Reforming the Delaware Appraisal Statute to Address Appraisal Arbitrage:

Will it be Successful?

Wei Jiang[1] Tao Li[2] Danqing Mei[3] Randall Thomas[4]

ABSTRACT

Delaware is considering significant changes to its appraisal statute to address problems created by the recent wave of appraisal arbitrage. This study provides a large-sample empirical analysis of those proposals to see what effects they will have on appraisal litigation. Looking first at the overall appraisal landscape, we find that recent appraisal petitions seem to be motivated by the appearance of transactions with potential conflicts of interest, such as going private deals, minority squeezeouts, and those with low deal premiums. The proposed De Minimis Exception which restricts appraisal to petitioners with a stake above $1 million or 1% of outstanding shares could cut down the amount of appraisal litigation by over one-third, but is unlikely to distort the underlying economic reasons why shareholders seek appraisal. The proposed Interest Reduction Amendment, which lowers the well above-the-market statutory interest rate for appraisal awards, is also likely to greatly reduce appraisal filings as it appears to have been the driving force for almost 45% of the petitions filed in recent years, especially the ones with high stakes.

Key words: Appraisal arbitrage; Delaware appraisal statute

First Draft: April, 2016

This Draft: April, 2016

[1] The Arthur F. Burns Professor of Free and Competitive Enterprise, Columbia Business School. She could be reached at wj2006@columbia.edu.
[2] Assistant Professor of Finance, Warwick Business School. He could be reached at Tao.Li@wbs.ac.uk.
[3] Ph.D. candidate in Finance, Columbia Business School. He could be reached at DMei19@gsb.columbia.edu.
[4] The John S. Beasley II Professor of Law and Business, Vanderbilt Law School and Owen Graduate School of Management. He could be reached at randall.thomas@vanderbilt.edu.

I. Introduction

In *Merion Capital v. BMC Software, Inc.* (2015), Delaware Vice Chancellor Sam Glasscock III vividly and succinctly summarized his view of a common scenario in shareholder appraisal litigation in his court:

> "[A] robust marketing effort for a corporate entity results in an arm's length sale where the stockholders are cashed out, which sale is recommended by an independent board of directors and adopted by a substantial majority of the stockholders themselves. On the heels of the sale, dissenters (here, actually, arbitrageurs who bought, not into an ongoing concern, but instead into this lawsuit) seek statutory appraisal of their shares. A trial follows, at which the dissenters/petitioners present expert testimony opining that the stock was wildly undervalued in the merger, while the company/respondent presents an expert, just as distinguished and learned, to tell me that the merger price substantially *exceeds* fair value."

The Delaware appraisal statute has entered the spotlight in recent years as activist hedge funds are increasingly using this form of shareholder litigation to challenge the terms of M&A transactions. The number of appraisal petitions has increased from a trickle of cases in early 2000s to over 20 a year in recent years, or close to one-quarter of all transactions where appraisal is possible ("appraisal eligible deals"). After years of being infrequently deployed and largely overshadowed by shareholder class actions in Delaware and other states, the contours of the appraisal remedy are suddenly front page news as some Wall Street law firms seek to cut back on appraisal arbitrage filings. These firms are petitioning the Council of the Corporate Law Section of the Delaware State Bar Association (the "Council") and the Delaware legislature to raise the bar for shareholders eligibility to file appraisal petitions and to make its terms less attractive in an effort to curb what they perceive to be a new form of strike suit. Shareholder advocates, on the other hand, are arguing in favor of expanding the appraisal remedy in order to

fill perceived gaps in investor protection that are alleged to have surfaced as Delaware and other states have cut back on judicial protections for minority shareholders in change-of-control transactions. After weighing the arguments made by both sides, the Council has proposed two important reforms in 2015: a required minimum required stake of $1 million or 1% of the stock of the company for which the petitioner is seeking appraisal (the "De Minimis Exception"), and reductions to the statutory pre-judgment interest rate paid on the amount awarded in an appraisal proceeding (the "Interest Reduction Amendment").

This study is the first large-sample empirical analysis of appraisal arbitrage. In addition to providing descriptive statistics from a manually collected comprehensive sample of all appraisal eligible deals and appraisal petitions from 2000 to 2014, we examine the empirical underpinnings of these proposed reforms to inform the ongoing debate about reforming the Delaware appraisal statute.

Our most important findings are summarized as follows. First, we show that hedge funds dominate the appraisal arbitrage strategy, accounting for three-quarters of the dollar volume involved in all appraisal petitions in recent years. The top seven hedge funds file petitions accounting for over 50% of the dollar volume and the top seven law firms representing them are named in about 50% of all the cases. Petitioners' stake size is highly variable, with a median of $1.9 million, although about 27% of the cases involve stakes of below $1 million. Moreover, a great majority (80.1%) of these petitions settle instead of going to trial.

Second, appraisal petitions target deals that have potential conflicts of interest. Going private deals, minority squeezeouts, short-form mergers (and other second-step transactions) after tender offers are each associated with a significant 2 – 10 percentage point increase in probability of an appraisal filing, a substantive magnitude given the all-sample average

probability of 6.9%. Relatedly, low takeover premiums are an invitation to appraisal arbitrageurs: for every 10 percentage point decrease in the deal premium, the probability of an appraisal petition being filed increases by 63 – 72 basis points.

Next, we provide direct evidence to assess the potential impact of the De Minimis Exception. Using the $1 million and 1% of outstanding stock as the cutoff for "large-stake" petitions, we project that the number of appraisal petitions will drop by almost one third if that reform is enacted, assuming that the in-sample relation between deal/firm characteristics and the filing of appraisal petitions (for high and low stakes) remains constant. We also conclude that restricting the amount for appraisal to be above $1 million or 1% of outstanding shares will not affect shareholders' motives for seeking appraisal. In contrast, small-stake appraisal seekers disproportionately target "friendly" deals, or deals initiated or immediately endorsed by target boards.

Moreover, confirming the common wisdom, we find that most of the petitioners settle, and that the petitioner stake size is the single most powerful predictor of whether a petition will go to trial. While only 12.1% of all the petitions eventually go to a trial, the probability increases by 14.7 percentage points if the petitioner's stake exceeds $10 million. Interestingly, we find that a low cutoff at $1 million, as suggested by the De Minimis Exception, would have no impact on the likelihood of a case going to trial. Instead, a cutoff closer to $5 million would be necessary to make a significant impact on the probability that a case will be tried rather than settled.

As to the Interest Rate Reduction, our study affirms the widely held belief that a significant part of the increase in appraisal petitions has been driven by the lucrative yields provided on the awards in these cases. The economic magnitude of the effect is substantial: for

every percentage point increase in the yield that arbitrageurs obtain in excess to their alternative risk free investment (e.g., treasury bills with comparable duration), the probability of an appraisal filing increases by about 1.3 percentage points. This implies that the 5% statutory rate above the risk free rate, on its own, has triggered 6.5 percentage points of additional appraisal filings among all eligible M&A deals, or almost 45% increase of the actual appraisal petitions filed. Such a finding strongly supports the Council's decision to propose the Interest Reduction Amendment as a way of discouraging interest rate driven appraisal cases.

Recent studies closest to ours include Korsmo and Myers (2015), an in-depth study (but without direct empirical analysis) of the implications of the statutory interest rate and proposed reforms; and Jetley and Ji (2015), who focus on the "Delaware advantage" for appraisal petitioners in terms of purchase after the record date, a lower equity risk premium in valuation method, and the high statutory interest rate.

II. The Current Delaware Appraisal Statute

A. General institutional background

Appraisal rights entitle shareholders in a limited set of extraordinary transactions, and subject to a number of limitations, to file a judicial petition seeking a court-ordered determination of the fair value of their shares. Delaware's pre-eminent position in corporate law makes its appraisal statute of particular importance. Section 262(a) of the Delaware General Corporation law provides a general grant of appraisal rights to the shareholders of a Delaware corporation when that company engages in a merger or consolidation, whether it is the target or the acquirer. However, section 262(b), the so-called market out exception, then eliminates appraisal rights for mergers and consolidations when the company's securities whose valuation is

under dispute are, at the time of the record date for the merger vote, listed on a national securities exchange, or held of record by more than 2000 shareholders. In other words, the market out exception applies when there is a liquid market for the company's securities. An exception to this exception applies, however, if the shareholders are forced to take other forms of consideration for their stock, typically cash. Thus, in cash-out mergers, the statute restores appraisal rights for the shareholders of the participating companies. Furthermore, if the target company shareholders are squeezed out in a short-form merger, that is where the parent company holds 90% or more of a subsidiary’s stock and seeks to cash out the remaining minority shareholders, the appraisal remedy is always available to those shareholders.

If appraisal is a potential remedy available to shareholders, there are still several important procedural hurdles that the shareholder must overcome in order to employ it. First, the shareholder needs to be a shareholder of record (or have one make demand for you as beneficial owner) to qualify to seek appraisal. Next, the shareholder must deliver a written demand seeking appraisal to the corporation before the vote is held, in which they represent that they voted against, or abstained from voting in favor of, the transaction. Within ten days of the effective date of the merger, the corporation must give all stockholders who perfect such a demand notice that the transaction is effective. Within 120 days of the transaction becoming effective, the shareholder must file a petition for appraisal in the Delaware Chancery Court. The corporation then has 20 days to respond to the petition(s) filed by eligible shareholders.

Once the litigation has begun, the shareholder has the burden to perfect his/her rights and to offer evidence about the value of his/her shares. During the pendency of the litigation, the corporation may withhold paying the merger consideration to the shareholder, although the

statute provides for the accrual of pre-judgment interest on the amount of the final award in an appraisal action at the statutory rate.

Once filed, the litigation proceeds as the parties engage in discovery and eventually hire experts to opine on the value of the shares. Shareholders can withdraw their appraisal demand within 60 days of the effective date of the transaction and elect to receive the merger consideration. If the case proceeds, the parties can seek a settlement, or the case can be tried in the Chancery Court, which will issue a judicial determination of the value of the shares. Counselled filings most often result in a settlement. The Delaware Chancery Court must approve any settlement. If some shareholders settle, others can object to a settlement and seek to continue the case.

In a trial, the Chancery Court determines the shareholder's proportional interest in the corporation as a whole. This means that there is no discount for the minority interest held by the shareholder. The parties can establish the value of the shares using any generally accepted valuation techniques. The most commonly employed methods are discounted cash flow analysis, relative valuation (multiples) and premiums on comparable transactions. In addition, since 2007, companies have been required by statute to pay interest on the appraisal award at a rate equal to 5% above the Federal discount rate, compounded quarterly, accruing from the effective date of the merger to the date of payment of the appraisal award after conclusion of the appraisal proceeding. In recent years this interest rate has far exceeded what could be earned from fixed-income investment with similar duration and risk levels.

There is no class action remedy in appraisal, although if multiple investors file petitions, they can combine their suits and litigate them as one action. The petitioning shareholders share

the payment of attorneys' fees and litigation expenses (typically expert fees) on a pro rata basis. The total cost of litigating an appraisal case to judgment ranges from $3 to $5 million for each side (Lafferty 2015). If the Chancery Court issues a decision, either party may seek to appeal it to the Delaware Supreme Court.

B. The Traditional Arguments Over the Adequacy of Appraisal

Over the past several decades, there has been a vigorous debate over the value of the appraisal remedy. Some scholars have argued in favor of expanding the scope of appraisal in order to provide minority shareholders with greater protections against unfairly priced transactions, especially going private and squeezeout deals. Other academics would prefer to narrow appraisal's scope in order to reduce the transaction costs of engaging in M&A activity, claiming that it will increase overall social welfare.

Outside the ivory tower, this debate had little traction because corporate planners can generally structure transactions to avoid appraisal rights, by using stock as merger consideration for example, so that appraisal played little role in most deals. Appraisal in fact was infrequently used, so that from 1977 to 1997 only an average of 14 appraisal petitions were filed annually, many by individual shareholders acting without legal counsel, which were quickly dismissed (Thomas, 2000). Similar statistics show little appraisal activity in 1999 and 2000 (Thompson and Thomas, 2004).

The apparent reason for this lack of activity is that the costs and delays associated with appraisal are prohibitive for a small shareholder and there is no class action mechanism for

resolving these cases. The end result is that small shareholders needed to look elsewhere for a remedy in short-form mergers, tender offers, or squeezeouts.

For many years, the preferred option for small shareholders was the acquisition-oriented class action law suit. For example, in 1999-2000, there were 772 class action complaints challenging 213 transactions (Thompson and Thomas, 2004). While during this "silver age" of shareholder litigation these suits resulted in higher deal premiums for minority shareholders (Krishnan, Masulis, Thomas, Thompson, 2012), more recently they are filed challenging virtually every major M&A transaction and are settled without an increase in merger consideration (Cain and Davidoff, 2016).

In the past few years, the Delaware courts have become concerned about the value of these class action law suits. In part because of these worries, Delaware case law has evolved to effectively limit the use of the class action remedy by small shareholders in well-lawyered short-form mergers (Glassman), tender offers (Pure Resources), and control shareholder squeezeouts (MFW). For small shareholders, this has raised the stakes surrounding the debate over the scope of the appraisal remedy.

What about large blockholders? For these shareholders, while appraisal is costly, they may be willing to pay the costs associated with an appraisal petition if they believe it will result in a cost-justified recovery (see, for example, the many trial court and appellate decisions in the ten year litigation saga in CEDE v. Technicolor).

C. The Advent of Appraisal Arbitrage and Delaware's Difficult Decision

Beginning in 2007, scholars observed that appraisal litigation has been experiencing a revival. (Kahan and Rock, 2007; Geis, 2011; and Korsmo and Myers, 2015). This new form of appraisal litigation has been dubbed, "appraisal arbitrage." In Delaware, both the number of deals and the percentage of eligible deals being targeted are increasing (see Figure 1). Hedge funds become the main driving force behind this development as they dissent in mergers where they believe that the deal price is too low, and then perfect their appraisal rights. Individual shareholders appear to be less active in filing appraisal actions (see Figure 2).

One of the most important stimuli for this new strategy appears to derive from a 2007 Delaware Chancery Court decision in the Transkaryotic Therapies, Inc. appraisal litigation. In that case, then-Chancellor William B. Chandler, III ruled that investors that bought shares after the record date set by the board of directors of the target company to determine which shares have voting rights on the proposed transaction, may still seek appraisal rights, even though the exact shares they purchased may not have voted against, or abstained from voting for, the merger. The court stated that the only limit on the number of shares that may be purchased in this manner is that the total shares held by the Depository Trust (also known as CEDE) seeking appraisal must be less than the total number of shares that voted against, or abstained on, the merger.

Transkaryotic is important because the record date fixes which shareholders get to vote on the merger but it also normally precedes the date when the proxy statement for the deal is sent to shareholders. Hedge funds want to wait to buy target firm until they read the proxy statement in order to determine if the deal is fairly priced. This means that they are usually buying stock in the stock market after the record date. If they need to show these shares were voted against the merger, or abstained in vote, they will not be generally able to do that.

In a subsequent decision involving Ancestry.Com, Vice Chancellor Sam Glasscock III agreed with the basic principle stated in the earlier Transkaryotic decision, but added an important limitation: in an arm's length deal without a conflict of interest, the price paid will be accorded "substantial weight" in determining the value of stock in an appraisal case. This ruling means that the court will usually find that the price paid in a well-shopped M&A transaction is fair market value, effectively eliminating the possibility of getting a higher price in an appraisal case. This would act as an important check on the likelihood of appraisal arbitrage spreading broadly to all M&A transactions. In other words, as a result of the Ancestry.com decision and others like it, appraisal petitioners will likely focus their suits on conflict-of-interest transactions, such as private equity buyouts without a strong market test or controlling shareholder squeezeouts.

To some extent, appraisal arbitrage belongs to a relatively new strategy of "activist risk arbitrage," which includes all attempts by shareholders to profit from an announced merger and acquisition deal by exercising shareholder rights beyond voting. The tactics include public campaigns and proxy solicitations to pressure the boards of both the target and the acquirer to sweeten the offered premium, and to facilitate alternative transactions with better terms. Appraisal arbitrage may well represent an activist's "last resort" after failing to convince the majority of shareholders to improve or to block the deal. However, there is a critical difference in that the gain from successful appraisal arbitrage accrues only to the dissenters who withheld their votes, and is not shared by other shareholders (and hence support from other shareholders is non-essential).

Due to this difference, appraisal arbitrage has evolved into a standalone litigation-based investment strategy by a specialized group of investors. We refer the reader to a concurrent

paper by Jiang, Li, and Mei (2016) which focuses on non-appraisal based risk arbitrage tactics. A cross-check of the samples covered by Jiang, Li, and Mei (2016) and in this paper confirms Korsmo and Myers's (2015) statement that the two groups of activist investors have little overlap. The top players in non-appraisal activist risk arbitrages are mostly large hedge funds/asset management companies including GAMCO, Ramius, Millennium, and Elliott Associates; while the top appraisal arbitrageurs are specialized funds such as Merion, Merlin, and Quadre.

However, there are concerns about appraisal actions being used as strike suits. In a recent memo, the Council suggested that the Delaware legislature adopt two modifications to the Delaware appraisal statute. The first proposal, the De Minimis Exception, would permit the corporation to obtain dismissal of an otherwise properly filed appraisal petitions if they do not collectively exceed at least 1% of the outstanding shares of stock, or if the total number of shares entitled to appraisal does not exceed $1 million of shares (evaluated at the closing price of the merger). This exception would not apply if a short-form merger is being used in the transaction The memo states that this exclusion is necessary to insure that appraisal is not being "used to achieve a settlement simply because of the nuisance value of discovery, the cost of financial experts and other burdens of litigation." This exception would only apply to shares, which on the record date before the merger, traded on a national securities exchange.

The second proposed modification, the Interest Reduction Amendment, concerns the accrual of interest on appraisal awards. As noted above, the Delaware appraisal statute provides that the pre-judgment rate of interest in appraisal cases is the federal discount rate plus 5%. This is currently a significantly higher amount than on many fixed-income investments. In fact, in a low-yield environment, the lucrative statutory rate may have motivated "interest arbitrage" in the disguise of an appraisal. That is, there has been a concern that a significant portion of appraisal

petitions are motivated primarily or even exclusively by the interest rate which has been above the market returns on investments with comparable risk profiles in recent years. This concern prompted the Council to propose that a corporation be permitted "to cut off the accrual of interest by paying to the appraisal claimants a sum of money of the corporation's choosing," so that interest would accrue only on the amount (if any) by which any judicial award exceeds the amount paid.

In 2015, the Delaware legislature did not act on the Council's suggestions. This legislative inaction may have triggered intensive lobbying by the defense bar for additional changes to the statute. In a letter dated April 1, 2015, seven Wall Street law firms argued that the Delaware legislature should go further and overrule the Transkaryotic decision. These law firms claimed that doing so would "reduce the unseemly claims-buying that is rampart and serves no legitimate equitable or other purpose."

In 2016, the Council renewed its recommendations that the Delaware legislature enact the two previously proposed amendments. It choose not to propose a legislative overruling of the Transkaryotic decision, perhaps because of the language in Ancestry.com (and other recent Chancery Court decisions) indicating that the court would find that in any arm's length M&A transactions, there would be a strong presumption that the deal price would be the appropriate value in an appraisal action. At this time, the Delaware legislature has not taken any action on the Council's proposals.

III. Data and Sample Overview

A. Sample of mergers and acquisitions

Our analysis builds on a comprehensive sample of M&A transactions that includes the universe of deals in which shareholders are eligible to seek appraisal in Delaware. To construct our sample, we start with all M&A transactions with effective dates between January 1, 2000 and December 31, 2014, based on information retrieved from the Securities Data Company ("SDC") database. We chose 2000 as the starting year because hedge funds rarely sought appraisal prior to that year (Korsmo and Myers, 2015). In total, for this 15 year period, we find 2,463 consummated deals in which the targets are incorporated in Delaware.

As we discussed above, Section 262 of the Delaware General Corporation Law generally eliminates appraisal rights in all deals in which the appraised security is, as of the record date for the merger, listed on a national securities exchange, or its stock is held of record by more than 2,000 stockholders, where the merger consideration is stock, or stock and cash for fractional shares. The statute restores appraisal rights for deals in which cash is any part of the consideration.[5] We adopt this criteria in screening our full sample of M&A transactions to determine which ones are appraisal eligible deals.

We manually collect the form of payment for all sample deals from merger agreements and 8-Ks filed with the SEC because SDC's definition of the form of payment is different in the merger agreements for certain deals, most notably those labeled by SDC as "Unknown" and "Other." Following the literature on M&A (e.g., Hsieh and Walkling, 2005), we further exclude transactions classified by SDC as a divestiture, spin-off or repurchase, because these are typically deemed to be non-M&A activities. These criteria result in a sample of 1,566 appraisal eligible deals.

[5] If the stockholders can elect to receive stock in the merger, instead of cash, then the merger does not trigger appraisal rights. Krieger v. Wesco Financial Corp., 30 A.3d 54 (2011). We thank Professor Minor Myers for pointing this out to us.

SDC provides information on the deal announcement date, effective date, withdrawal date, deal premium, and characteristics of the target. We supplement with information on firm characteristics and stock prices/returns from Compustat and CRSP, and with data on institutional holdings from the Thomson Financial 13F Database.

B. Sample of appraisal petitions

In order to identify all instances where an appraisal petition was filed, we use the Bloomberg Law database, which begins its coverage in 2003. For the time period 2003 to 2014, we searched all of the Delaware Chancery Court dockets using the key word "Appraisal," and identified 262 unique appraisal cases based on the transaction's closing date (the "effective date"). For the years 2000-2003, which predate Bloomberg Law's docket coverage, we supplement the sample by manually searching the Delaware Court of Chancery Opinions and Orders, and uncover an additional 29 unique appraisal cases filed during the period.[6] Our sample consists of 225 unique M&A deals with appraisal actions, with some transactions involving multiple petitions. We merge the 225 unique deals with appraisal cases between 2000 and 2014 to our M&A database, and end up with 152 matches. This is due to the fact that the SDC database, though the best of the kind, misses some transactions especially when involving small companies (see documentation of the data issue in Constantinos, 1995; Barnes, Harp, and Oler, 2014). The rest of the 1,414 appraisal eligible deals involve no petition filings.

Figure 1 plots the time-series of the 225 unique deals involving petition cases between 2000 and 2014, both in their number as well as their proportion of all appraisal eligible deals. In the first three years of the sample period, there were around five appraisal petitions each year,

[6] Because Bloomberg Law does not begin coverage until 2003, we are unable to access the dockets of the earlier Delaware Chancery Court cases, so that we may miss some appraisal petitions that were filed during 2000-2003 but which did not result in judicial opinions.

accounting for 2% − 3% of all eligible deals. The same figures rose to around 20 petitions each year, or 20% −25% of all eligible deals during the last four years of the sample.

[Insert Figure 1]

Figure 2 shows the number of appraisal petitions that are filed by hedge funds and individual shareholders, the two largest groups of filers during our sample period. It shows that hedge funds are by far the dominant force among the appraisal petitioners, especially after 2010, whereas the number of petitions filed by individuals seems to be much reduced from its highest levels during the 2005-2007 time period.

[Insert Figure 2]

To get a better understanding of who is filing appraisal petitions, Table 1, Panel A breaks down the type of petitioners in detail. Hedge funds account for the largest numbers of deals challenged (170), and the largest percentage of total capital invested, that is the dollar amount of securities seeking appraisal by petitioners (73.8%).[7] These petitions are filed by 86 hedge funds, indicating the presence of some repeat players. Focusing on dollar volume of the deals, mutual funds, contributing 13.6% of the dollar volume, take the second spot. Individuals are next in dollar volume (7.1%), although they are first in terms of the number of unique investors filing appraisal petitions (118) and second in terms of the number of deals that they challenge (122). The close correspondence between the number of unique individual investors and the number of deals challenged shows that there are few repeat individuals filing appraisal cases. The remaining investor categories cover small dollar volumes: other companies (2.1%), bank and insurance companies (1.7%), and other institutional investors such as private equity, venture capital, and pension funds (1.8%).

[7] The invested capital is calculated as the number of shares the petitioner seeks appraisal on multiplied by the stock price at deal closing.

[Insert Table 1 here.]

To explore the question of who are the repeat filers of appraisal petitions, in Table 1, Panel B, we examine the top appraisal filers, which we define as those investors that filed four appraisal petitions or more during our sample period. It shows that all of the top filers by number of deals challenged are hedge funds. In addition, when we look at total dollar value, Merion Capital (25.1%), Megnetar Capital (5.2%), Merlin Partners (0.9%), Ancora (0.6%), and Quadre Investments (0.4%), are the main players. Together they also file petitions in 61 deals, or about 27.1% of all the deals challenged between 2000 and 2014.

Given the prominence of repeat players, we expect to see a similar concentration in the attorneys that represent them in this litigation. Table 1, Panel C, breaks out the top plaintiffs' law firms that are involved in appraisal litigation. As we predicted, a small cadre of law firms file most of the cases. If we examine the total number of cases filed, Prickett, Jones & Elliott, with 57 cases filed, 48 of which are filed on behalf of hedge funds, has by far the largest market share. Grant & Eisenhofer and Smith Katzenstein Jenkins are tied for second with 17 cases brought, although all 17 of the cases prosecuted by Smith Katzenstein Jenkins are on behalf of hedge funds, whereas Grant & Eisenhofer's portfolio is more diversified. The remaining plaintiffs' law firms are Proctor Heyman Enerio (15 cases), Abrams & Bayliss (9 cases), Mark Andersen (8 cases) and Rosenthal Monhait & Goddess (6 cases). There is a wide variation in the size of the ownership stakes of the various plaintiffs that these firms represent.

With the huge variation in the invested capital, or the value of securities petitioners seek appraisals on, Panel A of Table 2 explores the distribution of the value of invested capital amounts represented in these cases. The average for all petitions in each deal is $26.3 million, with an interquartile range of $583 thousand to $8.3 million. This suggests that a substantial

number of these appraisal cases are filed by investors holding too little stock to justify the full costs of bringing one of these cases to trial (up to $3 to $5 million), according to Lafferty (2015).

Another way of getting at this issue is to look at the percentage ownership stakes of the petitioning shareholders. We find that the average percentage of ownership represented in these petitions is 4.6%, with the interquartile range of 0.3% to 5.0%. Again, these data plainly show that there are some very small appraisal cases being filed. Moreover, the average dissident ownership in appraisal cases is substantially lower than the 6% − 7% average in general hedge fund activism (Brav, Jiang, Partnoy, and Thomas, 2008) or in activism specifically targeted at M&A deals (Jiang, Li, and Mei, 2016).

Focusing in more finely on this issue, we calculate that in 32% of the appraisal cases filed, the petitioners collectively have stakes less than $1 million and represent less than 1% of the total outstanding shares. The relatively large number of small-value appraisal litigation may have prompted the proposed De Minimis Amendment to the Delaware appraisal statute in 2015, which was discussed in section II. However, we note that there are also in our sample some very large cases where the value of invested capital would clearly support the costs of aggressive litigation. Some examples include Merion Capital v. Safeway (2015) in which Merion demanded appraisal for shares that were worth $618.4 million at the closing deal its acquisition by Albertsons Holdings; and Millenco & Porter Orlin v. Transkaryotic Therapies (2005) where securities worth $380.5 million were at stake.

[Insert Table 2 here.]

Panel A of Table 2 further provides data showing the time involved in prosecuting appraisal cases. On average, there are 75 days between the merger effective date (upon the filing

of the articles of merger marking the completion of the entire transaction) and the filing of the first petition. Once a petition if filed, beginning the litigation process, then on average another 348 more days pass before a settlement (if any) is reached, or if the case goes all the way to trial, about 839 days go by before the Chancery Court issues a decision. Our sample includes five cases that were dismissed by the court for technical defects (usually because the shareholder failed to satisfactorily follow all of the steps needed to perfect their appraisal right), and there are three cases that were voluntarily withdrawn. The median case takes over two years (805 days) from petition to decision. The total investor horizon for the petition could be even longer for some dissidents if they acquire their stakes before the record date, which is on average 60 days (or 47 days in median) prior to the merger effective date.

The dissidents, however, may welcome the long duration of these cases because companies are required to pay pre-judgment interest on the appraisal award at a rate of 5% plus the federal discount rate, as discussed in section II. This is currently a decidedly above market rate of interest and has raised questions about the motives of some of the appraisal petitioners.

Both the small stake of some petitioners and the relatively high statutory pre-judgment interest rate raise the issue as to what proportion of the petitions were bona fide appraisals based on a genuine dissention about the corporate valuation versus those that are pure interest rate arbitrage using the litigation process. To get some insight on this issue, we compiled data on the amount of litigation activity that occurs in these cases. In particular, we pulled the docket sheets for all of the appraisal petitions filed over the five year period of 2010-2014. We are interested in seeing how actively these cases are litigated during this sample period. Figure 3 illustrates the average and median number of filings. The distribution is highly skewed: whereas on average there are 63 docket entries recorded for the filings by all parties and the court, the median

number of docket entries is much smaller at 25. As one would expect most of the filings are made by petitioners, with the average and median level at 25 and 9 respectively.

[Insert Figure 3 here.]

While this data is suggestive of big differences in how these cases are litigated, we need to probe further to see how filing patterns vary across the cases. Table 2, Panel B, displays data on the relationship between the number of filings and the value of capital invested by the petitioners in each deal. Litigation activity clearly increases with the amount of money at stake in the case. For cases where the underlying amount invested was less than $1 million, the petitioners made, on average, 15.5 filings and settled their cases 100% of the time (11 deals). By contrast, where the average value of the capital invested exceeds $10 million, the average petitioners' filings rises to 50, and 36.4% (4 out of the 11) of the cases go to trial. This suggests that the amount of a petitioner stake in the appraisal could be a good indicator of whether the litigation will go to trial instead of a relatively quick settlement.

Another way of looking at this issue is to scrutinize the relationship between the amount of litigation in an appraisal action and the type of M&A transaction. In general, if an arm's length sale of a corporate entity occurs after a seeming diligent sale process, where the sale is recommended by a majority independent board, approved by a majority of stockholders, and endorsed by a fairness opinion (which are sought by over 80% of the merger targets in the post-*Smith v. Van Gorkom* (1985) period, according to Kisgen, Qian, and Song, 2009), it will be difficult for the plaintiff to show that their stock was undervalued in the merger.

Table 2, Panel C breaks out appraisal cases filed in transactions where there is an ex ante perceived conflict of interest, such as, minority squeezeouts, going private deals, and deals with

low offered premiums. Minority squeezeouts arise when an acquirer holding a control block of stock buy out the minority shareholders. A going private deal arises when the buyout group, which often includes the target firm's management, seeks to purchase the publicly held shares of the target. Both forms of transaction can create serious concerns of conflicts of interest between management, or controlling shareholders, as (part of) the buyout group, and the public shareholders. These conflicts may lead to underpayment for the shares of the public investors. The literature holds mixed views on whether outside shareholders face expropriation in going private deals (DeAngelo, DeAngelo, and Rice, 1984; Jiang, Li, and Mei, 2016), or whether minority shareholders are "left out in the cold" after a "freezeout" (Amihud, Kahan, and Sundaram, 2004; Bates, Lemmon, and Linck, 2006). Finally, we look at low premium deals, where we sort offered premiums and define the bottom 25% of such deals as "low premium deals."

Table 2, Panel C shows that these appraisal cases are filed by shareholders holding an average of 1.8% to 3.3%, which puts them among the lower one-half in terms of ownership stake in our overall sample for 2010-2014. Petitioner filings are less voluminous than average, ranging from an average of 17.2 to 21.4, which is significantly below the sample median of 24.9 filings. Similar patterns exist for total docket entries and respondent filings. Such deals are, however, more likely to settle than be resolved by courts. The percentage of cases that settle is 88%, 86%, and 86%, respectively, for minority squeezeouts, going private transactions, and low premium deals. This suggests that potentially strong cases are in fact settled earlier by defendants, leading to less litigation activity in them.

[Insert Table 3 here.]

We turn next to an analysis of the deal characteristics associated with appraisal filings. Table 3 reports characteristics of merger target companies which are subject to appraisal petitions (column 1a, 1b and 1c) in comparison to target firms in appraisal eligible deals where no petitions were filed. The difference in the average values are shown in column 2a and the *t*-statistic for the difference is in column 2b.

These results show that deals involving appraisal litigation, on average, have an announcement premium of 21.5% (calculated as $(P_{Offer} - P_{-1})/P_{-1}$, where P_{Offer} and P_{-1} are the initial offer price and previous-day close of the target firm's stock price), compared to a 36.1% premium for deals without appraisal petitions. The difference is significant at the 1% level. Similarly, deals with appraisal litigation filed have a lower final offer premium with a difference of 12.5% versus those without appraisal litigation (calculated as $(P_{Final} - P_{-1})/P_{-1}$, where P_{Final} and P_{-1} are the final offer price at deal completion and previous-day close of the target firm's stock price). If we look at the types of transaction that attract appraisal litigation, we see that these cases are more commonly filed in going-private deals and squeezeouts, which are among the most susceptible to conflicts of interest between insiders and outside shareholders.

Interestingly, petitioners are more likely to target deals with higher institutional ownership presumably because such target stocks have a more liquid market especially after the announcement date and around the record date. Their stock purchases would have a lower price impact, thus higher profitability. For other major deal attributes, such as deal value, target profitability (ROA) and deal duration, there is little difference between appraisal targeted deals and appraisal eligible deals involving no appraisal litigation.

IV. Determinants of Appraisal Petitions and Trials

A. Determinants of Appraisal Petitions

What kinds of deal characteristics attract appraisal arbitrageurs? Table 4 analyzes the question formally in a multivariate framework. In this table, we run a probit regression in which the dependent variable is a dummy variable for the appearance of any appraisal petition in the deal, and the sample includes all 1,326 eligible deals with all the required information.

[Insert Table 4 here.]

As expected, and consistent with results in Table 3, low takeover premium, either measured by *Announcement premium*, or by *Final offer premium*, predicts higher likelihood of the filing of an appraisal petition. If the premium is ten percentage points lower, the probability of an appraisal petition increases by 63 to 72 basis points (significant at the 5% level). We also examine *Going private* and *Minority squeezeout* deals, which are commonly perceived as being most susceptible to conflicts of interest and unfair pricing to the public shareholders. Both variables are significantly (at the 5% level) associated with a higher probability of appraisal filings.

Last, *Tender offer* increases the probability of an appraisal petition by 2.8 percentage points, and the effect is significant at the 5% level. These are deals that combine a tender offer with a merger in two steps. In the first step, the buyer initiates a tender offer to acquire a majority of the outstanding target company's stock. In the second step, the buyer completes a "back-end merger" to acquire the balance of the target company's stock. The remaining shareholders retain their appraisal rights if they do not consent to surrendering their shares, or if their consent is not sought (e.g., in short-form mergers where at least 90% of the target

company's stock was already acquired by the parent company in the tender offer). Short-form mergers are a frequent source of appraisal litigation as they are minority shareholders only recourse if they feel the deal price is too low. Thus the effect of *Tender offer* is closely related to that of a short-form merger.

B. Determinants of arbitrageur ownership stakes

Table 5 presents a related analysis but focuses on the size of the stake held by the filing shareholders. We divide filing petitioners into two groups: large petitioners and small petitioners, which we separate using $1 million capital input (which is the 27th percentile at the deal level) as a cutoff for small petitioners. The estimation method is a multinomial logit model with unordered outcomes, recognizing that the two types of appraisals have motives that are different and are not necessarily ordered functions of the determinants. The base outcome (or "no outcome") is no appraisal filed, large (above $1 million) petitions are coded as the "category one outcome," and small petitions are coded as "category two outcome." Indeed, the two types of petitions seem to be driven by different underlying motives. Low-stake petitions target two types of deals disproportionately: *Minority squeezeout* and *Friendly* deals (column 2). None of the other predictors are close to being significant.

[Insert Table 5 here.]

In contrast, larger petitions have more characteristics that explain their emergence. Both *Going private* and *Minority squeezeout* deals are among the most susceptible to conflicts of interest between insider/controlling owners and public shareholders, and the presence of these factors is associated with a significant increase of 2.9 and 5.4 percentage points, respectively, in

the probability of the filing of a large stake appraisal petition. Another significant factor is the size of the premium paid in the transaction: every increase of 10 percentage points in the *Announcement premium* reduces the probability of a larger shareholder filing an appraisal petition by 60 basis points, plausibly because a low premium is more likely to be perceived as a bad deal for target shareholders, especially when deal and firm characteristics are controlled for in a regression framework.

The use of a *Tender offer* in an M&A deal is associated with a 3.3 percentage point heightened risk of the filing of an appraisal petition by a larger shareholder. In these cases investors claim that the valuation is inadequate in a "back-end" merger, which is frequently a short-form merger in our sample. *Same industry* deals lead to fewer dissidents filing presumably because these transactions are more likely to be driven by strategic bidders seeking cost savings and synergies, and are therefore are likely to lead to value increasing outcomes reached in arms' length negotiations.

C. Determinants of trial among appraisal petitions

Next, we analyze what motivates an appraisal petitioner to proceed to trial, once an appraisal petition is filed. In the analysis, the relevant sample is thus all the 91 filed appraisal deals in which the key variable information is not missing. The dependent variable is a dummy variable for the appraisal to actually go to trial, rather than being settled by the parties, which we interpret as an indication that the petitioner seriously intends to pursue their appraisal case and not to settle cheaply. The results from our probit regressions are listed in Table 6.

[Insert Table 6 here.]

The independent variable of our key interest is the size of the stake by the arbitrageurs, measured at the cutoffs of $10 million (*I (Investment* $\geq$ $10 *million)*) and one million (*I(Investment* $\geq$ *$1 million)*), which is a dummy variable indicating the amount of investment by the dissident in the target firm is over $10 million or $1 million. We see that an investment amount above the $10 million threshold increases the probability of an appraisal case going to trial by an additional 14.7 percentage points, that is, the probability of a large-investment case going to trial would more than double the average sample probability of 12.1%. The effect is significant at the 5% level. In results not tabulated, we find that this effect is also statistically significant if we use a $5 million cutoff. However, at the $1 million cutoff, the effect becomes indistinguishable from zero both economically and statistically. Overall the evidence suggests that the high cost of taking an appraisal cost to trial makes it uneconomical to pursue small cases (up to a few million dollars) all the way to a judgment.

We also find that *Going private* deals are significantly (at the 10% level) less likely to go to trial by 6.7 percentage points, most likely due to the stronger propensity for the defendant to settle weaker cases where the deal value may reflect a clear conflict of interest. *Minority squeezeout* is insignificant in its effect incremental to *Going private.* However, *Minority squeezeout* would negatively predict trial in a regression without *Going private,* suggesting that the two variables capture a common source of potential conflict of interest but the effect of *Going private* dominates.

D. Returns to Appraisal Arbitrage

A comprehensive assessment of returns from appraisal arbitrages is difficult for two reasons. First, a great majority of the appraisal cases are settled out of the court. The final settlement price is usually not disclosed due to a confidentiality agreement between the petitioner(s) and the respondent. Second, the legal and administrative cost for litigating these cases is not observable, either. We nevertheless conducted a pre-cost return analysis for a subsample of 88 observations (65 from trials involving 57 unique transactions and 23 from settlements involving 17 unique deals) for which we have information about the final valuation awarded to the petitioners.[8] Results are reported in Table 7.

[Insert Table 7 here.]

In terms of the total raw returns, the average (median) is 107.1% (38.2%) from petition to resolution, or 22.5% (13.5%) in annualized terms. If we adjust the returns by the same-period market returns,[9] the average (median) excess return becomes 65.5% (31.4%), and the average (median) annualized excess return is 15.9% (9.3%). Such returns are highly lucrative (before costs are considered) given the low risk. Though the standard deviation of raw returns is sizable, 100% of the deals provide non-negative raw returns with the minimum total raw return being zero.[10] Such a pattern suggests that the dispersion mostly captures a long right tail of returns.

With the caveat that we only have a small sample of settled cases where the terms of the settlement were publicly disclosed,[11] we compare returns from deals receiving judge-determined

[8] Certain deals in our sample involve multiple petitioners. Different petitioners may also receive different payments depending on whether and when they settle with the respondent. See, for example, Merion Capital LP et al. v. Safeway Inc., C.A. No. 10719-VCL (Del. Ch. 2015).
[9] We use the CRSP value-weighted all-market return.
[10] There are seven cases (including, e.g., Christen v. Trados) for which we code zero return for the petitioners: There are six cases in which the valuations of the disputed securities were zero at merger completion and remained at zero by the court ruling; there is one case in which the petitioner withdrew with a zero valuation. Because the final valuations were zero in these cases, there was no accrued interest, leading to a zero total raw return. All other cases have positive total raw returns.
[11] We attempted to collect data on the values awarded in all settlements, but were unable to get the parties involved in these cases to disclose this information.

prices with those in settled cases. For the former, the average (median) total raw return is 128% (52.4%), or 18.9% (12.3%) in annualized terms. For the latter, the average (median) total raw return is 48.3% (26.0%), or 32.8% (18.2%) in annualized terms. The comparison suggests that arbitrageurs tend to receive significantly higher awards if they follow through to a trial, however, due to the much longer time required to obtain a court decision, the settlement cases in fact exhibit higher annualized raw returns.

For the trial sample, we can decompose the total return into two disjoint parts: The first component is valuation improvement, i.e., the percentage increase in the valuation awarded by the court over the price offered at the completion of the merger. The average (median) value improvement is 51.2% (19.6%). The second component is the interest accrual on the proceeds awarded to petitioners. The average (median) return from interest accrual is 76.8% (27.5%), considerably larger than that from value improvement. This decomposition suggests the accrual of interest contributes significantly to the returns to appraisal litigation as it boosts expected returns and at the same time completely eliminates the downside risk. In the absence of interest incomes, 10.8% of petitioners would have incurred negative raw returns, that is, received returns based solely on the court-determined valuation that is lower than the takeover offer price.

For the small sample of settled cases where we have some information about the shareholder awards, the same decomposition is not available. This is because the settlement terms, when disclosed, only reveal the total awards to the petitioners. These payments combine a privately negotiated valuation and privately agreed-upon interest accrual.

V. Implications of Delaware Appraisal Law Reforms

A. Interest Reduction Amendment

The results in Tables 4 and 5 shed light on the interest reduction initiative. In Table 4, *Excess yield,* defined as the spread between the Federal discount rate plus five percentage points and the yield on two-year U.S. Treasury notes,[12] significantly predicts (at the 5% level) the emergence of more appraisal petitions. Moreover, the economic magnitude of the effect is substantial: for every percentage point increase in the *Excess yield*, the probability of an appraisal filing increases by 1.3 percentage points. In other words, the 5% statutory rate above the risk free rate – on its own – with the flattening of the yield curve in recent years, could trigger appraisal filings in an additional of 6.5 additional percentage points of all of the appraisal eligible deals, leading to over 45% of all the actual appraisal petitions filed. This finding affirms the wide spread conjecture that a significant part of the increase in appraisal petitions has been driven by the lucrative yields provided on the awards in these cases (Jetley and Ji, 2015). This finding strongly supports the Council's decision to propose the Interest Reduction Amendment as a way of discouraging interest rate driven appraisal cases.

Table 5 corroborates the inferences from Table 4. The effects of *Excess yield* on the presence of appraisal filings are of similar economic magnitude between the large and small petitioner samples, at about 50-60 basis points for each percentage point increase in the *Excess yield*. However, both coefficients are not statistically significant at the 10% level due to the much smaller size of the subsamples.

Finally, Table 7 confirms the anecdotal conjecture that appraisal arbitrage has become a backdoor interest rate arbitrage. Indeed, a majority (60.5%) of the returns to appraisal arbitrage in trial cases came from interest accrual rather than higher valuation awarded by the court. Moreover, the interest accrual essentially ensures that the appraisal arbitrage will receive non-

[12] Federal discount rates are obtained from the Federal Reserve System, whereas yields on two-year U.S. Treasury notes are downloaded from Bloomberg.

negative raw returns. This illustrates that many appraisal petitions generate returns which are not primarily derived from genuine dissension over takeover valuation. Our evidence again supports the Council's rationale for the "Interest Reduction Amendment."

B. De Minimis Exception

In this section, we build on Tables 4 to 6 and further examine the effects of implementing the De Minimis Exception proposed by the Council. To illustrate its potential impact, we try to assess the extent to which the volume as well as the composition of the appraisal petitions would have changed if the De Minimis Exception had been put in place prior to the beginning of our sample period, that is, the year 2000. In other words, what would appraisal litigation have looked like from 2000-2014 if shareholders needed to hold at least $1 million in shares or 1% of outstanding stock in the target firm?

To this end, we analyze the determinants of the likelihood of an appraisal filing for the petitioners that held more than $1 million or 1% of outstanding shares using a probit regression during our sample period, where the sample consists of all 1,326 eligible deals. The covariates remain the same as in Tables 4 and 5. The results are reported in Table 8.

[Insert Table 8 here.]

Table 8 shows that low *Announcement premium, Going private* and *Minority squeezeout* deals motivate high-stake filings by the petitioners, with the first two variables significant at the 5% level, while *Minority squeezeout* is significant at the 1% level. Moreover, *Tender offer*, which is related to a short-form of merger, is associated with higher incidences of the emergence of high-stake dissidents.

A comparison between the results in Table 8 and those in Tables 4 and 5 clearly indicates that the same factors which appeal to appraisal arbitrageurs also motivate them to acquire higher stakes in the deal. Such a relation suggests that restricting the minimum stake to $1 million or 1% of outstanding stock is unlikely to distort the primary motives to file appraisal petition: Appraisal arbitrageurs will continue to target deals with the appearance of a conflict of interest or unfair pricing, e.g., going private deals, minority squeezeout deals, and deals with low premium. In fact, these effects will become stronger after the passage of the De Minimis Exception because, as shown in Table 5, these variables are more significant predictors of large-, rather than small-stake petitions.

On the other hand, the De Minimis Exception with a threshold of $1 million or 1% of outstanding stock should not be expected to change the number of trials conditional on a petition being filed, as shown by the insignificant coefficient *I(Investment ≥ $1m)* in Table 6. In fact, a threshold as high as $5 to $10 million is necessary to reduce the proportion of cases that are settled out of the court.

Moreover, the predictive regression in Table 8 allows us to calculate the number of appraisal petitions that would have filed if the De Minimis Exception were implemented earlier. In particular, the predicted probability of deals involving appraisal petitions involving stakes over $1 million or 1% of outstanding stock was 2.7% in 2015 (by applying the regression coefficients on the 2015 deal characteristics). This translates into 20.3 predicted deals where appraisal petitions would be filed. In fact there were a total of 33 such deals in 2015. Hence based on the prediction model reported in Table 8, there would have been 38.5% fewer deals with appraisal petitions filed if the De Minimis Exception had been effective in 2015.

VI. Conclusions

In this paper we have examined the Council's recent proposed legislative reforms to Delaware's appraisal statute. These reforms were suggested to address the significant expansion of the hedge fund's appraisal arbitrage activities. Using the first large scale empirical study, we find that the proposed De Minimis Exception and Interest Reduction Amendment are each likely to lead to significant reductions in appraisal filings. We project that the De Minimis Exception by itself could reduce appraisal filings by over one-third over time, but without affecting the underlying reasons why the remaining larger shareholders seek appraisal. In other words, we expect that larger petitioners will continue to target going private transactions, control shareholder squeezeouts and low premium deals.

Turning to the Interest Reduction Amendment, we find that the current well-above market rate of pre-judgment interest in appraisal actions could have stimulated the filing of almost 45% of all the petitions filed during our sample period, especially those filed by larger stakeholders. This suggests that if companies facing potential appraisal claims offer to pay the merger consideration to disgruntled shareholders shortly after they file for appraisal, the ex ante effect of such a promise would be to substantially reduce appraisal filings.

Finally, we note that the Council's decision not to propose legislative overruling of the Transkaryotic decision, perhaps because of the Delaware Chancery Court's statements that they will defer to the deal price in M&A transactions negotiated in arm's length transactions, appears prudent. Larger shareholders that file appraisal petitions are generally motivated to do so because of perceived conflicts of interest in the underlying deal, and these petitions are the least likely to be negotiated at arm's length. If the appraisal remedy is designed to address "unfair"

prices in M&A transactions, then the Delaware appraisal statute will still be available in those circumstances.

References

Amihud, Yakov, Marcel Kahan, and Rangarajan K. Sundaram, 2004, The Foundation of Freezeout Laws in Takeovers, *Journal of Finance*, 59(3), 1325-1344.

Barnes, Beau G., Nancy L. Harp, and Derek Oler, 2014, Evaluating the SDC Mergers and Acquisitions Database, *The Financial Review* 49(4), 793-822.

Bates, Thomas W., Michael L. Lemmon, and James S. Linck, 2006, Shareholder Wealth Effects and Bid Negotiation in Freeze-out Deals: Are Minority Shareholders Left Out in the Cold? *Journal of Financial Economics* 81(3), 681-708.

Brav, Alon, Wei Jiang, Frank Partnoy, and Randall Thomas, 2008, Hedge Fund Activism, Corporate Governance, and Firm Performance, *Journal of Finance,* 63(4), 1929-1775.

Cain, Matthew D. and Steven Davidoff Solomon, 2016, Takeover Litigation in 2015, Working Paper, U.S. Securities and Exchange Commission and University of California, Berkeley.

DeAngelo, Harry, Linda DeAngelo, and Edward M. Rice, 1984, Going Private: Minority Freezeouts and Stockholder Wealth, *Journal of Law and Economics* 27(2), 367-401.

Geis, George S., 2011, An Appraisal Puzzle, Northwestern University Law Review 105(4), 1635-1677.

Hsieh, Jim and Ralph A.Walkling, 2005, Determinants and Implications of Arbitrage Holdings in Acquisitions, *Journal of Financial Economics* 77(3), 605-648.

Jiang, Wei, Tao Li, and Danqing Mei, 2016, Influencing Control: Jawboning in Risk Arbitrage, Working Paper, Columbia Business School and Warwick Business School.

Kahan, Marcel and Edward B. Rock, 2007, Hedge Funds in Corporate Governance and Corporate Control, *University of Pennsylvania Law Review* 155(5), 1021-1093.

Kisgen, Darren J., Jun Qian, and Weihong Song, 2009, Are Fairness Opinions Fair? The Case of Mergers and Acquisitions, *Journal of Financial Economics* 91(2), 179–207.

Krishnan, C.N.V., R. Masulis, R.S. Thomas, and R. Thompson, 2012, Shareholder Litigation in Mergers and Acquisitions, *Journal of Corporate Finance* 18(5), 1248-1268.

Korsmo, Charles and Minor Myers, 2015, Appraisal Arbitrage and the Future of Public Company M&A, *Washington University Law Review* 92(6), 1551-1615.

Jetley, Gaurav and Xinyu Ji, 2015, Appraisal Arbitrage – Is There a Delaware Advantage? *The Business Lawyer*, Forthcoming.

Lafferty, William M., 2015, Should Delaware Dictate Corporate Conduct? Effects of Recent Delaware Decisions and Legislative Initiatives on Everything from Third-Party Liability to Choice of Forum, Presentation at the 2015 ABA Section of Litigation Annual Conference.

Markides, Constantinos C., 1995, Diversification, Refocusing, and Economic Performance, The MIT Press.

Thomas, Randall S., 2000, Revising the Delaware Appraisal Statute, *Delaware Law Review* 3(1), 1-35.

Thompson, Robert and Randall S. Thomas, 2004, The Public and Private Faces of Derivative Suits, *Vanderbilt Law Review* 57, 1747-1793.

Figure 1: Deals Resulting in Appraisal Petitions in the Delaware Court of Chancery

This figure shows appraisal activities from 2000 to 2014. The gray bars (left axis) plot the number of announced M&A transactions targeted by petitioners in each year (by effective date, or closing date). The black line (right axis) plots the percentage of eligible deals targeted by petitioners, as recorded by the Securities Data Company ("SDC"). An eligible deal must meet the following requirements: (1) the target company is incorporated in Delaware; (2) it is a cash deal or a hybrid deal (part-cash and part-stock deal), or (3) the acquirer is a private company in a stock deal. Data sources include the SDC, the Delaware Court of Chancery and Bloomberg Law. Section III provides detailed information about the sample and data.

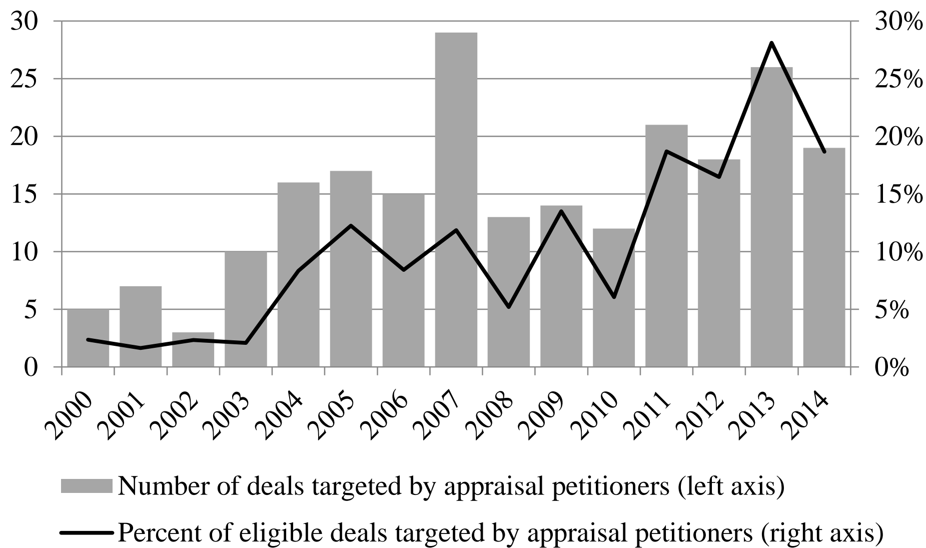

Figure 2: Number of Appraisal Petitions by Investor Type

This figure shows the total number of appraisal petitions by individuals and hedge funds from 2000 to 2014.

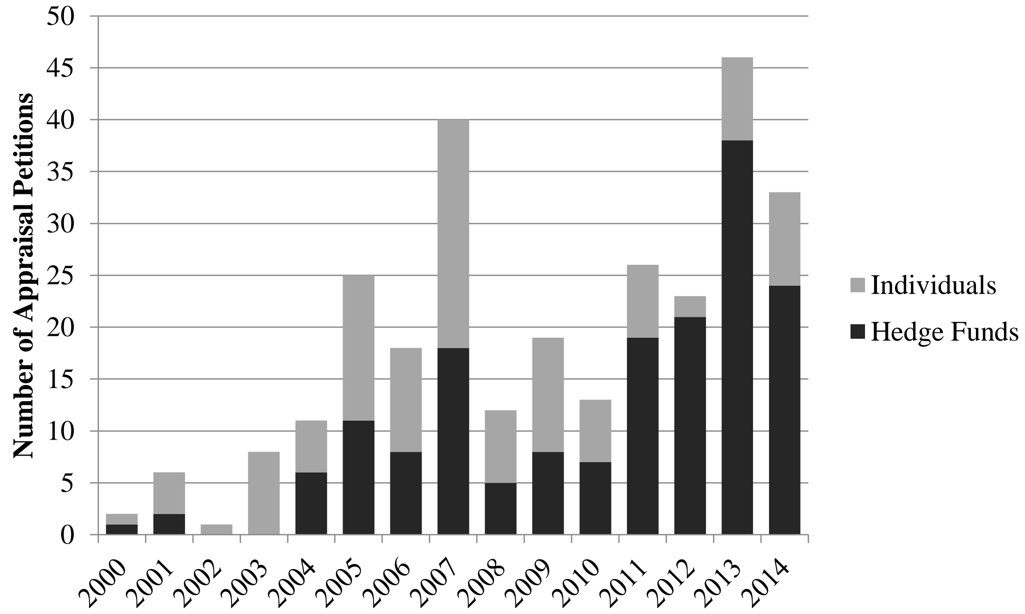

Figure 3: Number of Appraisal Filings by Party

This figure shows the number of average and median petition filings by all parties, petitioners, the respondent and other interested parties. Our sample period is from 2010 to 2014.

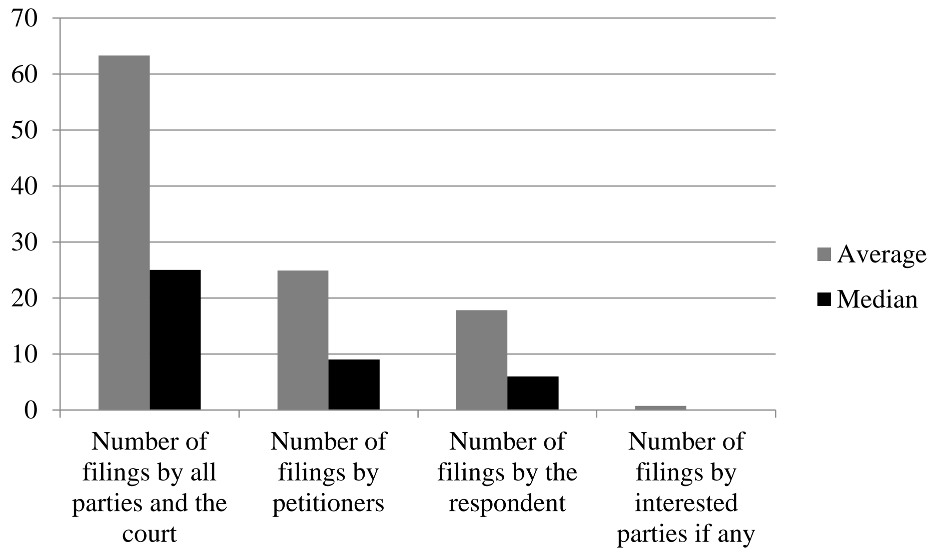

Table 1: Appraisal Petitioners

This table presents descriptive data on appraisal petitioners. Panel A shows the number of unique investors, number of deals and percent of total dollar volume invested in appraisal deals for each investor type during 2000-2014. Panel B reports the players in our sample that invested in at least four merger targets in the sample period. Panel C reports the top law firms that represent plaintiffs and their clients' stock ownership.

Panel A: Types of investors and their investments

Type of investor	Number of unique investors	Number of deals	Percent of total dollar volume
Hedge fund	86	170	73.8%
Mutual fund	8	8	13.6%
Individual investor	118	122	7.1%
Public and private companies	20	20	2.1%
Bank and insurance firm	3	3	1.7%
Venture capital/private equity firm	11	12	1.5%
Pension fund/plan	5	5	0.3%

Panel B: Top players who file at least four appraisal petitions

Petitioner	Investor type	Number of deals	Percent of unique deals	Percent of total dollar volume	Percent of total dollar volume (2010-2014)
Merlin Partners LP	Hedge fund	20	8.9%	0.9%	1.5%
Quadre Investments LP	Hedge fund	13	5.8%	0.4%	0.6%
AAMAF, LP (Ancora Arbitrage Fund)	Hedge fund	13	5.8%	0.6%	1.0%
Merion Capital LP	Hedge fund	10	4.4%	25.1%	40.3%
Patchin Value Master Onshore LLC	Hedge fund	6	2.7%	0.2%	0.3%
Longpath Capital LLC	Hedge fund	5	2.2%	0.2%	0.3%
Magnetar Capital	Hedge fund	5	2.2%	5.2%	8.3%
Dorno Investment Partners LLC	Hedge fund	4	1.8%	0.1%	0.2%
Predica Capital Fund I LLC	Hedge fund	4	1.8%	0.1%	0.0%

Panel C: Top law firms representing plaintiffs (2010-2014)

Name of law firm	# Cases filed for all plaintiffs	# Cases filed for individuals	Average % of stock ownership	# Cases filed for hedge funds	Average % of stock ownership	# Cases filed for other clients	Average % of stock ownership
Prickett, Jones & Elliott, P.A.	57	5	6.05%	48	1.15%	4	1.53%
Grant & Eisenhofer, P.A.	17	1	0.01%	8	3.38%	8	0.04%
Smith Katzenstein Jenkins LLP	17	0	--	17	0.39%	0	--
Proctor Heyman Enerio LLP	15	4	0.01%	5	3.44%	6	0.04%
Abrams & Bayliss LLP	9	0	--	9	3.13%	0	--
Mark Andersen, P.A.	8	1	0.01%	7	1.99%	0	--
Rosenthal Monhait & Goddess, P.A.	6	3	6.37%	3	16.63%	0	--

Table 2: Appraisal Petitioners' Capital Commitment and Investment Horizon

Columns (1) and (2) of this table report summary statistics of the size of appraisal petitioners' collective stakes in the merger target on the effective date, both in dollar values and as a percentage of outstanding shares of the target companies. Column (3) shows the number of days between the effective date (closing date) of the deal and the date of the first petition filing. Column (4) reports the number of days between the first petition filing and settlement date for settled cases, while column (5) reports the number of days between the first petition filing and court decision date for cases determined by a judge. Panel B shows information on settled and litigated cases, sorted by the value of invested capital. Panel C reports statistics on settled and litigated cases, sorted by deal type. The sample size is 152 deals/cases from 2000 to 2014 (by effective date). 108 cases are settled, 26 cases are ruled by a judge, five cases are dismissed, three cases are voluntarily withdrawn, and 10 cases are pending.

Panel A: Invested capital and investment horizon

	Value of invested capital at final offer price ($m)	Percent Ownership	Days between the effective date and filing of the first petition	Days between the filing of first petition and settlement date	Days between the filing of first petition and court decision date
	(1)	(2)	(3)	(4)	(5)
Mean	26.254	4.61%	75.4	348.6	838.8
Std. Dev.	72.877	9.16%	52.0	301.1	243.7
5% Percentile	0.023	0.01%	1	51	419
25% Percentile	0.583	0.27%	32.5	133	731.5
50% Percentile	1.897	1.37%	83.5	234	804.5
75% Percentile	8.250	4.97%	118	478.5	1,005
95% Percentile	170.625	25.86%	120	1,060	1,302

Panel B: Settled and litigated cases (2010-2014)

Value of invested Capital	% Stock ownership [median]	# Filings by all parties and the court [median]	# Filings by petitioners [median]	# Filings by respondent [median]	# Filings by any interested parties [median]	# Cases settled (average # days to settlement)	# Cases resolved by court (average # days to decision)
Less than $1 million	4.28% [0.70%]	35.4 [25]	15.5 [7]	8.2 [7]	0 [0]	11 (354.2)	0 (--)
$1-5 million	1.23% [0.52%]	41.2 [22]	15.9 [7]	10.5 [5]	0.4 [0]	29 (195.9)	3 (794.7)
$5-10 million	2.45% [2.33%]	52.6 [27]	19.7 [11]	16.0 [5]	0 [0]	6 (309.5)	1 (729.0)
Above $10 million	6.41% [3.54%]	127.4 [63]	50.1 [21]	38.4 [25]	1.9 [0]	7 (275.6)	4 (710.0)
Overall (2010-2014)	3.39% [1.36%]	63.3 [25]	24.9 [9]	17.8 [6]	0.7 [0]	53 (252.2)	8 (744.1)
Overall (2000-2014)	4.61% [1.37%]	--	--	--	--	108 (348.6)	26 (838.8)

Panel C: Suspect Transactions: Settled and litigated cases (2010-2014)

Type of deal	% Stock ownership [median]	# Filings by all parties and the court [median]	# Filings by petitioners [median]	# Filings by respondent [median]	# Filings by any interested parties [median]	# Cases settled (# days to settlement)	# Cases resolved by court (# days to decision)
Minority squeezeout	1.80% [0.85%]	45.4 [25]	20.9 [5]	10.9 [5]	0.22 [0]	7 (202.4)	1 (719.0)
Going private	3.31% [1.39%]	55.8 [19]	21.4 [7]	15.9 [5]	0.13 [0]	19 (185.9)	3 (740.0)
Low premium deals (below 0.25 percentile)	2.90% [1.29%]	47.7 [25]	17.2 [8]	14.5 [6]	0.20 [0]	12 (332.1)	2 (731.5)
Overall (2010-2014)	3.39% [1.36%]	63.3 [25]	24.9 [9]	17.8 [6]	0.69 [0]	53 (252.2)	8 (744.1)

Table 3: Deal Characteristics

This table reports characteristics of 165 deals involving appraisal petitioners, and compares them to 1,414 eligible deals with no such petitioners. Our sample includes all closed deals from the SDC between January 2000 and December 2014 (by effective date), in which the target is incorporated in the state of Delaware. Petitioners are identified through their appraisal petitions filed in the Delaware Court of Chancery. *Announcement premium* is calculated as $(P_{Offer} - P_{-1})/P_{-1}$, where P_{Offer} and P_{-1} are the initial offer price and previous-day close of the target firm's stock price. *Final offer premium* is calculated as $(P_{Final} - P_{-1})/P_{-1}$, where P_{Final} and P_{-1} are the final offer price and previous-day close of the target firm's stock price. *Deal value ($ million)* is the total value of consideration paid by the acquirer, excluding fees and expenses. *Return on assets* (ROA) is defined as earnings before interest, tax, depreciation and amortization (EBITDA) scaled by lagged assets. *Revision return* is calculated as $(P_{Final} - P_{Offer})/P_{-1}$. *Deal duration* is measured as the number of calendar days between the first takeover announcement and the announced resolution of the deal. *Minority squeezeout* is an indicator equal to one if a controlling shareholder buys out a minority shareholder's stock to eliminate that shareholder. *Going private* is a dummy variable equal to one if the acquisition involves a publicly traded company being converted into a private entity, usually by insider-led buyouts. *Acquirer toehold* is the percentage of target shares held by the acquirer prior to the announcement. *Multiple bidders* is a dummy variable equal to one if multiple bidders compete for the target. *Friendly* is a dummy variable with a value of zero if the target company resists or receives an unsolicited offer as reported by the SDC. *Defense* is a dummy variable equal to one if the target firm has used defensive tactics against the acquisition as determined by the SDC. *Tender offer* is a dummy variable equal to one if the bid takes the form of a tender offer. *Same industry* equals to one if the target and acquirer are in the same three-digit SIC industry. Finally, *Institutional ownership and Insider ownership* are the proportion of shares held by institutional investors and company insiders, respectively, as reported by the Thomson Reuters Ownership Database. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Merger targets with appraisals			Difference with eligible targets without appraisals	
	Average (1a)	Median (1b)	Std. Dev. (1c)	Diff. in Avg. (2a)	*t*-stat. of Diff. (2b)
Announcement premium	21.5%	19.2%	30.6%	-14.6%***	-4.78
Final offer premium	25.3%	21.5%	34.6%	-12.5%***	-3.68
Revision return	3.7%	0	13.5%	1.9%	1.48
Deal value ($ million)	1,622.7	261.6	5,064.0	-58.7	-0.13
Return on assets (ROA)	4.8%	11.4%	41.6%	2.3%	0.57
% Minority squeezeout	17.8%	0	38.4%	11.7%***	3.73
% Going private	36.7%	0	48.4%	7.2%*	1.74
% Acquirer toehold	9.3%	0	23.4%	3.8%*	1.94
% Friendly	97.3%	1	16.2%	-0.5%	-0.37
% Tender offer	26.0%	0	44.0%	-4.2%	-1.11
Same industry	36.0%	0	48.2%	-5.6%	-1.35
Institutional ownership	54.6%	53.5%	27.6%	7.0%**	2.39
Insider ownership	10.5%	3.7%	19.2%	-1.0%	-0.51
Deal duration	106.6	77.0	122.4	-7.6	-0.74

Table 4: Determinants of Appraisal Petitions

This table examines the determinants of appraisal petitions. The sample includes all appraisal-eligible deals from 2000 to 2014. All independent variables are as defined in Table 3, and are measured at the effective date except otherwise defined. *Excess yield (%)* is defined as the spread in between the Federal discount rate plus five percentage points and the yield on two-year U.S. Treasury notes. The dependent variable is a dummy variable equal to one if the deal is targeted by appraisal petitioner(s) and zero if it involves no such petitioner(s). In each column we report probit coefficients, their heteroscedasticity-robust *t*-statistics, and the marginal probability change induced by a one unit change in the value of a specific covariate from its sample average. *, ** and *** indicate statistical significance at the10%, 5% and 1% levels, respectively.

Deal characteristics	Coefficient (1a)	*t*-stat. (1b)	Marg. Prob. (1c)	Coefficient (2a)	*t*-stat. (2b)	Marg. Prob. (2c)
Announcement premium	-0.63**	-2.30	-7.2%			
Final offer premium				-0.54**	-2.27	-6.3%
Going private	0.25**	1.97	3.0%	0.24**	1.99	3.0%
Minority squeezeout	0.59***	3.18	9.8%	0.65***	3.52	11.3%
Excess yield (%)	0.12**	2.00	1.3%	0.12**	2.01	1.3%
Friendly	0.17	0.45	1.7%	0.14	0.38	1.4%
Institutional ownership	0.24	1.00	2.7%	0.25	1.06	2.9%
Deal value (log $ million)	0.05	1.21	0.5%	0.05	1.19	0.5%
Insider ownership	-0.11	-0.36	-1.2%	-0.12	-0.42	-1.4%
Same industry	-0.14	-1.19	-1.6%	-0.16	-1.37	-1.8%
Return on assets (ROA)	0.12	0.41	1.4%	0.14	0.46	1.6%
Tender offer	0.21*	1.89	2.6%	0.23**	2.01	2.8%
Observations	1,326			1,326		
Pseudo R-squared	0.06			0.05		
% (Dep variable = 1)	6.9%			6.9%		

Table 5: Determinants of Appraisal Petitions

This table studies the determinants of appraisal petitions using an unordered choice (multinomial logit) model. All independent variables are as defined in Table 3, and are measured at the effective date except otherwise defined. *Excess yield (%)* is defined as the spread between the Federal discount rate plus five percentage points and the yield on two-year U.S. Treasury notes. Columns (1) and (2) report results using the full sample of all appraisal-eligible mergers from 2000 to 2014. The base outcome is a merger that does not involve appraisal petitions (category = 0). Large petitioners are those that collectively invest more than one million dollars in the target stock. Small petitioners own less than one million dollars in target shares. In each column we report probit coefficients, their heteroscedasticity-robust *t*-statistics, and the marginal probability change induced by a one unit change in the value of a specific covariate from its sample average. *, ** and *** indicate statistical significance at the10%, 5% and 1% levels, respectively.

Deal characteristics	Deals with large petitioners (category=1) (1a)	*t*-stat. (1b)	Marg. Prob. (1c)	Deals with small petitioners (category=2) (2a)	*t*-stat. (2b)	Marg. Prob. (2c)
Announcement premium	-1.27**	-2.02	-6.0%	-1.07	-1.32	-2.7%
Going private	0.61**	2.13	2.9%	0.22	0.40	0.3%
Minority squeezeout	1.14***	2.85	5.4%	1.00*	1.73	1.4%
Excess yield (%)	0.13	1.10	0.6%	0.09	0.76	0.5%
Friendly	0.12	0.16	-0.7%	2.37***	4.69	18.3%
Institutional ownership	0.46	0.84	2.2%	0.41	0.44	0.6%
Deal value (log $ million)	0.15*	1.89	0.7%	-0.08	-0.40	-0.1%
Insider ownership	-0.36	-0.49	-1.8%	0.29	0.27	0.5%
Same industry	-0.37	-1.29	-1.8%	0.01	0.03	0.1%
Return on assets (ROA)	0.24	0.33	1.1%	0.32	0.25	0.5%
Tender offer	0.67***	2.67	3.3%	-0.50	-0.95	-0.8%
Observations	1,326					
Pseudo R-squared	0.07					
% (Dep variable = 1)	5.3%			1.6%		

Table 6: Determinants of Trial among Appraisal Petitions

This table examines the determinants of trial, conditional on the filing of an appraisal petition. All independent variables are as defined in Table 3, and are measured at the effective date except otherwise defined. *Excess yield (%)* is defined as the spread between the Federal discount rate plus five percentage points and the yield on two-year U.S. Treasury notes. *Trial* is a dummy variable equal to one if the appraisal goes to trial, zero otherwise. *I (Investment ≥ $10m)* is an indicator equal to one if the petitioners collectively hold shares valued more than $10 million. Similarly, *I (Investment ≥ $1m)* is an indicator equal to one if the petitioners collectively hold shares valued more than $1 million. Columns (1) and (2) report results from fitting a probit model using the sample of all appraisal deals from 2000 to 2014. In each column we report probit coefficients, their heteroscedasticity-robust *t*-statistics, and the marginal probability change induced by a one unit change in the value of a specific covariate from its sample average. *, ** and *** indicate statistical significance at the10%, 5% and 1% levels, respectively.

	Dependent variable: Trial					
	Coefficient	*t*-stat.	Marg. Prob.	Coefficient	*t*-stat.	Marg. Prob.
Deal characteristics	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
I (Investment ≥ $10m)	0.80**	2.18	14.7%			
I (Investment ≥ $1m)				0.12	0.25	1.7%
Announcement premium	-0.56	-0.69	-7.8%	-0.51	-0.74	-7.8%
Going private	-0.49*	-1.80	-6.7%	-0.51**	-1.97	-7.7%
Minority squeezeout	0.45	0.82	7.8%	0.22	0.44	3.7%
Excess yield (%)	-0.12	-0.25	-1.6%	-0.09	-0.22	-1.4%
Friendly	-1.82*	-1.95	-56.3%	-1.62	-1.55	-50.3%
Institutional ownership	0.72	0.80	10.1%	0.44	0.47	6.8%
Deal value (log $ million)	-0.25**	-2.09	-3.5%	-0.13	-1.11	-2.0%
Insider ownership	0.92	1.31	12.9%	1.28*	1.87	19.6%
Same industry	-0.72	-1.41	-8.5%	-0.73	-1.41	-9.5%
Return on assets (ROA)	-0.11	-0.12	-1.5%	-0.42	-0.46	-6.4%
Tender offer	0.77*	1.66	12.8%	0.71	1.38	12.6%
Observations	91			91		
Pseudo R-squared	0.25			0.22		
% (Dep variable = 1)	12.1%			12.1%		

Table 7: Returns from Appraisal Litigation

This table presents descriptive data on returns from appraisal litigation from 2000 to 2014, for the full, trial and settlement samples, respectively. For the trial subsample, *Total raw return* is computed as $(P - P_{Offer})/P_{Offer}$, where P and P_{Offer} are the per-share proceed the investor eventually receives and the final offer price, respectively. The final proceed is compounded using the "legal" interest rate (Federal discount rate plus a 5% annual rate) specified by the Delaware Court of Chancery. *Total return from value improvement* (only available for the trial subsample) is calculated as $(V - P_{Offer})/P_{Offer},$ where V is the final valuation per share awarded by the court. *Total return from interest accrual* is the difference between *Total raw return* and *Total return from value improvement*. *Market-adjusted total return* is the difference between *Total raw return* and the CRSP value-weighted all-market return during the same period. We use annual compounding to calculate *Annualized raw return* and *Market-adjusted annualized return*. For the settlement subsample, there is no separate information on valuation and total proceeds, and *Total raw return* is calculated as $(P - P_{Offer})/P_{Offer}$.

	# obs	Average	Std. Dev.	25%	Median	75%
Full sample	88					
Total raw return		107.1%	233.1%	16.0%	38.2%	92.4%
Annualized raw return		22.5%	32.0%	5.9%	13.5%	27.4%
Market-adjusted total return		65.5%	202.6%	-9.4%	31.4%	63.3%
Market-adjusted annualized return		15.9%	33.5%	-3.1%	9.3%	20.9%
Trial subsample	65					
Total raw return		128.0%	266.9%	19.6%	52.4%	94.4%
Annualized raw return		18.9%	28.5%	6.2%	12.3%	23.6%
Total return from value improvement		51.2%	88.1%	0%	19.6%	60.1%
Total return from interest accrual		76.8%	208.8%	15.3%	27.6%	39.9%
Settlement subsample	23					
Total raw return		48.3%	52.6%	12.6%	26.0%	67.4%
Annualized raw return		32.8%	39.3%	5.0%	18.2%	51.6%

Table 8: Predicting Appraisal Petitions Over $1 million in Value or 1% of Outstanding Stock

This table examines what predicts appraisal petitions valued more than $1 million or 1% of outstanding stock being filed. The sample includes all appraisal-eligible deals from 2000 to 2014. All independent variables are as defined in Table 3, and are measured at the effective date except otherwise defined. *Excess yield (%)* is defined as the spread between the Federal discount rate plus five percentage points and the yield on two-year U.S. Treasury notes. The dependent variable is a dummy variable equal to one if the petitioners collectively hold shares valued more than $1 million or over 1% of outstanding stock of the target firm. In each column we report probit coefficients, their heteroscedasticity-robust *t*-statistics, and the marginal probability change induced by a one unit change in the value of a specific covariate from its sample average. *, ** and *** indicate statistical significance at the10%, 5% and 1% levels, respectively.

	Dependent variable: I (Investment ≥ $1m or 1% of outstanding stock)		
	Coefficient	*t*-stat.	Marg. Prob.
Deal characteristics	(1a)	(1b)	(1c)
Announcement premium	-0.60**	-2.00	-5.6%
Going private	0.28**	2.13	2.9%
Minority squeezeout	0.57***	2.89	7.9%
Excess yield (%)	0.08	1.44	0.8%
Friendly	0.06	0.18	0.6%
Institutional ownership	0.23	0.89	2.1%
Deal value (log $ million)	0.05	1.19	0.4%
Insider ownership	-0.23	-0.69	-2.1%
Same industry	-0.17	-1.30	-1.5%
Return on assets (ROA)	0.16	0.51	1.5%
Tender offer	0.29**	2.39	2.9%
Observations	1,326		
Pseudo R-squared	0.07		
% (Dep variable = 1)	5.5%		