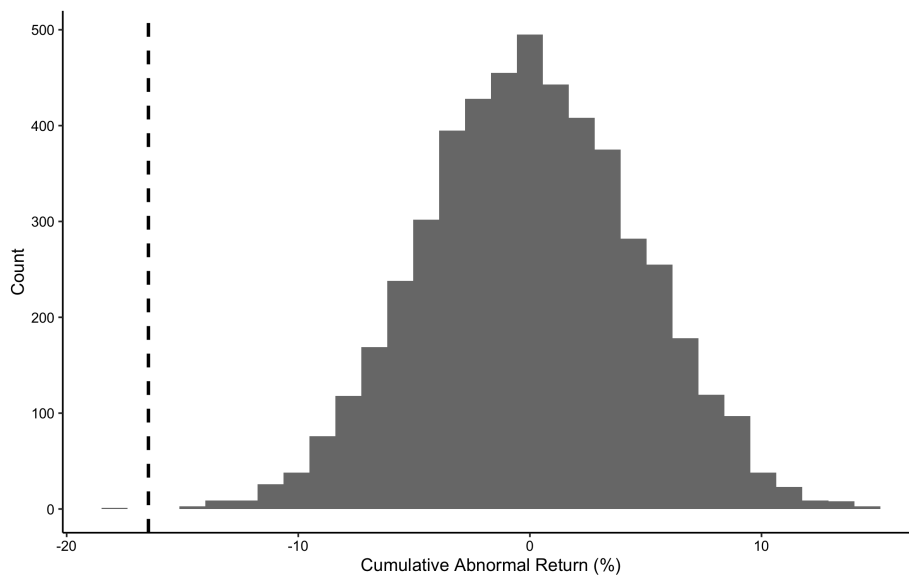


Figure 3: Event Study — Simulated Distributions of Differences in CARs

This figure presents simulated distributions for differences in cumulative abnormal returns (CAR) around the announcement date under the enforced null hypothesis that the difference is zero. The point estimates for the actual difference between the petitioned average CAR and the matched average CAR are plotted as dashed vertical lines. Subfigure (a) presents the distribution of target cumulative abnormal returns for a window starting ending three trading days prior to the announcement and three trading days after the announcement. Subfigure (b) presents the acquirer cumulative abnormal returns for a window starting three trading days prior to the announcement and ending three trading days after the announcement. Expected returns are calculated based on a Fama-French-Carhart four factor model estimated over a window that starts 180 trading days prior to the announcement and ends 31 trading days prior to the announcement.

Subfigure (a): Cumulative Abnormal Returns of Acquisition Announcement (Target)



Subfigure (b): Cumulative Abnormal Returns of Acquisition Announcement (Acquirer)

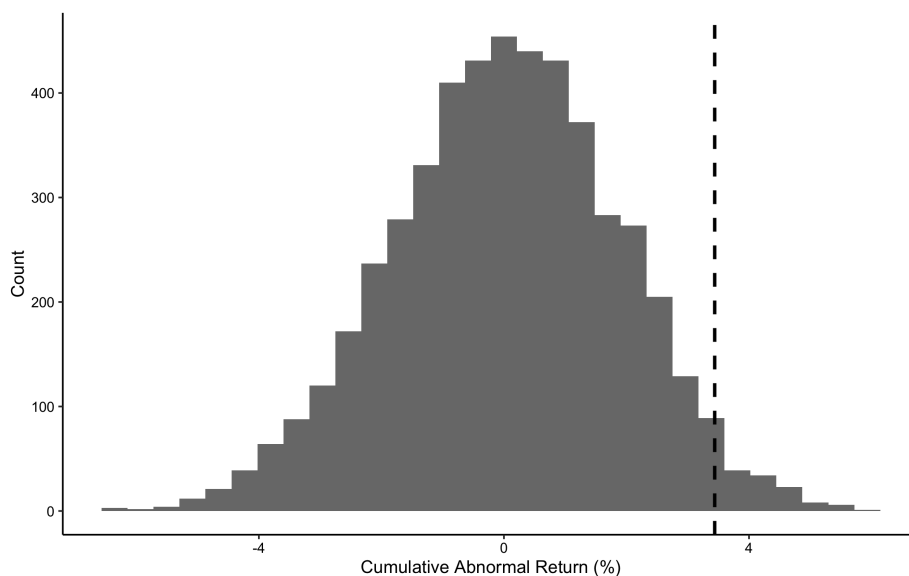


Table I: Summary Statistics of Petitions

This table provides univariate statistics on the petitions for appraisal collected from CourtLink, a LexisNexis database, for the time period January 2003 to May 2015. Ownership by Petitioner calculates the percent ownership in the target firm the petitioner owns.

Summary Statistics of Petitioned Transactions (N = 116)					
	Obs.	Mean	Median	Min	Max
Number of Petitions	159	1.37	-	-	-
Value of Claim (\$Thousands)	129	31,600	4,042	1.39	403,300
Ownership by Petitioner (%)	129	2.03	0.77	0.000006	16.18

Table II: Summary Statistics of Top Petitioners in Sample

This table presents summary statistics of the most active petitioners. The value of a petitioner's claim is reported as thousands of dollars. If an investment manager has multiple funds that petition for appraisal, each fund is treated as a separate beneficial owner.

Petitioner	Number of Claims	Average Value of Claim	Average Ownership Percent
Merlin Partners	18	2,181	0.72
Merion Capital	14	97,965	4.39
Farallon Capital	13	14,086	0.17
Quadre	13	1,095	0.54
AAMAF	11	2,295	0.43
Veriton	8	26,572	1.52
T Rowe Price	7	52,931	0.22
Magnetar	6	16,436	0.63
Third Point	6	55,320	0.67
Longpath Capital	5	1,539	0.55

Table III: Univariate Analysis of Financial and Deal Characteristics

This table presents the results of a univariate analysis of the average characteristics for the petitioned and matched sample of acquisitions. CAPEX, R&D, Asset Tangibility, Leverage, Cash, Tobin's Q, Market-to-Book, and Return on Assets are winsorized at the one percent level. Scaled variables are scaled with respect to total assets. Variable definitions are provided in Appendix A. Statistical significance is determined with heteroskedasticity robust standard errors. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel A: Univariate Analysis of Financial Characteristics				
	Petitioned	Matched	Difference	<i>t</i> -statistic
Total Assets (\$Millions)	2,006	1,158	848	1.16
Market Cap. (\$Millions)	2,010	1,133	877	0.98
CAPEX - Scaled (%)	3.26	3.57	-0.31	-0.66
R&D - Scaled (%)	7.50	9.90	-2.40	-1.07
Asset Tangibility - Scaled (%)	46.37	56.38	-10.01	-1.50
Leverage (%)	53.28	51.04	2.24	0.49
Cash - Scaled (%)	24.25	26.57	-2.32	-0.65
Tobin's Q	1.83	1.90	-0.07	-0.35
Market-to-Book	1.53	2.59	-1.06	-0.93
Return on Assets (%)	-2.44	-5.65	3.21	0.96

Panel B: Univariate Analysis of Deal Characteristics				
	Petitioned	Matched	Difference	<i>t</i> -statistic
Initial Premium (%)	20.27	37.91	-17.64***	-3.54
Final Premium (%)	23.64	39.31	-15.67***	-3.05
Revision Occurred (%)	15.91	10.11	5.80	1.15
Revision Amount (%)	2.46	1.16	1.30	1.38
Revision Amount Cond. on Revision (%)	15.41	11.43	3.98	0.78
All Cash (%)	83.70	72.83	10.87*	1.79
Going Private (%)	41.30	39.13	2.17	0.30
Unsolicited (%)	17.39	10.87	6.52**	2.19
Tender Offer (%)	30.44	26.09	4.35	0.65
Financial Buyer (%)	36.95	31.52	5.43	0.77

Table IV: Event Study — Target and Acquirer Stock Price Reaction

This table presents an analysis of the market reaction to the announcement a petitioned or matched sample firm is being acquired. Panel A presents the cumulative abnormal returns of the target for varying window lengths starting three trading days prior to the announcement and ending either 1, 3, 5, or 10 trading days after the announcement. Panel B presents the cumulative abnormal returns of the acquirer for varying window lengths starting three trading days prior to the announcement and ending either 1, 3, 5, or 10 trading days after the announcement. Expected returns are calculated based on a Fama-French-Carhart four factor model estimated over a window that starts 180 trading days prior to the announcement and ends 31 trading days prior to the announcement. Panel C presents an analysis of the ratio of CARs to initial offer premium (tabulated as a percentage) for the targeted firms. White standard errors are presented in parenthesis. Statistical significance is based on  $t$ -tests for the average petitioned, average matched, and average difference in abnormal returns. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel A: Cumulative Abnormal Returns of Acquisition Announcement (Target)

	Window Length in Trading Days			
	[-3, 1]	[-3, 3]	[-3, 5]	[-3, 10]
Avg. Petitioned Sample (N = 92)	19.95*** (2.02)	19.65*** (2.02)	19.77*** (2.07)	19.08*** (2.09)
Avg. Matched Sample (N = 92)	35.79*** (3.91)	36.12*** (3.91)	36.20*** (3.91)	36.60*** (4.03)
Avg. Difference (N = 184)	-15.84*** (4.40)	-16.47*** (4.40)	-16.43*** (4.42)	-17.52*** (4.54)

Panel B: Cumulative Abnormal Returns of Acquisition Announcement (Acquirer)

	Window Length in Trading Days			
	[-3, 1]	[-3, 3]	[-3, 5]	[-3, 10]
Avg. Petitioned Sample (N = 33)	2.00* (1.17)	2.02 (1.28)	2.31* (1.36)	3.33* (1.73)
Avg. Matched Sample (N = 38)	-1.43 (1.14)	-1.41 (1.21)	-1.53 (1.32)	-3.28* (1.71)
Avg. Difference (N = 71)	3.43** (1.63)	3.44* (1.76)	3.85** (1.90)	6.61*** (2.44)

Panel C: Cumulative Abnormal Return as Percent of Initial Premium (Target)

	Window Length in Trading Days			
	[-3, 1]	[-3, 3]	[-3, 5]	[-3, 10]
Avg. Petitioned Sample (N = 92)	88.05*** (17.01)	82.73*** (15.29)	99.10*** (19.18)	91.14*** (14.78)
Avg. Matched Sample (N = 92)	92.26*** (5.52)	97.61*** (5.99)	98.29*** (6.48)	94.50*** (8.25)
Avg. Difference (N = 184)	-7.21 (17.88)	-14.88 (16.42)	0.81 (20.24)	-3.36 (16.93)

Table V: Univariate Analysis of Board and Director Characteristics

This table presents the results of a univariate analysis of board and director characteristics for target firms. Variable definitions are provided in Appendix A. For the board level tests in Panel A, statistical significance is determined with heteroskedasticity robust standard errors. For director level tests in Panel B, statistical significance is determined with standard errors clustered at the board level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel A: Univariate Analysis of Board Characteristics				
	Petitioned	Matched	Difference	<i>t</i> -statistic
Board Size	7.93	7.70	0.23	0.83
Percent Independent Directors	83.91	82.32	1.68	1.37
CEO on Board (%)	95.18	97.50	-2.32	-0.79
Acquirer-Target Director Overlap (%)	16.13	12.90	3.22	0.36
Busy Board (%)	7.23	1.25	5.98*	1.92
Avg. Busy Directors on Board (%)	17.90	12.12	5.78***	2.47
Avg. Board Tenure (Years)	6.34	7.83	-1.49***	-2.49

Panel B: Univariate Analysis of Director Characteristics				
	Petitioned	Matched	Difference	<i>t</i> -statistic
Busy Director (%)	18.31	11.54	6.77***	2.62
Number of Directorships	3.30	2.66	0.64***	2.80
Time on Board (Years)	6.17	7.67	-1.50**	-2.20
Time on Board - Busy (Years)	5.23	5.56	-0.33	-0.37
Time on Board - NonBusy (Years)	6.37	7.94	-1.57**	-2.11
Busy Director Addition (%)	39.79	42.86	-3.07	-0.37



Table VI: Event Study — Market Reaction to Chancery Court Decisions

This table presents an analysis of the market reaction to Delaware Chancery Court decisions that substantively affected appraisal rights. Varying window lengths are reported starting one trading day prior to the decision and ending either 1, 3, 5, or 10 trading days after the decision. Panel A presents results for the May 2nd, 2007 Transkaryotic decision. Panel B presents results for the November 1st, 2013 CKx decision. Panel C reports results for the October 21st, 2015 BMC decision. Expected returns are calculated based on a Fama-French-Carhart four factor model estimated over a window that starts 180 trading days prior to the announcement and ends 31 trading days prior to the announcement. White standard errors are presented in parenthesis. Statistical significance is reported based on quantiles simulated under an enforced null distribution. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Panel A: Cumulative Abnormal Returns of Transkaryotic Decision

	Window Length in Trading Days			
	[-1, 1]	[-1, 3]	[-1, 5]	[-1, 10]
Average DE	-0.18 (0.14)	-0.37 (0.16)	-0.66 (0.18)	-1.36 (0.23)
Average non-DE	0.00 (0.14)	-0.10 (0.15)	-0.10 (0.17)	-0.86 (0.23)
Average Diff	-0.18 (0.20)	-0.27 (0.22)	-0.56 (0.25)	-0.50 (0.32)

Panel B: Cumulative Abnormal Returns of CKx Decision

	Window Length in Trading Days			
	[-1, 1]	[-1, 3]	[-1, 5]	[-1, 10]
Average DE	-0.21 (0.16)	-0.4 (0.21)	-0.58 (0.23)	-0.52 (0.28)
Average non-DE	-0.51 (0.15)	-0.43 (0.17)	-0.51 (0.21)	-0.79 (0.26)
Average Diff	0.30 (0.22)	0.03 (0.27)	-0.07 (0.31)	0.27 (0.38)

Panel C: Cumulative Abnormal Returns of BMC Decision

	Window Length in Trading Days			
	[-1, 1]	[-1, 3]	[-1, 5]	[-1, 10]
Average DE	-0.51 (0.20)	-0.80 (0.23)	-0.95 (0.23)	-1.04 (0.28)
Average non-DE	-0.27 (0.18)	-0.41 (0.21)	-0.62 (0.23)	-0.47 (0.28)
Average Diff	-0.24 (0.27)	-0.39 (0.31)	-0.32 (0.32)	-0.57 (0.40)

Table VII: Event Study — Market Reaction to Proposed Reforms

This table presents an analysis of the market reaction to appraisal reform proposals announced by the Delaware State Bar. Varying window lengths are reported starting one trading day prior to the decision and ending either 1, 3, 5, or 10 trading days after the decision. Proposed reforms were announced by the Corporation Law Council of the Delaware State Bar Association on March 6th, 2015. Expected returns are calculated based on a Fama-French-Carhart four factor model estimated over a window that starts 180 trading days prior to the announcement and ends 31 trading days prior to the announcement. White standard errors are presented in parenthesis. Statistical significance is reported based on quantiles simulated under an enforced null distribution. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

	Cumulative Abnormal Returns of Proposal Announcement			
	Window Length in Trading Days			
	[-1, 1]	[-1, 3]	[-1, 5]	[-1, 10]
Average DE	0.16 (0.15)	0.15 (0.17)	0.10 (0.20)	-0.30 (0.23)
Average non-DE	-0.24 (0.15)	-0.44 (0.18)	-0.35 (0.21)	-0.50 (0.25)
Average Diff	0.40 (0.21)	0.60 (0.25)	0.45 (0.29)	0.20 (0.34)