THE DELAWARE APPRAISAL REMEDY: VALUATIONS IN EXCESS OF DEAL PRICE NO LONGER A SAFE BET FOR ARBITRAGEURS

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I. INTRODUCTION

Arbitrage is defined as "the nearly simultaneous purchase and sale of securities or foreign exchange in different markets in order to profit from price discrepancies."[1] However, arbitrage strategies have roots in ancient times, when Hammurabi's Code was law.[2] Even at the nascence of modern economics, in approximately 1760 B.C., arbitrageurs sought to take advantage of money-making opportunities.[3]

As one might expect, however, trade markets at that time looked quite different than they do today—instead of trading securities globally with a click of a button in deep, liquid markets at a trade institution, "securities" were traded via camel with details of the transaction inscribed on stone tablet bills of sales.[4] Amazingly, even when information travelled literally at a camel's pace, humans exploited risk-created arbitrage opportunities by purchasing goods on consignment to offset merchants' risk of loss over long delivery voyages.[5] These ancient arbitrageurs then turned a profit on the goods in a known higher paying locality based on the information shared in the arbitrageurs' merchant information network: cash-and-carry arbitrage.[6]

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[1] *Arbitrage*, MERRRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/arbitrage (last visited Apri. 21, 2019).

[2] Geoffrey Poitras, *Arbitrage: Historical Perspectives*, *in* 1 ENCYCLOPEDIA OF QUANTITATIVE FIN. 1 (Rama Cont. ed., 2010).

[3] *Id.*

[4] *Id.*

[5] *Id*.

[6] *Id*. at 2–3.

A. *Is It Gambling If Arbitrageurs Are Winning?*

Ancient and modern arbitrage is, in its most basic and theoretical form, well-informed, no-risk capitalization on various markets and their respective conditions.[7] Innumerous highly profitable arbitrage strategies have been developed throughout history and, as is human nature, there are always critics of those who engage in such practices. However, in recent years, arbitrageurs have deviated from the linchpin "no-risk" element of arbitrage in search of high-yield returns in markets that do, in fact, include some degree of risk, such as merger arbitrage.[8]

These risk-related forms of arbitrage have forums that are conceptually akin to an opulent horse racing track, an industry that generates approximately $11 billion annually in betting revenue, where wagering is conducted through a "pari-mutuel" system, typically operated "on-track";[9] the arbitrageurs are predominantly hedge funds[10]—the "bettors"—and their difficulty is finding out how to arbitrage the system. One of arbitrageurs' most successful betting methods has, in recent history, been appraisal arbitrage,[11] which takes

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[7] *Arbitrage*, INVESTOPEDIA, https://www.investopedia.com/terms/a/arbitrage.asp (last updated Oct. 22, 2018).

[8] *Merger Arbitrage*, INVESTOPEDIA, https://www.investopedia.com/terms/m/mergerarbitrage.asp (last updated Apr. 14, 2019) ("Merger arbitrage, often considered a hedge fund strategy, involves simultaneously purchasing and selling the stocks of two merging companies to create 'riskless' profits. A merger arbitrageur reviews the probability of a merger not closing on time or at all. Because of uncertainty, the stock price of the target company typically sells at a price below the acquisition price. The arbitrageur purchases the stock before the acquisition with an expectation of making a profit when the merger or acquisition is complete.").

[9] *See generally* 15 U.S.C. § 3002 (2012) (defining several terms within the meaning of the 2000 Amendment of the Interstate Horseracing Act of 1977, including "on-track wager," meaning that the wager is placed "at the racetrack," and "pari-mutuel," defined as a system in which "wagers are placed with, or in, a wagering pool . . . and in which the participants are wagering with each other and not against the operator.").

[10] Wei Jiang et al., *Appraisal: Shareholder Remedy or Litigation Arbitrage?*, 59 J. L. & ECON. 697, 706 tbl.1 (2016) (providing that, from 2000-2014, 86 unique hedge funds have filed appraisal petitions for 170 different deals, and account for 73.8% of the aggregate invested capital in target firms, the shares for which appraisal is sought, with the second largest amount of invested capital belonging to mutual funds, which account for a mere 13.6% of aggregate invested capital).

[11] *Id*. at 721 tbl.11 (revealing that, in a sample of 101 appraisal petitions that went to trial, dating from 2000-2014, the average gross returns—the amount of money made, before expenses, represented by a percentage of the original capital

place at an unconventional pari-mutuel track—the Delaware Court of Chancery.[12] Appraisal arbitrage burgeoned out of Delaware's statutory appraisal remedy, provided in response to the effective revocation of minority shareholders' veto rights, necessarily nullified by corporation law's transition away from unanimous shareholder voting requirements.[13]

The appraisal remedy was legislatively intended to be, in lieu of minority shareholders' veto right, a safeguard against corporate majority rule, enabling minority beneficial owners of stock in a target firm of a merger to petition the Court of Chancery to determine the "fair value," as opposed to the "deal price," of such shares.[14] Theoretically, the statute purports to deter surviving firms[15] in mergers from forcing minority shareholders of a target firm to accept an undervalued per-share deal price as a result of the merger.[16] However,

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investment in a target firm—realized by petitioners was 108.3%. That is, if Hedge Fund purchased $100 of shares in Y Corporation, the target firm in a merger deal with X Corporation, and perfected appraisal rights, based on the percentage of average gross returns taken from the sample of 108.3%, Hedge Fund would realize a gain of $108.3 from its $100 invested capital, which is an astronomical investment figure.).

[12] *Id.* at 706 tbl.2 (indicating that, from 2000-2014, 9 different hedge funds have been petitioners for 80 challenged deals, accounting for 52.5% of total dollar volume of invested capital in target firms).

[13] Barry M. Wertheimer, The Shareholders' Appraisal Remedy and How Courts Determine Fair Value, 47 DUKE L.J. 613, 614 (1998) ("The origin of the appraisal remedy typically is tied to the move in corporate law to majority approval of fundamental corporate changes, and away from a requirement of unanimous shareholder consent. When unanimous approval was no longer required, and shareholders effectively lost their individual right to veto corporate changes, the appraisal remedy was provided . . . .").

[14] DEL. CODE ANN. tit. 8, § 262(h) (2019) (distinguishing that deal price is the per-share price offered by surviving firm to the target firm in a merger, whereas fair value is determined by the Court of Chancery in an appraisal proceeding—assuming the petitioner satisfies the prerequisites to initiate such petition—in which "the Court shall determine the fair value of the shares exclusive of" any synergies that create value as a result of the announcement or completion of such merger, plus "interest, if any." In making its determination of fair value, the Court must "take into account all relevant factors," which includes deal price as indicia.).

[15] DEL. CODE ANN. tit. 8, § 251(a) (2019) ("Any 2 or more corporations of this State may merge into a single surviving corporation, which may be any 1 of the constituent corporations or may consolidate into a new resulting corporation formed by the consolidation, pursuant to an agreement of merger or consolidation.").

[16] Wertheimer, *supra* note 13 ("The origin of the appraisal remedy typically is tied to the move in corporate law to majority approval of fundamental corporate changes, and away from a requirement of unanimous shareholder consent. When

the statute concurrently supports appraisal arbitrage, which ensues after the record date of a merger, when arbitrageurs purchase large, typically outstanding, blocks of shares in the target firm of the deal,[17] which are held by record holders of stock. Through Delaware's appraisal statute, the wagers placed by arbitrageurs that fair value would be in excess of deal price proved to be an excellent arbitrage strategy.

B. *Perfecting Appraisal Rights Under Section 262: "Standing" Requirements*

When patrons attend a horse race, there are several prerequisites that must be met in order for such patrons to be eligible to place bets: the patron must be of legal age;[18] the patron must have a ticket enter the race in order to be able to place an on-track wager; and, among others, that the patron has the requisite amount of money to be able to place the desired bet. to be able. Likewise, in order for stockholders,[19] often arbitrageurs, to qualify for an appraisal proceeding before the Court of Chancery, various section 262 procedural prerequisites must be satisfied.[20]

Initially, pursuant to Delaware's appraisal statute, upon timely receipt of notice of a proposed merger from the corporation, stockholders of such corporation must, before voting on the merger, furnish the corporation with a written demand that reasonably informs the corporation of such stockholder's identity and intent to seek appraisal.[21] Subsequently, when the corporation holds its shareholder vote on the merger, "[a] stockholder only can pursue an appraisal if the stockholder 'neither voted in favor of the merger . . . nor consented

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unanimous approval was no longer required, and shareholders effectively lost their individual right to veto corporate changes, the appraisal remedy was provided.").

[17] Scott Callahan, Darius Palia, & Eric Talley, *Appraisal Arbitrage and Shareholder Value*, CLS BLUE SKY BLOG (Dec. 14, 2017), http://clsbluesky.law.columbia.edu/2017/12/14/appraisal-arbitrage-and-shareholder-value.

[18] DEL. CODE ANN. tit. 29, §4810 (2019).

[19] DEL. CODE ANN. tit. 8, § 262(a) (2019) ("As used in this section, the word 'stockholder' means a holder of record of stock in a stock corporation.").

[20] *See id.* § 262(d) (providing procedural requirements for perfecting appraisal rights, relating both to the corporation and to the stockholder of such corporation that seeks appraisal of such stockholder's shares).

[21] *Id.* § 262(d)(1).

thereto in writing,'" which the Court of Chancery refers to as the "Dissenter Requirement."[22]

Interdependent upon the dissenter requirement is the "Record Holder Requirement," which "dictates that the record holder's actions determine perfection of the right to appraisal."[23] That is, "[t]he statute's requirements are directed to the stockholder—expressly defined as the record holder—and whether it has owned the stock at the appropriate times, whether it has made a sufficient demand, and whether it has voted the shares it seeks to have appraised in favor of the merger."[24]

With respect to the eventual litigation stage of the appraisal remedy, the dissenter and the record holder requirements have been cemented into Delaware courts' precedent as statutorily interpreted cornerstones that capacitate arbitrage; however, the final prerequisite to commence appraisal litigation, assuming all antecedent conditions of sections 262(a) and (d) have been satisfied, is for either the record holder or the beneficial owner of shares for which appraisal is sought to file an appraisal petition with the Court of Chancery.[25] If all such standing requirements have been met, the stockholder "shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder's shares of stock."[26]

C. *Appraisal Arbitrage's Profitable Past and Bleak Future*

While there are many commentators who either advocate for, or condemn, the use of appraisal arbitrage, this Note does not seek to assert a position on the common discussed "good versus evil" appraisal arbitrage argument.[27] Rather, this Note endeavors to impartially

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[22] *In re* Appraisal of Dell Inc., 143 A.3d 20, 21 (Del. Ch. 2016).
[23] *Id*. at 46.
[24] Merion Capital LP v. BMC Software, Inc., No. CV 8900-VCG, 2015 WL 67586, at *6 (Del. Ch. Jan. 5, 2015).
[25] *See id*. at *6 n.49 ("[A]lthough procedurally a beneficial owner may now initiate the legal action, its substantive right to appraisal is still dependent on whether the record holder has perfected appraisal according to Section 262(a)."); *see also* DEL. CODE ANN. tit. 8, § 262(e) (providing beneficial owners of shares for which appraisal is sought the ability to file, independent of the record holder, an appraisal petition directly with the Court of Chancery).
[26] *See* DEL. CODE ANN. tit. 8, § 262(a).
[27] *See generally* Jiang, *supra* note 10, at 721 tbl.11 ("[T]here has been a surge of petitions, [since the mid-2000s], often led by a small group of hedge funds. The rise and dominance of these hedge fund players has prompted some commentators to consider the appraisal process not as providing a remedy but rather as an

expound the extant and prognosticated legislative and jurisprudential abatement of arbitrageurs' licit utilization of the appraisal statute as an arbitrage apparatus.

The first part of this Note discusses the transmutation of Delaware's appraisal statute, from a minority shareholder remedy against the hegemony of the corporate majority, into a highly remunerative paragon of arbitrage. In 2007, the coalescence of the Court of Chancery's *Transkaryotic* decision and the Delaware Legislature's amendment to Delaware General Corporation Law rendered the appraisal remedy and, tangential to the statutory intent, appraisal arbitrage concomitants of section 262.[28] Although the appraisal remedy has conceivably coexisted symbiotically[29] with appraisal arbitrage—post-2007—within section 262, statistics indicate that arbitrageurs have increasingly accounted for a substantially larger number of appraisal petitions filed in the Court of Chancery, whereas pre-2008, individuals filed the majority of appraisal petitions.[30]

These statistics substantiate the certitude that, consequent to the post-2007 state of the appraisal statute, appraisal arbitrageurs in Delaware had been given what bettors refer to as a pari-mutuel lock—a guaranteed win in an information driven, pooled capital system. Equipped with this lock, appraisal arbitrageurs employed a betting and trading strategy, referred to as an anti-martingale system, which "involves halving a bet each time there is a trade loss, and doubling it each time there is a gain."[31] This trading method is often scrutinized for falling into the trap of the "hot hand fallacy,"[32] but such a fallacy never affected appraisal arbitrageurs; rather, there was no fallacious component of the hot hand that such arbitrageurs possessed from 2007

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arbitrage in which professional investors (arbitrageurs) buy stock in a company on the brink of an acquisition and then petition the judge for a price increase . . . [which] has stoked concerns that a new form of strike suit has been born.").

[28] *See* DEL. CODE ANN. tit. 8, § 262(d) (2019).

[29] Jiang, *supra* note 10, at 700 (explaining that the statistics from the 2000-2014 large-scale empirical study are supportive of the authors' hypothesis that the contemporary § 262 serves its role as a shareholder appraisal remedy, while concurrently providing a successful strategy for arbitrageurs).

[30] *Id*. at 705 fig.2.

[31] *Anti-Martingale System*, INVESTOPEDIA, https://www.investopedia.com/terms/a/antimartingale.asp (last updated Apr. 5, 2018) (defining the anti-martingale system of placing wagers or trades).

[32] *Hot Hand*, INVESTOPEDIA, https://www.investopedia.com/terms/h/hot-hand.asp (last updated June 24, 2018) ("Several common behavioral gaps, which can be brought on by a hot hand include overconfidence, confirmation bias, illusion of control, recency bias and hindsight bias.").

through 2016.[33] The fallacy only reared its head in 2016, when, contrary to 2007's ignition of arbitrage, the Delaware Legislature and the Delaware Supreme Court somewhat clogged the appraisal arbitrage pipeline.

The second part of this Note explores how Distributed Ledger Technology ("DLT") could be implemented to expressly add the "share-tracing requirement"[34] into section 262, which would have a profound effect on appraisal arbitrage through the standing requirements of sections 262(a) and (d).[35] The standing requirements, as a by-product of the Court of Chancery's interpretation of the statute's record holder and dissenter requirements,[36] cracked open the floodgates of appraisal litigation through which arbitrageurs have flowed.[37] In a trilogy of Chancery Court decisions, referred to as the "Appraisal Arbitrage Cases,"[38] the Court leniently construed the section 262 standing requirements in a light most favorable to appraisal arbitrageurs.[39] In *Transkaryotic* the respondent-corporation contended that because Delaware precedent places "the burden of proof on the petitioner to demonstrate compliance with the requirements of the appraisal statute,"[40] the petitioner was required, under section 262, to demonstrate that each individual share for which the petitioner sought appraisal had been voted against the merger, for purposes of standing.[41] Despite respondent-corporation's contentions, because of the "fungible bulk" issue and through a plain language reading of section 262, the Court of Chancery in *Transkaryotic* initially interpreted section 262 to mean that the record holder and dissenter requirements are to be strictly enforced.[42] However, the Court held that because no such "share-tracing requirement" is expressly contained in sections 262(a) or (d), the Court would not usurp the role of the Delaware Legislature, via judicial aggrandizement, to imply such requirement into the statute.[43]

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[33] *See supra* notes 11–12 and accompanying text.
[34] *In re* Appraisal of Dell Inc., 143 A.3d 20, 52–54 (Del. Ch. 2016).
[35] *Id*. at 51–52.
[36] *Id.*
[37] *See* Jiang, *supra* note 10.
[38] *Dell*, 143 A.3d at 36.
[39] *In r*e Appraisal of Transkaryotic Therapies, Inc., No. CIV.A. 1554-CC, 2007 WL 1378345, at *2 (Del. Ch. May 2, 2007).
[40] *Dell*, 143 A.3d at 36.
[41] *Transkaryotic*, 2007 WL 1378345 at *2.
[42] *Id.* at *3.
[43] *Id.* at *5.

The *Transkaryotic* Court's interpretation of the statute was affirmed approximately eight years later, in the tertiary decision of the Appraisal Arbitrage Cases, *Merion Capital*.[44] The *Merion Capital* Court faced the same issue with different factual circumstances, due to the Delaware Legislature's amendment to section 262 in response to the *Transkaryotic* decision, which allowed either a record holder or a beneficial owner of shares in a corporation to file an appraisal petition.[45] However, the *Merion Capital* Court reached the same conclusion, noting the fungible bulk issue and finding that the focus of its inquiry for the record holder and dissenter requirements of section 262 is on the actions of the petitioner-record holder, not the actual shares.[46]

After the Appraisal Arbitrage Cases, the share-tracing requirement argument appeared to be a precedential loser for respondents at trial; however, a year after *Merion Capital* was decided, a mutual fund's accidental vote in favor of a merger that it sought to contest and arbitrage proved that the share-tracing requirement did, in fact, exist to some degree.[47] Citing a Delaware Supreme Court Case from 1963, the Chancery Court in *Dell*, for the first time, acknowledged the share-tracing requirement of section 262, stating that "if there was evidence about how the record holder actually voted the specific shares, it did not matter that the shares themselves were held in fungible bulk."[48] The Court also stressed the need for "recognition of the realities of modern stock practices and the necessity to afford such protection to stock beneficially owned as is not inconsistent with protection of the corporation's rights."[49] Because modern stock practices need to be taken into account, a look to both domestic and global use of Blockchain technology in capital markets demonstrates how it could be used to police claims without merit from entering the realm of the appraisal remedy.

In sum, this Note will first discuss the rise of appraisal arbitrage into prominence, and, subsequently, how it is currently threatened by Delaware courts' contemporary favoritism of the efficient market hypothesis for purposes of valuation, which is likely not a jurisprudential anomaly. Second, this Note will discuss how, based on evidence of success in different markets, Blockchain Technology can

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[44] Merion Capital LP v. BMC Software, Inc., No. CV 8900-VCG, 2015 WL 67586, at *6–*7 (Del. Ch. Jan. 5, 2015).
[45] *See id*. at *5; *see also* DEL. CODE ANN. tit. 8, § 262(e) (2019).
[46] *See Merion Capital*, 2015 WL 67586, at *6.
[47] *In re* Appraisal of Dell Inc., 143 A.3d 20, 52–54 (Del. Ch. 2016).
[48] *Id* at 41.
[49] *Id*.

be used as a share-tracing device to ensure that only meritorious appraisal actions are filed with the Court of Chancery. Taken together, it appears that appraisal arbitrage may begin to quickly falter.

II. SECTION 262: A STATUTE AMENDED AND INTERPRETED TO VIVIFY A DORMANT "LOCK" IN A PARI-MUTUEL SYSTEM

In a pari-mutuel horse-racing system, which is driven by variable odds that adjust in proportion to the volume of wagers placed on a particular outcome, a bettor traditionally has three general betting options: (1) win; (2) place; and (3) show.[50] The first option, win, is axiomatic—the bettor bets on a certain horse to win the race. Of the three betting options, a win bet produces the best betting odds—the margin of payout—because there is only one statistically possible winning outcome; the wagered-on horse must win the race. The second option, place, will provide bettors with slightly less favorable, or safer, odds, because in order to win the bet, the wagered-on horse must finish either first or second, thus increasing the statistical likelihood of the bet winning. Similarly, the third option, a show bet, requires only that the horse finish in the top three; obviously, this bet will have the worst odds of the three bets because it has the highest statistical chance of winning.

Additionally, a particular horse will carry with it its own odds that are factored into any of the three betting options, dependent upon its race record, physical attributes, and the jockey's ability, among others. In other words, based on an inverse relationship between odds and likelihood of outcome (the higher the statistical likelihood of an outcome, the lower its odds will be), bettors must weigh the type of bet with a particular horse to target a combination thereof that is undervalued and ripe for betting. Because of innumerous uncontrollable variables, pari-mutuel bettors' success is almost entirely dependent upon, in addition to some luck, the non-public, unique information that the bettors have, which other bettors do not.

With regard to appraisal arbitrage, one must not lose sight of what is being "bet" on: shares of stock. Charlie Munger, Vice Chairman of Berkshire Hathaway, likened stock picking to pari-mutuel betting on horse races in a speech in which he said that "a pari-mutuel system is

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[50] Ed DeRosa, *What Does Pari-Mautuel Betting Mean in Horse Racing?*, TWINSPIRES, https://www.twinspires.com/betting-guides/what-is-pari-mutuel-betting (last visited Apr. 21, 2019) (providing different pari-mutuel betting options).

a market. Everybody goes there and bets and the odds change based on what's bet. That's what happens in the stock market."[51] The main difference between a traditional pari-mutuel system and the theoretical pari-mutuel stock market system proposed by Munger is that, in horse racing, there is a finish line—the race ends; however, in Munger's pari-mutuel stock market system, no such definite end point exists. Thus, winners and losers are not necessarily the focus of the pari-mutuel stock market system; instead, the concept is premised on how information is invaluable in such a system and how that information is used to analyze investments that affect the odds of outcomes—the return on shares of stock invested in a corporation—as a measure of success.[52]

The pari-mutuel concept in the context of appraisal arbitrage shares traits with both the traditional and the stock market conceptions of such systems. Similar to a traditional pari-mutuel system, the considerations that go into making a bet on a horse are analogous to the process that appraisal arbitrageurs undergo when selecting a deal to contest. Under the appraisal remedy pari-mutuel concept, where shares are pooled by stockholders—the other bettors—into a merger deal, arbitrageurs' wagerable outcomes—historically, at least—were: (1) fair value in gross excess of deal price plus accrued interest; (2) fair value in moderate excess of fair value plus interest; or (3) fair value as deal price plus interest. More comparable to Munger's theoretical stock market pari-mutuel system, which is helpful to conceptualize stock picking, arbitrageurs must select a deal to contest—short-term arbitrage of an undervalued firm versus long-term capital investment in undervalued shares of a firm—based on factors including the form of the merger,[53] the deal price in comparison to the arbitrageurs' own expert valuations of fair value, the cost of litigation, costs of litigation, as well as others discussed below.

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[51] *How Good Gamblers Think,* FARNAM STREET, https://fs.blog/2013/01/how-good-gamblers-think (last visited Apr. 21, 2019) (quoting the speech by Charlie Munger on his conceptualization of the stock market as a pari-mutuel system).

[52] *Id*.

[53] *See* DEL. CODE ANN. tit. 8, § 262(b) (2019) ("Appraisal rights shall be available for the shares of any class or series of stock of a constituent corporation in a merger or consolidation to be effected pursuant to § 251 (other than a merger effected pursuant to § 251(g) of this title), § 252, § 254, § 255, § 256, § 257, § 258, § 263 or § 264 of this title.").

A. *The Appraisal Statute's Pari-Mutuel Arbitrage System, Establisehed in 2007*

The appraisal statute was virtually quiescent until 2007; however, the cumulative effect of a landmark Chancery Court decision[54] and Delaware Legislature's amendment to section 262[55] vivified an untrodden appositeness of appraisal arbitrage to the statute. The synthesized effect of the 2007 amendment to section 262 and the *Transkaryotik* decision resulted in a drastic influx of appraisal actions brought by arbitrageurs in Delaware.[56] The volume of actions filed was accompanied by an essentially guaranteed gross return in excess of 100% in such actions, attributable both to the Court's reluctance to read a share-tracing requirement into section 262 in the *Transkaryotic* decision and to the 2007 amendment of section 262, awarding appraisal petitioners accrued interest on shares from the effective date of the merger until the date the judgment is paid, compounded quarterly.[57]

In *Transkaryotic*, the Court of Chancery held that shares acquired after the record date of a merger are eligible for appraisal petition, irrespective of the fact that the predecessor beneficial owner of the shares might not have voted against the merger.[58] The *Transkaryotic* Court did not focus inquiry not on whether, in accordance with the standing requirements of sections 262(a) and (d), the individual shares acquired by the petitioner-arbitrageur after the record date had been voted against the merger; rather, it held that, despite appraisal petitioners' burden to prove compliance with the record holder and dissenter requirements of section 262,[59] because of the convoluted

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[54] Jiang, *supra* note 10, at 701, 705 fig.1 (explaining that, from 1977 to 1997, an annual average of 14 deals were challenged in the Delaware Court of Chancery, which decreased to approximately five deals challenged per year from 2000 to 2002, which trended upward to approximately 14 deals challenged per year from 2003-2006, spiked to 29 deals challenged in 2007, regressed to approximately 13 annual deals challenged from 2008-2010, and from 2011-2014, the annual average increased drastically to approximately 21 deals challenged); see *id.* at 715 ("[s]ome legal scholars argue that the landscape of appraisals changed dramatically around 2007–8, after the landmark *Transkaryotic* ruling and the 2007 amendment to the Delaware appraisal statute that set the default prejudgment interest rate.").

[55] *See* Jiang, *supra* note 10, at 702.

[56] *See* Jiang, *supra* note 10, at 704–705.

[57] *See* Jiang, *supra* note 10, at 702; DEL. CODE ANN. tit. 8, § 262(h) (2019).

[58] *In re* Appraisal of Transkaryotic Therapies, Inc., No. CIV.A. 1554-CC, 2007 WL 1378345, at *4 (Del. Ch. May 2, 2007).

[59] *See* DEL. CODE ANN. tit. 8, § 262(d).

nature by which shares in a target firm flow through the open market,[60] it would be impracticable to imply a share-tracing requirement into the statute. Further, the Court held that a plain reading of the statute revealed no such share-tracing requirement.

Interestingly, at the end of its opinion, the *Transkaryotic* Court expressly addressed the petitioner's "policy argument" that the Court's decision will "pervert the goals of the appraisal statute by allowing it to be used as an investment tool for arbitrageurs as opposed to a statutory safety net for objecting stockholders."[61] To this contention, the Court responded powerfully that "[o]nly the record holder possesses and may perfect appraisal rights . . . [and] [t]he Legislature, not this Court, possesses the power to modify section 262 to avoid the evil, if it is an evil, that purportedly concerns respondents."[62] Such patent recognition of the existence of appraisal arbitrage by the Chancery Court was only a confirmation to arbitrageurs that this strategy was, until held otherwise, permissible under the statute.

Consequent to the *Transkaryotic* decision, the Delaware Legislature amended section 262 to enable beneficial owners, as well as record holders, to file appraisal actions.[63] Appended to this amendment, however, was a crucial component of appraisal arbitrage—a provision that awarded an accrued interest rate on shares for which petitioners sought appraisal.[64] In essence, the 2007 amendment was intended to allow minority dissenting shareholders to pursue appraisal litigation, which might otherwise have been cost inhibitive, by awarding, in proportion to the value of the shares for which appraisal is sought, interest on the shares at the Federal Reserve Discount Rate plus 5%.[65] However, for appraisal arbitrageurs, this acted merely as an additional cushion on top of the arbitrageurs' presumptive take-home of fair value at a gross return in excess of 100%, on average.[66] The Court of Chancery's non-restrictive interpretation of section 262 and the statute's subsequent amendment to award interest after the effective date of a merger quickly commanded the attention of arbitrageurs.

With the 2007 developments of the appraisal statute in mind, the perspicuity of arbitrageurs' lock on the pari-mutuel appraisal system becomes evident. Recall that a pari-mutuel bettor's success is derived

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[60] *Transkaryotic*, 2007 WL 1378345, at *2–*3.
[61] *Id*. at *5.
[62] *Id*.
[63] *See* DEL. CODE ANN. tit. 8, § 262(e).
[64] *See id.* § 262(h).
[65] *Id*.
[66] *See* Jiang, *supra* note 10.

from the bettor's exclusive information about particular outcomes. However, with respect to arbitrageurs, the construction of the appraisal statute, which allows arbitrageurs to assess and act upon public information about a particular merger, combined with arbitrageurs' knowledge of the Chancery Court's valuation methodologies and fair value decisions, is precisely what makes it such a profitable arbitrage strategy. That is, because there is a finish line in the appraisal pari-mutuel system—the valuation judgment of the Court of Chancery—and because arbitrageurs with substantial capital have access to deal particulars and the Chancery Court's precedential valuation "market" information, arbitrageurs are practically capable of predict predicting outcomes—making legal what might be construed as insider trading in Munger's pari-mutuel stock market system. Simply put, arbitrageurs seemingly could not lose.

B. *The Anti-Martingale Period of Appraisal Arbitrage*

Most contemporary forms of arbitrage involve some degree of risk; however, the post-2007 animation of the Delaware appraisal remedy functionally furnished arbitrageurs with what bettors refer to as a fallacious pari-mutuel "lock"—a guaranteed win. For these arbitrageurs, however, there was nothing fallacious about their lock on the pari-mutuel appraisal system. To comprehend the pari-mutuel lock concept, however, it is first necessary to examine traditional pari-mutuel systems. A pari-mutuel system is a betting system where the funds from wagers, placed by bettors by purchasing a desired quantity of fixed price tickets at a horse racetrack, are collected into a pool from which the payout to the winner, or winners, is divided.[67] In other words, in a traditional pari-mutuel betting system,[68] bettors are betting against one another, while the track acts merely as a bailee of the private funds until winners are determined. One caveat is that the organization charged with maintaining the pari-mutuel market will take a certain percentage from the pool, irrespective of the outcome; however, for purposes of this Note, the commission that is taken from the pool reflects the costs of litigation.

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[67] *Pari-mutuel Gambling System*, BRITTANICA, https://www.britannica.com/topic/pari-mutuel (last visited Apr. 21, 2019). ("Most pari-mutuel systems are operated by [a] racetrack, although in France a national pari-mutuel system with offtrack branches was established in 1891. In pari-mutuel betting, the player buys a ticket on the horse he wishes to back. The payoff to winners is made from the pool of all bets on the various entries in a race.").

[68] *Id.*

For example, the odds for a certain event will actively fluctuate to reflect betting trends, correlative to the number of tickets—the percentage of the pool—bet on each particular offered outcome, until the event begins and the pool is closed.[69] If there is a three horse race and bettors, in the aggregate, purchase 100 tickets for Horse 1, 500 tickets for Horse 2, and 400 tickets for Horse 3, then Horse 2 will have the best odds to win the race, but Horse 1 will have the largest payout if it wins. That is, if Horse 1 wins, then 90% of the pool is disbursed evenly amongst the 10% of bettors who chose Horse 1, in addition to the return of the bettors' initial risk.

With regard to the pari-mutuel stock market concept, Munger's belief is that anyone can interpret the traits of a winning horse, just like anyone can discern the traits of successful stock; however, "the one thing that all those winning betters in the whole history of people who've beaten the pari-mutuel system have is quite simple. They bet very seldom."[70] The key, according to Munger, that accompanies a bet seldom approach is that "they bet big when they have the odds."[71] Rather than follow Munger's proposed bet seldom, but bet big, approach, arbitrageurs engaged in what is referred to by bettors and traders as an "anti-martingale system" of betting or trading.[72] As appraisal litigation continued to result in judgments that awarded fair values in substantial excess of deal price, arbitrageurs doubled down on the arbitrage strategy, and the volume of appraisal cases steadily increased, correlative to consistent and markedly profitable outcomes.[73]

Similar to the collected information that a horse-racing bettor will weigh when choosing a horse to wager on—size, jockey, record, performance in like-conditions, etcetera—arbitrageurs must also consider their possessed information in relation to the deal structure, deal price, record date, court precedent on valuation, and prerequisites for standing. However, post-2007, arbitrageurs had a significant tactical informational advantage: arbitrageurs were armed with the knowledge that, among other considerations, (1) the Court of Chancery did not require proof that individual shares were voted against the merger; (2) valuation methods used by the Court of Chancery essentially guaranteed a gross return in excess of 100%; (3) from the

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[69] *Id.*
[70] *See* FARNAM STREET, *supra* note 51.
[71] FARNAM STREET, *supra* note 51.
[72] *See* Jiang, *supra* note 10.
[73] *Id*.

effective date of the contested merger, arbitrageurs are awarded accrued interest at the Federal Reserve Discount Rate plus 5%; and (4) because deal price has already been established, which provides arbitrageurs the distinct advantage of conducting their own valuation of a target company to determine both if deal price is significantly undervalued enough to contest the merger and, derivatively, whether the gross return would be worth the costs.[74] Thus, one could hardly say that arbitrageurs were wagering if they already knew what the outcome would be.

To demonstrate this advantage, hypothetically, for a merger in a pari-mutuel system without appraisal rights, when Corporation A (the purchasing firm) and Corporation B (the target firm) enter into a merger agreement and announce the merger (the record date), the pari-mutuel pool is effectively closed to bettors—purchasing shares after the record date of the merger would merely produce a return equal to the initial capital stake of such investor. However, appraisal arbitrage in the pari-mutuel system context allows arbitrageurs, proceeding with exceptionally accurate outcome predictive information, to wager on per-share fair value, appraised by the Court of Chancery, after the record date, which, in a traditional pari-mutuel system, would be post-closing of the pari-mutuel wager pool. In other words, in appraisal litigation over the fair value of shares in a merger, section 262 acts as a permutation in an otherwise unaffectable pari-mutuel pool, which effectively guarantees arbitrageurs a sizeable, near-simultaneous gain, above deal price of the merger. Post-2007, arbitrageurs tested this strategy and, until 2017, it was immensely profitable.

C. *Has the Delaware Supreme Court's Decisions in* Dfc *and* Dell *Foiled Arbitrageurs' Lock on the Pari-Mutuel Appraisal System?*

Under section 262, when the Court of Chancery determines fair value in appraisal cases, the Court must consider all relevant indicia of fair value, exclusive of any synergies that resulted from either the announcement of merger or the closing of a merger.[75] Precedentially, upon the Court of Chancery's determination that a stockholder complied with the conditions of section 262 to become entitled to appraisal rights, litigation would take place before the Court, in which

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[74] *Id*.

[75] *See* DEL. CODE ANN. tit. 8, § 262(h) (2019) (providing the guidelines the Chancery must follow when it determines fair value).

the Court would, through valuation methods[76] presented by experts on behalf of petitioner and respondent, as well as the Court's own proffered valuation method, determine fair value of the shares of such stockholder-petitioner, which was almost invariably held to be in excess of deal price.[77]

The trend in choice of valuation methodology changed drastically in 2017, however, when the Delaware Supreme Court heard the *DFC Global* appeal from the Court of Chancery.[78] The Delaware Supreme Court opined that, while the appraisal statute permits no presumption in favor of deal price for fair value, because the Court of Chancery found the deal process in the case to be "robust," such determination gives substantial weight to deal price as fair value; however, the Court of Chancery did not accord any such weight.[79] The *DFC Global* case was the first indicator of the Delaware Supreme Court's renewed faith in the markets as indicators of fair value, which also served somewhat as a warning to the Court of Chancery with regard to its valuation practices.[80] However, the Court of Chancery did not make any adjustments.

Months after the *DFC Global* case was decided, the appraisal of *Dell* was reversed on appeal from the Court of Chancery to the Delaware Supreme Court, which seemed to indicate that the Delaware Supreme Court accorded more reliance upon deal price as fair value than it professed in *DFC Global*.[81] When the Delaware Supreme Court heard *Dell*, it again reviewed the Court of Chancery's valuation methodology and, in somewhat of a scolding manner, stated that "the Court of Chancery's analysis ignored the efficient market hypothesis long endorsed by this Court."[82] The efficient market hypothesis "teaches that the price produced by an efficient market is generally a

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[76] Ronald N. Brown, III & Keenan D. Lynch, *Skadden Discusses Delaware Courts' M&A Appraisal Valuation Methods*, CLS BLUE SKY BLOG (Dec. 19, 2016), http://clsbluesky.law.columbia.edu/2016/12/19/skadden-discusses-appraisal-valuation-methods-employed-in-merger-transactions-by-delaware-courts (discussing the traditional valuation methodologies employed by the Court of Chancery in key decisions, which tended to be discounted cash flow analyses, comparable companies analyses, presented by experts of both petitioner and respondent, for the Chancellors' determination as to fair value).

[77] *Id*.

[78] DFC Glob. Corp. v. Muirfield Value Partners, L.P., 172 A.3d 346 (Del. 2017).

[79] *Id.* at 388.

[80] *Id.*

[81] Dell, Inc. v. Magnetar Glob. Event Driven Master Fund Ltd, 177 A.3d 1 (Del. 2017).

[82] *Id.* at 24.

more reliable assessment of fair value than the view of a single analyst, especially an expert witness who caters her valuation to the litigation imperatives of a well-heeled client."[83]

The Delaware Supreme Court indicated that the Court of Chancery's utilization of a Discounted Cash Flow ("DCF") analysis was clearly erroneous because it "was the antithesis of any economist's definition of fair market value" because the Court of Chancery "picked a price higher than any strategic [buyer] would pay because, in economic terms, no strategic [buyer] believed it could exploit a purported $6.8 billion value gap."[84] The Court then offered guidance on when DCF valuations were appropriate, providing that DCF valuations are "considered the best tool for valuing companies when there is no credible market information and no market check," but warned that because "DCF valuations involve many inputs—all subject to disagreement by well-compensated and highly credentialed experts—and even slight differences in these inputs can produce large valuation gaps."[85] Moreover, from a policy standpoint, the Delaware Supreme Court lamented that, "[i]f the reward for adopting many mechanisms designed to minimize conflict and ensure stockholders obtain the highest possible value is to risk the court adding a premium to the deal price based on a DCF analysis, then the incentives to adopt best practices will be greatly reduced."[86]

The Delaware Supreme Court concluded, however, that it would remand the case to the Court of Chancery, but that it would not mandate use of deal price for fair value; rather, it left open the possibility for the Vice Chancellor to implement some variation of a DCF or other model, so long as it was in accordance with the guidelines in the Delaware Supreme Court's opinion.[87] On remand to the Court of Chancery, the presiding Vice Chancellor, Travis Laster, ordered approval of the settlement agreement between the petitioner and Dell, and the case was dismissed with prejudice.[88]

Subsequent to the Delaware Supreme Court's scornful opinion in *Dell*, the valuation methodology of the Court of Chancery has changed drastically. In the first appraisal trial before the Court of Chancery since the Delaware Supreme Court's decision in *Dell*, the Court of

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[83] *Id.*
[84] *Id.* at 37.
[85] *Id.* at 38.
[86] *Id.*
[87] *Id.* at 44.
[88] *In re* Appraisal of Dell Inc., No. 9322-VCL, 2018 WL 2939448, at *1 (Del. Ch. June 11, 2018).

Chancery complied with the Delaware Supreme Court's favoritism toward the efficient market hypothesis. In *Aruba*, the Court of Chancery issued a shocking decision in which it found that "the best evidence of Aruba's fair value as a going concern, exclusive of any value derived from the merger, is its thirty-day average unaffected market price of $17.13 per share . . . [which] is lower than Aruba's proposed figure of $19.75 per share."[89]

After the radical decision in *Aruba*, the Court of Chancery decided *AOL*, in which it established factors for when deal price is the proper measure for fair value—that is, the deal is "Dell Compliant."[90] However, the Court of Chancery did not find the *AOL* deal to be Dell-Compliant; thus, the Court of Chancery employed its own DCF, again finding that fair value was below deal price.[91] However, perhaps providing some hope to appraisal arbitrage, there was one post-DFC and Dell case that resulted in a fair value in excess of deal price—albeit only marginally.[92]

Considered together, the results of the recent cases before the Court of Chancery does not bode well for appraisal arbitrageurs. These Court of Chancery appraisal cases, along with the antecedent Delaware Supreme Court decisions of *DFC Global* and *Dell*, provide guidance as to what factors will be taken into account for the Chancery Court's future valuation methodologies.[93] One conclusion that seems evident from these cases, however, is that appraisal arbitrageurs have lost their lock on the appraisal pari-mutuel system.

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[89] Verition Partners Master Fund Ltd. v. Aruba Networks, Inc., No. CV 11448-VCL, 2018 WL 922139, at *55 (Del. Ch. Feb. 15, 2018).

[90] *In re* AOL Inc., No. CV 11204-VCG, 2018 WL 1037450, at *8 (Del. Ch. Feb. 23, 2018) ("(i) information was sufficiently disseminated to potential bidders, so that (ii) an informed sale could take place, (iii) without undue impediments imposed by the deal structure itself. In other words, before I may consider the deal price as persuasive evidence of statutory fair value, I must find that the deal process developed fair market value. I conclude that, under the unique circumstances of this case, the sales process was insufficient to this task, and the deal price is not the best evidence of fair value.").

[91] *Id*. at *21.

[92] Blueblade Capital Opportunities LLC v. Norcraft Companies, Inc., No. CV 11184-VCS, 2018 WL 3602940, at *39 (Del. Ch. July 27, 2018) (finding deal price not to be a good indicator of fair value, the Court relied on a DCF analysis and appraised the per-share fair value to be $0.66 above deal price).

[93] *See supra* notes 75–92 and accompanying text.

III. BLOCKCHAIN'S DISTRIBUTED LEDGER CAPABILITIES AND THE SHARE-TRACING REQUIREMENT

In pari-mutuel betting systems, programmers have designed security software that polices the electronically maintained betting pools that exist today. One function of the software is to detect inefficiencies that would allow for arbitrage opportunities. However, appraisal arbitrage is an anomalous opportunity within a pari-mutuel system, where a share-tracing function is impracticable and thus unenforceable. This is an anomaly in modern pari-mutuel systems. That is, the combination of the Court of Chancery's jurisprudence and the amendments to section 262 created a virtually "no-risk" form of arbitrage. Arbitrageurs, as spectators of this pari-mutuel appraisal system, detected a capitalizable market inefficiency, which was statutorily and jurisprudentially created: the ability to purchase shares of stock in a target firm of a merger, without a required showing that the shares were voted against the merger, and perfect appraisal rights on those shares, which the Court of Chancery invariably appraised at per-share fair value in excess of deal price—increased by interest at the Federal Reserve Discount Rate plus 5%.

Contrary to the Chancery Court's repeated dismissals of the existence of the share-tracing requirement, in *Dell*, the Court distinguished the Appraisal Arbitrage Decisions, also referred to as the "Absence of Proof" cases, on grounds that, despite the inherent impracticability imposed by a share-tracing requirement, if the vote of particular shares can be traced, then such evidence must be admissible by the respondent.[94] The *Dell* Court's logic is that, once a petitioner satisfies its burden of showing that its record holder held a sufficient number of shares voted against the merger to account for the shares for which petitioner seeks, then the burden shifts to respondent to adduce evidence to the contrary.[95] If such proof can substantiate the petitioner's failure to vote its shares against the merger, then the record holder requirement is not satisfied, and such shares do not qualify for appraisal.[96]

While the *Dell* Court verified the existence of the share-tracing requirement in some form, it was only acknowledged because of an affirmative record-based error, in which the petitioner's shares for which appraisal was sought were accidentally voted in favor of, instead

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[94] *In re* Appraisal of Dell Inc., 143 A.3d 20, 37 (Del. Ch. 2016).
[95] *Id*.
[96] *Id*.

of against, the merger.[97] The issue that remains is the ability, absent human voting error in favor of a merger, to have an effective vote-tracing system, largely because of the nature in which shares are held by record holders, on behalf of beneficial owners, in a fungible bulk. However, based on the Delaware Blockchain Initiative and the implementation of Blockchain Technology as a ledger system in security exchanges throughout the world, if "recognition of modern stock practices" is truly taken into account, it becomes possible—if not probable—that Blockchain can become the enforcer of the share-tracing requirement that section 262 is missing. If so, then appraisal arbitrage stands to be drastically reduced.

A. *The Share-Tracing Requirement—Nonrecognition to Acknowledgment from an Accidental Record of Proof*

In order to properly exercise the appraisal right, which is attached to each, individual share, the record shareholder[98]—historically[99]—needed to vote against the merger; that is, when the shareholder vote is held, each share has a right to vote and, if either no vote is cast on behalf of the share, or the share votes against the deal, then that particular share loses its right to appraisal.[100]

Herein lies a massive advantage that exists for appraisal arbitrageurs. Many of the targets involved in these deals are multi-billion-dollar corporations[101] that correspondingly have millions of outstanding shares.[102] Long gone are the days when the beneficial

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[97] *Id*.

[98] *See* DEL. CODE ANN. tit. 8, § 220(a)(1) (2019) ("Stockholder" means a holder of record of stock in a stock corporation.).

[99] *Id*. (§ 220(a)(1) was amended to expand "stockholders," beyond holders of record, to include "a person who is the beneficial owner of shares of such stock.").

[100] *See* DEL. CODE ANN. tit. 8, § 262 (2019) ("Any stockholder of a corporation of this State who holds shares of stock . . . and who has neither voted in favor of the merger or consolidation nor consented thereto . . . shall be entitled to an appraisal by the Court of Chancery of the fair value of the stockholder's shares of stock.").

[101] Christopher Wink, *64% of Fortune 500 Firms Are Delaware Incorporations: Here's Why,* TECHNICAL.LY (September 23, 2014, 10:11 AM), https://technical.ly/delaware/2014/09/23/why-delaware-incorporation ("More than half of U.S. publicly-traded companies and fully 64 percent of the Fortune 500 were among that number.").

[102] *Outstanding Shares*, INVESTOPEDIA, https://www.investopedia.com/terms/o/outstandingshares.asp (last updated Dec. 11, 2017) (Outstanding shares refer to a company's stock currently held by all its shareholders, including share blocks held by institutional investors and restricted shares owned by the company's officers and insiders.).

owner of shares actually invested them in companies personally; today, these shares are held by a record shareholder,[103] nominated by the Depository Trust Company ("DTC"),[104] from whom the record shareholder acquires a "fungible bulk" of shares.[105] Because these shares are "after-acquired"[106] by the arbitrageurs, there is a chance that the shares have already been voted by a beneficial owner prior to the acquisition of the share by the record holder. However, it would be nearly impossible for the record holder of millions of shares to trace the vote of each individual share, especially the after-acquired shares of the target by the arbitrageurs.[107]

This was addressed by the Court of Chancery, and it interpreted section 262 to hold that the beneficial owner of the shares seeking appraisal need not demonstrate the vote status of each individual share held of record by a depository; rather, the Chancery Court found that shareholder of record need only demonstrate the record shareholder—the depository—had not taken a voting action inconsistent with appraisal requirements.[108] In essence, because of the difficult of tracing the vote status of each individual share, the Chancery Court was

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[103] *See* DEL. CODE ANN. tit. 8, § 262(a)(1) (2019) ("[A] holder of record of stock in a stock corporation, or a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person.").

[104] *The Depository Trust Company (DTC)*, DEPOSITORY TRUST & CLEARING CORP., http://www.dtcc.com/about/businesses-and-subsidiaries/dtc ("The Depository Trust Company (DTC), established in 1973, was created to reduce costs and provide clearing and settlement efficiencies by immobilizing securities and making "book-entry" changes to ownership of the securities.").

[105] *In re* Appraisal of Transkaryotic Therapies, Inc., No. CIV.A. 1554-CC, 2007 WL 1378345, at *2 (Del. Ch. May 2, 2007) ("The securities deposited as a part of this system are held in an undifferentiated manner known as 'fungible bulk,' which means that no DTC participant, no customer of any participant (such as an intermediary bank or broker), and no investor who might ultimately have a beneficial interest in securities registered to Cede, has any ownership rights to any particular share of stock reflected on a certificate held by Cede.").

[106] Merion Capital, L.P. v. 3M Cogent, Inc., No. CV 6247-VCP, 2013 WL 3793896, at *24 (Del. Ch. July 8, 2013), *judgment entered sub nom*. Merion Capital, L.P v. 3M Cogent, Inc. (Del. Ch. 2013) (After-acquired shares are shares that are acquired "after the Merger was announced.").

[107] *In re* Ancestry.Com, Inc., No. CV 8173-VCG, 2015 WL 66825, at *8 n. 49 (Del. Ch. Jan. 5, 2015) ("I use the term 'share-tracing requirement' as a shorthand for the burden that Ancestry suggests the statute imposes on appraisal petitioners; it is somewhat imprecise, as Ancestry suggests that the burden could be met in a number of ways, including through, for instance, a petitioner buying shares after the record date also buying sufficient proxies to cover the number of shares for which it seeks appraisal.").

[108] *Transkaryotic*, 2007 WL 1378345, at *3.

merely concerned with the vote action taken by the depository. Thus, until *Dell*, so long as the record holder held enough shares of record voted against the deal, then the appraisal remedy could be perfected.[109]

1. *Nonrecognition of the Share-Tracing Requirement: The "Appraisal Arbitrage Decisions"*

In *Transkaryotic*, a merger was announced between Transkaryotic ("TKT") Therapies, Inc., which was designed to merge TKT with and into its wholly owned subsidiary, Shire Pharmaceuticals Group plc.[110] At the time of the record date,[111] Cede & Co., the DTC nominee, was the record holder of a fungible bulk of 29,720,074 shares of TKT.[112] Of the aggregate shares held of record by Cede & Co., 12,882,000 shares were voted in favor of the merger, and 9,888,663 share were voted against the merger, while the remaining 6,949,411 shares abstained from the vote.[113] Petitioners held 2,901,433 shares at the record date of the merger.[114] After the record date, but before the effective date of the merger, petitioners purchased an additional 8,017,217 shares and sought appraisal on all 10,972,650 shares that petitioners owned in aggregate.[115]

The issue that arose in the case was "whether under 8 Del. C. § 262 a beneficial owner, who acquires shares after the record date, must prove that each of its specific shares for which it seeks appraisal was not voted in favor of the merger?"[116] The Court of Chancery held that because "a purchasing beneficial owner takes subject to the actions and inactions of the previous beneficial owner," then, "[i]f the previous beneficial owner voted stock in favor of the merger, the current beneficial owner may not seek appraisal for those shares."[117] The Court went on to explain that, "[i]f the previous beneficial owner voted against the merger, the current owner may seek appraisal for those shares," but, "[i]f no record exists as to how the previous beneficial

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[109] *Id.*
[110] *Id.* at *1.
[111] *Id.* (providing that the record date for the merger was June 10, 2005).
[112] *Id.*
[113] *Id.*
[114] *Id.*
[115] *Id.*
[116] *Id.*
[117] *Id.*

owner voted, then this Court must not allow appraisal since the petitioner would not have complied with its burden under § 262."[118]

Succinctly, the Court stated that the question to be answered in the case was, "[m]ust a beneficial shareholder, who purchased shares after the record date but before the merger vote, prove, by documentation, that each newly acquired share (i.e., after the record date) is a share not voted in favor of the merger by the previous beneficial shareholder?"[119] Due to the fact that the Delaware General Corporation Law was literally read to only be concerned with the record shareholder for the purpose of perfecting appraisal rights, the Court held that only "the record holder's actions determine perfection of the right to seek appraisal."[120] That is, the previous beneficial owner, who may or may not have voted in favor of the merger (eviscerating the right to seek appraisal), is irrelevant for the purpose of a subsequent beneficial shareholder instructing its designated record holder (Cede & Co., in this case) to perfect petitioner appraisal rights.[121]

The *Transkaryotic* Court opined that the only action that mattered was the action of the record shareholder, Cede & Co., which perfected appraisal rights, on behalf of the petitioners—beneficial owners of shares—in compliance with section 262.[122] The Court reached this conclusion based upon a mere literal reading of the statute as written, and the Court placed the onus on the Delaware Legislature to amend the statute to avoid the alleged "[perversion of] the goals of the appraisal statute by allowing it to be used as an investment tool for arbitrageurs as opposed to a statutory safety net for objecting stockholders."[123] Despite this burden-shifting tactic of the Court of Chancery, many legal commentators contend that "appraisal arbitrage has been facilitated by the Delaware Chancery Court decision of *In re Appraisal Transkaryotic Therapies Inc.*"[124] These commentators believe that the Court of Chancery was the catalyst for appraisal arbitrageurs because the Court "held that shareholders who purchased their stock in the target company after the stockholders' meeting, but

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[118] *Id.*
[119] *Id.* at *3.
[120] *Id.*
[121] *Id.* at *4.
[122] *Id.*
[123] *Id.* at *4–*5.
[124] Rich Bodnar, *Does an Appraisal Action Preclude a Fiduciary Breach Claim?*, LOWENSTEIN SANDLER (Jan. 11, 2019), https://www.appraisalrightslitigation.com/category/no-proof-of-wrongdoing-needed.

before the stockholder vote, could seek appraisal despite not having the right to vote those shares at the meeting."[125]

In *Merion Capital,*[126] the Chancery Court once again addressed the share tracing requirement—or lack thereof—and clarified and extended its *Transkaryotic* decision.[127] The Delaware Supreme Court held that when the petitioner is a record shareholder that has acquired its shares after the record date from the "fungible bulk" at the depository, the petitioner need not show that each individual previously owned share had not been voted in favor of the deal by its previous owner.[128] Instead, for the shares for which the petitioner sought appraisal, the petitioner needed to show that it had not voted the shares in favor of the deal and that the previous record holder held enough shares that were not voted in favor of the deal to cover the amount of shares for which the petitioner sought appraisal.[129]

Although complex, this process becomes simple once illustrated. For example, Company X (purchaser) and Company Y (target) enter into an agreement on January 1, 2018, whereby Company Y is to sell its shares to Company X at a deal price of $100 per share. The deal is set to close on January 1, 2019, the effective date. For the sake of simplicity, assume that Company Y has 10 million total shares, all of which are outstanding.[130] Of the 10 million outstanding shares, 5 million are held in a fungible bulk by Record Holder A for Company Y beneficial owners.

The record date is January 20, 2018, and the shareholder vote to approve the merger is set for February 1, 2018. Company Y timely notifies its shareholders 20 days[131] prior to the meeting of their appraisal rights. At this point in time, the beneficial owners of the shares held by Record Holder A begin to direct Record Holder A on

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[125] *Id.*

[126] Merion Capital LP v. BMC Software, Inc., No. CV 8900-VCG, 2015 WL 67586, at *6 (Del. Ch. Jan. 5, 2015) ("Because I find that the unambiguous language of the statute does not give rise to any such share-tracing requirement, and that Merion has otherwise complied with the requirements of Section 262, I hold that Merion has perfected its right to appraisal.").

[127] *See supra* text accompanying note 27.

[128] *Merion Capital*, 2015 WL 67586, at *3 n.20 ("[F]inding that *Transkaryotic* remains in force to permit a record holder to perfect appraisal rights for beneficial owners as long as the record holder holds sufficient shares in fungible bulk not voted in favor of the merger to cover the number of shares for which the beneficial owner seeks to have appraised.").

[129] *Id.*

[130] *Outstanding Shares*, *supra* note 102.

[131] *See* DEL. CODE ANN. tit. 8, § 262 (2019).

how to vote their respective shares: (1) in favor of the merger; (2) no action taken in the vote; or (3) against the merger.[132] Record Holder A does not connect each individual share to its beneficial shareholder with respect to the vote, hence the "fungible bulk" concept. Rather, Record Holder A is aware that it has 5 million total shares and correspondingly cannot exceed 5 million total votes, irrespective of the voting position of each specific share.

On February 12, 2018, Hedge Fund approaches Record Holder A and buys 1 million of the 5 million shares Depository held of record of Company Y. Before the February 1, 2018, shareholder vote, Hedge Fund directs Record Holder A to vote all 1 million of its shares against the merger, with adequate formal notice provided to Company Y that Hedge Fund will seek appraisal. The dust settles and Record Holder A votes 3 million shares in favor of the merger and 2 million against the merger, with a formal appraisal request sent on account of the 2 million shares that dissented.[133] The other 5 million outstanding shares, held by Record Holder B, are all voted in favor of the merger. The votes are tallied and the merger is approved—8 million in favor and 2 million against the merger.

Because Hedge Fund bought its shares after the record date, there is a significant likelihood that some of the shares it purchased from the fungible bulk were, in fact, voted against the merger. However, based on Delaware courts' precedent, all that is pertinent to the appraisal remedy is that Hedge Fund holds 1 million of the 2 million shares that comprise the "fungible bulk" that Record Holder A voted against the merger, and that Hedge Fund seeks to perfect its appraisal rights on those particular shares. This, however, somewhat changed in *Dell*, decided one year after *Merion Capital*.

2. *The* Dell *Court's Clarification of the Appraisal Arbitrage Cases Offers Proof of the Share Tracing Requirement's Existence in Section 262*

The *Dell* Court distinguished the case before it, on grounds that "the Appraisal Arbitrage Decisions address[ed] a situation in which there [was] an absence of proof."[134] This "absence of proof" distinction is because, in the Appraisal Arbitrage Decisions, "no evidence was available to show how [the record holder] voted the particular shares

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[132] *Id.*
[133] *Id.*
[134] *In re* Appraisal of Dell Inc., 143 A.3d 20, 37 (Del. Ch. 2016).

for which appraisal was sought, and the record suggested that no one who held shares in street name[135] would be able to satisfy Section 262(a) if it required establishing how [the record holder] voted specific shares."[136] However, "[i]t does not necessarily follow that just because in some cases there is no evidence regarding how [the record holder] voted, then in other cases where it does exist the parties cannot introduce it and the court cannot consider it."[137]

Furthermore, "if the Record Holder Requirement prevents the parties and the court from looking beyond [the record holder's] aggregate voting totals, then neither can know 'the dissentients and the extent of the dissent.'" If the Record Holder Requirement is interpreted in that manner, then "[i]n lieu of 'order and certainty, and a sure source of information,' the voting process is hidden behind a depository veil of ignorance."[138] Instead, the *Dell* Court presented a new proof-substantiated view of the share-tracing requirement, providing that "the solution" to the record holder requirement is to accord "recognition of the realities of modern stock practices"[139] and merely because a record holder "outsourced [certain] parts of the voting process does not mean an iron curtain has descended to isolate the resulting evidence from the legal system."[140] Instead, "[i]t simply means that the litigants must obtain the information . . . and they readily can."

Applying these principles, if a petitioner satisfies its burden of proving "that the Dissenter Requirement was met by showing that there were sufficient shares at [the record holder] that were not voted in favor of the merger to cover the appraisal class" then, absent evidence to the contrary, such a "showing is dispositive."[141] However, "[o]nce the appraisal petitioner has made out a prima facie case, the burden shifts to the corporation to show that [the record holder]

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[135] *In Street Name*, INVESTOPEDIA, https://www.investopedia.com/terms/i/instreetname.asp (last updated Feb. 27, 2018) ("In street name is slang for when a brokerage account holds a customer's securities and assets under the name of the brokerage firm, rather than the name of the individual who is the legal owner of a security. Although the name on a stock certificate is not that of the individual, they are still listed as the real and beneficial owner and have the rights associated with the security.").
[136] *Dell*, 143 A.3d at 37.
[137] *Id.*
[138] *Id.*
[139] *Id.* at 41.
[140] *Id.* at 53.
[141] *Id.*

actually voted the shares for which the petitioner seeks appraisal in favor of the merger."[142]

B. *Blockchain Technology: The Proof That the Share-Tracing Requirement Has Been Missing*

This section of the Note is not a pretentious examination of the theoretical intricacies of Blockchain; rather, it is a realistic discussion of the potential that Blockchain has to ensure that only meritorious appraisal arbitrage actions—in which shares for which appraisal is sought are proven to have been voted against the merger—are brought by petitioners. However, to understand the revolutionary role that Blockchain can serve in the realm of appraisal litigation, it is essential to understand some fundamental principles about the enigmatic technology. As a preliminary matter, Blockchain—as it would apply to appraisal litigation—is not to be conflated with its application to Cryptocurrency.[143] That is, Cryptocurrency merely utilizes Blockchain as the technological vessel that facilitates its Crypto-market databases.[144] However, Blockchain itself is merely a derivation of Distributed Ledger Technology ("DLT"), which is the overarching cyber registry technology that makes Blockchain, and its sibling applications, operational. [145]

1. *DLT and the Delaware "Blockchain Initiative" Amendments*

DLT, in its simplest form, is a peer-to-peer[146] network of "nodes"[147] that operate simultaneously to create a database without any centralized administration. [148] Amongst the primary advantages of DLT are its speed, virtually instantaneous updates to data, decentralized protection from manipulation, and immutable

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[142] *Id.*
[143] *Blockchain, Explained*, INVESTOPEDIA, https://www.investopedia.com/terms/b/blockchain.asp (last updated Feb. 10, 2019) ("[B]lockchain is a distributed, decentralized, public ledger.").
[144] *Id.*
[145] *Blockchain & Distributed Ledger Technology (DLT)*, THE WORLD BANK (Apr. 12, 2018) https://www.worldbank.org/en/topic/financialsector/brief/blockchain-dlt.
[146] *Id.*
[147] *Id.*
[148] *Id.*

accuracy.[149] Blockchain uses DLT technology to permanently record a discrete transaction into an individual data "block" that exists in a chronological "chain," and, as more blocks—transactions—are linked to the chain, the initial block imprints subsequent blocks with a distinctive code, which creates an indelible lineage of transactions traceable back to inception.[150]

For example, Company X has 5 million authorized shares, all of which have been stored and traced by Blockchain technology from each share's respective date of issuance by Company X. Company X then issues an additional 1 million share, 100 of which are purchased by Investor A. Immediately upon issuance, there are 1 million new blocks that were created, each of which unique and discernable from the rest. Subsequently, upon purchase by Investor A, each of the 100 individual shares generates a new block, which reflects the purchase by Investor A. The 100 shares, each individually, are now traceable back to Company X's issuance—the original block—through Investor A—the subsequent block.

Company Y then approaches Company X and the two firms enter into a merger agreement. The record date of the merger passes and Investor A is informed by proxy about the shareholder vote on the merger. Investor A, pleased with the merger, votes all 100 shares in favor of the merger, thereby creating a new block in the chronological chain that represents the affirmative vote on the merger. This immutable time stamp, so to speak, is permanent record that each of these 100 shares voted to approve the merger. Therefore, if Hedge Fund approaches Investor A to purchase Investor A's 100 shares, there will be an everlasting link that connects Hedge Fund's purchase of Investor A's 100 shares, to the blocks that indicate the vote in favor of the proposed merger, all the way back to Investor A's initial purchase from the original issuance of the 1 million shares by Company X. In other words, the pristine record tracks each and every action taken with respect to all individual shares, which renders impossible the perfection of appraisal rights on shares that, going back to the *Transkaryotic* decision, would have been deemed untraceable and, therefore, eligible to initiate an appraisal petition.

Such an application of Blockchain is not speculation; rather, there are many indicators that Blockchain can be the section 262 share-

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[149] *Distributed Ledger Technology*, INVESTOPEDIA, https://www.investopedia.com/terms/d/distributed-ledger-technology-dlt.asp (last updated Jan. 25, 2018).

[150] *Blockchain, Explained*, *supra* note 143.

tracing enforcer that the Delaware courts have lacked throughout years of appraisal arbitrage litigation.[151] Preliminary evidence is that the Delaware Legislature has demonstrated that it is not loath to the codified implementation of Blockchain in the Delaware General Corporation Law.[152] Effective August 1, 2017, the Delaware General Corporation Law was amended[153] in part to authorize Delaware corporations' "use [of] networks of electronic databases (examples of which are described currently as 'distributed ledgers' or a 'blockchain') for the creation and maintenance of corporate records, including the corporation's stock ledger."[154] The pertinent sections amended to encompass DLT in Senate Bill No. 69 were section 219,[155] section 224,[156] and section 232.[157] However, the amendments reach into other sections that are more directly related to the share tracing requirements of section 262.[158]

Currently, section 219(c) defines a "stock ledger" as "1 or more records administered by or on behalf of the corporation" that includes "the names of all of the corporation's stockholders of record, the address and number of shares registered in the name of each such stockholder, and all issuances and transfers of stock of the corporation are recorded in accordance with § 224."[159] Stock ledger, as defined in section 219(c), is expanded upon in section 224 to explain that a Delaware corporation is authorized to keep any of its records "on, or by means of, or be in the form of, any information storage device, method, or 1 or more electronic networks or databases (including 1 or more distributed electronic networks or databases)."[160]

A pertinent connection between the Blockchain language of section 224 and the share tracing requirement of section 262 is the allowance of DLT record keeping "to prepare the list of stockholders

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[151] *See* discussion *supra* Section II.C.
[152] *See* Marco A. Santori, *Governor Jack Markell Announces Delaware Blockchain Initiative*, GLOBAL DELAWARE BLOG (June 10, 2016), http://global.blogs.delaware.gov/2016/06/10/delaware-to-create-distributed-ledger-based-share-ownershipstructure-as-part-of-blockchain-initiative [http://perma.cc/BRG9-4YFU].
[153] S.B. 69, 149th Gen. Assemb., Reg. Sess., Synopsis (Del. 2017).
[154] *Id.*
[155] *See* DEL. CODE ANN. tit. 8, § 219 (2019).
[156] *See* DEL. CODE ANN. tit. 8, § 224 (2019).
[157] *See* DEL. CODE ANN. tit. 8, § 232 (2019).
[158] *See* DEL. CODE ANN. tit. 8, §§ 218, 219 (2019).
[159] *See* DEL. CODE ANN. tit. 8, § 219.
[160] *See* DEL. CODE ANN. tit. 8, § 224.

specified in §§ 219 and 220."[161] This is important because one of the essential functions of section 219 is to explain Delaware corporations' requirements for mandatory and complete lists of shareholders that are able to vote at corporations' shareholder meetings. [162] Particularly, section 219(a) provides that "[t]he corporation shall prepare, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting," but "if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date."[163] Further, section 220(a)(1) defines a stockholder as "a holder of record of stock in a stock corporation, or a person who is the beneficial owner of shares of such stock held either in a voting trust or by a nominee on behalf of such person."[164]

The interrelation of the amendments to these sections of the Delaware General Corporation Law is encouraging for the implementation of DLT into section 262 share tracing requirements for mergers. Pursuant to the enactment of these amendments, corporations are enabled to maintain mandatory lists of shareholders authorized to vote (e.g., shareholders that are entitled to vote for or against a merger) with the assistance and accuracy of DLT.[165] While the amendments made to these sections of the Delaware General Corporation Law do not specifically address the share tracing requirement, the functions of the amendments do signal that section 262 might soon be amended to include DLT implementation.

2. *Blockchain Implementation Into Domestic and International Financial Markets Has Proven Viable*

The United States was initially hesitant to embrace Blockchain Technology in its financial markets, but the exploration of Blockchain for use by Nasdaq, the New York Stock Exchange, and even other countries' implementation of the technology into exchanges is encouraging for its potential share tracing use for perfecting appraisal rights in the near-future.[166] For all of the exchanges that have already

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[161] *Id.*
[162] *See* DEL. CODE ANN. tit. 8, § 219(a).
[163] *Id.*
[164] *See* DEL. CODE ANN. tit. 8, § 220(a)(1) (2019).
[165] *See supra* text accompanying notes 59–70.
[166] Eric Ervin, *Blockchain Technology Set to Revolutionize Global Stock Trading*, FORBES (Aug. 16, 2018),

effectuated—or are currently experimenting with effectuating—the technology, one component of Blockchain's revolutionary usefulness seems to stand out from all else: efficiency.[167] This degree of efficiency is precisely what could rectify the issue that currently exists with tracing the activity of each share within the fungible bunk of shares, held by record shareholders on behalf of beneficial shareholders, in appraisal actions.

In order to comprehend why Blockchain can be used safely, securely, and efficiently, a common misconception about Blockchain must first be clarified. Given the nascence and complexity of Blockchain, one consumer misapprehension that exists about Blockchain is that the technology is immutable, but that it subsists on a publicly accessible database.[168] However, the technology consists of both public and private Blockchains.[169] The difference between private and public Blockchains is simple—private Blockchains can selectively filter the participants that can access a particular network, while public Blockchains' intent is to be publicly accessible.[170] Nasdaq was among the first exchanges, both domestically and internationally, to actively utilize Blockchain technology for a client.[171] Private Blockchain was used by Nasdaq for client, Chain.com ("Chain"), to unveil Nasdaq's own Blockchain ledger technology, Nasdaq Linq, which enabled Nasdaq to electronically document its issuance of shares to Chain, a private investor.[172]

A concern about Blockchain technology that persists, particularly in the financial and banking industries, which consist of entities that possess and communicate highly-sensitive information, such as social security numbers attached to bank and trading accounts on a daily

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https://www.forbes.com/sites/ericervin/2018/08/16/blockchain-technology-set-to-revolutionize-global-stock-trading/#32daa6ce4e56.

[167] *Id.*

[168] Jordan French, *NASDAQ is "All-In" on Blockchain Technology*, STREET (Apr. 23, 2018), https://www.thestreet.com/investing/nasdaq-all-in-on-blockchain-technology-14551134.

[169] Praveen Jayachandran, *The Difference Between Public and Private Blockchain*, IBM (May 31, 2017), https://www.ibm.com/blogs/blockchain/2017/05/the-difference-between-public-and-private-blockchain.

[170] *Id.*

[171] Prableen Bajpai, *How Stock Exchanges are Experimenting with Blockchain Technology*, NASDAQ (June 12, 2017), https://www.nasdaq.com/article/how-stock-exchanges-are-experimenting-with-blockchain-technology-cm801802.

[172] *NASDAQ Linq Enables First Ever Private Securities Issuance*, NASDAQ (Dec. 30, 2015), http://ir.nasdaq.com/news-releases/news-release-details/nasdaq-linq-enables-first-ever-private-securities-issuance?releaseid=948326.

basis, is the transparency that Blockchain promotes.[173] The primary advantage of Nasdaq Linq for private companies is that it is incredibly efficient in comparison to the non-Blockchain ledger systems.[174] For example, the use of Nasdaq Linq for Chain "enabled the issuer to digitally represent a record of ownership using Nasdaq Linq, while significantly reducing settlement time and eliminating the need for paper stock certificates."[175]

It must be noted, however, that Nasdaq Linq, in its current form, is not a distributed ledger.[176] However, what is incredibly interesting about Nasdaq Linq is that it was built and designed with the underlying ability for it to eventually become a distributed ledger.[177] The process to transform Nasdaq Linq is informative for how Blockchain can be translated into use for appraisal actions. Frederik Voss, the Vice President of Blockchain Innovation at Nasdaq, explained, in a press release, the steps that Nasdaq Linq will need to go through in order to become a distributed ledger.[178] Voss explained that, in order to become a distributed ledger, Nasdaq Linq would not be able to jump "straight from one writer to a totally permission-less environment; he suggests that the next step would be to transform Linq into a federated solution with an agreement as to who is allowed to write transactions to the ledger."[179] However, Nasdaq Linq's ability to become a distributed ledger in the future is telling of Blockchain's ability to make the legal system's problems with appraisal actions much more efficient and less opaque, which would consequently filter out non-viable perfections of appraisal rights.

While Nasdaq's Linq technology is certainly compelling evidence that Blockchain could be effectively used to trace shares with regard to appraisal actions, Nasdaq has embarked on an even more promising application of Blockchain, that is far less attenuated than Linq, to serve the share tracing purpose.[180] As mentioned above, when appraisal arbitrageurs seek to perfect appraisal rights, they need not show the

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[173] *Building on the Blockchain,* NASDAQ (Mar. 23, 2016, 5:31 PM), https://business.nasdaq.com/marketinsite/2016/Building-on-the-Blockchain.html.
[174] *Id.*
[175] *Id.*
[176] *Id.*
[177] *Id.*
[178] *Id.*
[179] *Id.*
[180] *NASDAQ to Deliver Blockchain E-Voting Solution to Strate*, NASDAQ (Nov. 22, 2017), http://ir.nasdaq.com/news-releases/news-release-details/nasdaq-deliver-blockchain-e-voting-solution-strate.

voting status of each individual share held by the record holder of fungible bulk of shares; rather, the beneficial owner—the arbitrageur—needs only show that the record holder of shares holds enough shares that voted against the merger to account for the total number of shares for which the arbitrageur seeks appraisal.[181]

These votes, however, are primarily conducted through proxies, in which record holders of shares, such as Cede & Co., will vote the fungible bulk of shares held on behalf of the beneficial owners, according to beneficial owners' instructions as to which of the three voting options the beneficial owners instruct the record holder to execute.[182] One of the issues that inherently exists for the present state of proxy voting for mergers is that, when the deal appears, in all aspects, to be fair to the selling firm's shareholders, the shareholders will often abstain from voting on the merger, which consequently provides for more shares held in the fungible bulk by the record shareholder to allow the arbitrageurs to perfect appraisal on account of those shares, without any concrete evidence as to the vote status of each of those shares.

In 2017, however, Nasdaq issued a press release that disclosed its new initiative to use Blockchain Technology to deliver e-voting solutions to Strate, which is South Africa's Central Securities Depository.[183] The Nasdaq press release expressly indicated that the primary purpose of the agreement with Strate was to "leverage the solution to improve voting efficiencies and increase shareholder participation in South Africa."[184] This was not a speculative first attempt by Nasdaq to implement a Blockchain solution to bring e-voting to foreign capital markets; in fact, Strate was compelled to reach this agreement with Nasdaq because Nasdaq had already implemented a similar Blockchain solution into its own market in Estonia.[185] The "Proof of Concept" in Estonia, that convinced Strate to enter into the agreement with Nasdaq, was spurred because investors often do not have direct control over their votes, especially when the votes are cast

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[181] *In re* Appraisal of Transkaryotic Therapies, Inc, No. Civ.A. 1554-CC, 2007 WL 1378345, at *3 (Del. Ch. May 2, 2007).
[182] *Id.*
[183] *See NASDAQ to Deliver*, *supra* note 180; *see also* STRATE, https://www.strate.co.za/about/our-company (last visited Mar. 7, 2019).
[184] *NASDAQ to Deliver*, *supra* note 180.
[185] *Is Blockchain the Answer to E-Voting? NASDAQ Believes So*, NASDAQ (Jan. 23, 2017), https://business.nasdaq.com/marketinsite/2017/Is-Blockchain-the-Answer-to-E-voting-Nasdaq-Believes-So.html.

through proxies.[186] Moreover, the Blockchain solution was intended to enable investors to have easier access to their voting history.[187] The e-voting project in Estonia rendered great early success and served as a tangible display of Blockchain's great potential for use in other capital markets, such as Strate for South Africa.[188]

With regard to the Strate initiative in South Africa, the stated purpose of the initiative by Strate is to provide an "end-to-end" interface for investors that hold shares in listed companies.[189] The "end-to-end" component of the Blockchain solution indicates Strate's desire to implement an all-in-one system that allows investors in listed companies to manage their shares "from notification and material distribution to voting management and reporting at the general meeting."[190] Among the major advantages of such a user interface is that it "improves efficiency and transparency" because "leveraging blockchain" enables Nasdaq and Strate to "reduce friction in the voting and proxy assignment process and also ensure that all information is transparent to stakeholders when required and with the proper security, governance and risk procedures in place."[191]

Although the initiatives by Nasdaq in both Estonia and South Africa are indicative of the growing receptiveness about Blockchain Technology as a tool to use to improve efficiency and transparency within markets, one country with a large equity market, more so than all others, has pioneered active use of Blockchain Technology in its largest exchange: Australia.[192] The Australian Stock ("ASX") has always taken an aggressive stance to be at the forefront of implementing technology to streamline its capital market interface.[193] Over a quarter of a century ago, ASX developed Clearing House

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[186] *Id.*
[187] *Id.*
[188] *Id.* ("The Estonia e-voting project was an opportunity to use the blockchain's immutable transaction ledger technology in a different way. The system uses the blockchain in the traditional way to record the ownership of securities as reported by the CSD. Based on those holdings, the system also issues voting right assets and voting token assets for each shareholder. A user may spend voting tokens to cast their votes on each meeting agenda item if they also own the voting right asset. This model successfully demonstrated how a blockchain could be used for something other than transaction settlement.").
[189] *NASDAQ to Deliver*, *supra* note 180.
[190] *Id.*
[191] *Id.*
[192] *Chess Replacement,* ASX, https://www.asx.com.au/services/chess-replacement.htm#DistributedLedgerTechnologysolution (last visited Mar. 7, 2019).
[193] *Id.*

Electronic Subregister System ("CHESS"), which "enabled the successful [dematerialization] of the cash equity market (the conversion of physical shares into an electronic format)."[194]

However, in a 2018 press release, ASX announced that it would be replacing CHESS with a distributed ledger as the "post-trade infrastructure for Australia's equity market."[195] The main objectives of ASX's DLT replacement of CHESS, due for effectuation beginning in 2020, are to operate for the benefit of issuers and investors, provide greater accessibility, make information more transparent and accessible, and to generate greater efficiency, while simultaneously creating a more private and secure system that will reduce exposure to new risks that would result from the corruption of, or fraudulent interference with, information on the system.[196] This is yet another pristine example of why DLT can and should be implemented as an infrastructure that can accurately and transparently trace the voting status of shares for the purpose of appraisal actions.

The most important feature of Blockchain for the share tracing issues in appraisal actions—aside from the proven successes that Blockchain has already seen in foreign exchanges and for domestic use—is that the technology has been recognized by notable figures involved in Delaware appraisal litigation. Most notably, Vice Chancellor, Justice Travis Laster, of the Delaware Court of Chancery, delivered a speech titled, "The Blockchain Plunger: Using Technology to Clean Up Proxy Plumbing and Take Back the Vote."[197] The promotion of the Blockchain by a Vice Chancellor on the Court of Chancery is an extremely positive indicator for its implementation into the legal system. Even more corroborative of such implementation, as mentioned above, is the fact that the Delaware legislature has already displayed its willingness to adopt Blockchain into Delaware General Corporate Law with its 2016 enactment of the Delaware Blockchain

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[194] *Id.*

[195] Media Release, ASX, ASX Outlines New Features and Timetable for DLT System to Replace CHESS (Apr. 27, 2018), https://www.asx.com.au/documents/asx-news/asx-chess-replacement-scope-and-implementation-plan.pdf.

[196] *Chess Replacement*, *supra* note 192.

[197] Andrea Tinianow, *When it Comes to Adopting Blockchain Technology, Education Leads to Utilization*, FORBES (June 20, 2018), https://www.forbes.com/sites/andreatinianow/2018/06/20/when-it-comes-to-adopting-blockchain-technology-education-leads-to-utilization/#2610dc3e4ea8.

Initiative.[198] Notably, Delaware was the first jurisdiction globally to officially integrate Blockchain into its legal system.[199]

Blockchain is certainly a new and relatively unknown realm of technology.[200] Although Blockchain technology has proven effective in a multitude of uses, there still remain those who are skeptical and, perhaps, afraid of the use of Blockchain. Consequently, it has raised the eyebrows of many as to its security and safety; regardless of its purported high-level security, the recurring question that arises is, "how secure is Blockchain Technology?"[201] Big Banks in the United States, in particular, have been highly skeptical of Blockchain.[202] However, an important distinction between Blockchain, DLT itself, and Cryptocurrencies' use of Blockchain underlies this skepticism—Big Banks find Blockchain's use in Cryptocurrency markets, not Blockchain in the broad scope of DLT, to be dubious.[203] In fact, Citigroup, among other Big Banks that effected policies that explicitly restricted clients from engaging in the purchase of Cryptocurrency on personal and business credit cards, has begun to conduct trials with Blockchain's ledger technology for transmission of the Bank's sensitive materials.[204]

Blockchain is no longer a theoretical concept, nor is it just a popular buzzword within social media spheres. It is a very real

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[198] *See supra* text accompanying notes 56–61. See previous comments.
[199] Tinianow, *supra* note 197.
[200] Bernard Marr, *A Very Brief History of Blockchain Technology Everyone Should Read*, FORBES (Feb. 16, 2018), https://www.forbes.com/sites/bernardmarr/2018/02/16/a-very-brief-history-of-blockchain-technology-everyone-should-read/#6063d1177bc4. Blockchain was first used by the public in 2009. *Id.*
[201] Andrew Gazdecki, *How Secure is Blockchain Technology?*, FORBES (Oct. 12, 2018), https://www.forbes.com/sites/forbestechcouncil/2018/10/12/how-secure-is-blockchain-technology/#2c832afd72f0.
[202] Jennifer Surane & Laura J Keller, *Bitcoin Ban Expands Across Credit Cards as Big U.S. Banks Recoil*, BLOOMBERG (Feb. 2, 2018), https://www.bloomberg.com/news/articles/2018-02-02/bofa-to-decline-all-cryptocurrency-transactions-on-credit-cards ("In February, 2018, several U.S. Big Banks implanted new policies that prohibited the purchase of Cryptocurrencies on personal and business credit cards. The Banks that effected this ban on their clients were, among others, JPMorgan Chase & Co., Bank of America Corp., and Citigroup, A likely reason for such a policy is that the banks, operating in centralized markets, do not want to deal with the risk associated with lending to clients that bet incorrectly and are subsequently incapable of paying off their credit debt.").
[203] *Id.*
[204] Lucinda Shen, *Banking Giants Including Citigroup and Barclays Sign Up for a Trial Blockchain Project*, FORTUNE (July 30, 2018), http://fortune.com/2018/07/30/blockchain-barclays-citi-app-store-ledgerconnect.

technology with a developing, but advanced, technological capacity. As Blockchain becomes increasingly perceived as more than a mere Cryptocurrency database, it will presumably experience implementation into larger-scale systems to perform multitudes of ledger-based functions. One such potential function, which is certainly within the realm of possibility, would be to enforce an eventually codified share-tracing requirement in section 262. If so, appraisal arbitrageurs' strategies may have to be completely reevaluated.

IV. CONCLUSION

The genesis of arbitrageurs' adventitious anti-martingale betting strategy upon its pari-mutuel lock on Delaware's appraisal statute may come to an equally anticipated cease. Delaware courts' recent appraisal jurisprudence lends support to the notion that the Court of Chancery no longer has free-reign to value deals, from upon its chancellors' disinterested throne. Withal, the evolving uses of DLT may, and should, cause the Delaware legislature to excogitate its codification into section 262. Combined, codification of a DLT-galvanized share-tracing requirement and recent Delaware courts' precedentially antithetical appraisal decisions could, theoretically, desiccate arbitrageurs' once-bottomless pool of gains, derived from valuation judgments well in excess of deal price.

In 2007, the amendments to section 262 and the Court of Chancery's jurisprudence unequivocally enabled arbitrageurs to profit from the appraisal statute; however, the appraisal statute functionally serves the significant purpose of allowing record holders of stock, on behalf of beneficial owners, to non-frivolously seek appraisal for per-share undervaluation offered as the deal price. The social value of the statute is to protect minority shareholders' shares, for which appraisal is sought, from being disgorged of substantial economic and intrinsic value derived from long-term investments with a particular firm. Conceptually, this makes sense, as a system that forces dissenting minority shareholders of the dissolving firm to accept shares, which they presumably would have purchased had they desired to, from the surviving firm is contrary to free market principles.

Conversely, from the perspective of arbitrageurs, the actual fairness of a given deal is of purely objective, rather than subjective, value; that is, there is no intrinsic value attached to the shares for arbitrageurs—appraisal arbitrageurs do not hold stock long-term in a target firm prior to the record date of a merger. Instead, the arbitrageurs are only concerned with asserting appraisal rights in order to receive short-term gain from a per-share valuation higher than that offered by

the acquiring firm as the deal price. The pari-mutuel lock drove appraisal arbitrage and generated massive sums of money from the method. Obviously, if the arbitrageurs purchased the shares and did not assert appraisal rights, then they would just be making an ordinary investment; no arbitrage would take place, as this would connote that the arbitrageurs are either purchasing stock with intent of having long-term investment with the surviving firm, or, illogically, that the arbitrageurs are willing to accept the deal price, which would provide no gain at all.

Arbitrageurs were willing to accept the risk associated with bringing appraisal actions under the appraisal statute, so long as the short-term gains derived from the sale of capital assets outweighed the costs of purchasing and litigating the per-share fair value of such assets. However, the decisions of the Delaware Supreme Court have cast an ominous shadow over the future of appraisal arbitrage. Moreover, technological advancements within the realm of Blockchain technology has spurred securities exchanges and financial titans around the globe to utilize its powerful distributed ledger capabilities. Thus, the synthesized effect of the Delaware courts' recent appraisals of fair value below, or at, deal price and the auspicious future of Blockchain as a share-tracing mechanism could soon bring an end to arbitrageurs' longstanding pari-mutuel lock on the Delaware appraisal statute.