2005

Corporate Voting and the Takeover Debate

Randall Thomas

Paul H. Edelman

Corporate Voting and the Takeover Debate

Paul H. Edelman and Randall S. Thomas***

* Professor of Mathematics and Law, Vanderbilt University.

** John S. Beasley II Professor of Law and Business, Vanderbilt University.

We appreciate comments that we received from Professor Guhan Subramanian, Vice-Chancellor Leo Strine, Professor Robert B. Thompson, and Professor Christopher Yoo.

I. INTRODUCTION

Shareholder voting is the key to the outcome of hostile takeovers. The most obvious example arises when an acquirer tries to unseat a corporate board in a proxy contest for corporate control. But shareholder votes are needed in almost all other takeover settings as well. For instance, when a bidder announces a hostile tender offer, a resistant target company's board of directors will normally use its poison pill antitakeover defense, or a combination of a poison pill and a classified board, to stop its shareholders from selling their shares to the bidder, forcing the bidder to engage in at least one proxy contest to obtain control.[1] In addition, if the company is incorporated in one of the twenty-seven states that have control shareholder antitakeover statutes, the bidder can accumulate a significant stake in the target and demand a disinterested shareholder vote by the target company's shareholders on whether the bidder's stock should have voting rights.[2] In all of these contested elections, the main issue before shareholders is whether to accept the hostile bid.

Given the central importance of shareholder voting to corporate takeovers, legal academics have begun to model shareholder elections to gain insights into the ongoing debate over the efficiency of different forms of takeover techniques and antitakeover defenses. Professors Gilson and Schwartz have developed a voting model to explore the Delaware Supreme Court's apparent preference for voting as a change of control mechanism.[3] They claim that elections represent an inferior change of control mechanism compared to market transactions through tender offers, and that therefore the Delaware courts should overrule their prior decisions that allowed the use of defensive tactics as a means of defeating tender offers. Professors Bebchuk and Hart subsequently used a voting model to examine the differences between pure voting contests, pure takeover bids, and acquisition offers that

1. *See generally* Lucian A. Bebchuk et al., *The Powerful Antitakeover Force of Staggered Boards: Theory, Evidence, and Policy*, 54 STAN. L. REV. 887 (2002) (providing an in-depth analysis of the impact of staggered,or classified boards on takeover success rates).

2. LUCIAN BEBCHUK & ALLEN FERRELL, ON TAKEOVER LAW AND REGULATORY COMPETITIONS tbl. 4 (Harvard John M. Olin Discussion Paper Series, Discussion Paper No. 363, May 2002). The Delaware antitakeover statute can also require a shareholder vote when the acquirer has accumulated more than a 15 percent stake in the target company and requests a shareholder vote on whether the statute should apply. DEL. CODE ANN. tit. 8, § 203 (2002).

3. Ronald J. Gilson & Alan Schwartz, *Sales and Elections as Methods of Transferring Corporate Control* 10-28 (2 THEORETICAL INQ. IN LAW, Art. 8, 2001), *available at* http://www.bepress.com/til/default/vol2/iss2/art8.

combine voting contests and takeover bids.[4] They argue that their model reveals that a combined proxy contest and tender offer is superior to either of the latter two.

In this Article, we argue that these earlier models present a far too simple picture of the world. For example, both of the aforementioned papers assume that the every shareholder holds exactly one share of the company. Gilson and Schwartz further assume that every shareholder decides how to vote believing that that his or her vote will be pivotal. Bebchuk and Hart insist that all shareholders presume that current management is superior to any rival. But shareholders are heterogeneous in their stockholdings and voting behavior: they have different valuations of the target's stock, hold different views of management and listen to different advice about how to cast their ballots. To realistically model shareholder voting behavior, one must explicitly incorporate each of these variables into the model.

In this Article, we construct a simple model of shareholder voting that captures these important variables in five common shareholder voting scenarios. Initially, we examine routine shareholder voting contests, such as when incumbent management proposes the adoption of a stock option plan, or when shareholders are asked to vote on a shareholder proposal that has been placed on the corporate ballot using Rule 14a-8. These are the most frequently occurring types of shareholder votes because these proposals are normally placed on the proxy card for the corporation's annual shareholders' meeting. Despite their importance, however, earlier models have completely disregarded this form of shareholder voting.

The other four scenarios we model are takeover situations. The first is a proxy contest for corporate control, that is, a corporate election in which the incumbent management team is proposing to re-elect a slate of directors, while the dissident is offering a competing slate of candidates. The winner of the election will gain control of the firm. Next, we look at takeover bids, where the dissident is offering to purchase the shares of the target company's shareholders but is forced by the presence of a poison pill to first try to unseat the target's board of directors in a corporate election. Here, the presence of the takeover bid increases the chances that the dissident will win because target shareholders are more likely to vote in favor of selling their stock if the price is high enough.

---

4. LUCIAN BEBCHUK & OLIVER HART, TAKEOVER BIDS VS. PROXY FIGHTS IN CONTESTS FOR CORPORATE CONTROL 22-35 (Harvard John M. Olin Discussion Paper Series, Discussion Paper No. 336 Oct. 2001).

Our third takeover scenario revisits proxy contests for corporate control but with the added twist that the target has a classified board. The presence of a classified board requires the dissident group to win two consecutive corporate elections without the aid of a pending takeover bid. Our last case is a takeover bid situation in which the target has both a poison pill and a classified board. These defenses will force an acquirer to win two consecutive corporate elections in order to gain control of the target.

In each of these five scenarios, we break down the composition of shareholders into six different shareholder groups: management, dissidents, three types of institutional investors, and individuals. We assign realistic values, based on actual cases and common ownership patterns, to the amount of stock held by each group.[5] This permits us to consider the voting behavior of the major shareholder groups and to incorporate the impact on shareholder voting from the recommendations of independent proxy advisory services. These services evaluate all takeover bids for publicly held companies for their shareholder clients. Institutional shareholders in particular frequently rely on such advice in deciding how to vote their large blocks of shares and, as a result, these advisory services' recommendations often have an impact on the outcome of a shareholder vote. For example, the recommendations of the largest proxy advisor, Institutional Shareholder Services (ISS), are often claimed to have determined election outcomes.[6]

We initially assume that the current legal regime applies so that corporate management determines whether to accept an unsolicited bid and can use a wide variety of antitakeover defenses to forestall hostile bidders. In particular, we assume that target companies are always able to implement a valid poison pill but, in some cases, may not be able to install a classified board.

We use our model to examine whether, under current legal rules, shareholder value will be maximized by a proxy contest or takeover bid. Contrary to earlier models, we find that, in both proxy contests and takeover bids, acquirers succeed in obtaining control of a target company in some value-decreasing transactions and are defeated in their acquisition efforts in some value-increasing

5. To assign values in the model we refer to decided cases where the underlying facts were similar to those we use in our models. *See* Part IV.A. for citations to these cases.

6. In the recent merger between Compaq and Hewlett Packard, ISS's decision to endorse the merger has been cited as the deciding factor in overcoming strong opposition to the deal. Hewlett v. Hewlett-Packard Co., C.A. No. 19513-NC, 2002 WL 818091, at * 8 (Del. Ch. Apr. 30, 2002).

transactions.[7] This result argues against an across-the-board preference of one acquisition technique over another, based on the maximization of target company shareholder value.

A further implication of this finding is that, under current law, there will generally be some plausible basis for the target company's management to argue that they are maximizing shareholder value by using defensive measures to defeat any form of change of control transaction. This implies that courts will experience great difficulty in determining when target companies are using takeover defenses to legitimately protect their shareholders or instead to entrench target management at their shareholders' expense.

These basic results do not change when we alter the current legal regime to ban poison pills and classified boards. Prohibiting classified boards lowers the odds of management winning, but it does not insure that value-maximizing transactions are always consummated.[8] Nor does banning the poison pill have unambiguously value-increasing effects. In proxy contests for corporate control, dissidents would be able to complete value-decreasing transactions by buying enough shares to tip the vote in their favor. Eliminating the poison pill permits tender offers to close without delay but could allow some value-decreasing transactions to go forward, especially if considered from the perspective of diversified investors.

We also analyze the effect of adopting different theoretical perspectives on the proper role of takeover defenses and the importance of shareholder voting. One alternative theory we examine is that target management should be barred from using *any* defensive measure to stop an unsolicited takeover bid. Our model shows that if we adopt this theory, a change of control will occur in any case in which the bid's value significantly exceeds the target's prior stock price. However, we are unable to accurately measure how this change will affect the size of premium offered in all bids, or the frequency of takeover bids. As a result, we cannot make social welfare comparisons between this hypothetical regime and the current one.

We then examine proposals that shareholders should be able to vote within a reasonable period of time to remove any defensive tactic

7. When we compare the different change of control scenarios, we find that proxy contests increase the chances that management will defeat a hostile bid, thereby increasing the likelihood of defeating value decreasing transactions, but at the cost of fewer value increasing transactions. Tender offers are more likely to result in a hostile change of control ensuing, but at the cost of permitting a larger number of value decreasing transactions to be completed.

8. If, however, we incorporate the transactions costs associated with running two proxy contests into the model, it appears likely that effective classified boards will stop all bidders from gaining control over targets.

that impedes their ability to accept a takeover bid. This approach reduces all takeover battles to proxy contests occurring within at most thirteen months, the maximum lengtb of time most states permit to elapse between annual meetings from the time of the announcement of the bid.[9] In this situation, the shareholder vote will, in most circumstances, lead to an acceptance of value-maximizing bids and a rejection of value-decreasing offers. We endorse this position because it is at least as good as the current legal regime in insuring the maximization of shareholder value, while better permitting shareholders to decide their own fate.

Finally, in our technical appendix, we engage in an in-depth analysis of the alternative models of corporate elections developed by Gilson and Schwartz[10] and Bebchuk and Hart.[11] In our critique, we show that both the Gilson and Schwartz approach and the Bebchuk and Hart papers are flawed. In particular, we find that the models used in Gilson and Schwartz employ unreasonable hypotheses and reach questionable conclusions, whereas we argue that the Bebchuk and Hart model requires exceptionally strong hypotheses and very stringent mathematical assumptions to reach its conclusions.

This Article proceeds as follows. Section II describes the basic forms of takeover techniques and defenses. Section III briefly describes earlier models of corporate voting. Section IV contains our basic model and its assumptions. Section V applies our basic model to corporate control contests. Section VI develops the implications of our model for legal policy. We conclude with a few brief remarks.

II. TAKEOVER TECHNIQUES AND DEFENSES: THE BASICS

Corporate voting has never been more important to corporate governance than it is today. Historically, shareholder voting rarely attracted much attention. The exceptions were the rare proxy contests for corporate control, whose popularity as a takeover mechanism was greatest in the 1950s and early 1960s, before the widespread use of the hostile tender offer.[12] Routine shareholder votes were a part of the background of the corporate landscape but only occasionally sparked much interest, such as during the 1980s when many corporate managements proposed dual-class recapitalizations as

9. *See, e.g.*, DEL. CODE ANN. tit. 8, § 211 (2002) (thirteen month maximum between annual meetings).

10. Gilson & Schwartz, *supra* note 3, at 10-28.

11. BEBCHUK & HART, *supra* note 4, at 22-35.

12. RANDALL S. THOMAS & CATHERINE T. DIXON, ARANOW & EINHORN ON PROXY CONTESTS FOR CORPORATE CONTROL 1-7 (3d ed. 1999).

a way of stopping hostile takeovers.[13] Shareholder proposals using Rule 14a-8 were considered more of an annoyance than anything by corporate boards, especially those that sought to influence corporations on social responsibility grounds.[14]

Things started to change gradually in the 1980s when the Delaware Supreme Court endorsed the Rights Plan, or poison pill, antitakeover device as a surefire corporate defense against hostile tender offers, but held that it could not be used to stop a proxy contest for voting control.[15] This left open the backdoor to the corporate boardroom by insuring that a determined bidder could seek a shareholder vote to remove the existing board and redeem the poison pill at the target's annual meeting. Suddenly, shareholder voting became important in takeover contests and combined tender offers and proxy contests for corporate control started to appear.[16]

The SEC's actions have also strengthened corporate voting. In 1992, the SEC liberalized the proxy rules to make it easier for institutional investors to influence corporate boards by using the voting mechanism. These reforms led to higher levels of shareholder support for many investor initiatives.[17] Since then, the SEC has further bolstered the importance of the voting process by proposing to permit shareholder nominations of directors in certain circumstances[18] and by requiring that mutual funds disclose how they are voting on corporate governance questions.[19]

---

13. Stephen M. Bainbridge, *The Short Life and Resurrection of SEC Rule 19c-4*, 69 WASH. L.Q. 565, 570-71 (1991).

14. THOMAS & DIXON, *supra* note 12, at 16-3, 16-14.

15. Moran v. Household International, Inc., 500 A.2d 1346, 1357 (Del. 1985).

16. THOMAS & DIXON, *supra* note 12, at 1-15.

17. Stephen Choi, *Proxy Issue Proposals: Testing the Impact of the 1992 SEC Reforms*, 16 J. L., ECON. & ORG. 233, 266 (2000).

18. The SEC's proposing release can be found at Security Holder Director Nominations, 68 Fed. Reg. 60,784 (Oct. 23, 2003) (to be codified at 17 CFR pts. 240, 249, 274). These changes have been highly controversial. *Compare* LUCIAN A. BEBCHUK, THE CASE FOR SHAREHOLDER ACCESS TO THE BALLOT (Harvard John M. Olin Discussion Paper Series, Discussion Paper No. 428, Aug. 2003) (advocating increased access), *and* ROBERT C. POZEN, INSTITUTIONAL PERSPECTIVE ON SHAREHOLDER NOMINATIONS OF CORPORATE DIRECTORS (Harvard John M. Olin Discussion Paper Series, Discussion Paper No. 429, Aug. 2003) (same), *with* Martin Lipton & Steven A. Rosenblum, *Elections Contests in a Company's Proxy: An Idea Whose Time Has Not Come*, 59 BUS. LAW. 67 (2003) (arguing that the SEC should not adopt these reforms). For a discussion presenting a variety of perspecitves, see also SYMPOSIUM ON CORPORATE ELECTIONS, (Lucian Bebchuk ed., 2003).

19. Final Rule: Disclosure of Proxy Voting Policies Records by Registered Management Investment Companies, Securities Act Release No. 33-8188 (Apr. 14, 2003), *available at* http://www.sec.gov/rules/final/33-8188.htm; *see also* Alan R. Palmiter, *Mutual Fund Voting of Portfolio Shares: Why Not Disclose?*, 23 CARDOZO L. REV. 1419, 1454-61 (2002) (noting the failure of courts to properly police mutual fund governance decisions through application of fiduciary

On top of these judicial and administrative actions, a wave of corporate scandals in recent years has increased institutional and other shareholders' interests in using the corporate ballot box to influence corporate boards. Corporate governance reform has become a leading issue, and shareholder activism has increased markedly. For example, in 2003, shareholder advocates filed an unprecedented number of shareholder proposals and earned record levels of investor support for them.[20] Management stock option plans that once were virtually unopposed now routinely register high levels of shareholder opposition and have suffered through an abnormally large number of defeats.[21] Boards have noticed shareholders' use of their voting power and may have responded to their initiatives.[22]

But shareholder voting's most important contribution in the corporate governance area is in the takeover arena.[23] Voting is central to takeovers because a takeover can only occur if an acquirer can obtain voting control of a target company. Voting control can only be obtained if the acquirer can buy a majority of the target's stock, either with the approval of the target's board through a friendly merger or, if such approval is not forthcoming, through a hostile tender offer.

The target's board can, if it wishes, block both paths. It can stop a friendly merger proposal by refusing to pass the necessary board resolution in favor of the transaction, and thereby deny target shareholders the right to vote on whether to approve a proposed deal. The target's directors can also deploy a Rights Plan, or poison pill, antitakeover defense to stop the acquirer if it later seeks to bypass the board and deal directly with the firm's shareholders through a tender offer.[24]

However, the poison pill can be end-run by a determined bidder. If the bidder is willing to engage in a proxy contest for corporate control, it can try to convince the target company's

---

duties and the reluctance of regulatory agencies and Congress to require disclosure of mutual fund voting.).

20. Richard Hill, *2003 Proxy Resolutions Set to be Highest in Terms of Number, Ability to Obtain Vote*, 35 SEC. REG. & L. REP. (BNA) 280, 280 (Feb. 17, 2003); Mark Jaffe, *Investors Fighting for Interests Via Proxies*, THE TENNESSEAN, Dec. 16, 2003, at E1.

21. Randall S. Thomas & Kenneth J. Martin, *The Effect of Shareholder Proposals on Executive Compensation*, 67 U. CIN. L. REV. 1021, 1050 (1999).

22. *See id.* at 1022 (noting that the results of an empirical study "may" show that "[s]hareholder proposals concerning executive compensation affect the level and compensation of CEO compensation.").

23. *See* FRANK H. EASTERBROOK & DANIEL R. FISCHEL, THE ECONOMIC STRUCTURE OF CORPORATE LAW 70 (1991) (observing that "voting facilitates takeovers").

24. The poison pill halts a hostile tender offer because it threatens the acquirer with massive dilution of its stake in the target if it proceeds to purchase a controlling block of the target's stock without the board of directors' support.

shareholders to remove the incumbent board of directors. The pitch is that if the bidder's candidates are elected to the board, they will redeem the company's poison pill and permit the target shareholders to sell their shares to the bidder at a price that includes a control premium. The Delaware Supreme Court has rejected attempts to modify the Rights Plan to stop newly elected directors from eliminating this antitakeover device.[25]

A well-counseled target company that plans ahead can nevertheless block any bidder's attempt to get around its poison pill by requiring a classified board in its corporate charter. Companies that have both defenses can generally force bidders to launch not one, but two proxy contests in order to overcome these defenses.[26] While in theory this still leaves open the possibility of a successful two-year campaign to acquire a target company, recent empirical work suggests that no bidder has succeeded in doing so.[27] Nevertheless, shareholder elections remain the only possible mechanism by which a bidder can overcome a combined classified board and poison pill defense.

A third type of antitakeover defense that makes shareholder voting an important part of some takeover battles is the control share acquisition statutes that are present in twenty-seven states.[28] These statutes generally require a shareholder vote to be held when a bidder acquires more than a specified amount of the target company's stock and asks for a referendum on whether its shares in the target company should be granted normal voting rights. While ostensibly the target shareholders are voting on giving the bidder voting rights, the referendum could more accurately be viewed as a vote on whether the shareholders should be allowed to accept the bidder's offer to buy their stock. The Delaware Business Combination Antitakeover statute[29], while not of the control shareholder variety, also contains provisions that could require a shareholder vote on whether the bidder's stock should have voting rights.

For all of these reasons, the importance of corporate voting in the takeover arena has surged. As a result, academic interest in corporate voting has increased dramatically in the past few years.[30]

---

25. Quickturn Design Sys., Inc. v. Shapiro, 721 A.2d 1281, 1283 (Del. 1998).

26. Bebchuk et al., *supra* note 1, at 899.

27. *Id.* at 927.

28. Bebchuk & Ferrell, *supra* note 2, at 7, 24.

29. Del. Code Ann., tit. 8 §203 (2002).

30. Just to cite a few of the recent efforts that have appeared in what was once an empty field, see, for example, Jennifer E. Bethel & Stuart L. Gillan, *The Impact of the Institutional and Regulatory Environment on Shareholder Voting*, 31 FIN. MGMT. 29 (2002); Roberta Romano, *Does Confidential Proxy Voting Matter?*, 32 J. LEGAL STUD. 465 (2003); K.A.D. CAMARA, SHAREHOLDER VOTING AND THE BUNDLING PROBLEM IN CORPORATE LAW (Harvard Working Paper, Dec. 2003)

At a theoretical level, this has led several prominent scholars to try their hands at modeling the corporate voting process. In the next Section, we give a brief intuitive description and critique of the two most prominent models.[31]

III. AN OVERVIEW OF EARLIER MODELS

Two attempts to model corporate voting have been previously made: the first by Professors Ronald Gilson and Allan Schwartz[32] and the second by Professors Lucian Bebchuk and Oliver Hart.[33] In both models, the voters will base their vote (or in some cases their decision to vote at all) on strategic considerations involving their individual expected utilities. Gilson and Schwartz employ game theoretic voting models to cast doubt on whether elections lead to efficient acquisitions.[34] Bebchuk and Hart develop a multistep decision-theoretic model to analyze proxy contests in which the inability of rivals to convince shareholders of their superior ability results in inefficient outcomes.[35] As we show below, both models are based on unrealistic assumptions.

The Gilson/Schwartz paper contains two models: one giving the voters full knowledge and the other incorporating uncertainty. Both models are predicated on two assumptions. The first assumption is that every voter casts one vote, meaning that each shareholder of the company owns only one share. This assumption eliminates one of the key aspects of corporate voting: large shareholders can cast many votes.[36] It is difficult to justify such an assumption. In fact, Gilson/Schwartz do not even try to justify it, remarking only in a footnote that the assumption is made on the basis of "simplicity."[37]

(on file with authors); FABRIZIO FERRI, GAREN MARKARIAN, & TATIANA SANDINO, STOCK OPTION EXPENSING: EVIDENCE FROM SHAREHOLDERS' VOTES (Harvard NOM Research Paper No. 03-52 2003) (on file with authors); ERNST MAUG & KRISTIAN RYDQVIST, DO SHAREHOLDERS VOTE STRATEGICALLY? EVIDENCE ON THE ADVISORY ROLE OF ANNUAL GENERAL MEETINGS (Working Paper Nov. 2003) (on file with authors).

31. A more detailed, technical discussion of the models appears in the appendix.

32. Gilson & Schwartz, *supra* note 3.

33. BEBCHUK & HART, *supra* note 4.

34. Gilson & Schwartz, *supra* note 3, at 10-28.

35. BEBCHUK & HART, *supra* note 4, at 22-35.

36. Large shareholders can cast more votes than shareholders that hold only a few shares of stock because typically each share of common stock is entitled to one vote. *See* ROBERT C. CLARK, CORPORATE LAW 361 (1986) (noting that "each outstanding share of stock is entitled to one vote on each matter voted on at the shareholders' meeting").

37. *See* Gilson & Schwartz, *supra* note 3, at 10 n.24. They note that the "one-share-one-vote assumption will turn out not to be innocuous" in their more sophisticated version of their model, which would seem to imply that they view it as innocuous in their simpler model. But, as we will see presently, it is an assumption quite central to their analysis.

The second assumption made in the Gilson/Schwartz model is that all voters cast their vote strategically in a very specific sense: each voter conditions his vote on the likelihood of that vote being decisive in the election. In the full-information model, there is a cost associated with voting so that a voter will abstain unless the expected value of voting is larger than the cost of voting, and the expected value of voting is dependent on the likelihood that the voter will cast the deciding vote. In their second model, in which uncertainty is incorporated, Gilson/Schwartz change the assumption that there is a cost to voting and replace it with a requirement that each voter condition his beliefs about the benefits of the vote on the assumption that his vote will be the deciding vote.[38]

This way of modeling strategic voting is inapt to this situation. First, many institutional shareholders have a fiduciary duty to vote,[39] and the direction of that vote is often influenced, if not determined, by a third-party advisor.[40] Neither of the Gilson/Schwartz models captures this important feature of corporate voting.

Moreover, the likelihood of a voter casting a deciding vote depends on the number of shares that voter owns. But this directly conflicts with the earlier assumption that all voters cast one share. Thus, it is difficult to see how either of the Gilson/Schwartz models can shed much light on actual corporate elections.[41]

The Bebchuk/Hart model suffers from a different set of problems.[42] It assumes that all shareholders are homogeneous, so that they respond to the same signal—the company's stock price as set by omniscient market-makers—in deciding how to vote. This assumption fails to acknowledge the heterogeneity of the shareholders. Different shareholders may hold different views about the value of their shares and on how to cast their votes on different issues. Moreover, as mentioned previously, institutional shareholders have a fiduciary duty to vote their shares in their beneficiaries' best interests, and they frequently base their votes on advice they receive from third-party voting advisors, not just the market price.

---

38. We will discuss the details of this model *infra* in the Technical Appendix.

39. THOMAS & DIXON, *supra* note 12, at 1-14.

40. Palmiter, *supra* note 19, at 1439.

41. There is also the question of whether the fiduciary duty of an institutional investor can accommodate the type of probabilistic conditioning assumed by Gilson/Schwartz. *See* Gilson & Schwartz, *supra* note 3, at 10 (assuming as part of their argument that "target shareholders . . . make an informed choice in the proxy because they can evaluate the economic variables bearing on the desirability of the underlying tender offer").

42. Bebchuk and Hart also assume that every shareholder holds "a quite small fraction . . . of the company," but in their case this assumption is immaterial since in the solution to their model all shareholders vote the same way. BEBCHUK & HART, *supra* note 4, at 7.

In addition to the faulty assumption about the signal to which shareholders will respond, the Bebchuk/Hart model assumes that shareholders always prefer current management to its rival.[43] While it is true that sometimes shareholders prefer incumbent management, there are many counter examples to this point, especially in change of control situations. Bebchuk and Hart's assumption has the effect of biasing the prediction of their model toward voting against a takeover. This assumption, coupled with shareholders responding only to the pricing signal sent by the market-makers, results in the Bebchuck/Hart model yielding the unlikely solution of a unanimous vote in opposition to a takeover.[44]

In summary, the earlier models make unrealistic assumptions about the homogeneity of shareholders, both in the size of their holdings and in their voting behavior. They also ignore differences in the signal to which the shareholders listen. To remedy these problems, this Article will develop a simulation that focuses on exactly these points.

IV. OUR MODEL OF CORPORATE VOTING

Our corporate voting model might be best described as a simulation. We are attempting to see experimentally how the distribution of shares among various constituencies will affect the outcome of the proxy battle. The model is designed to incorporate two important aspects of voting in corporate governance. The first is that blocs of shares are voted by big shareholders, not single shares by every shareholder. Moreover, many shareholders rely on an independent third-party proxy advisor, an external signaler, to advise them on how to vote. These key points must be incorporated for a corporate voting model to be relevant. One goal of this Article is to generate qualitative information about proxy battles based on how shareholders actually vote, rather than expecting everyone to be the same.

Our model evaluates the probability that a given collection of shareholders will vote in favor of management based on the type of contest and the independent third party's voting advice. We break the shareholder base of the firm into groups of constituencies that have

43. *See id.* at 14 (noting that "[n]ow even though some rivals might be superior it is plausible to assume that, in the common case, the average quality of potential rivals is lower than the quality of the incumbent").

44. They must make a rather stringent technical assumption about the likelihood that rival management is superior to current management in order to get a solution to their model at all. We will discuss this issue in the Appendix.

different probabilities of voting for management. The likelihood of a particular vote favoring management depends on the individual probabilities for each shareholder group.[45] Some of these probabilities will depend in part on what the third-party advisor determines is the best outcome.

To be precise, let $V=\{v_1,v_2,\ldots,v_n\}$ be a set of voters and suppose that voter v_i votes a percentage s_i of the outstanding shares in favor of management with probability p_i. A subset $A\subseteq V$ of the voters can carry the election if

$$\sum_{i\in A} s_i > 50$$

and the probability that every voter in A votes in favor of management and every other voter is against is

$$\prod_{i\in A} p_i \prod_{j\notin A}(1-p_j),$$

so the likelihood of the coalition A forming is given by this product. The probability that the vote will be in favor of management is given by

$$\sum_{\{A\subseteq V \mid \sum_{i\in A} s_i > 50\}} \prod_{i\in A} p_i \prod_{j\notin A}(1-p_j).$$

We now add in the third-party proxy advisor, "ISS," whose recommendation, or signal, affects the value of p_i for some of the voters. We divide the voters into three groups. The first group of voters will cast their vote with a fixed probability, although these probabilities need not be all the same. For example, the voter we designate "Management" will cast a vote in favor of management with probability 1. Conversely, the voter we call "Dissident" always votes against management.

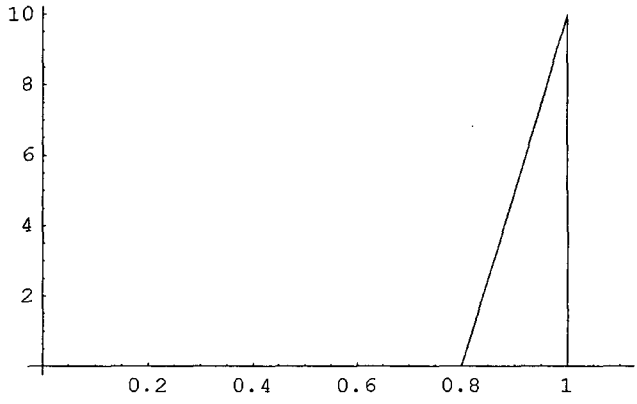
A second group of voters will cast their vote in accordance with a signal they receive from the third-party proxy advisor, ISS. ISS issues one of two recommendations: (1) "For," which is in support of management; or (2) "Against," which has the opposite meaning. If a "For" recommendation is issued, then this second class of voters vote in favor of management with a probability p where p is distributed according to the probability density function a graph of which is pictured in Figure 1.

---

45. This assumption is in contrast to other standard assumptions about the formation of coalitions. *See* DAN S. FELSENTHAL & MOSHÉ MACHOVER, THE MEASUREMENT OF VOTING POWER 35-36, 171-76 (1998) (comparing policy seeking and office-seeking viewpoints of voting, then later comparing those two theories against the P-power voting idea).

$$f(x) = \begin{cases} 0 & \text{if } x \le .8, \\ 50x - 40 & \text{if } .8 \le x \le 1, \\ 0 & \text{if } 1 < x. \end{cases}$$

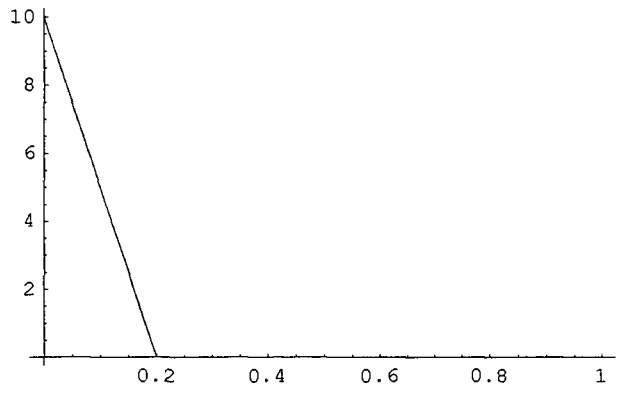
Figure 1



The intuition behind this choice of distribution function is that when presented with a "For" signal, the shareholders will most likely vote with management, but there may be some combination of noise in the signal that makes it less than a sure thing. In a similar way, a signal of "Against" results in the choice of a probability p taken from the distribution function whose graph is shown in Figure 2.

$$g(x) = \begin{cases} 0 & \text{if } x < 0, \\ 10 - 50x & \text{if } 0 \le x \le .2, \\ 0 & \text{if } .2 \le x. \end{cases}$$

Figure 2



The vote of the last group of voters, while correlated with the signal given by ISS, is not as tightly controlled as the second group. For this last group of voters we use a two-parameter family of functions, *r(k,t,x),* defined by

$$r(k,t,x)=\begin{cases} h(k,x)(1-t)+t & t\geq 0, \\ h(k,x)(1+t) & t\leq 0 \end{cases}$$

where $h(k,x)=2^{2k}(x-\frac{1}{2})^{2k+1}+\frac{1}{2}$. The following graphs show how the parameters *k* and *t* affect the shape of this function.

Figure 3 r(k,0,x) for k=1,3,5,10 and 20

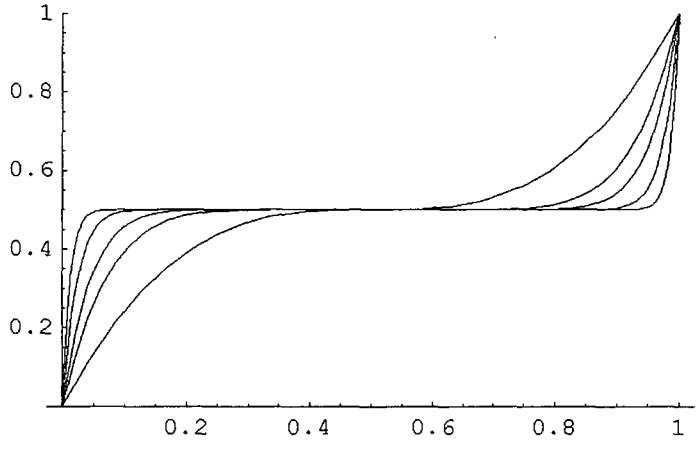
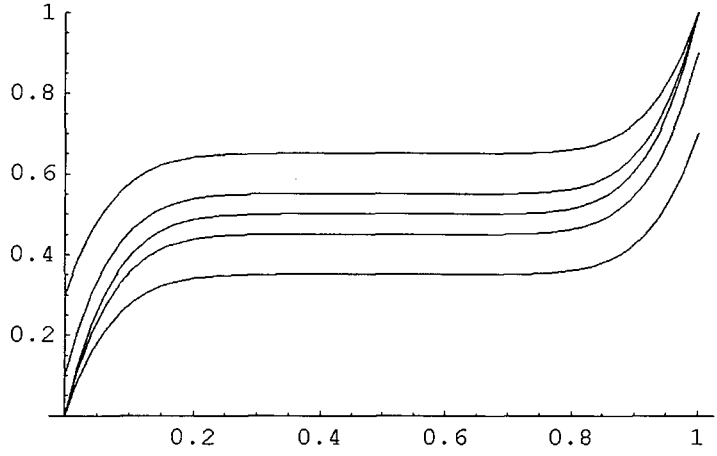


Figure 4 r(3,t,x) for t= -.3, -.1, 0, .1, and .3



The parameter k controls the flatness of the curve and the parameter t raises and lowers the curve. We will discuss the modeling significance of these parameters shortly.

The vote of this last group of shareholders is decided in the following way: if ISS gives a For signal, then a probability p is taken from the density function f, as with the previous class of shareholders, but this group votes in favor of management with probability $r(k,t,p)$. The value of k has the effect of making this group of shareholders more or less influenced by the signal, and the value of t introduces an underlying bias for or against management independent of the signal. The same method produces the probability for a vote in favor of management if ISS gives an "Against" signal, only substituting the density function g for f.

For this last group (or groups) of voters, the intuition that this model is trying to capture is that their votes will be correlated with the proxy advisor's recommendation but that the extent of that correlation, and the underlying bias in favor of (or against) management, might vary. Thus, the choice of the function $r(1,.3,x)$ would indicate a shareholder whose vote will strongly correlate with the signal, but has an underlying bias in favor of management. The function $r(20,-.3,x)$ results in a vote weakly correlated with the signal and with an antimanagement bias.

Let's now put the two parts of this model together. Suppose the corporation consists of five voters, which we call "Management," "Dissident," "Institution I," "Institution II," and "Public." Suppose further that Management holds 15 percent of the stock, Dissident

holds 12 percent, Institution I has 30 percent, Institution II has 40 percent, and Public has 3 percent. We will assign Management the probability 1 of voting for itself, Dissident a probability of 0 that it will vote for management, and Public a probability of .5. Let Institution I listen to the proxy advisor ISS (that is Institution I is of the second group of voters described above) and suppose Institution II is of the third group of voters, with vote governed by *r(5,-.2,x)*, so Institution II is somewhat biased against management and somewhat sensitive to the ISS signal.

From this data we can compute the expected probability that Management will win the election in the case that the proxy advisor issues a "For" or "Against" signal. Suppose the signaler issues a "For" signal. Let us look at one scenario in which management wins, the one in which Management and Institution II vote for management (securing 15 percent +40 percent=55 percent of the stock in favor) and the other three voters vote against. The probability of Management, Dissident, and Public voting in this manner is 1, (1-0)=1, and (1-.5)=.5. The probability of Institution I voting this way is (1-p) where p is drawn from the distribution g. The probability of Institution II voting in favor of management is *r(5,-.2,p)*. So the expected probability of Management winning the election with exactly this set of votes is

$$\int_{.8}^{1} 1\times(1-0)\times(1-x)\times r(5,-.2,x)\times .5\times(50x-40)\,dx = .0154$$

To compute the likelihood that management will win with some set of votes, we have to consider all of the different combinations of votes that result in management winning and integrate over the likelihood of such an outcome. The result in this instance is .535. That is, with this distribution of stock and the above assumptions about voting probabilities, if the signaler gives a "For" signal, then we expect management to win slightly over half of the time.

One of the applications of our model will be to the analysis of defensive tactics such as a staggered board. In analyzing this situation, we will need to compute the likelihood that management will lose two consecutive elections. If management wins the first election with probability p and the second election with probability q (which may be different from p as we describe subsequently), the likelihood of losing both elections is (1-p)×(1-q). Hence, the likelihood of winning at least one election is 1-(1-p)×(1-q). Thus, if in order to succeed the dissident must win two consecutive elections, then management will win the contest with probability 1-(1-p)×(1-q).

Finally, we should briefly discuss how sensitive the model is to the choice of the exogenous parameters. We start with the behavior of

the variable k, which measures the sensitivity of the institutional investors to the proxy advisor's signal. In our applications this value is set to 20 for both sets of Institutional investors. Even if this value is lowered to 10 for both sets of investors, the computed probabilities vary on average by 10 percent. If both values of k are lowered to 5 the resulting probabilities can vary by as much as 30 percent.

Another exogenous variable is t, which indicates the bias of the institutional investors to management. The values of t vary in our applications between -.5 and .5. Variations of one of these values by an amount of .2 results in a variation of the computed probabilities of around 25 percent.

Finally, the model is sensitive to the distribution of shares. For technical reasons, we have insured that the shareholders cannot be partitioned into two groups each holding exactly half of the shares.[46] With that exception, it follows from the discrete nature of the model that small changes in the distribution will not affect the computed probabilities.

V. APPLICATIONS OF THE MODEL

A. Ownership Structure Assumptions

We assume for the moment that corporate management decides whether to sell the company to an unsolicited bidder subject to the shareholders' right to vote at the company's annual meeting to remove any directors that are standing for election at that time. Antitakeover defenses, such as the poison pill and classified board, are permitted. This view has largely been adopted by the courts subject to a few limited exceptions. In Section V, we will consider the impact of alternative theories of the proper role for target management and shareholders in responding to an unsolicited takeover bid.

We begin by detailing a number of different scenarios corresponding to different corporate ownership structures. The specification of each of these scenarios comes in two parts. First, we describe the distribution of shares among the different types of shareholders. Following the terminology from the previous Section, we will denote the different classes of shareholders by Management, Dissident, Institution I, Institution II, Institution III (or Arbitrageur in tender offer situations) and Public.

46. This guarantees that every vote will have one winning side and one losing side.

Having fixed the distribution of shares among these constituencies, we then describe the functions used to determine how they will vote in a proxy contest. These probabilities will always be computed relative to the likelihood that management will prevail in the election. We will then apply our model to make some predictions about the likelihood of management winning proxy battles under these scenarios. As part of this analysis, we will also consider the effect of classified boards on the likelihood of management retaining control. When we consider the situation of two consecutive elections, we will assume that the probabilities of voting in favor of management change in a prescribed manner.

We begin by describing the distribution of shares of stock in each of four different scenarios. We consider four typical factual situations for large publicly held companies.[47]

Scenario A. Founding Family

Management	30 %
Dissident	5 %
Institution I	16 %
Institution II	22 %
Institution III	22 %
Public	5 %

In this scenario, management is aligned with the founding family of the firm in resisting a hostile acquisition.[48] The bidder has accumulated a small stake in the firm and could purchase more stock without exceeding the poison pill's trigger level of 15 percent. However, the bidder has decided to proceed without accumulating more target company stock.

Institutional investors are assumed to hold the overwhelming majority of the remaining stock, with individual shareholders (Public) having only 5 percent of the shares. The institutional holdings are divided so that a significant group of institutional investors will follow ISS's recommendation (Institution I), a second group will favor management generally but are influenced by ISS's recommendation

47. We draw on published cases for each of these scenarios. *See infra* notes 46-47, 49-50.

48. This scenario might correspond to the situation of Willamette Industries, Inc. in its takeover battle in 2001 with Weyerhaeuser. *See, e.g.*, Drew DeSilver, *Weyerhaeuser Bids for Rival Willamette*, SEATTLE TIMES, Nov. 14, 2000, at C1 (evidencing that Willamette had been resistant to succumb to a takeover by Weyerhaeuser, but Weyerhaeuser continued to pressure Willamette's board for a decision).

(Institution II), and the third group will be more opposed to management in takeover situations but still influenced by ISS's recommendations.

For all of the takeover bids, we take into account arbitrageur activity by replacing Institution III with "Arbitrageurs" as a category of investors. We model these investors as being strongly oriented toward maximizing short-term value and therefore highly likely to support a value-increasing takeover bid.

Scenario B. Management with Small Shareholdings and ESOP/White Squire

Management	15 %
Dissident	15 %
Institution I	17 %
Institution II	23 %
Institution III	24 %
Public	6 %

In this scenario, target management owns a very small percentage of the company's stock, but the company has an ESOP in place and/or has sold a block of shares to a friendly third party: a white squire.[49] This might be the case at target companies with strong antitakeover defenses but low management stock ownership.[50] The dissident shareholder has purchased as much stock as possible given the 15 percent trigger of the target company's poison pill.

As in Scenario A, institutional investors own the vast majority of the remaining stock, with individual shareholders having only 6 percent of the shares. The institutional holdings are divided so that a significant group of institutional investors will follow ISS's recommendation (Institution I), a second group will favor management generally but are influenced by ISS's recommendation (Institution II), and the third group (Institution III) will be more opposed to management in takeover situations but still influenced by ISS's recommendations.

49. This scenario could approximate the situation in Polaroid's battle for independence from Disney. *See* Shamrock Holdings, Inc. v. Polaroid Corp., 559 A.2d 278, 279 (Del. Ch. 1989) (explaining that "[t]he litigation precipitated by this takeover effort began ... when Shamrock [the acquiror] and Polaroid stockholders filed actions attacking the validity of an employee stock ownership plan ('ESOP')").

50. For example, if management held less than 1 percent of the target's stock, but had placed another 14 percent with a white squire or ESOP, and the target company had a poison pill with a trigger level of 15 percent, then this scenario would be closely duplicated.

Scenario C. Management With Small Shareholdings

Management	3 %
Dissident	15 %
Institution I	16 %
Institution II	30 %
Institution III	30 %
Public	6 %

Here, the target company management again has a small stake in the firm. The firm has neither an ESOP nor a white squire. Scenario C represents the target company with relatively few antitakeover defenses and low management stock ownership.[51] Dissident shareholder has purchased the maximum amount of shares permitted under the target company's rights plan.

Again, as in most large publicly held companies, institutional investors own most of the target company's stock, with individual shareholders having a small fraction of the shares (6 percent). We use the same split of the institutions: Institution I (follows ISS's recommendations), Institution II (favors management generally but are influenced by ISS's recommendation), and Institution III (more opposed to management in takeover situations but still influenced by ISS's recommendations).

Scenario D. Large Dissident Shareholder Block

Management	3 %
Dissident	30 %
Institution I	16 %
Institution II	23 %
Institution III	23 %
Public	5 %

In Scenario D, we model the most favorable situation for dissident shareholders, one in which they have accumulated a large block position in the target company before the target implements a

51. This might be factually similar to the situation in *Grand Metropolitan Public Limited Company v. The Pillsbury Company*. 558 A.2d 1049, 1051 (Del. Ch. 1989) (describing the attempted takeover situation in which Pillsbury bad some defense mechanisms in place, including a poison pill, but did not utilize an ESOP or a white squire).

poison pill to block them from making further purchases.[52] While perhaps less common than the first three cases, this scenario could arise in several ways if the target company does not have a pre-existing poison pill in place: 1) a bidder could secretly accumulate large amounts of target stock; 2) there could be a large block sale of stock to an unfriendly outside investor; or 3) a formerly friendly large investor could unexpectedly decide it wished to replace incumbent managers. The remaining shares are split in accordance with the earlier distributions to the three groups of institutional investors and the individual investors.

Having described the distribution of shares, we turn to describing how the different shareholders vote in various kinds of contests. We begin by noting that Management will always vote for management with probability 1, Dissident will always vote for management with probability 0, and Public will always vote for management with probability .5. Moreover, Institution I will vote according to the signal sent by the advisory agent ISS, i.e., its vote will be drawn from the distribution $f(x)$ if it receives a For signal and from $g(x)$ if it receives an Against signal. In other words, Institution I is comprised of those institutional investors that routinely follow the advice of their advisory agent and who vote their shares automatically in accordance with this signal.

The remaining actors, Institution II and Institution III will vote differently depending on the nature of the contest, although in every case their vote will be controlled by the function $r(k,t,x)$ as described previously.

B. Types of Voting Contests

1. Routine Contests

We begin with the most common forms of proxy voting which are routine votes on management stock option plans and shareholder proposals concerning corporate governance issues, such as reducing executive compensation or changing the composition of the board of directors. These are votes that do not involve change of control

52. Here we have in mind Stanley Stahl's bid for Apple Bancorp. Stahl v. Apple Bancorp, Inc., 579 A.2d 1115, 1118 (Del. Ch. 1990) (explaining that Stahl had accumulated at least 30.3 percent of Bancorp's stock and was its largest shareholder before any discussion of the implementation of a poison pill took place). A second way to think about this situation is that it corresponds to a world where poison pills are invalid. *See* discussion *infra* Part IV. for further discussion of this point.

issues.[53] Here, management will engage in a solicitation of shareholders' votes, sending out its proxy materials that include its recommendation that shareholders vote in favor of the proposal.

Prior research has shown that shareholder voting in these routine votes tends to heavily favor management's position, and that only in unusual circumstances will institutional investors vote heavily against management.[54] ISS generally recommends voting in favor of stock option plans and on shareholder proposals concerning internal corporate governance issues.

In this situation, both Institution II and Institution III will vote according to the function $r(20,.5,x)$. The choice of this function reflects a strong bias toward management (t=.5) and little sensitivity to the signal sent from the advisory agent (k=20). Arbitrageurs are unlikely to become involved in this situation as there is no bidder making a premium offer to purchase the target's stock.

2. Proxy Contests for Corporate Control

In this type of voting contest, both management and dissidents run a slate of candidates for the target company's board of directors. The dissidents are not offering to purchase the target company's shareholders' stock (that is, there is no accompanying tender offer). Rather, they are only proposing to do a better job of running the company if they are elected. We assume that the dissidents do not have sufficient financial capability to make a tender offer as part of their effort to acquire the company. This assumption is consistent with the adage that proxy contests are the "poor man's tender offer."

The target company's poison pill does not bar the dissident from trying to elect its candidates, nor does it stop the firm's shareholders from voting in their favor. It does, however, limit the amount of stock that the dissidents can accumulate,[55] and in that

53. Many shareholder proposals to remove the poison pill, or to declassify the board of directors, involve change of control issues. We therefore believe that those votes could be considered under takeover contests.

54. *See e.g.*, Randall S. Thomas & Kenneth J. Martin, *The Determinants of Shareholder Voting on Stock Option Plans*, 35 WAKE FOREST L. REV. 31, 58-59 (2000) (finding that the average level of opposition to management sponsored stock option proposals was only 18.6 percent of votes cast at meeting); Thomas & Martin, *supra* note 21, at 1021-22 (analyzing shareholders' abilities to influence executive compensation through shareholder proposals and finding low levels of shareholder support for most proposals).

55. Randall S. Thomas, *Judicial Review of Defensive Tactics in Proxy Contests: When Is Using A Rights Plan Right?*, 46 VAND. L. REV. 503, 510-15 (1993) (examining the mechanics of Rights Plans and their impact on proxy contests and establishing that "for a dissident shareholder group to win a proxy contest for corporate control, the shareholder group must either purchase enough voting shares to vote itself into office, or persuade enough other

fashion, forces them to persuade other shareholders to vote for their slate. The presence of a staggered board, though, will force dissidents to win two proxy contests in order to gain control of the company, as they can only elect one-third of the board in a single election when there is a classified board.

Prior evidence indicates that shareholders are more likely to vote in favor of dissidents than they would be in routine contests, but less likely to do so than in takeover contests where there is a pending tender offer.[56] To reflect these preferences, we will assume that Institution II votes according to the function $r(20,-.1,x)$ and Institution III votes according to $r(20, .2, x)$. In the event of a two-part contest, such as the case where there is a staggered board, the two groups will vote in the second contest according to the functions $r(20,-.3,x)$ and $r(20, 0,x)$. These choices reflect the intuition that, in a second vote, the shareholders will be more biased against management than in the initial vote. Arbitrageurs are unlikely to become actively involved in these battles as there is no pending tender offer at a premium over the market price.

3. Takeover Contests Using A Tender Offer

In a takeover contest, we assume that there will be a pending tender offer made by the bidder to the target company's shareholders, that the offer is priced at a premium over the market price, and that the target company will use its poison pill to prevent the bidder from buying a control block of its stock promptly with its tender offer. This forces the bidder to engage in a proxy contest to unseat the incumbent directors so that it can replace the old board with a new board that is willing to redeem the poison pill and allow it to buy a controlling stake in the target.

In this situation, the dissident's election platform is much stronger. Instead of asking shareholders to vote in its favor because it will manage the company better, it can now state that if its candidates are elected, then it will buy the shareholders' stock at a premium over the market price. This increases the likelihood that target company shareholders will vote in its favor.

---

shareholders to vote for the dissident slate so that it obtains a majority of the votes cast in the election").

56. For a summary of prior evidence, see THOMAS & DIXON, *supra* note 12,at 1-9 ("[T]ender offers allowed a potential acquirer to present its offer to purchase a controlling interest in a target company's stock directly to that company's shareholders, thereby circumventing its board of directors. In most situations, a takeover bid was faster, cheaper and more likely to succeed than the traditional proxy contest").

In this case, we will assume that Institution II and Institution III are at their most negative toward management and vote according to the function $r(20, -.5, x)$ and $r(20, -.2, x)$, respectively. If there is a second vote, as in the case of a staggered board, Institution II will vote according to the same function, but Institution III will vote according to the function $r(20, -.5, x)$ reflecting a more negative appraisal of management. In this situation, Institution III can be thought of as representing arbitrageurs who are speculating on the likelihood that the offer will succeed.

C. Basic Voting Results

Tables 1 – 5 present our results in the five different types of votes characterized by the different biases (b) and sensitivities (k). The independent proxy advisor, ISS, can give two different signals: (—) signal = vote against management; and (+) signal = vote for management. The numbers in the tables indicate the likelihood of management winning the vote.

1. Routine Vote

Table 1 shows that when proxy advisor I gives a (+) signal, management's odds of winning a routine vote are always greater than 50 percent. The pro-management bias in routine proposals is evident here, even if there is a large block of stock that is publicly and openly opposed to the management proposal. When I makes a (—) recommendation, management's odds of winning the routine vote remain above 50 percent in all cases except in Scenario D where there is a large block of concentrated opposition. Again, this is consistent with observed behavior in routine voting contests, with dissident victories a very scarce commodity.

Table 1: Probability That Management Wins Routine Vote

Probability That Management Wins	Proxy Advisor Signals (—)	Proxy Advisor Signals (+)
Scenario A	.922	.972
Scenario B	.549	.923
Scenario C	.537	.766
Scenario D	.281	.589

2. Proxy Contest for Corporate Control

In Table 2, we set out management's odds of winning a single proxy contest when there is no pending takeover bid for the target company, and no classified board.[57] When the proxy advisor's signal is (+), management's odds of winning the contest are above 50 percent except in Scenario D. If the proxy advisor's signal is negative, then management's odds of remaining in power drop dramatically, falling below 30 percent in all but the Founding Family scenario.

Table 2: Probability That Management Wins Proxy Contest Vote

Probability That Management Wins	Proxy Advisor Signals (—)	Proxy Advisor Signals (+)
Scenario A	.732	.900
Scenario B	.264	.781
Scenario C	.247	.556
Scenario D	.124	.322

Scenario D is an interesting case because it allows us to model the impact of prohibiting the use of poison pills. As we have assumed that the dissidents do not have the resources to launch a tender offer in the proxy contest case (otherwise we would be in the takeover bid case), we can think of Scenario D as representing the outcome of a proxy contest where there is no poison pill and dissidents have control of a large, but not majority, block of stock. Irrespective of the proxy advisor's signal, dissidents win when allowed to accumulate 30 percent of the target company's stock. In other words, without the poison pill, dissidents can engage in creeping acquisitions (or negotiate voting agreements with other shareholders) and use their position to push through value-decreasing transactions for target company shareholders.

The other interesting scenario in the proxy contest case is Scenario A. Here, the dissidents have a very small stake in the target company, and management is allied with the founding family so that it has a substantial block of shares in its corner. On the other side, dissidents own very little stock. This means that Management here

57. We note that classified boards, unlike poison pills, cannot be implemented by board action alone but require shareholder approval unless included in the corporation's initial articles of incorporation. As shareholders are unlikely to give such approval in the middle of a contest for corporate control, it is realistic to assume that a company that did not have a classified board before a control contest could not adopt one once such a battle developed.

will win the vote even if the target company has no poison pill because that defensive tactic's limitations on dissident stock ownership are not binding. This illustrates how large stock ownership can act as a substitute for defensive tactics, protecting incumbent management even in situations where disinterested observers believe a change of control transaction would be beneficial.

3. Takeover Bid Using A Tender Offer

In this case, we have a bidder that has launched a tender offer for the target company and is forced by the target's poison pill to engage in a proxy contest. However, because the target company does not have a classified board we need only consider the bidder's likelihood of success in a single election contest. Table 3 shows how management's likelihood of success will vary with the independent proxy advisor's voting recommendation.

Table 3: Probability That Management Wins In Takeover Bid Case

Probability That Management Wins	Proxy Advisor Signals (—)	Proxy Advisor Signals (+)
Scenario A	.509	.783
Scenario B	.113	.564
Scenario C	.098	.346
Scenario D	.045	.125

Now a negative recommendation by the proxy advisor leads to almost certain victory for the bidder except in the founding family case, where the odds are about even. Such a voting recommendation appears certain if the tender offer is at a premium over the market price, and the independent voting advisor is only taking into account gains to target company shareholders. Note that the poison pill provides little protection here, especially if the bidder is willing to purchase up to the threshold limit of 15 percent of the stock.[58]

When will the independent proxy advisor make a pro-management recommendation if there is a premium-priced tender offer before the shareholders? One possibility is that management will make a convincing argument to the proxy advisor that target shareholders should hold their stock for the long run, because the

58. In calculations not shown, we found that even in Scenario A if we give the bidder 15 percent of the target company's stock, the probability that management wins only drops slightly.

company's strategy is likely to yield greater benefits than the immediate premium that the bidder is offering. While this is possible, if we assume that the bidder's tender offer is a real bid, that is, it does not have conditions attached to it that make its potential closing highly uncertain, then rational shareholders will typically reject such arguments and sell their stock at an immediate profit.

A second and more plausible possibility is that institutional investors have diversified portfolios, which contain shares in both the target and the bidder. In takeover bids, a very common pattern is for the target company's shareholders to realize a gain on their stock, while the bidders' shareholders suffer losses on their holdings. For a diversified investor, this may lead them to conclude that a takeover bid is value decreasing for them on balance, especially if the value of their holdings of the bidder's stock greatly exceeds those they have in the target.

The independent proxy advisor's recommendations will reflect these facts. ISS commonly states its recommendations based both on the value of the transaction to the target company's shareholders and its value to diversified investors with holdings in both companies. If we think of institutional investors voting their shares in line with their financial interests, then a positive recommendation by the independent advisor could lead to management victory in some takeover bid scenarios. Note that the poison pill alone, therefore, is not enough to insure that management wins in all of these scenarios; it is still likely to lose in scenarios C and D.

What would be the impact of eliminating the poison pill altogether? In this case, shareholders would have to decide whether to sell their shares, rather than vote to remove the board of directors in order to sell the shares. Institutions are likely to make their selling decisions internally without use of the proxy advisor. However, we could think of the signal from the independent proxy advisor as instead reflecting an internal calculation by the institution about the net benefits and costs of the proposed transaction for them, as well as some adjustments for the likelihood that the takeover bid will close even if they do not tender into it. A negative signal seems very likely in this case, as even diversified shareholders would be likely to believe that other shareholders would sell. They would likely, therefore, decide to tender into the offer to insure that they received their pro rata share of the premium or, in the instance of an all shares offer, to

insure that they were not forced to wait until the second step transaction closed to get their money.[59]

The poison pill can be beneficial to diversified shareholders in these circumstances. For example, if diversified institutions would conclude that the net value of the deal was negative (their gains from selling target shares were outweighed by their losses on their holdings of bidder stock), their decision should be not to sell (that is, management should win). The poison pill permits these investors in making this decision to consider only their own behavior, and not to worry about other investors' decisions about tendering. Thus, the poison pill can benefit diversified investors by disconnecting the voting and selling decisions and thereby stopping certain value decreasing deals from closing.[60]

4. Proxy Contests for Corporate Control With Classified Boards

When the target company has a classified board, then the dissident shareholders who are not making a tender offer will need to fight two proxy contests in order to gain control of the target. Table 4 shows the probability that management will win two consecutive proxy contests depending on the signal given by the independent proxy advisor.[61]

Of course, many dissidents will not undertake a second proxy contest even if they have won the first one for a whole host of reasons, including: the expense involved in a second contest, the multitude of circumstances that may have changed over the two-year time period, and the possibility that the target company may have agreed to sell itself to another bidder before a second proxy contest. We cannot precisely determine the impact that these potential changes may have on management's likelihood of success. However, we assume that, on average, these effects will increase the likelihood that dissidents will ultimately prevail if a second vote is held. Thus, the values in Table 4 are calculated with an assumption that shareholders are less likely to vote for management in the second vote than in the first vote.

---

59. This is often referred to as the "pressure-to-tender" problem. Lucian Arye Bebchuk, *The Case Against Board Veto in Corporate Takeovers*, 69 U. CHI. L. REV. 973, 981 (2002) ("Whenever the expected post-takeover value of minority shares is lower than the bid price, this scenario will exert pressure on the shareholder to tender. As a result, shareholders might tender, and a takeover might occur, even if most shareholders do not view a takeover as being in their collective interest.").

60. Bebchuk endorses poison pills for a similar purpose so long as they are not used to deny the bidder a chance "to win a vote of shareholder support." *Id.* at 986.

61. The values shown in Table 4 are computed using a two-step process. *See* discussion *infra* Part. IV.B.

Table 4: Probability of Management Winning Two Proxy Contests

Probability of Management's Winning Two Proxy Contests	Proxy Advisor Signals (—)	Proxy Advisor Signals (+)
Scenario A	.898	.985
Scenario B	.396	.931
Scenario C	.370	.758
Scenario D	.193	.470

Comparing Tables 2 and 4, the most obvious impact of a classified board is to increase the likelihood in every scenario for both types of signals from the proxy advisor that management will ultimately prevail in a proxy fight. Recall from the discussion of the single proxy contest case that Scenario D can be thought of as representing the outcome of a proxy contest where there is no poison pill. In the single proxy contest, we saw that without the poison pill preventing dissidents from accumulating a large stake in the target, dissidents could succeed in winning value decreasing proxy contests about two-thirds of the time. The impact of the classified board is to shift these probabilities so that the dissidents' chances of victory in a value decreasing transaction are reduced to only about 50 percent. This illustrates how a classified board can be beneficial to target company shareholders in proxy contests.

However, it is an open question whether this benefit to shareholders is worth the additional costs of forcing the bidder to fight two proxy contests. First, we note that the direct costs of two proxy fights may be very substantial–tens of millions of dollars for any public company–and these are deadweight costs for both target and bidder company shareholders. Second, there are undoubtedly large indirect costs to the target, as its management will be distracted from its primary tasks of managing the firm for at least a year and possibly as long as two years. Finally, the bidder faces high costs from waging a second contest and may decide to drop a value-enhancing contest in order to minimize these costs. Estimating these costs for bidders and targets is a difficult, yet unanswered, empirical question that lies outside the scope of this Article.

5. Takeover Bids Using a Tender Offer with Classified Boards

When the target company has both a classified board and a poison pill, the bidder will need to win two voting contests in order to buy the target company shareholders' stock. In Table 5, we present the probabilities of management victory with these defenses in place. As with Table 4, the most apparent effect of adding the classified board is to increase the likelihood that management wins in all scenarios for both types of voting recommendation.

Table 5: Probability That Management WinsIn Extended Takeover Bid

Probability of Management's Winning Extended Takeover Bid	Proxy Advisor Signals (—)	Proxy Advisor Signals (+)
Scenario A	.711	.939
Scenario B	.181	.761
Scenario C	.156	.644
Scenario D	.072	.193

Even with the classified board, a negative signal from the proxy advisor has a powerful effect on management's likelihood of success: only in the founding family situation do management's chances of success seem good, while in the other scenarios, they do not exceed 20 percent. We continue to view the negative signal by the independent advisor as the most likely one, as we do with takeover bids where there is no classified board, because takeover bids are priced at a premium over the market price, with the exceptional positive signal being limited to situations where diversified shareholders find the transaction value-decreasing.

As with proxy contests with classified boards, it is worth questioning the value of forcing bidders to fight a second contest. Prior research has found that no hostile bidder has gone through two voting contests in an extended takeover bid.[62] This indicates that even bidders with premium priced bids that may be value maximizing do not pursue them.

While this seems at odds with the values in Table 5, we have calculated those numbers assuming that the bidder will continue to press its takeover bid through the second voting contest. As with the

62. Bebchuk et al., *supra* note 1, at 877.

two proxy fight case, there are many reasons why this may not be true. For example, in cases where the proposed transaction is value-increasing for shareholders, as will usually be the case with a premium priced tender offer, there is some evidence that a target company board of directors' resistance collapses after the bidder's initial victory and a friendly transaction is negotiated.[63] The directors' decision could reflect the underlying values shown in Table 5, which show that, in most instances, target management's position is not sufficiently enhanced by the classified board for it to prevail in a second contest. In other instances, the bidder may decide that the costs of keeping its tender offer open and engaging in a second (or in some cases even a first) proxy fight are prohibitive, and either drop its bid or never even begin one. If bidders drop value-enhancing bids for these reasons, then the classified board may cost shareholders more than it benefits them.

D. Summary of Basic Results

Thus far, we have assumed that the current legal regime applies so that corporate management determines whether to accept an unsolicited bid and can use a wide variety of antitakeover defenses to forestall hostile bidders. In this world, none of the acquisition techniques considered will always lead to the desirable outcome for target company shareholders in *any* scenario. Bidders succeed in obtaining control of the target company in some value-decreasing transactions, and are defeated in their acquisition efforts in some value-increasing transactions. The model thus illustrates why there is generally some plausible basis for target management to argue that using defensive measures to stop a takeover bid is in its shareholders' best interests.

Comparing different acquisition forms, our model predicts that proxy contests give management a better chance to defeat a hostile bid, thereby increasing the likelihood of defeating value-decreasing transactions, but reducing the likelihood of accepting value-increasing transactions. By contrast, tender offers result in more hostile change of control transactions succeeding, but permit a larger number of value-decreasing transactions. Thus, neither acquisition technique can be automatically preferred on the basis of the maximization of target company shareholder value.

---

63. *See* Martin Lipton, *Pills, Polls, and Professor Redux*, 69 U. CHI. L. REV. 1037, 1057-59 (2002) (describing Willamette directors' decision to sell as "a shining example of how a staggered board and poison pill operate to the benefit of shareholders").

Our predictions do not depend on whether defensive tactics such as the poison pill and classified board exist. Permitting effective classified boards raises the likelihood of management prevailing in all scenarios, but does not insure that only value-increasing transactions are completed. Conversely, banning effective classified boards lowers the odds of management winning but does not insure that value-maximizing transactions are always consummated. If, however, we consider the transactions costs associated with running two proxy contests into the model, it appears likely that effective classified boards are likely to stop bidders from gaining control over targets. Shareholder voting alone cannot lead to a change of control in these circumstances, although it does place a significant amount of pressure on the target board to sell the company before the second election, either to the original bidder, or to a friendly third party.

Under current law, our model demonstrates that shareholder voting will only be dispositive in situations where the target company lacks an effective classified board so that dissidents can obtain control through a single proxy fight. Even here, though, management has the ability in many cases to stack the odds in its favor through a variety of other defensive maneuvers, such as the sale of large blocks of stock to friendly third parties (white squires) or the creation of an employee stock option plan (our Scenario B). Thus, management retains a substantial edge in many proxy contests for corporate control even without an effective classified board.

VI. POLICY IMPLICATIONS

Our discussion in Section V assumed that the current legal regime applied. Yet, there are many other possible legal regimes that could be adopted, and the policy implications of our results depend largely upon the underlying theory of shareholders' appropriate role in corporate takeovers. In this Section, we consider how two competing theoretical views may affect our results.

One popular perspective on shareholder voting is that target management should not be allowed to use any defensive measures to impede shareholders' choice to accept an unsolicited tender offer.[64] In this world, bidders are free to acquire control if they can convince shareholders to tender a sufficiently large amount of stock into their offer, and thereby accumulate a large enough number of votes to force

64. Frank H. Easterbrook & Daniel R. Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 HARV. L. REV. 1161, 1188-89 (1981).

out the existing target company board of directors. This situation is analogous to that shown in Table 3, Scenario D, where the bidder is free to accumulate 30 percent of the stock before starting a tender offer.

In this case, unfettered shareholder voting should lead to a change of control in both situations. However, this means that even in situations where the transaction is value-decreasing, the bid will prevail. Moreover, as others have shown, the pure passivity approach may lead to lower premiums being offered in all takeover bids so that overall shareholder wealth could be reduced.[65] Therefore, from a social welfare perspective, we cannot conclude that this approach is preferable to the current regime.

An intermediate position on the proper role of shareholder voting is that shareholders should be able to vote to remove any defensive tactic that is interfering with the right to sell or vote their stock.[66] However, in order to permit the target company's board to act as a unified bargaining agent for the firm's shareholders, directors should be able to delay such votes for a limited period of time to facilitate such negotiations. Thus, shareholders should be able to act at the company's annual meeting in order to remove defenses that stop them from approving a change of control transaction. An analogous position was endorsed by the Delaware Court of Chancery in its *Interco* decision, although the Delaware Supreme Court later disapproved of that decision.[67]

The essence of this position is that no target can prolong its defensive stance beyond a maximum of thirteen months, the greatest possible time required to bring the target's defenses before an annual shareholders' meeting. This eliminates the possibility of target management using an effective classified board to force a bidder to launch two proxy contests unless there is a target company shareholder vote approving that defense. Such an affirmative vote would be highly unlikely in situations where ISS has recommended that shareholders accept the bid (which would normally correspond to those bids that offer a sizeable premium over the market price).

Applying this perspective, our model shows that the composition of the shareholder body and the recommendation of ISS play very substantial roles in determining whether takeover bids are

65. *See, e.g.*, Ronald J. Gilson, *Seeking Competitive Bids Versus Pure Passivity in Tender Offer Defense*, 35 STAN. L. REV. 51, 56 (1982); Lucian A. Bebchuk, *The Case For Facilitating Competing Tender Offers: A Reply and Extension*, 35 STAN. L. REV. 23, 50 (1982).

66. Robert B. Thompson & D. Gordon Smith, *Toward a New Theory of the Shareholder Role: "Sacred Space" in Corporate Takeovers*, 80 TEX. L. REV. 261, 300 (2001).

67. Paramount Communications, Inc. v. Time Inc., 571 A.2d 1140, 1152-53 (Del. 1989).

ultimately successful. All defenses are assumed valid for a period of thirteen months, or until the holding of the company's annual meeting, whichever is earlier. At this point, there is a shareholder vote on whether to keep them in place or accept the bid. In essence, this policy reduces all takeover battles to the outcomes shown in Scenarios A, B, and C of Table 3. Management wins the vote in most cases where the transaction is value-decreasing, and loses in most takeover contexts where the takeover is value-increasing. As with the other approaches, we cannot claim that this will always maximize shareholder value.

However, our view is that the intermediate position, although not currently favored by the courts, is the most sensible. It allocates to both management and shareholders important roles in responding to an unsolicited takeover proposal. Management can resist unwanted bids using defensive tactics, while simultaneously trying to convince shareholders that the market has undervalued the firm, or alternatively seeking higher offers for the company either from the original bidder or from third parties. At the same time, shareholders retain a meaningful way to express their preferences about the proposed transaction at the ballot box without undue immediate pressure to tender their stock into what may be a lowball bid. This approach is preferable to the current system because it maximizes shareholder value in at least as many cases, and it gives shareholders a greater say over their own fate.

VII. CONCLUSIONS

In this Article we develop a realistic simulation of corporate voting and apply it in a wide variety of settings. Our results show that none of the different legal theories about the proper role of target management and shareholders in responding to an unsolicited takeover bid will lead to the maximization of shareholder welfare in all circumstances. The current legal regime gives management too much discretion to reject unsolicited bids at the expense of shareholder wealth maximization. A pure passivity regime, while permitting unfettered shareholder choice, may result in acceptance of value-decreasing bids, reduce the size of premiums paid by bidders in all transactions, and lower overall shareholder wealth because it eliminates management's ability to negotiate better terms for shareholders in a takeover situation.

Finally, we consider an intermediate position that allows shareholders to vote on the continued use of takeover defenses at the first annual meeting after the announcement of the bid. This

approach permits both management and target shareholders to have a role in determining whether to accept an unsolicited bid. While this theory does not always lead to the acceptance of value-increasing bids, it does so in most circumstances. Moreover, when we compare it to the current legal regime, we see that neither one is plainly superior in terms of maximizing shareholder value, while the intermediate position has the advantage of giving shareholders more say over their own fate.

TECHNICAL APPENDIX

There have been two major efforts to analyze corporate voting contests. Unlike our model, which falls squarely in the realm of weighted voting theory, these models are either decision-theoretic or game-theoretic. The voters will base their votes (or in some cases their decision to vote at all) on strategic considerations involving their individual expected utilities. Gilson and Schwartz[68] employ game-theoretic voting models to cast doubt on whether elections lead to efficient acquisitions. Bebchuk and Hart[69] develop a multistep decision-theoretic model to analyze proxy contests in which the inability of rivals to convince shareholders of their superior ability results in inefficient outcomes. In each of these articles, the models employed ignore key aspects of proxy battles.

We begin with Gilson/Schwartz. Their analysis of elections as the means of transferring corporate control is two-pronged. Their first attack employs a perfect information game-theoretic voting model that concludes that a minority of the shareholders with sufficiently large incentive (or sufficiently low cost of voting) could win a proxy contest leading to an inefficient outcome. Their second model, a game-theoretic voting model with imperfect information, is used to illustrate how an election with imperfect information can fail to produce an outcome equivalent to the full information election.

The first of the models Gilson and Schwartz present is based on the work of Campbell.[70] The assumptions of the model are as follows: each shareholder can cast a single vote either for acquisition (A), or no acquisition (N), or the shareholder might abstain from the election altogether. Let Θ_i be the marginal payoff to the i^{th} voter of A winning over N. If $\Theta_i < 0$ then i prefers outcome N to A. Moreover, there is a non-zero cost to voting, which Gilson and Schwartz call c, but Campbell normalizes to 1.[71] Gilson and Schwartz are not clear about

68. Gilson & Schwartz, *supra* note 3, at 10-28.

69. BEBCHUK & HART, *supra* note 4, at 22-35.

70. Colin M. Campbell, *Large Electorates and Decisive Minorities*, 107 J. POL. ECON. 1199 (1999).

71. *Id.* Campbell can normalize the cost for his purposes, because it is only the ordinal properties of the utility functions that matter and not their actual value. As an example of this scaling behavior, suppose a voter has u(A)=4 and u(N)=16 so Θ=4-16=-12. Also suppose that his cost of voting c is 2. Then for the purposes of this model, this voter will make exactly the same decision about how (and whether) to vote if all of these numbers are scaled by dividing by 2 so that c=1, u(A)=2, u(N)=8 and Θ=-6.

whether the cost c is truly constant or only a constant relative to utility scaling.[72] It is assumed that each shareholder will only cast a vote if she expects her vote to be pivotal and the marginal benefit of winning the vote exceeds the cost of the vote.

Before proceeding further, let us consider the various hypotheses in this model. There are two that stand out as problematic. The first is that each shareholder casts one vote, when in a true corporate election the number of votes cast by each shareholder can vary dramatically. Gilson and Schwartz do not say much about this assumption, relegating the condition to a footnote[73] and remarking that "(t)he one share-one vote assumption will turn out not to be innocuous in the imperfect information case analyzed in Part 4 below." But why the assumption ***is*** innocuous in their first model is never explained. In a rational voting model in which calculations of being pivotal are crucial, the number of shares voted is a critical variable. So, already we must be wary of conclusions drawn from this model.

The second problematic assumption is that shareholders cast their votes strategically. If shareholders only vote when they think their vote will be pivotal and when the marginal benefit of winning exceeds the cost of the vote, then the outcome is that very few shareholders cast a vote at all. In fact, as the number of voters gets large, the percentage of votes cast goes to 0.[74] Yet we know that many shareholders, such as pension funds, are legally obligated to vote and are precluded from making this sort of strategic decision. Since these tend to be large shareholders, their nonstrategic voting complicates considerably the strategy for strategic voters. Furthermore, actual voting percentages in contested elections average more than 85 percent of all shares.[75] None of this is discussed by Gilson and Schwartz.

The important conclusion of the model is that the minority position might win an election if the voters who hold that position are suitably *zealous,* by which we mean that the voters get a

72. The question of the normalization of the cost is problematic for Gilson and Schwartz. It undermines their analysis of efficiency later in the paper.

73. Gilson & Schwartz, *supra* note 3, at 10 n.24.

74. This is a common problem for strategic voting models. *See* Donald P. Green & Ian Shapiro, PATHOLOGIES OF RATIONAL CHOICE THEORY, A CRITIQUE OF APPLICATIONS IN POLITICAL SCIENCE, 50 (1994).

75. See THOMAS &. DIXON, *supra* note 12, for further discussion on this point. At the very least, a sufficient number of shareholders must submit proxies in order to establish a quorum for certain types of shareholder action.

disproportionate amount of utility if their candidate is successful.[76] The result is that if the number of voters gets large, and the voters in favor of N are more zealous than those for A, then N will likely win the election *whether or not the total number of voters favor N.* The intuition is that as the number of voters gets large, only the most committed voters will cast their votes, and since the voters in favor of A are more committed than those for N, A will win regardless of the underlying distribution of voters.

For Gilson and Schwartz it is not quite enough that the minority position might triumph in a proxy contest. What matters for them is that the economically inefficient position might triumph in the contest, that is, the utility gained by those that favor N winning might be less than the utility lost to those who would have preferred A.[77] They assert that "when a large majority prefers an outcome but the minority has more zealous voters and defeats the outcome for this reason, the result often will be inefficient."[78]

There are two critiques to be made of the conclusions drawn from this model by Gilson and Schwartz. The first is the assertion that management shareholders are likely to be more zealous than other shareholders both because their private benefits are at risk in a takeover and because their cost of voting is less than other shareholders. Gilson and Schwartz lump all non-management shareholders into a group called independent shareholders who, it is assumed, receive no benefits from ownership other than the value of their shares. Under this assumption, they go on to argue that since the management shareholders have their private benefits at risk as well as the value of their shares, they are likely to be more zealous than the independent shareholders.[79]

While it is certainly possible that management has more at stake in a takeover than the average shareholder, surely any dissident shareholders pursuing a takeover (and the ensuing private benefits) will have as much at stake as management. Indeed, they may well be able to increase the size of the private benefits they receive over those

76. Let π be the proportion of the voters who prefer N. To incorporate zealousness, we assume that there is a number $x(\pi)>0$ such that for all types $\Theta > x(\pi)$ we have $F(-\Theta) > 1- F(\Theta)$. This assumption asserts that for some threshold level of utility (given by $x(\pi)$), given any utility $\Theta > x(\pi)$ the probability that a voter prefers N and gets at least Θ in marginal utility for N winning is greater than the probability that a voter prefers A and gets at least Θ in marginal utility for A winning. In this sense, the voters in favor of N are considered more committed to the outcome than the voters who favor A.

77. Gilson & Schwartz, *supra* note 3, at 17.

78. *Id.* at 18.

79. *Id.* at 19.

secured currently by management.[80] Gilson and Schwartz do not need to consider this possibility because of their decision to break the shareholders into only two groups, management and independent. If we consider a division into three groups, management, independent, and dissident, then we are confronted with a more difficult empirical question, the answer to which cannot be so easily decided.

The second, and more subtle (and technical), critique of their assertions about the likelihood of an inefficient outcome is based on their misuse of utility theory in the context of the voting model they have chosen to employ. To see this, we have to go back to their initial assumptions. Recall that the model identifies each voter with a value Θ corresponding to the difference between the utility received by the voter if A wins and the utility received if N wins. This difference of utilities is independent of the cost of voting. In the original work of Campbell, the utilities were scaled so that the cost of voting was always 1.[81] It was the fact that the costs were constant relative to the utility that allows them to decide whether a voter will cast a ballot solely on the basis of his utility Θ. If the costs were not constant in terms of the utility, it would be possible for one voter with parameter Θ to have such a high cost of voting that he would not vote under any circumstances and another with parameter Θ with a lower cost who would vote under some circumstances.

As we noted earlier, an arbitrary multiplicative scaling of the utilities does not affect the decisions of the individual voters.[82] And since comparisons of utility between voters are not relevant to the decisions of the voters, we can, with impunity, scale them as we wish.

Gilson and Schwartz are quite adamant that the costs of voting are not constant.[83] In fact, as they note, if the costs of voting are independent of the utility, then the effect that they wish to demonstrate, a minority position winning an election, cannot occur.[84] But if the costs are not constant, then the rescaling of the utilities to get the cost to equal 1 ruins any chance of comparing the size of the utilities without knowing *a priori* the costs involved.[85] For instance, if Θ is large for a particular voter it could be because the underlying utility is large or it could be because the cost of voting for that voter is

80. This may be offset by management's lower costs of soliciting shareholder votes because it can obtain reimbursement for its solicitation expenses whether it wins or loses in the contest, whereas dissidents only get reimbursed if they win. THOMAS & DIXON, *supra* note 12, § 24.

81. Campbell, *supra* note 69, at 1204.

82. *See supra* note 71.

83. Gilson & Schwartz, *supra* note 3, at 20.

84. *Id.* at 18.

85. Of course we should really try to avoid comparing utilities, anyway.

small. Similarly, the value of Θ could be small if the utility is small or if the utility is large but the cost of voting is large as well. If the cost of a vote is *c*, then the utility gained from A winning is $c \times \Theta - c$, but all we can see in the model is $\Theta - 1$. It is impossible to compute the actual utility without knowing the cost.

Gilson and Schwartz ultimately base their claim about the economic inefficiency of the outcome of a proxy battle on an estimate of the expected value of Θ, showing that "[w]hen the electorate is large and π [the proportion of the voters who prefer N to A] is small, the probability thus is very low that the sum of *all* voters' Θ's is negative."[86] But as we just noted, since the utilities have been rescaled, the expected value of Θ is completely meaningless as a measure of welfare. Without that measure, Gilson and Schwartz can say little about efficiency that is conclusive.

We move now to Gilson and Schwartz's second model. In this model, they consider a rational choice voting model with imperfect information. They conclude, under the hypotheses of their model, that a proxy vote will not aggregate the private information correctly, resulting in an inefficient outcome. The complicated model they employ is taken from the work of Feddersen and Pesendorfer.[87]

The Feddersen/Pesendorfer model concludes that large elections satisfy *full informational equivalence*, i.e., the alternative that wins in a large election is almost surely the same as the alternative that would have been chosen if the electorate were fully informed of the true state of the world.[88] Of course, this result would seem to put proxy battles in a rather good light. What Gilson and Schwartz proceed to do is show that the hypotheses of the Feddersen/Pesendorfer model do not hold. For instance, they note that if blocs of shares are voted, instead of each voter casting a single vote, then one cannot conclude that full informational equivalence holds. They also note that Feddersen/Pesendorfer's assumption that the distribution of the utilities of the shareholders is common knowledge is incorrect in the corporate context.

But for all their objections, what have Gilson and Schwartz really proven? They have shown that the Feddersen/Pesendorfer model cannot guarantee full informational equivalence with the generality that it could with the more restrictive assumptions. That is

86. Gilson & Schwartz, *supra* note 3, at 17 n.31.

87. *See id.* at 23 n.38 (citing Timothy Feddersen & Wolfgang Pesendorfer, *Voting Behavior and Information Aggregation in Elections with Private Information*, 65 ECONOMETRICA 1029 (1997)).

88. They also conclude that large elections are close with probability 1, something that one does not observe in the real world.

a far cry from demonstrating that in the class of elections being considered it does not hold. And, even if full informational equivalence cannot be guaranteed, how often is it violated? Gilson and Schwartz are silent on this point. Feddersen and Pesendorfer show that if the distribution of types is not common knowledge but the uncertainty in that distribution is small compared to the uncertainty associated with the state of the world, then full informational equivalence nearly holds.[89] Perhaps proxy contests are not so bad after all.

In summary, Gilson and Schwartz present two distinct game-theoretic voting models to test whether proxy battles will lead to economically efficient outcomes. One of these models assumes perfect information but includes a cost to vote. The other has no cost to voting but assumes imperfect information. The first model ignores the problem of blocs of shares being voted, which is considered a critical problem in the second model. The first model assumes perfect information in the distribution of types, which again is considered a critical drawback in the second model. Both these models are based on game-theoretic models that have no empirical substantiation. Given all of these shortcomings, we conclude that they have not substantiated their claims.

Now we turn to Bebchuk and Hart's decision-theoretic model, which contains three classes of shareholders. First, there are rational informed investors who own a tiny fraction of the shares of the corporation but have sufficient wealth to set the market price. Rational uninformed investors compose the second and largest group of shareholders. They draw inferences based on their *a priori* distribution of the cash flows under the incumbent management and under the rival, as well as the market price set by the informed investors. The third group of investors is the noise investors, who are irrelevant for much of the analysis. Their sole purpose is technical, insuring that certain strategic behavior is forestalled and that the uninformed investors always have a chance of being pivotal and will vote sincerely. We will not mention them further.

We will begin by discussing their model of a proxy contest. Assume a rival, R, appears and initiates a proxy challenge to an incumbent, I. If I retains control, denote, by Y_I, the resulting cash flow, and let Y_R denote the cash flow if R wins control. Their analysis of a pure proxy battle is based on a three-stage process. In the first stage, rational informed investors, who have complete information about what the cash flows will be under the different managements

89. Feddersen & Pesendorfer, *supra* note 87, at 1046-47.

(the values of Y_I and Y_R), set a price for the stock in the first stage. In the second, the rational uninformed investors, seeing the price set in stage one and knowing the distribution of the cash flows of the corporation under the two different managements (i.e., they know the distribution of the values (Y_I,Y_R)), decide how to vote. In the last stage, the cash flows and private benefits are realized.

Bebchuk and Hart present two propositions about pure contests. The first proposition gives conditions under which R will launch a successful proxy battle and the resulting transfer of control will be efficient. The required conditions are extraordinarily restrictive and we are not told why anyone would expect them to hold.[90]

The more interesting proposition is a negative result when there is imperfect information. To incorporate the imperfect information among some of the shareholders about the sizes of the cash flows (Y_I and Y_R), we suppose that (Y_I,Y_R) is drawn from a known probability distribution with mean (Y_I^*, Y_R^*) and with support $(0,Y) \times (0,Y)$. Note the assumption that this distribution has support on the whole open square and that it need not be defined at the point (0,0).[91] This seemingly innocuous condition will be discussed later.

The principal conclusion that Bebchuk and Hart wish to draw from the model is that the difficulty in convincing uninformed shareholders that the cash flows under R will exceed the cash flows under I ($Y_R > Y_I$) leads to a unique solution in which there is unanimous vote of the shareholders against a takeover. They start with the assumption that "it is plausible to assume that, in the common case, the average quality of potential rivals is lower than the quality of the incumbent."[92] This assumption enters the model in the form of the assumption that the expected value of the cash flow under R is less than the expected value of the cash flow under I ($Y_R^* < Y_I^*$), and they observe that:

> if rational uninformed shareholders cannot infer information about ΔY_R from the market price and if $Y_R^* < Y_I^*$, then all rational uninformed shareholders will vote against R even if $Y_R > Y_I$. Hence, under these conditions R will never launch a proxy fight.[93]

The model proceeds as before: the market-making rational informed investors set a price, the rational uninformed shareholders vote, and the benefits are realized.

---

90. BEBCHUK & HART, *supra* note 4, at 13.

91. Having support on $(0,Y)\times(0,Y)$ means that for every pair of numbers a and b, each strictly between 0 and Y, there is some positive probability that Y_I=a and Y_R=b.

92. BEBCHUK & HART, *supra* note 4, at 14.

93. *Id.* at 15.

Before stating their proposition, let us consider some of the hypotheses of this model. In order to achieve a stable outcome,[94] the market makers will have to set one of two prices, either Y_R or Y_I. This is because the model sets up the proxy battle as a coordination problem in which only pure strategies[95] are allowed. Whatever price they set, the rational uninformed voter will not be able to tell, *a priori*, whether the price set is Y_R or Y_I; because the distribution of (Y_I,Y_R) has support on the whole open square, any value is possible for each of Y_I and Y_R. Nor can the uninformed voters look to previous valuations of the stock for a clue. Given this model, it is surprising that there is any set of strategies that will result in a stable outcome, and, indeed, in general there is not.[96]

Bebchuk and Hart require an additional hypothesis to produce a stable solution. The assumption they employ is that no matter what the cash flow is under I, we expect that the cash flow under R will be worse.[97] With this assumption, Bebchuk and Hart show that the unique equilibrium solution occurs when market price is set at Y_I and all of the investors vote in favor of I.

This result is not all that surprising given the very stringent hypotheses. If the only information available to the uninformed shareholders is a price, and they presume that R will always perform worse than I, it is predictable that they will never vote for R. And since the only signal that the informed shareholders can send to the uninformed ones is ambiguous, there is not enough information to persuade them otherwise.[98]

Because of the extreme technical conditions and unrealistic hypotheses inherent in this model, we do not find the conclusion that proxy battles are unwinnable to be compelling. In fact, Bebchuk and

---

94. A stable outcome means that the market makers will set a price in such a way that the outcome of the election results in the price that they set.

95. The pure strategies are "vote for I" and "vote for R". The model has each voter choose one of these alternatives, and they are not allowed to randomize their vote, i.e., they are not permitted to condition their vote on a flip of a coin and vote for R if the coin comes up heads and I if it comes up tails.

96. If we allow distributions on the variables (Y_I,Y_R) whose support does not cover the square then there may be stable solutions other than the unanimous vote in opposition. Mostly, however, there will he no stable solutions at all.

97. This assumption is expressed formally as $E[\Delta Y_R \mid Y_i=x]$ is negative for all x, $0 < x < Y$.

98. Before ending this discussion, we would make one technical point about the assumption that the expectation $E[\Delta Y_R \mid Y_I=x]$ is negative for all x. It is an exercise in calculus to see that, under this hypothesis, if the probability distribution on the open square is continuous, then there is no way to define that distribution at (0,0) continuously. This is because the distribution must go to infinity on any path in the square that stays below the main diagonal and converges to (0,0). This eliminates most of the standard distributions one might think of, and explains that rather odd assumption that the distribution is defined on the open, instead of closed, square.

Hart take this conclusion with a grain of salt as well. They outline three different scenarios under which a proxy contest might be won. The first, which they call a verifiable plan of action, amounts to R convincing the uninformed shareholders that $Y_R^* > Y_I^*$.[99]

Another scenario suggested by Bebchuk and Hart that might lead to the success of a proxy battle is when R owns a substantial block of the shares of the company prior to the battle. If R owns a large number of shares, then there is a way that he might convey to the uninformed shareholders what Y_R is.[100] It is certainly plausible that the outcome of a proxy contest might depend on the size of the bloc of shares that R holds. We discussed this situation in our simulation in Section V in Scenario D.

Their final successful proxy battle scenario is when R proposes a tender offer of value Π that exceeds Y_I. This situation might arise when a poison pill is in place. Then R cannot launch a tender offer before taking over the board and disabling the pill. But, in the course of the proxy contest, R can announce what price he is prepared to offer for the shares. By giving an explicit signal of Y_R, R is able to circumvent the ambiguity inherent in the market-makers setting the price of the shares. In Section V we also discussed the prospects of success of a takeover bid coupled with a proxy contest in which a poison pill plays a role.

Having introduced these three situations in which a proxy contest might be successful, Bebchuk and Hart are silent as to how often they might actually arise. It is not even clear whether they think the exceptional cases are less or more likely to occur than the situation in which the proxy contest loses unanimously. Ultimately, then, it is hard to know how Bebchuk and Hart would answer the crucial question for policymakers, the actual likelihood of success of a proxy contest.

In summary, these two papers' analyses of proxy battles are not convincing. Gilson and Schwartz employ models with

---

99. BEBCHUK & HART, *supra* note 4, at 18. They suggest this might be done if R has some attractive and verifiable plan. *Id.* As an example, they cite Kerkorian's 1995 proxy fight against Chrysler, in which Kerkorian promised to distribute the company's accumulated cash to the shareholders. *Id.* But even if the plan was sufficient to convince the shareholders that $Y_R^* > Y_I^*$, some additional conditions would be required in order to achieve an equilibrium in their voting model.

100. If R owns Θ shares of stock, then a successful takeover of the company will lead to a payoff to R of $\Theta \Delta Y_R + B_R$ and so R would only pursue a takeover battle if $\Theta \Delta Y_R + B_R > c_p$. "Thus, if R has a block Θ, shareholders' estimate for ΔY_R (without any inference from market prices) will be $E[\Delta Y_R \mid \Theta \Delta Y_R + B_R > c_p]$ and not ΔY_R^*." BEBCHUK & HART, *supra* note 4, at 18. While this is true, they do not explain how the uninformed investors were able to assess this conditional probability, since they have no information about the value of B_R.

unreasonable hypotheses and reach suspect conclusions. Bebchuk and Hart's model requires exceptionally strong hypotheses, including rather stringent mathematical assumptions, to reach its outcomes.

Patents, Essential Medicines, and the Innovation Game

David W. Opderbeck *58 Vand. L. Rev. 501 (2005)*

Current international patent rules strike an uneasy balance between conflicting views about patents. The precarious nature of this balancing act is illustrated by the recent heated debate about the conditions under which compulsory licenses will be available for certain essential medicines under the Trade Related Aspects of Intellectual Property (TRIPS) agreement. That debate produced a compromise that will do little to fix the essential medicines problem.

This Article argues that the recent debate was misplaced because it ignored differing elasticities of demand between developed and developing country markets. Demand elasticity is a primary driver of the utility of patent rules. If demand is inelastic, strong patent protection allows the patent owner to charge a price premium and the social cost of the patent monopoly is minimized. If demand is elastic, however, the justification for strong patent protection evaporates. In a demand elastic market, the patent owner cannot sustain supercompetitive pricing, and the social cost of such pricing is high.

This Article argues that the level of patent protection in developing countries is irrelevant when there is inelastic demand and a relatively large market in developed countries. The author supports this argument with a game theory analysis of the essential medicines debate. The author's analysis shows that, at least with respect to essential medicines for which there is strong demand in developed countries, the level of patent protection in developing countries makes no difference. The author concludes that the international patent system governing such products should allow greater flexibility for generic imitator competition in developing country markets.

***