Dilution Warrants for Corporate Acquisitions Free of Private Benefits of Control

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ABSTRACT. This paper identifies efficiency costs in corporate control auctions distorted by the valuable extractability of private benefits from control of the auctioned firm by potential acquirers. Such costs may entail suboptimal control transfers to the extent that the present value of all future private benefits constitutes an element of the competing bidders’ valuation of the target. To avoid those efficiency costs, this paper proposes a dilution warrants mechanism. The mechanism essentially presumes that control premia relative to the postacquisition target share market price reflects private benefits. Thus, the dilution warrants confer: (1) on the target’s minority shareholders an opportunity for compensation; and (2) on potential acquirers a disincentive to pay a premium in the prospect of extracting private benefits of control.

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Normatively, mergers and acquisitions play an allocative efficiency role in the economy. They enable capital assets to move toward their highest-valuing users. As a positive matter, however, a voluntary sale of control over corporate assets isn’t always optimal. In particular, a seemingly Pareto dominant equilibrium might well be distorted by the valuable extractability of private benefits of control from the target company. In other words, a potential acquirer may find utility in enjoying benefits unavailable to minority shareholders and in disproportion to its fractional ownership.

One classic example is the practice of transfer pricing along a chain of intra-conglomerate transactions that effects a wealth shift to an entity wholly-owned by the acquirer. Such tunneling of company resources might prove problematic if it remains

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1 I would like to thank Professor Henry B. Hansmann, Professor Jonathan R. Macey, Professor Ian Ayres, and Professor Roberta Romano for their helpful comments. All mistakes are mine.

2 See Alan Schwartz, *The Fairness of Tender Offer Prices in Utilitarian Theory*, 17 J. LEGAL STUD. 165, 170 (1988) (arguing that “any transfer of corporate assets at a nontrivial premium above the market price is efficient *ex ante*, in the same sense that any voluntary contract is efficient *ex ante*”); Frank H. Easterbrook & Daniel R. Fischel, *Corporate Control Transactions*, 91 YALE L.J. 698, 705 (1982) (“There is a strong presumption . . . that free transferability of corporate control, like any other type of voluntary exchange, moves assets to higher valued uses.”).


4 For a similar argument, see John C. Coffee, Jr., *Transfers of Control and the Quest for Efficiency: Can Delaware Law Encourage Efficient Transactions While Chilling Inefficient Ones?, 21 DEL. J. CORP. L. 359, 363 (1996) (“In truth, control transactions can be both, motivated in part by efficiency-promoting justifications and in part by the inefficient desire of the control seeker to consume the private benefits of control.”).

5 See Ronald J. Gilson & Jeffrey N. Gordon, *Controlling Controlling Shareholders*, 152 U. PA. L. REV. 785, 785 (2003) (“[T]here is an] agency problem that arises between controlling and noncontrolling shareholders, which produces the potential for private benefits of control—benefits to the controlling shareholder not provided to the noncontrolling shareholders.”).

6 RONALD J. GILSON & BERNARD S. BLACK, THE LAW AND FINANCE OF CORPORATE ACQUISITIONS 1233 (1995) (“[C]ontrolling shareholders in vertical relationships with the company can
undetected by accounting audits, or to the extent that it’s carried out in ways that don’t rise to a legally cognizable wrong. Event studies evidencing control premia relative to the postacquisition price level suggest that self-dealing or other private benefits of control are empirically significant.

In so far as private benefits constitute a nontrivial element of the competing bidders’ valuation of the contested target an auction allocating corporate control won’t necessarily maximize shareholder wealth. This claim is premised on the assumption that the potential for transfer pricing is contingent upon rival bidders’ owning different sets of businesses with varying synergistic possibilities. As such, the tunneling potential is characterized as an auctioned object to which potential acquires attach independent private values, possibly drawn from uncorrelated surplus distributions.

Therefore, unless manipulate transfer pricing in ways that are difficult to detect and evaluate. Even if a controlling shareholder pays its supplier company a fair spot market price for the products it purchases, that price may be too low for an assured source of supply, but the existence of the assurance may be difficult to detect because it is likely implicit rather than explicit.”). See also Simon Johnson et al., Tunneling, AM. ECON. REV., May 2000, at 22, 22-23 (noting that tunneling comprises self-dealing transactions, and includes “asset sales and contracts such as transfer pricing advantageous to the controlling shareholder”).

Marcel Kahan, Sales of Corporate Control, 9 J.L. ECON. & ORG. 368, 368 (1993) (“For example, a controlling person can pay herself an excessive salary, structure corporate policies (such as dividend policies) to satisfy her peculiar interests, engage in favorable self-dealing transactions with the company, or take corporate opportunities, in manners that either remain undetected or do not rise to a legally cognizable wrong.”).

See Alexander Dyck & Luigi Zingales, Private Benefits of Control: An International Comparison, 59 J. Fin. 537, 551 (2004) (including a table showing block premia that “are computed as the difference between the price per share paid for the control block and the price on the Exchange two days after the announcement of the control transaction”); Michael J. Barclay & Clifford G. Holderness, Private Benefits from Control of Public Corporations, 25 J. Fin., ECON. 371, 379 (1989) (including a table with “[c]omparisons of the price of 63 trades . . . with the closing exchange price on the day of the initial Wall Street Journal announcement of the trade”). The evidence those two papers present is reviewed infra.

See Peter Cramton & Alan Schwartz, Using Auction Theory to Inform Takeover Regulation, 7 J. L. ECON. & ORG. 27, 29 (1991) (“A takeover should be viewed as an independent private-values auction if it is made for synergy purposes. Then the postacquisition surplus is likely to vary considerably with the nature and plans of the winning bidder.”); Roberta Romano, A Guide to Takeovers: Theory, Evidence, and Regulation, 9 YALE J. ON REG. 119, 161 (1992) (“If a takeover is undertaken to achieve synergy gains, then the auction setting is one of independent values because the value of the target will vary with the bidder (different bidders can achieve different levels of synergy gains). In this context, an auction is appropriate because it permits the target to identify the highest-valuing bidder.”).
a target charter provision creates an incentive for bidders to overlook private benefits in
calculating their reservation prices, the suitor best positioned to exploit self-dealing
opportunities might offer the highest price. Because such winner might not be the most
efficient, the ensuing equilibrium may contradict the goal of shareholder wealth
maximization.10

Yet under a utilitarian moral theory,11 the target’s noncontrolling stockholders
should be given the chance to choose the bid actually leading to the Pareto optimal
solution in the circumstances.12 Such entitlement falls outside the scope of an appraisal
or fairness review proceeding awarding the preinvestment price. The latter is concerned

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10 The argument this paper develops is consistent with the view advanced by Hansmann and Kraakman that
the attainment of aggregate social welfare requires that the interests of shareholders—as embodied in the
maximization of stock prices—prevail in corporate governance. Henry Hansmann & Reiner Kraakman,

11 Not a strict utilitarian philosophy, but one based on consensual exchanges of property rights. See
Romano, supra note 8, at 164 (“Opting for efficiency rather than revenue maximization stands a
commonsense understanding of property rights on its head: our economic system is premised on the
consensual transfer of property in private commercial transactions. Yet from a social efficiency standard,
the target shareholders ought to be compelled to sell to any bidder for a trivial amount above the market
price, in order to move the assets to the higher-valuing user. Most of us—except strict utilitarians—would
find such a rule unacceptable, but it is the logical implication of implementing such a policy.”); John C.
Coffee, Regulating the Market for Corporate Control: A Critical Assessment of the Tender Offer’s Role in
Corporate Governance, 84 COLUM. L. REV. 1145, 1165-66 (1984) (“[The zero takeover premium policy] is
heretical even from a neo-classical economic standpoint, because it fundamentally seeks to subordinate
normal market processes to an ulterior goal.”). On the relationship between economic analysis, efficiency
notions and utilitarian moral theory, see Jules L. Coleman, Efficiency, Utility, and Wealth Maximization, 8
HOFSTRA L. REV. 509, 516 (1980) (“Those committed to utilitarianism will no doubt embrace the Pareto
standard since they are committed to a conception of the right and the good from which Pareto superiority
follows as a particular instance, that is, as one way of promoting utility.”).

12 See Schwartz, supra note 1, at 195 (“[The utilitarian] theory supports delegating to owners the decision
when assets should sell because external decision makers cannot make the interpersonal utility comparisons
requisite to deciding when particular sales will maximize welfare and because single owners who maximize
utility have the incentive to sell to the highest-valuing buyers. In the corporate context, the interpersonal
utility problem vanishes; transfers at the premiums above prebid prices that unregulated markets would
yield very probably move assets to higher-valuing users.”); Lucian A. Bebchuk, Toward Undistorted
Choice and Equal Treatment in Corporate Takeovers, 98 HARV. L. REV. 1695, 1765 (1985) (“It is in
society’s interest that corporate assets, as well as all other resources, be put to their most productive uses.
The productivity of given assets might well depend on the identity of the corporation that controls them; the
identity of the controlling corporation determines what managerial resources will be brought to bear upon
these assets and what other resources will be used in combination with them. Thus, at any given time there
are likely to be some companies whose acquisition by other companies would produce efficiency gains by
creating “synergy” or improving management.”).
with encouraging the optimal level of investment in the acquired firm on the part of the bidder who presumably cast the highest bid.\textsuperscript{13} The former, on the other hand, acts at a more fundamental, chronologically preceding level; it prophylactically ensures that all bids cast reflect efficiency, rather than exploitative, considerations. That’s the effect of the contractual arrangement this paper proposes.

The basic idea is to make the acquirer liable to the acquired corporation’s noncontrolling stockholders to the extent that its bids reflected the present value of all future private benefits it may extract. In this vein, target shareholders are granted as many warrants as shares they hold which were left out of the applicable offer.\textsuperscript{14} For instance, in a privately negotiated control block sale all but the shares comprised in the block are granted warrants, unless an equal opportunity doctrine controls.\textsuperscript{15} In contrast, if a partial offer to buy a controlling interest is made both the shares not contemplated with

\textsuperscript{13} See Benjamin Hermalin & Alan Schwartz, \textit{Buyouts in Large Companies}, 25 J. LEGAL STUD. 351, 370 (1996) (“Optimal investment is more likely if minority shareholders are excluded from any gains that a change of control creates and . . . in many cases the optimal investment goal can be achieved at low cost by awarding dissenters the firm's preinvestment market price in appraisal or fairness review proceedings.”); Easterbrook & Fischel, \textit{supra} note 1, at 714-15 (“A requirement that all investors receive at the least the market value of their positions prior to the transactions would be a useful rule-of-thumb for separating beneficial deals from potentially harmful ones.”).

\textsuperscript{14} See WILLIAM A. KLEIN & JOHN C. COFFEE, JR., BUSINESS ORGANIZATIONS AND FINANCE: LEGAL AND ECONOMIC PRINCIPLES 312 (2004) (explaining that “warrants are issued by the corporation while options are ‘side bets’” and that “the warrant is a device created by the firm while the option is a similar device created by the financial market”).

\textsuperscript{15} For attempts to offer a coherent statement of the law, see Robert W. Hamilton, \textit{Private Sale of Control Transactions: Where We Stand Today}, 36 CASE W. L. REV. 248, 249 (1985) (concluding that "it is unlikely that any American court would reject the general proposition that controlling shareholders may obtain a control premium for their shares which they need not share with other shareholders"); Einer Elhauge, \textit{The Triggering Function of Sale of Control Doctrine}, 59 U. CHI. L. REV. 1465, 1532 (1992) (“[I]n a way that has before gone unappreciated, current doctrine effectively triggers either the equal sharing or deregulatory approach, depending on which is best suited for the situation.”); Coffee, \textit{supra} note 3, at 360 (“From a comparative law perspective, however, this consensus may seem surprising, because the United States stands virtually alone in failing to accord minority shareholders any presumptive right to share in a control premium.”).
an offer and those tendered but left out of the pro rata purchase are conferred warrants.\(^{16}\)

Thus, the event triggering the issuance of warrants is the consummation of a change in control that results in a new majority taking over the target’s board of directors, whatever the number of shares of stock necessary to effectuate such a change.\(^{17}\)

Once granted, the warrants may be exchanged for additional shares of stock to be issued for such purpose by the acquired or resulting corporation. The option to convert warrants into shares may be exercised in the course of three years following the close of the merger. Each warrant, in turn, gives title to approximately as many additional (fractions of) shares as to reinstate the warrantholder onto the position she would be in had she tendered all her shares. Nonetheless, target management may object in court to the (ratio of the) conversion by adducing evidence in support of a market explanation for the drop in the postacquistion target price level relative to the price paid for control. The number of additional shares \(a\) to which a given warrantholder is entitled at the time she exercises her conversion option entirely or in part is given by the following formula:

\[
a = \frac{wnk(t - p)}{\text{.}}. \tag{1}
\]

\(^{16}\) A brief description of the pertinent Securities and Exchange Commission (SEC) regulation is in order. In the United States, if a potential acquirer bids for over five percent of a class of voting equity securities of a publicly-traded company, Section 14(d) of the Securities Exchange Act of 1934 and the 11 rules so far promulgated by the SEC thereunder apply. Accordingly, (1) a tender offer has to remain open for at least 20 business days (Rule 14e-1(a)); (2) it has to be addressed to all shareholders (Rule 14d-10(a)(1)); (3) the best price has to be offered to all (Rule 14d-10(a)(2)); (4) if the offer is oversubscribed, the bidder has to accept shares tendered on a pro rata basis (Rule 14d-8); and (5) the bidder is obligated to disclose, among other things, its plans for the target (Rule 14d-6(a)(2) and Schedule TO). Nevertheless, these rules don’t apply to privately negotiated control block sales because of the private offering exception, provided under §4(1) of the Securities Act of 1933, to the definition of tender offer. Wellman v. Dickinson, 475 F.Supp. 783, 817 (S.D.N.Y. 1979) (“There can be no disagreement that a purely private transaction is not subject to the pre-filing strictures under Section 14.”).

\(^{17}\) The fractional ownership necessary to confer control in any given case depends on factors such as the size of the board, whether its members have staggered terms, the proportion of directors elected by each class of stock, whether election is conducted with straight or cumulative voting, and so forth.
In formula (1): \( w \) is the number of warrants that the warrantholder wishes to exercise; \( n \) is the number of outstanding shares of stock in the acquired or resulting corporation; \( k \) is the proportion of the target’s outstanding stock comprised in the controlling interest such that \( 0 < k < 1 \); \( p \) is the target share current market price at the time the conversion is made; and \( t \) is the tender offer price, or the per-share price paid for the control block, beta-adjusted until the time of the conversion. Formula (1) will be derived below. For now it suffices to note that it yields (under the assumptions discussed below) the number of target shares that equal by and large the present value of all private benefits that the new controller expects to siphon from the acquired enterprise.

To put it differently, the proposed arrangement raises a rebuttable presumption that any shortfall of the postacquisition target share market price in matching the beta-adjusted tender offer (or per-share) price is attributable to the new controller’s diverting private benefits from the acquired company to the detriment of the target noncontrolling stockholders. For that reason, it entitles the target noncontrolling stockholders to compensation by exercising their warrants against the acquired corporation. Because the majority shareholders aren’t bestowed with warrants, the conversion of warrants into shares going to the minority shareholders sets off a dilutive wave into the majority position. That’s to say that the financial burden associated with the dilution is inflicted entirely upon the controlling interest, even though no cash changes hands and target corporate assets are left unimpaired. The bottom line then is that wealth is shifted back to the minority by the amount of the dilution of the majority, that is, by the present value of all expected private benefits of control.
This paper contains two parts. Part I identifies efficiency costs in connection with suboptimal corporate control auctions whose outcome is distorted by the valuable extractability of private benefits’ constituting a nontrivial and idiosyncratic element of the competing bidders’ respective valuations of the target firm. In response, Part II develops a dilution warrants mechanism, hereafter also referred to as the dilution rule, to prevent the incurrence of the identified costs.

I. PRIVATE BENEFITS OF CONTROL

Previous attempts to model efficient and inefficient transfers of corporate control haven’t internalized the preposition that private benefits of control are invariably value destroying. For instance, Kahan posits that control sales should occur if they enhance cash flow benefits, whether or not they boost private benefits. In comparison, for Bebchuk private benefits imply a wasteful transaction unless more than offset by cash flow benefits. This paper, however, takes the sweeping view that any level of private benefits is undesirable per se. Two arguments support that stance. First, private benefits generally thwart financial development from a macroeconomic point of view. And, second, a subset of them, namely those amenable to uncorrelated valuations (such as transfer pricing), may bias the takeover auction in favor of a suboptimal equilibrium.

18 Kahan, supra note 6, at 370 n.2 (“Only minor modifications in the analysis would be required if one regarded private control value as illicit and postulated as the objective of the legal rule to encourage control sales iff [the buyer’s cash flow benefits exceed the seller’s].”).

19 Lucian A. Bebchuk, Efficient and Inefficient Sales of Corporate Control, 109 Q.J. ECON. 957, 965, 963 (1994) (”[N]o assumption is made as to whether the extraction of private benefits dissipates total value or enhances it.”).
A. Private Benefits Thwart Financial Development

In a study involving “393 observations [of control block sales] from 39 countries for the time period 1990 to 2000” 20 Dyck and Zingales found that “[a] one standard deviation increase in private benefits translates into a 67 percent decline in the percent of external equity capitalization/GNP.” 21 The theoretical case is comparably strong. Outside investors will pay less for shares subject to insiders’ extraction of company value, thereby raising the costs of external equity. 22 Financial development, in turn, is positively correlated with economic growth. 23

Concededly, some degree of private benefits extraction might be necessary to induce a controlling stockholder to hold a nondiversified position and perform a monitoring function (and such monitoring function may reduce managerial agency costs). 24 Nevertheless, the existence of large controlling stockholders in public corporations isn’t consistent with the ideal of an egalitarian society, in which the marginal value of money to the average individual is maximized. Consequently, any rule

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20 Dyck & Zingales, supra note 7, at 546 (finding that higher private benefits of control are associated with less developed capital markets, more concentrated ownership, and more privately negotiated privatizations).

21 Id. at 575.

22 See id. at 571.

23 See Robert G. King & Ross Levine, Finance and Growth: Schumpeter Might Be Right, 108 Q.J. ECON. 717 (1993) (examining eighty countries in the second half of the twentieth century and finding that certain measures of financial development were closely associated with subsequent overall economic growth rates).

24 See Gilson & Gordon, supra note 4, at 785-86 (“Noncontrolling shareholders will prefer the presence of a controlling shareholder so long as the benefits from reduction in managerial agency costs are greater than the costs of private benefits of control.”); Gilson & Black, supra note 5, at 1230 (“[M]inority shareholders would prefer a rule which left some room for self-dealing by a control coalition, but which limited the amount “stolen” by holders of control below the per-share gain from the reduction in agency costs accruing to the minority shareholders.”).
that interferes with changes of corporate control oughtn’t to encourage transactions in which private benefits constitute part of the acquirer’s willingness to pay.

B. Certain Private Benefits Distort Takeover Auctions

This section makes out the case that the subset of private benefits of control to which competing bidders attach varying, idiosyncratic valuations may distort the optimality of takeover auctions, imposing negative externalities on minority shareholders.

1. Revlon and the Takeover Auction

The takeover process is often analogized to an auction.25 The analogy doesn’t denote though that a typical takeover follows a set of formal auction procedures of a particular type,26 be it an open ascending-bid auction (i.e., the so-called English auction), or a sealed-bid one.27 Nonetheless, it might well do so such as in In re RJR Nabisco, Inc. Shareholders Litigation, where the target board of directors issued bidding rules

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25 See, e.g., Cramton & Schwartz, supra note 8, at 28 (“This paper draws on auction theory to evaluate current regulation of the takeover auction. . . . Actual takeovers are too complex and auction theory too undeveloped to permit us to model the takeover auction in its full particularity. Nevertheless, our early results are suggestive.”).

26 See id., at 32 n.10 (“The board is required to "canvass the market" in some fashion and to entertain bids. It is not required to go through a prescribed set of auction procedures.”).

27 See R. Preston McAfee & John McMillan, Auctions and Bidding, 25 J. Econ. Lit. 699, 702 (1987) (“Four basic types are used when a unique item is to be bought or sold: the English auction (also called the oral, open, or ascending-bid auction); the Dutch (or descending-bid) auction; the first-price sealed-bid auction; and the second-price sealed-bid (or Vickrey) auction.”); Paul Milgrom, Auctions and Bidding: A Primer, 3 J. Econ. Persp. 3, 6 (1989) (“In a sealed bid auction, each bidder independently and privately picks a price and offers to buy the goods at that price. The one who bids the highest price wins.”).
specifying a first-price sealed bid auction. Rather, the analogy implies that in competitive takeover biddings economic principles equivalent to those molding formal auctions are at work.

The bid war unraveled by Paramount against Time in *Paramount Communications, Inc. v. Time, Inc.* offers a didactic illustration of a *de facto* auction taking place in the market for corporate control. Such auctions have become more frequent with the Williams Act’s minimum offer period and five percent share accumulation disclosure requirements as well as the Hart-Scott-Rodino Act’s premerger notification requirement. In the same token, the advent of the poison pill gave target

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28 No. 10389, 1989 Del. Ch. LEXIS 9, at *15 (Del.Ch. Jan. 31, 1989) (‘On November 2, the Special Committee issued a press release announcing that it was interested in receiving proposals to acquire the Company. On November 7, the Committee disseminated Rules and Procedures for Submission of Proposals. This provided, *inter alia*, for a deadline of 5:00 p.m. November 18, 1988 for the final submission of bids. The rules specified that “[t]he rules and procedures outlined above are intended to constitute a single round of bidding. Any Proposal should reflect the potential purchasers highest offer.” The Special Committee also stated that it “encourag[ed] proposals that provided to current RJR shareholders a prospect for a substantial common stock related interest in the purchasing entity.”).

29 See Jonathan R. Macey, *Auction Theory, MBOs and Property Rights in Corporate Assets*, 25 WAKE FOREST L. REV. 85, 87 (1990) (“[T]he principal insight of this paper as derived directly from the economics literature of auctions, is that different sorts of assets should be sold in different ways. The application of this insight to the market for corporate control is straightforward but heretofore unrecognized. While an unfettered, English-style, come-one-come-all auction may be the optimal way to transfer control of certain firms, for other companies, shareholders will maximize the value of their shares by utilizing some other selling strategy.”).

30 571 A.2d 1140, 1149 (Del. 1989) (‘On June 23, 1989, Paramount raised its all-cash offer to buy Time's outstanding stock to $200 per share. Paramount still professed that all aspects of the offer were negotiable. Time's board met on June 26, 1989 and formally rejected Paramount's $200 per share second offer. The board reiterated its belief that, despite the $25 increase, the offer was still inadequate. The Time board maintained that the Warner transaction offered a greater long-term value for the stockholders and, unlike Paramount's offer, did not pose a threat to Time's survival and its "culture."’).

31 Although no *Revlon* duty was triggered. See id., at 1151 (“[W]e decline to extend Revlon’s application to corporate transactions simply because they might be construed as putting a corporation either "in play" or "up for sale." . . . The adoption of structural safety devices alone does not trigger Revlon.”).

32 Romano, *supra* note 8, at 156 (“Major federal regulation furthers auctions through the Williams Act's minimum offer period, mandatory withdrawal rights and 5% accumulation disclosure requirements, and the premerger notification, reporting and waiting period requirements of the Hart-Scott-Rodino Act.”).
management more leeway to negotiate on the face of a hostile bid.\textsuperscript{33} So notwithstanding the lack of a quantitative study estimating the statistical significance of \textit{de facto} auctions in takeovers, a model that captures how the competition between bidders for the control of one and the same target affects the dominant equilibrium would do justice to reality.

In addition to the positive argument for the modeling of takeovers as auctions, since the Supreme Court of Delaware’s decision in \textit{Revlon, Inc. v. MacAndrews \& Forbes Holdings, Inc.} in 1985 there is also a prescriptive case.\textsuperscript{34} The court found that “when an auction among active bidders is in progress” \textsuperscript{35} “[m]arket forces must be allowed to operate freely to bring the target’s shareholders the best price available for their equity.” \textsuperscript{36} Moreover, it held that as “it became apparent to all that the break-up of the company was inevitable . . . [t]he directors’ role changed from defenders of the corporate bastion to auctioneers charged with getting the best price for the shareholders at a sale of the company.” \textsuperscript{37} As a result, if there is just one bid outstanding the target board is under a duty to make “a canvas of the market to determine if higher bids may be elicited.” \textsuperscript{38} However, such a duty doesn’t arise where the control block owner, as opposed to the board of directors, negotiates the sale of a controlling interest.\textsuperscript{39} Accordingly, the prescriptive case for modeling the takeover auction applies to tender offers only.

\begin{footnotes}
\item[33] Romano, \textit{supra} note 8, at 156 (“[M]anagement's principal defensive tactic, the poison pill, also promotes auctions, as it permits the board to negotiate the redemption of the pill with a preferred bidder.”).
\item[34] 506 A.2d 173.
\item[35] \textit{Id.}, at 182.
\item[36] \textit{Id.}, at 184.
\item[37] \textit{Id.}, at 182.
\item[38] \textit{Barkan v. Amsted Industries, Inc.}, 567 A.2d 1279, 1287 (Del. 1989).
\item[39] \textit{In re Digex Shareholders Litigation}, 789 A.2d 1176, 1196 (Del.Ch. 2000) (“As Vice Chancellor Lamb observed in \textit{Odyssey Partners, L.P. v. Fleming Co., Inc.}: “Revlon duties do not arise where the directors do not have the power to control the terms on which a sale of the company takes place.” Where, as here, a majority shareholder can block proposed transactions involving a sale of control, the courts will not require
\end{footnotes}
That line of authority has been maintained by the court in subsequent cases.\textsuperscript{40} But the specific outgrowths of the Revlon doctrine fall outside the scope of this paper.

Neither does it revive the overlavish debate over the efficiency of the takeover auction in and of itself.\textsuperscript{41} The point here is rather that the operation of law as well has made of the takeover auction an integral part of the corporate control transaction archetype. To be sure, in modeling the optimality of mergers a vertical comparison between one bidder and one target—much in the way Kahan\textsuperscript{42} and Bebchuk\textsuperscript{43} have done—must be compounded by a horizontal juxtaposition among a plurality of bidders competing for the same target. Especially, one must ask how the possibly differential ability to extract private benefits from the contested firm affects the bidding outcome. That question is germane to the extent that different bidders may garner different surpluses from the transfer pricing a board of directors to engage in a futile exercise, even though the board continues to owe requisite fiduciary duties to its shareholders.’).

\textsuperscript{40} See, e.g., Paramount Communications v. QVC Network, 637 A.2d 34, 44 (Del. 1994) (“In the sale of control context, the directors must focus on one primary objective—to secure the transaction offering the best value reasonably available for the stockholders—and they must exercise their fiduciary duties to further that end.”).

\textsuperscript{41} See, e.g., Ronald J. Gilson, Seeking Competitive Bids Versus Pure Passivity in Tender Offer Defense, 35 STAN. L. REV. 51, 62-66 (1982) (arguing that auctions will more efficiently allocate assets to their most productive users); Lucian A. Bebchuk, The Case for Facilitating Competing Tender Offers: A Reply and Extension, 35 STAN. L. REV. 23, 24-25 (1982) (developing further the point that target shareholder welfare and social welfare are enhanced when management is required, as part of its fiduciary duty, to seek a higher offer); Frank H. Easterbrook & Daniel R. Fischel, Auctions and Sunk Costs in Tender Offers, 35 STAN. L. REV. 1, 21 (1982) (emphasizing that auctions decrease expected returns to potential bidders, and consequently reduce their incentives to monitor agency costs generally); Alan Schwartz, Search Theory and the Tender Offer Auction, 2 J.L. ECON. & ORG. 229, 230 (1986) (making out the case that “auctions reduce the returns to search for mismanaged companies,” and that “the less search there is, the less effective is the takeover sanction in causing managers to maximize share values”); David D. Haddock et al., Property Rights in Assets and Resistance to Tender Offers, 73 VA. L. REV. 701, 718-19 (1987) (“Well-defined property rights control the race by forcing contenders to deal with an owner or agent capable of implementing an internally consistent plan of action. Weakening their property rights by removing shareholders' ability to bargain would open a "common," to be claimed by the first arrival. Facing no resistance, first bidders would be more likely to be the only bidders, since no defense could be used to elicit competing bids.”); Romano, supra note 8, at 160 (“[A] finding of no tradeoff of higher premiums for fewer bids undercuts the position of auction proponents, because it indicates that a policy encouraging auctions may not maximize target revenues either \textit{ex ante} or \textit{ex post}.”).

\textsuperscript{42} See Kahan, supra note 6.

\textsuperscript{43} See Bebchuk, supra note 18.
potential associated with the amalgamation of the target enterprise into their respective mixes of businesses.\textsuperscript{44}

2. A Model of the Takeover Auction

Three assumptions should be expounded. First, the production of cash flows adds value $X$ to the company benefiting all shareholders proportionately; this accretion capitalizes positively on the price of the publicly traded stock. In contrast, the extraction of private benefits of control subtracts value $Y$ from the company to the sole benefit of the controlling stockholders and at the expense of the noncontrolling stockholders; this subtraction impacts negatively the stock price. Hence, the price of the stock reflects the residual difference of $X - Y$, that is, the trading price is “discounted by the capitalized value of the controlling shareholder’s private benefits.”\textsuperscript{45} Second, the applicable legal rules don’t constrain fully the diversion of private benefits by controllers.\textsuperscript{46} Rather, they leave unchecked a baseline level of private value consumption, which justifies the

\textsuperscript{44}See Cramton & Schwartz, supra note 8, at 38 (“A takeover resembles an independent private-values auction when the social surplus that would be produced varies substantially across potential bidders.”).

\textsuperscript{45}Gilson & Gordon, supra note 4, at 787. See Ronald Lease et al., The Market Value of Differential Voting Rights in Closely Held Corporations, 57 J.Bus. 443, 446 (1984) (including a table that suggests that only minority shareholders sell their shares over the market, causing thereby market prices to reflect the price of minority shares (even) in controlled corporations).

\textsuperscript{46}See id., at 788 (“[T]he rules controlling the level of private benefits from operations are the central determinant of the judicial doctrine that controls controlling shareholders; these rules set the level of private benefits that can be appropriately capitalized through sale of control or a freeze-out”); Gilson & Black, supra note 5, at 1234 (“[T]he emphasis on the potential for different levels of private benefits to be taken by purchasers and sellers of control in turn emphasizes the importance of the underlying substantive law governing relations between controlling shareholders and their companies. The more rigorous the substantive law, the less important are differences between controlling shareholders. This suggests that focusing so much academic attention on the equal opportunity aspect of Perlman v. Feldmann may be to allow the tail to wag the dog.”).
existence of control premia relative to the postannouncement target stock price. Third, nonpecuniary, psychic private benefits are excluded because they don’t impose negative externalities on minority shareholders.

So now suppose a market for corporate control where control premia needn’t be shared with minority shareholders. Let A and B be two bidders competing to acquire a controlling interest kn in a target company under the seller S with n shares of outstanding stock (where $0 < k < 1$). A typical bidder will offer a total price $P$ that is less than the value $V$ of kn under its control. The value of kn under A is $V_A = kX_A + Y_A$, and under B is $V_B = kX_B + Y_B$. But the bidder won’t offer a price $P$ that is no more than the value $V_S$ of kn under S given that $V_S = kX_S + Y_S$. Thus, A offers a

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47 See Dyck & Zingales, supra note 7, at 511; Barclay & Holderness, supra note 7, at 379.

48 Assume that precedents such as Perlman v. Feldmann, 219 F.2d 173, 178 (2d Cir. 1954) (“So in a time of market shortage, where a call on a corporation’s product commands an unusually large premium, in one form or another, we think it sound law that a fiduciary may not appropriate to himself the value of this premium.”) and Brown v. Halbert, 271 Cal.App.2d. 252, 272 (1969) (“The rule we have adopted here simply is that the duty of the majority stockholder-director, when contemplating the sale of the majority stock at a price not available to other stockholders and which sale may prejudice the minority stockholders, is to act affirmatively and openly with full disclosure so that every opportunity is given to obtain substantially the same advantages that such fiduciary secured and for the full protection of the minority.”) are put on hold to the extent they imply premium sharing. For an analytic statement of the fairness case for premium sharing, see William D. Andrews, The Stockholder’s Right to Equal Opportunity in the Sale of Shares, 78 HARV. L. REV. 505, 515 (1965) (“[W]hensoever a controlling stockholder sells his shares, every other holder of shares (of the same class) is entitled to have an equal opportunity to sell his shares, or a prorata part of them, on substantially the same terms.”). For a reply, see Victor Brudney, Equal Treatment of Shareholders in Corporate Distributions and Reorganizations, 71 CAL. L. REV. 1072 (1983) (discussing the positive and negative effects of an “equal treatment rule” in internal and third party transactions); Easterbrook & Fischel, supra note 1, at 698 (“We argue . . . that those who produce a gain should be allowed to keep it, subject to the constrain that other parties to the transaction be at least as well off as before the transaction. Any attempt to require sharing simply reduces the likelihood that there will be gains to share.”); 716 (“If . . . minority shareholders may sell on the same terms as the controlling shareholder, bidders may have to purchase more share than necessary, possibly causing the transaction to become unprofitable”).

49 Total price $P$ is the result of the per-share price $p$ multiplied by the number of shares $kn$ offered to be acquired such that $P = pkn$.

50 $X_A$ and $X_B$ represent the total amount of cash flow benefits expected to be produced by the target company under the control of A and B respectively. $Y_A$ and $Y_B$ stand for the total amount of private benefits of control expected to be extracted from the target company by A and B respectively. The variable $k \mid 0 < k < 1$ portends the proportion of outstanding shares comprised in the controlling interest.
price $P_A$ such that $V_S < P_A < kX_A + Y_A$ and $B$ offers a price $P_B$ such that $V_S < P_B < kX_B + Y_B$.

It follows that $P_A$ defeats $P_B$ if and only if $kX_A + Y_A > kX_B + Y_B$.

Rearranging the variables yields

$$k \left( X_A - X_B \right) > Y_B - Y_A. \quad (2)$$

By contrast, if inequality (2) isn’t satisfied, $P_B$ dominates.

An ancillary remark precedes the major point. Inequality (2) implies that the size of the controlling interest at stake, $k$, determines how important the difference in cash flow benefits is relative to the difference in private benefits in determining the dominant equilibrium. Hence, the more dispersed is the shareholding distribution pattern in a given economy, the greater the relative importance of private benefits in determining the winning bidder—and the more pressing the need to deter the consumption of private benefits of control.

To see the major point, let bidder $A$ be more efficient than bidder $B$ such that $k \left( X_A > X_B \right)$ and $B$ be keener than $A$ to extract private value such that $Y_B > Y_A$. Now suppose $B$ makes a higher bid such that $P_B > P_A$ because $Y_B$ is so much greater than $Y_A$ as more than to offset the amount by which $kX_A$ exceeds $kX_B$. In other terms,

$$Y_B > kX_A + Y_A - kX_B. \quad (3)$$
Every time inequality (3) is satisfied, such that the less efficient controller $B$ casts the higher bid, a suboptimal control transfer occurs. This doesn’t mean that the target’s noncontrolling stockholders are necessarily worse off as control changed hands from the seller $S$ to the buyer $B$. They might well be better off under $B$ than they were under $S$. The equilibrium only implies that they aren’t best off because they’d have been even better off had control wound up with the more efficient controller $A$ instead of $B$.

3. Appraisal Rights and the Takeover Auction

This point follows immediately from the preceding one. Appraisal rights, while making sure that the target’s noncontrolling stockholders are (at least marginally) better off under the buyer $B$ than they were under the seller $S$, aren’t the least guarantee that they’re best off—or that the optimal allocation of corporate assets (under the circumstances) has eventuated. Indeed, from a normative standpoint appraisal remedies confer the target’s dissenting shareholders no more than the market price of their shares before the acquirer invested any effort in the target firm. Nevertheless, they obviously

51 See, e.g., Michael Barclay & Clifford Holderness, The Law and Large Block Trades, 35 J.L. & ECON. 265, 392 (1992) (“We provide evidence from seventy-eight trades of large-percentage blocks of exchange-listed firms between 1978 and 1982 that are priced at premiums to the postannouncement exchange price. From six months before to one year after the initial announcement of these trades, stock prices on average increase by 25 percent.”).

52 See Hermalin & Schwartz, supra 12, at 370, 365 (arguing that “the Delaware rule, which awards dissenters only the preinvestment value of their shares, is preferable to the New York and American Law Institute rules, which also would award to the minority a share of the gain that the going private transaction creates.”); Easterbrook & Fischel, supra note 1, at 731-32 (“These minimum payments, codified in most states by the appraisal statute, require that shareholders receive the equivalent of what they give up but do not require sharing of the gain from the change in control.”). The Delaware General Corporation Law, Section 262(h), provides that the court “shall appraise the shares, determining their fair value exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation.” For the New York rule, see New York Business Corporation Law § 623(h)(4); and Alpert v. 28 Williams Street Corp., 63 N.Y.2d 557, 571 (1984) (“Elements of future value arising from the accomplishment or expectation of the merger which are known or susceptible of proof as of the date of the merger and not the
have no consideration for the fact that as between competing bidders their respective bids might not accurately have reflected their ability to generate cash flows in connection with their investments of effort. Finally, the ideal of the market standard, as opposed to the sole owner standard, may not be implementable without some measure of regulation, namely, one that eliminates elements of private value from the competing bidders’ respective valuations of the target enterprise.

4. The Costs of a Distorted Takeover Auction

If a takeover auction distorted by the valuable extractability of private benefits of control from the target may be suboptimal, the ensuing efficiency costs are the expected costs associated with the probability of the wasteful equilibrium’s dominating. Recall that the wasteful equilibrium is the one that satisfies inequality (3). Suppose that it

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53 See Schwartz, supra note 1, at 165 (“The market standard holds that any offer above the target's prebid market price should succeed. According to the efficient-market hypothesis the prebid market price is the present discounted value of the target's future earnings under current management. A bid above the market price implies that the bidder can increase these earnings, if bidders are informed, rational, and maximize profits. An increase in earnings from the same assets is an increase in welfare. Hence, any bid price that induces tender is fair, if economic efficiency is the standard by which the fairness of a transaction is measured.”).
54 See Lucian A. Bebchuk, The Sole Owner Standard for Takeover Policy, 17 J. LEGAL STUD. 197, 197-98 (1988) (“The term “sole owner” is appropriately attached to the standard because the objective underlying it is to establish in the corporate acquisition context a mechanism that parallels the one operating in the sole owner context. Because the law conditions the acquisition of a sole owner’s assets on his consent, such an acquisition would take place if and only if the owner views the offered price as higher than the value to himself of retaining his assets. According to the proposed standard, the dispersed shareholders of a target should be able to follow the same course of action that a sole owner would”).
obtains at probability $\pi$ such that $0 < \pi < 1$. It follows that the attendant expected efficiency costs are:

$$C_\pi = \pi (Y_B - Y_A + kX_A - kX_B).$$  \hfill (4)

This paper’s goal is to save $C_\pi$ by hanging a stick (not a carrot) over bidders who are willing to pay extra in the prospect of getting a return on their investment in part through consuming private benefits of control. Nonetheless, by preventing $Y_B$ and $Y_A$, but not $Y_S$, that is, the private benefits extracted from the target by the seller $S$, the dilution rule will overdeter efficient transactions if and only if \footnote{Recall that the bidder $A$ is more efficient than the bidder $B$. So in a world without private benefits of control, $Y$, $P_A$ dominates $P_B$ every time.}

$$Y_S > kX_A - kX_S. \hfill (5)$$

Whenever inequality (5) is satisfied, a potentially efficient control transfer won’t come into being in a world in which potential acquirers don’t pay premia for private benefits (i.e., the efficient world). \footnote{See Gilson & Black, supra note 5, at 1231 ("[T]he holders of control, already having been given a disproportionate share of the corporation’s income because it was to the minority shareholders’ advantage to encourage the formation of a control coalition, would not sell their shares except at a premium which reflected the capitalized value of that disproportionate share.").} Because existing controllers typically do consume some undetectable level of private benefits, \footnote{See Dyck & Zingales, supra note 7, at 511; Barclay & Holderness, supra note 7, at 379.} inequality (5) will be satisfied at some nontrivial probability $\lambda$. Thus, the expected costs of the efficient world are:
\[ C_\lambda = \lambda (kX_A - kX_S + Y_S). \]  

(6)

It’s difficult to determine probabilities \( \pi \) and \( \lambda \). Therefore, in lieu of making an \textit{ex ante} judgment about the relative expected costs \( C_\pi \) and \( C_\lambda \), an \textit{ex post} assessment is delegated to the target’s noncontrolling stockholders. Stated differently, the shareholders can opt out of the default dilution rule after the transaction is announced if and only if \( C_\pi < C_\lambda \) or, alternatively,

\[ Y_B - Y_A - kX_B < Y_S - kX_S. \]  

(7)

II. DILUTION WARRANTS

To save the efficiency costs \( C_\pi \) whenever \( C_\pi > C_\lambda \), this paper proposes a dilution warrant mechanism.\(^{58}\) The mechanism was described in general strokes in the introduction to this paper. In this Part, it’ll be taken apart and its constituent pieces analyzed.

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\(^{58}\) For similar mechanisms, see Barry E. Adler & Ian Ayres, \textit{A Dilution Mechanism for Valuing Corporations in Bankruptcy}, 111 \textit{Yale L.J.} 83, 96-112 (2001) (“Our dilution mechanisms are directly inspired . . . by the Daines and Hanson analysis. Daines and Hanson suggested that target managers should be allowed to resist tender offers only if they were willing to post a “resistance bond”—a promise to compensate their shareholders for any shortfall in stock value (at some certain future date) relative to the tender offer price.”); Robert M. Daines & Jon D. Hanson, \textit{The Corporate Law Paradox: The Case for Restructuring Corporate Law}, 102 \textit{Yale L.J.} 577, 622-24 (1992) (“Under our liability rule, recall, Target’s management can prevent a takeover so long as it guarantees that target shareholders will be as well off at \( T_2 \) as they would have been had they been permitted to tender at \( T_1 \).”)
A. The Rebuttable Presumption of Private Benefits

The dilution rule raises a rebuttable presumption that any shortfall of the postacquisition target share market price in matching the beta-adjusted tender offer price, or the beta-adjusted per-share price paid for the control block, is attributable to the acquirer’s extracting private benefits of control from the acquired firm. In turn, the acquired or resulting corporation, as represented by its management presumably under the agency of the new controllers, may rebut the presumption by proving that such shortfall is actually attributed to reasons other than the extraction of private benefits, such as an unanticipated drop in sales.

The big idea is that the acquired company ought to incur liability for having its new controllers divert company value, not for being less efficient than expected. Additionally, the target management has the opportunity to show that the beta-adjustment factor hasn’t made up for every (negative) broader price movement in the stock market, underdiscounting the tender offer (or per-share) price. At last, as soon as the target management discharges that burden of persuasion, the dilution warrants that were exercised expire.

The opportunity to rebut the presumption arises every time one or more dilution warrants are exercised by one or more target noncontrolling stockholders who held on to their shares partially or entirely in spite of the tender offer and the subsequent merger. Dilution warrants, however, aren’t triggered with respect to those shares to which the tender offer was extended and turned down. Otherwise, the dilution rule would render the decision whether to tender meaningless. Illustratively, if a tender offer is made for
one third of every stockholder’s shares (under the pro rata requirement of SEC Rule 14d-8), dilution warrants are triggered solely with respect to the remaining two thirds, left out of the prorated public bid. On the other hand, if the case concerns a block sale instead of a tender offer, all of the target’s noncontrolling stockholders will be granted dilution warrants in proportion to their shareholdings.

B. The Effect of a Total Bid

A bid directed at the totality of the target’s shares disables the dilution rule. A total bid, however, is likely to be more costly to the bidder than a partial one subject to the dilution rule, simply because the dilution warrants might not be triggered. In fact, the widespread adoption of the dilution rule could function as a cost-effective alternative to the mandatory bid rule (for jurisdictions that insist in having it) in so far as the dilution rule protects minority shareholders against suboptimal control transactions with lower social costs. At any rate, a total bid would eradicate any negative externality entailed

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59 See supra note 15.

60 For a game-theoretic statement of the case for the inefficiency of the European mandatory bid rule, see Simone M. Sepe, Private Sale of Corporate Control: Why the European Mandatory Bid Rule is Inefficient, SIENA MEMOS AND PAPERS ON LAW AND ECONOMICS 51-52 (2006), available at http://www.cleis.unisi.it/site/node/12 (“On the one side, the [mandatory bid rule] fails to protect minority interests. Indeed, the rule does not prevent the expropriation of private benefits of control. . . . On the other, the [mandatory bid rule] reduces corporate wealth by preventing a large number of value increasing transactions from taking place. . . . Finally, the rule may lead to further increase in corporate ownership concentration, with the result of decreasing corporate contestability.”). See also Modesto Carvalhosa, The Brazilian Experience with Respect to Tender Offers, 3 J. COMP. CORP. L. & SEC. REG. 103 (1981) (discussing the regulation of tender offers in Brazil); Deborah A. DeMott, Comparative Dimensions of Takeover Regulation, 65 WASH. U. L.Q. 69 (1987) (discussing takeover regulations in the U.S., Great Britain, Canada, and Australia); Ruth Luttmann, Changes of Corporate Control and Mandatory Bids, 12 INT’L REV. L. & ECON. 497 (1992) (arguing that the mandatory bid rule may lead to corporate ownership concentration).
by the consumption of private benefits since no target shareholder would choose to hold on to their target shares without being compensated for any expected value diversion.  

C. The Maturity of the Warrants

The dilution warrants may be exercised at any time in the course of three years following the close of the merger. Admittedly, the public announcement of an acquisition is impounded immediately into stock prices in a semistrong efficient market. In a study based on “a sample of 101 stocks listed on the New York and American Stock Exchanges and 93 stocks traded on the Over-the-counter Market with announcement dates ranging from 1975 through 1978” Keown and Pinkerton found that “[t]he market does appear to adjust immediately to the first public announcement of the planned takeover” and that the market reaction “is complete by the day after the announcement.”

However, such piece of evidence doesn’t suggest that the market won’t make further adjustments in the target’s stock price many months after the merger once more accurate data is generated better to assess the acquirer’s business plan. To say that the

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61 A similar supposition appears to be implicit in Bebchuk’s model. See Bebchuk, supra note 18, at 968.
62 A semistrong efficient market is a market in which “an investor cannot earn abnormal profits by trading on the information after its release.” Sanjai Bhagat & Roberta Romano, Event Studies and the Law: Part I: Technique and Corporate Litigation, 4 AM. L. & ECON. REV. 141, 143 (2002). About 226 academic financial economists “feel that, by and large, financial markets are efficient” in the United States. Ivo Welch, Views of Financial Economists of the Equity Premium and on Professional Controversies, 73 J. BUS. 501, 523 (2000) (reporting on a survey of financial economists). But there must be an unrelenting opportunity for arbitrage to induce investors to search for and trade on mispricing—an equilibrium level of inefficiency, see Stanford Grossman & Joseph Stiglitz, On the Impossibility of Informationally Efficient Markets, 70 AM.ECON.REV. 393, 393 (1980) (“We propose here a model in which there is an equilibrium degree of disequilibrium: prices reflect the information of informed individuals (arbitrageurs) but only partially, so that those who expend resources to obtain information do receive compensation.”).
64 Id. at 866.
market is so efficient as to process (or even prophesy) all the information possibly bearing on a change of control in one day (namely, the day of the first public announcement of the acquisition) would be tantamount to making out the case for the market irrationality.\textsuperscript{65} Particularly, the choice of a three-year maturity for the dilution warrants is predicated on the assumption that three years provide a reasonable time frame: one, for the market to evaluate new management and its ability to generate cash flows at levels compatible with the tender offer (or per-share) price; and, two, for the acquirer to be discouraged from the temptation temporarily to manipulate stock prices in order to avoid triggering the dilution warrants.

\textit{D. The Beta Adjustment}

The prerogative effectively to exercise dilution warrants at any time within the three years of the merger is enabled by the constant beta adjustment of the tender offer price, or the per-share price paid for the control block.\textsuperscript{66} Thereby the tender offer price, or the per-share price, doesn’t remain static throughout the three years. Rather, it floats up and

\textsuperscript{65} See Hermalin & Schwartz, \textit{supra} note 12, at 368 (“We do not recommend giving dissenters the prebid market price, however, but rather the market price for minority shares that obtains after the takeover succeeds but before the investment is made.”); JAMES LORIE ET AL., THE STOCK MARKET: THEORIES & EVIDENCE 55-75 (2d ed. 1985), \textit{reprinted in} RONALD J. GILSON & BERNARD S. BLACK, THE LAW AND FINANCE OF CORPORATE ACQUISITIONS 143-44 (1995) (“It is important to note that at the time of the first public announcement of the acquisition, the transaction’s outcome is unknown. In many cases, the first offer is followed by higher competing offers from other bidders and higher revised offers by the same bidder. In other cases, the transaction fails, and the stock price falls dramatically when the failure is announced.”).

\textsuperscript{66} See Adler & Ayres, \textit{supra} note 57, at 98 n.37 (“It probably would be useful to use a beta-adjusted stock price. If the general stock market had gone up 10% since the tort and if the rival’s stock had a beta of 1.2, then (ignoring dividends for the moment) Gates should be required to pay in money until the rival’s stock price exceeds 112% of its price just before the tort was inflicted.”).
down in tandem with the wider market fluctuation, as determined by the target’s beta. 67

The target’s beta measures, on the basis of historical trends, the relative coefficient by which the target’s stock reacts to a percentage change in a broad market index such as the Standard & Poor’s 500. 68 The beta is derived from the slope of a best-fit straight line in a scatter plot in which the daily or monthly returns on the target’s stock are plotted against the returns on the S&P 500 Index. 69 Accordingly, if the target’s beta amounts to, say, 1.4, every time the reference index rises or drops by 10% the tender offer price, or the per-share price, rises or drops correspondingly by 14%. 70

The simple idea behind the beta is to exclude systematic, market variation and separate out idiosyncratic risk, specific to the target. 71 It’s true that idiosyncratic risk isn’t a pure measure of private benefits, since it’s also affected by cash flow benefits. Nevertheless, the extent to which the separated-out idiosyncratic variation reflects changes in cash flow benefits falls upon the target’s management to show, in order to rebut the presumption raised by the exercise of dilution warrants.

67 See Franco Modigliani & Gerald Pogue, An Introduction to Risk and Return: Concepts and Evidence (Part I), FIN. ANALYSTS J. 68, 76-79 (Mar.-Apr. 1974) (“The beta factor is a market sensitivity index, indicating how sensitive the security return is to changes in the market level.”).

68 The stock index acts as a proxy for the underlying economic factors that cause the market to rise or fall. RONALD J. GILSON & BERNARD S. BLACK, (SOME OF) THE ESSENTIALS OF FINANCE AND INVESTMENT 100 (1993).

69 Id.

70 The beta coefficient is derived from the Capital Asset Pricing Model. For a discussion of the model, see RICHARD A. BREALEY ET AL., PRINCIPLES OF CORPORATE FINANCE 189-99 (2006) (the model’s message is that “[i]n a competitive market, the expected risk premium varies in direct proportion to beta”).

71 See Daines & Hanson, supra note 57, at 624 n.219 (“That possibility is one that can, to some degree, be contracted around with the aid of event studies which can control for non-firm-specific changes in market price.”).
E. The Market Sector

The reference index (for the calculation of the target’s beta) may include a market sector adjustment factor if an industry-specific index isn’t readily available. Being such the case, the potential target corporation may elect *ex ante*, by means of a provision or amendment to its by-laws, certain similarly-situated trading stocks whose weighted average serves as a guide to how its market segment is faring. The incentive on the target management’s part to put forth such an amendment, or on the promoters’ part to estipulate it *ab novo*, originates from the fact that a company with a clearer dilution rule may be more valuable *ex ante* than one without.\(^{72}\) Nonetheless, if the target makes such election, *ex post* it may not allege that the self-tailored adjustment factor fails accurately to reflect the industry’s variation.

F. Dilution Warrants and Endogeneity

Even though the beta adjustment is needed to discount systematic risk, a similar mechanism isn’t necessary to avoid endogeneity.\(^{73}\) Indeed, market approaches to judicial valuation often suffer from a kind of circularity: “The court would be looking to the market price to calculate damages, but the market price would be trying to capitalize,

\(^{72}\) See Jeffrey N. Gordon, *The Mandatory Structure of Corporate Law*, 89 COLUM. L. REV. 1549, 1556 (1989) (“[I]n the case of the initial choice of rules at \(t = 0\), absolute contractual freedom should apply, since the promoters, not the purchasing shareholders, bear the full costs of features that are undesirable from the investor’s point of view.”).

\(^{73}\) Such as carve-out, separately tradable rights. See Adler & Ayres, *supra* note 57, at 98 n.39 (“Carving out separately tradeable rights destroys the circularity problem because the price of the stock itself would no longer reflect the expected value of litigation.”).
among other things, the expected court damages.” However, that problem doesn’t exist where the amount to be paid is decreasing in the target stock market price, that is, the higher the value of the target’s equity the lower the value of the warrants. Thus, the very structure of how the warrant price is calculated renders counter-effective any attempt to capitalize any expected payment because it would itself bring about a lower payment.

G. Control Premia and Private Benefits

The core assumption behind the dilution rule is that a shortfall of the postacquisition target share market price in matching the beta-adjusted tender offer (or per-share) price may be owing to the circumstance that the acquirer is expected (by the market) to extract private benefits of control from the acquired company, or has in fact been doing so. The logic is straightforward: Why would the acquirer pay, say, $120 for a share of stock it could dispose of for no more than $100? Dyck and Zingales made the point:

74 Adler & Ayres, supra note 57, at 97. See also Daines & Hanson, supra note 57, at 622 (“However, the problem with tying the bonder's obligation to market price is that stock market prices will, once there has been resistance bonding, reflect more than just shareholders' estimates of the firm's value . . . .”); FRANK H. EASTERBROOK & DANIEL R. FISCHEL, THE ECONOMIC STRUCTURE OF CORPORATE LAW 154 (1991) (“The principal difficulty with relying on market price . . . [is that] the price may have been influenced by the transaction [at issue] . . . .”); Janet C. Alexander, The Value of Bad News in Securities Class Actions, 41 UCLA L. REV. 1421, 1435 (1994) (“The existence of a securities class action lawsuit can itself affect the value of the firm's shares.”); Stephen Fraidin & Peter Golden, The Value Assurance Plan: A Pill Without Poison, N.Y.L.J., August 11, 1986, at A1, 38-39 (Mayflower's “Value Assurance Plan” stipulated that "if the value of [target] shares does not equal a . . . price equal to $75 more than the Laidlaw offer price (as increased by interest to compensate for the passage of time) during the two-year life of the plan, Mayflower [would] be required to pay the difference between the target price and the value of the stock.”).

75 See Gilson & Black, supra note 5, at 136 (“[I]f market prices are semistrong efficient, buying a public company, at a premium to the target’s maker price, makes sense only if: (i) the acquisition will increase the combined cash flows to the shareholders of the bidder and target, or reduce the systematic risks associated with those cash flows; or (ii) the acquirer has private information about the target’s expected cash flows or
there are two methods to try to assess empirically the magnitude of private benefits of control. The first one, pioneered by Barclay and Holderness (1989), is simple. Whenever a control block changes hands, they measure the difference between the price per share paid by the acquirer and the price quoted in the market the day after the sale’s announcement. This difference (which we shall call the control premium) represents an estimate of private benefits of control enjoyed by the controlling party.76

Barclay and Holderness offered a seminal formulation of the idea:

If all shareholders receive corporate benefits in proportion to their ownership, large-percentage blocks will trade at the exchange price, or at a discount if blockholders incur costs that others do not. If, on the other hand, large-block shareholders anticipate using their voting power to secure benefits unavailable to other shareholders, the blocks will trade at a premium to the exchange price. In short, we argue that because the exchange price reflects the value of corporate benefits that accrue to all shareholders in proportion to their fractional ownership, any difference between the block price and the exchange price reflects benefits that accrue to the blockholder alone—the private benefits from control.77

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76 Dyck & Zingales, supra note 7, at 542.
77 Barclay & Holderness, supra note 7, at 372.
1. Bargaining, Competition, and Private Benefits

The control premium (computed on the basis of the postannouncement target stock market price) frequently understates, but never overstates, the private value the acquirer expects to extract from the target. If the buyer were to pay the seller the entire differential private value, $Y_B - Y_S$ (determined on the basis of the expected present value of all future private benefits enjoyable by the buyer), the buyer would be indifferent to carrying out the transaction absent transaction costs and other things holding equal. Nevertheless, it might well be that the buyer’s ability to funnel private benefits of control doesn’t exceed that of the seller ($Y_B \leq Y_S$). In such case, the control premium effects an accurate estimate of private benefits since the bargain will play out solely with respect to the differential cash flow value ($kX_B - kX_S$). Now there being differential private value, the extent to which the control premium constitutes an accurate estimate depends on the structure of the market for corporate control: the more competitive is the auction for the target, the higher the proportion of the differential private value that will wind up with the seller.

Three additional factors may tip the bargaining equilibrium in favor of the seller. First, *Revlon* makes it more likely that there will be a competitive bidding and, hence, that the control premium will realize an accurate estimate of private benefits. Second, “the availability of defensive tactics ensures targets a much larger share of the surplus

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78 $Y_B$ and $Y_S$ represent total private benefits of control under the buyer and the seller respectively.

79 $kX_B$ and $kX_S$ represent proportional cash flow benefits under the buyer and the seller respectively.

80 For a formal bargaining model, see Dyck & Zingales, supra note 7, at 543-44.
from acquisitions than bidders get.”

Third, the ideal of the sole owner standard entails a better approximation of the magnitude of private benefits of control because the sole owner, as opposed to “a fluid aggregation of unaffiliated stockholders,” theoretically gets a larger portion of the winning bidder’s surplus in a bargaining game with many bidders.

2. The Empirical Evidence

The postannouncement target share market price’s falling short of the per-share price paid for a controlling interest constitutes an empirically significant phenomenon. Dyck and Zingales compiled a sample of 393 control block transactions between 1990 and 2000 in 39 countries. The median control premium as percent of firm equity has averaged 11% in the entire sample. It has proven positive in all but four countries—United Kingdom, Taiwan, South Africa, and Japan (-1%)—and in 16 it has exceeded 10%. Especially, the median control premium has amounted to 2% in the United States (based on 46 transactions), 11% in Germany (17 transactions), 16% in Italy (eight), 47%

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81 Hermalin & Schwartz, supra note 12, at 368.
83 For an extensive statement of the sole owner standard’s implications in takeovers, see Bebchuk, supra note 11, at 1701 (“Let us now return from the sole owner context to that of the public corporation. What the undistorted choice objective suggests is that we should enable a target's dispersed shareholders to act as a sole owner would be likely to act. When the shareholders judge the offered acquisition price to be lower than the independent target's value . . . then the acquisition offer should be rejected; in such a case, efficiency would likely be served by having the target remain independent.”).
84 The magnitude of the variable “block premia as a percentage of the value of equity” is computed as “the difference between the price per share paid for the control block and the price on the Exchange two days after the announcement of the control transaction, divided by the price on the Exchange after the announcement and multiplied by the proportion of cash flow rights represented in the controlling block.” Dyck & Zingales, supra note 7, at 547.
in Mexico (five), and 49% in Brazil (11). In the Czech Republic, a control transaction with a 217% premium was observed; and in Turkey one with 141%.\(^85\)

The United States has experienced higher control premia between 1978 and 1982. On the basis of 63 block trades, Barclay and Holderness concluded:

We document that trades of blocks involving at least 5% of the common stock of NYSE- and Amex-listed corporations are typically priced at substantial premium to the post-announcement exchange price. The average premium is 20%, which represents approximately 4% of the total value of the firm’s equity. These results call into question the widely held assumptions that shareholders are homogeneous and that corporate benefits are distributed to shareholders in proportion to their fractional ownership. Instead, the block premiums suggest that large-block shareholders typically use their voting power to secure private corporate benefits that do not accrue to other shareholders.\(^86\)

Neither the Dyck and Zingales nor the Barclay and Holderness sample includes tender offers, not involving block sales. But no theoretical reason for a different pattern appears plausible. A tender-offeror may well share with the tender-offerees part of its differential private value as a comparative advantage in the bidding contest. In fact, data on

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\(^85\) Dyck & Zingales, supra note 7, at 551.

\(^86\) Barclay & Holderness, supra note 7, at 394.
takeovers in France revealed that premia in block deals were substantially lower than those paid in tender offers.\textsuperscript{87}

\textbf{H. Dilution Warrants as Call Options}

The dilution rule assigns target noncontrolling stockholders call options to buy (back) the corporate value (expected to be or actually) diverted away by the new controller—which value is embodied in shares of stock to be issued by the acquired company. Thus, the target noncontrolling stockholders are the option buyers, while the acquired or resulting corporation is the option writer.\textsuperscript{88} To purchase the options, the target noncontrolling stockholders must pay the option premium. The option premium consists of the transaction costs associated with voting down the management-proposed shareholder resolution to opt out of the dilution rule with respect to the pending tender offer or block sale, as will be explained below. Once purchased, the option holders may exercise the options on or before three years as of the close of the merger—the expiration date. At the time they exercise the options, the option holders subtract the strike price. The strike price amounts to the target share prevailing market price at that time they’re exercised, as expressed is formula (1) to be derived below.

Option holders will exercise their options if the options are in the money and at the time their exercise value reaches, in their judgment, the highest possible level in the

\textsuperscript{87} B. Espen Eckbo & Herwig Langohr, \textit{Information Disclosure, Method of Payment, and Takeover Premiums: Public and Private Tender Offers in France}, 24 J. Fin. Econ. 363, 397 (1989) ("We find that the average premium over the pre-offer price in private bids after 1970 is 27%, which is significantly lower than the 73% average in public offers.").

foreseeable future. The exercise value roughly corresponds to the amount by which the beta-adjusted tender offer price, or per-share price paid for the control block, exceeds the target share current market price, with some adjustments contained in formula (1) explained below. As the options are exercised, they’re paid off in stock issued by the acquired company solely to the target noncontrolling stockholders. Thereby they have the effect of diluting the controlling interest and shifting value (and voting power in the case of voting common stock) back to the noncontrolling interest—at whose expense private benefits were (expected to be or actually) extracted by the new controller in the first place. Nonetheless, the acquired company isn’t bound to issue new shares of stock in payment of the exercised options until the control transaction is consummated. Last but not least, once half of the outstanding options have been exercised, all remaining options are deemed exercised to avoid penalizing the unwary shareholders.

I. The Warrants and Their Dilutive Effect

As warrants are exercised, new shares of stock are issued by the acquired or resulting corporation (assuming the issuance of additional shares has been properly authorized). Neither cash nor other property is poured into the issuing company to back the new issue of stock. It follows that the issuing of new stock causes diminution in the value of the stock already outstanding. The logic is self-evident. Shares of stock are nothing but fractional claims on the assets contributed to, and accumulated by, the corporation by whom they’re issued. As such, shares have no value of their own, independent of the corporate assets on which they lay claim. Hence, the more
(additional) stock is issued—corporate assets staying the same—the less each share’s proportionate claim on the firm assets. Because converting warrants into additional shares of stock brings about dilution, the warrants that are part of the mechanism this paper proposes are called dilution warrants.

However, the dilution—that is, the diminution in the fractional claim on corporate assets—is in effect inflicted exclusively upon those to whom additional shares of stock are not issued, namely, the acquirer or new controller. More precisely, it is true that the dilution of the value of each share of stock affects all shareholders proportionately with their fractional ownership. Nevertheless, minority shareholders are contemplated with as many shares as necessary financially more than to offset the nominal dilution. Therefore, the financial burden associated with the dilution is imposed entirely on the controlling shareholders—to whom no additional stock is issued. The advantage of a mechanism that promotes wealth redistribution at the fractional ownership level, as opposed to one that simply pays out money or issues bonds to minority shareholders, is that it leaves unimpaired the (productive) assets of the acquired enterprise.

The advantage of a mechanism that promotes wealth redistribution at the fractional ownership level, as opposed to one that simply pays out money or issues bonds to minority shareholders, is that it leaves unimpaired the (productive) assets of the acquired enterprise.\textsuperscript{89}

\textsuperscript{89} By leaving unimpaired the productive assets of the firm \textit{inter alia}, this paper differs from Bebchuk’s:

“While prohibiting immediate takeouts below the bid price would not ensure equality between the post-takeover value of minority shares and the bid price, one might still seek to ensure such an equality by adopting supplemental or alternative measures. Such equality could be ensured, for example, by providing minority shareholders in the aftermath of a takeover with the option of redeeming their shares at the bid price.” Bebchuk, \textit{supra} note 11, at 1740.
J. Deriving Formula (1)

Formula (1) constitutes the centerpiece of the dilution warrants mechanism. Deriving it in three different steps reveals: one, the relationship between the beta-adjusted tender offer (or per-share) price and the target current market price; two, the precise sum of wealth which is to be shifted around by means of dilution; and, three, how it corrects the problem that the more (additional) shares are issued the more (additional) shares have to be issued to offset nominal dilution and shift a constant amount of wealth around—the so-called compounded, or geometric dilution problem.

Step one starts with the gross exercise value of each warrant. The gross exercise value $v_{ge}$ is arrived at by subtracting the target’s (i.e., the acquired or merged corporation’s) prevailing share market price at the exercise time, $p$, from the beta-adjusted tender offer price, in the case of a public tender offer, or the beta-adjusted per-share price paid for the controlling interest, in the case of a private block sale, $t$. Accordingly, the gross exercise value is given by

$$v_{ge} = t - p.$$  \hfill (8)

The gross exercise value $v_{ge}$ floats on the market for two reasons. First, $p$ is the daily trading price of the target’s share of stock. And, second, $t$ is beta-adjusted in tandem with the reference index. Ex ante the higher the control premium relative to the postannouncement target share market price, the more in the money is the warrant. Nevertheless, ex post the warrantholder will exercise the conversion option on the day on
which she believes the target’s share reaches its bottom-end price relative to the stock market average in the three-year period starting of the consummation of the acquisition.

To exercise her warrants, the warrantholder needs just answer two simple questions: first, whether the share price is below the tender offer (or per-share) price (she may even ignore the beta adjustment impact here); and, second, whether that particular share price is, in her judgment, the lowest possible price relative to the stock market average (but here the beta adjustment impact becomes significant) within three years of the issuance of the warrants. Equation (8) constitutes the only variable term of formula (1). All the rest may be thought of as a constant term, making some adjustments. Therefore, equation (8) is all that the warrantholder has to worry about.

Step two makes one first adjustment to the gross exercise value. The intuition is that the tender offer (or per-share) price bidden by the acquirer is calculated on the basis of the controlling interest to be acquired, \( kn \); whereas, the dilution warrants are granted to members of the noncontrolling interest, \( (1 - k)n \).\(^90\) Further, the financial loss the dilution warrants are to cause the controllers is supposed be compensatory rather than punitive in purpose. In other words, the loss to the controllers cannot exceed the present value of all private benefits they (are expected to or actually have) extracted from the target firm at the expense of the noncontrollers. It follows that to avoid overcompensation one must multiply the tender offer (or per-share) price by the number of shares comprised in the controlling interest at stake, \( pkn \), and divide the resulting total by the number of warrants issued \( (1 - k)n \). This goal is achieved by multiplying equation (8) by the constant term \( k(1 - K) \) yielding

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\(^90\) By definition, the controlling interest \( kn \) encompasses all those shareholders to whom a bid was extended. Then, by exclusion, the remainders compose the noncontrolling interest \( (1 - k)n \), to whom warrants were granted.
\[ v_{age} = k ( t - p ) ( 1 - k ). \] (9)

Recall that \( k \mid 0 < k < 1 \) is the proportion of the outstanding shares \( n \) that are comprised in the controlling interest \( kn \) at stake. Then the effect of adjustment (9) is to provide that the wealth shifted from the majority shareholders to the minority shareholders through dilution doesn’t exceed the present private value to be diverted by the majority shareholders at the expense of the minority shareholders. Accordingly, the dilution mechanism cannot be charged as promoting unjust enrichment.

Step three makes the second and final adjustment to the adjusted gross exercise value provided in (9). The idea here is to correct the compounded or geometric dilution problem referred to above: the more shares are issued the more shares have to be issued to shift one and the same unit of wealth around, holding corporate assets constant. To accomplish that goal, two working assumptions are necessary. First, every time a warrantholder exercises her warrants it’s assumed that all warrants \( ( 1 - k ) n \) are exercised. And, second, if the exercising warrantholder exercises her warrants at the strike price \( p \) it’s assumed that all warrants \( ( 1 - k ) n \) are exercised at the price \( p \). To the extent these two rigid assumptions don’t compromise accuracy, the number of additional shares \( a \) needed to shift around value \( v \) to a warrantholder exercising a number of warrants \( w \) is

\[
a = \frac{wvn}{( 1 - k ) np - v}. \] (10)
If the value \( v \) to be shifted around is that given by equation (9), to arrive at the number of additional shares \( a \) to which a warrantholder is entitled, equation (9) is substituted into equation (10). Then simplifying and rearranging the variables yields

\[
a = \frac{wnk(t - p)}{np - k(t - p)}.
\]

(1)

K. An Opt-out Default Rule

The dilution rule should be an opt-out default rule incorporated into the target’s charter.\(^9\) Recall that inequality (7) shows that there are circumstances in which the costs of the efficient world (that is, the world in which the dilution rule controls) are greater than the costs of the wasteful equilibrium (that is, the equilibrium in which a suboptimal transfer occurs). In particular, the present value of all future private benefits enjoyable by the current block owner may exceed the proportionate present value of all cash flow benefits expected to be generated by the potential acquirer. Because the dilution rule discourages compensation for private benefits, a potentially wealth-increasing transaction might not take place.

In such case, target noncontrolling stockholders should be given the opportunity to opt out of the dilution rule. To avoid the collective action problem, a duty is imposed on management to propose a shareholder resolution opting out of the dilution rule with respect to the impending block sale or tender offer. A majority of the noncontrolling voting stock may approve the resolution. Shares abstained are counted as votes against. Nevertheless, only a two-third majority may disable the dilution rule once and for all.

CONCLUSION

This paper identifies efficiency costs in corporate control auctions distorted by the valuable extractability of private benefits of control from the auctioned firm by potential acquirers. Such costs may entail suboptimal control transfers to the extent that the present value of all future private benefits constitutes an element of the competing bidders’ valuation of the target.

To save those efficiency costs, this paper proposes a dilution warrants mechanism. This mechanism looks like a poison pill. But it’s not so for two reasons. First, it’s redeemable by the very shareholders who are affected by its operation. And, second, when triggered it stops short of penalizing the acquiring firm and limits itself to

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92 Romano describes a typical poison pill in the following terms: “A poison pill is a shareholder rights plan in which the firm issues a warrant on each share of common stock (except those owned by the triggering shareholder) that gives the holder the right to acquire preferred stock for a low price. The right is contingent upon the occurrence of either a tender offer for the common or an accumulation of a block of common stock. The preferred stock has superior dividend and liquidation rights and is convertible into shares of the acquirer, at a steep discount, if the common stock is exchanged in a merger. Boards can redeem the rights for a trivial amount in the case of a tender offer, but the rights become nonredeemable upon the block acquisition.” Romano, supra note 8, at 156 n.143.
compensating minority shareholders for the value expected to be diverted by majority shareholders in the form of private benefits of control.

Finally, it might be raised that to the extent the dilution mechanism corrects a preexisting inefficiency it’s pointless, because such inefficiency was already discounted by investors and accordingly price-adjusted. Well, the choice is with the investors.
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