An Economic Analysis of the Potential for Coercion in Consent Solicitations for Bonds

Royce de R. Barondes
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INTRODUCTION

WHEN corporations issue bonds\(^1\) to the public, to induce investors to purchase the bonds at a higher price, the corporations frequently agree that they will not engage in specified transactions. These agreements, known as covenants, may subsequently prevent consummation of transactions that an issuing corporation’s management believes to be in the best interest of the corporation.\(^2\) In those

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Tom Brome of Cravath, Swaine & Moore, in an offhand remark made a number of years ago, first drew my attention to the risk that companies may compel their bondholders to approve amendments to indentures through the consent mechanism discussed in this Article. Because I have been puzzled and distracted by the manner in which this issue had been contractually resolved during the time that I practiced securities law, I remain uncertain whether this acknowledgement also should express gratitude. I also would like to thank H. Kurt von Moltke of Kirkland & Ellis for his thoughtful comments on the issues considered in this Article, including the identification of a number of patterns in the actions of participants that are observed in practice.

1. This Article uses the term “bond” to refer generically to debt securities. Others may use the terms “notes” and “debentures” to distinguish the maturity of the securities or the existence of any security.

2. There are four major categories of restrictive covenants that are contained in indentures: (i) covenants restricting the assumption of additional indebtedness; (ii) covenants limiting the payment of dividends; (iii) covenants restricting acquisitions, mergers and other changes in control; and (iv) covenants regulating the firm’s disposition of assets. Handbook of Corporate Finance § 12, at 27 (Edward I. Altman & Mary J. McKinney eds., 1986); Clifford W. Smith & Jerold B. Warner, On Financial Contracting: An Analysis of Bond Covenants, 7 J. Fin. Econ. 117, 118-19 (1979). See generally William W. Bratton, Jr., Corporate Debt Relationships: Legal Theory in a Time of Restructuring, 1989 Duke L.J. 92, 139-42, 156-58 (discussing the historical development of the scope of covenants); Morey W. McDaniel, Bondholders and Corporate Governance, 41 Bus. Law. 413, 424-29 (1986) (discussing the extent of covenants typically contained in indentures). Any of these types of covenants might prevent consummation of a desirable transaction and therefore become the object of a consent solicitation or an exchange offer. See John C. Coffee, Jr. & William A. Klein, Bondholder Coercion: The Problem of Constrained Choice in Debt Tender Offers and Recapitalizations, 58 U. Chi. L. Rev. 1207, 1216 n.27 (1991) (“Generally, the amendments would eliminate restrictive covenants; in a few cases, they would also subordinate the untendered old securities to the new securities or, in the case of secured debt, would release collateral pledged to support the old securities.”); Marcel Kahan & Bruce Tuckman, Do Bondholders Lose from Junk Bond Covenant Changes?, 66 J. Bus. 499, 504 (1993) (reporting in a survey of 48 events that involved consent solicitations, or tender offers or exchange offers coupled with consent solicitations, the need to receive the consent of the bondholders arose from the following

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circumstances, one solution is for the corporation to prepay the bonds. This approach may not be feasible, however, because some bonds are not subject to prepayment at the option of the issuer. Even if the bonds are callable, the specified prepayment premium may be prohibitively large in the particular context. Where bonds whose covenants prohibit a transaction cannot be called feasibly, management may instead seek to obtain the express consent of the bondholders to the transaction by amending the indenture under which the bonds were issued. The process by which issuers obtain the agreement of bondholders is called a consent solicitation. Typically, these consent solicitations are directed to holders of non-investment grade bonds.

The Trust Indenture Act of 1939 (the "TIA") requires that publicly issued debt registered under the Securities Act of 1933 be issued pursuant to an indenture qualified under the TIA. Two instruments create rights of the holders of publicly offered bonds against the issuer, the indenture and the bond itself. Although an amendment to the indenture would modify each bondholder's rights under the indenture, types of transactions: leveraged acquisitions, 37.5%; payments to stockholders, 16.7%; internal restructurings with no financial distress, 12.5%; asset sales without the assumption of debt by the purchaser, 10.4%; the issuance of additional debt, 8.3%; the avoidance of mandatory repurchases, 4.2%; and other, 10.4%).

Indentures for subordinated bonds typically provide that the terms of the subordination provisions cannot be amended without the approval of all holders affected thereby. Ford Lacy & David M. Dolan, Legal Aspects of Public Debt Restructurings: Exchange Offers, Consent Solicitations and Tender Offers, 4 DePaul Bus. L.J. 49, 67 (1991); see, e.g., Model Simplified Indenture § 9.02(7), reprinted in 38 Bus. Law. 741, 763 (1983). Therefore, issuers typically cannot further subordinate outstanding subordinated bonds as a part of a consent solicitation. However, issuers desiring to achieve a similar effect can issue debt in an exchange offer having a term less than the remaining term of the outstanding bonds or can cause subsidiaries to incur debt issued in exchange for outstanding bonds. See McDaniel, supra, at 426 ("Unsecured subsidiary debt is much like secured parent company debt because bondholders of the parent can reach the assets of the subsidiary only after the creditors of the subsidiary have been paid off."); Mark J. Roe, The Voting Prohibition in Bond Workouts, 97 Yale L.J. 232, 246 (1987) (discussing the issuance of debt having a shorter term); Note, Distress-Contingent Convertible Bonds: A Proposed Solution to the Excess Debt Problem, 104 Harv. L. Rev. 1857, 1863 n.36 (1991) (discussing the issuance of debt having a shorter term).

3. One survey indicates that 88% of the bonds sold during the first quarter of 1991 were not callable. Gene Laber, Bond Covenants and Forgone Opportunities: The Case of Burlington Northern Railroad Company, Fin. Mgmt., Summer 1992, at 71, 72 n.1.

4. Generally, the price to call bonds equals principal plus accrued interest and a premium. The premium typically declines over time, beginning at a fee between one year's interest and one-half that amount, and decreasing to zero. The Handbook of Fixed Income Securities 269 (Frank J. Fabozzi et al. eds., 3d ed. 1991). Other bonds may provide for no prepayment premium.

5. See infra note 107 and accompanying text.


9. See generally Roe, supra note 2, at 256-58 (summarizing the development of a doctrine under which holders could have separate actions under the two documents).
a bondholder's right to receive payment of principal or interest on the
bond when due generally may not be impaired without that bond-
holder's consent. This prohibition effectively prevents issuers from
making amendments to those fundamental obligations as a part of
consent solicitations. However, the TIA does not require that other
amendments receive the approval of all affected bondholders; the vote
required to approve such other amendments is determined as a matter
of contract.

Companies desiring to amend an indenture frequently attempt to
increase the likelihood that a consent solicitation will be successful by
offering to pay a specified amount to each bondholder who delivers a
consent approving the amendment. Those amendments also com-
monly are sought in connection with a simultaneous exchange offer or
tender offer, in which the issuer offers to exchange its outstanding
bonds for other securities or property. In such a case, a bondholder is
required to deliver a consent as a condition to tendering bonds in the
exchange offer or tender offer (sometimes referred to as an "exit con-
sent"), and the issuer may condition payment for the consent on ac-
ceptance of the exchange offer or tender offer by a specified
percentage of the bondholders. In this fashion, issuers attempt to en-
courage acceptance of the consent solicitation (and any simultaneous
exchange offer or tender offer), as those who do not consent or tender
will have reduced benefits under the indenture after consummation of
the consent solicitation. Issuers desiring to maximize the bondhold-
ers' incentive to consent may provide that the bonds not tendered will
be divested of more contractual benefits than are necessary to con-
summate the contemplated transaction. This type of offer increases

ment to securities having sophisticated terms may raise difficult issues. Compare
1992) (holding that an issuer's contractual obligation to repurchase bonds upon the
election of any holder, within 30 days of a specified interest reset date, is a payment of
principal governed by 15 U.S.C. § 77ppp(b)) with McMahan & Co. v. Wherehouse
(S.D.N.Y. Aug. 11, 1994) (holding that 15 U.S.C. § 77ppp(b) did not pertain to a
holder's right to have bonds repurchased, at the holder's option, upon certain "trig-
gering events," which included consummation of a merger not approved by the "In-
dependent Directors"). The TIA permits an indenture to grant holders of not less
than 75% of the bonds the right to agree to the postponement of any interest payment
for up to three years. See infra note 51 and accompanying text. This optional provi-
sion is not common. For example, it is not included in the Model Simplified Inden-
ture. Model Simplified Indenture, supra note 2, § 6.07. Under the TIA, an indenture
also may limit the right of bondholders to bring an action that would impair the lien

Section 318(c) of the TIA provides that terms required by the TIA to be included in
indentures qualified under the TIA are incorporated by reference into those inden-
tures and control in the case of any conflict with the express terms of the indenture. 15
the incentive to tender by increasing the detriment arising from not agreeing to a successful consent solicitation.

Bondholders presented with this type of incentive may find it not to be benign. Payment of a consent fee is a clear example of vote buying, and bondholders have challenged the legality of consent solicitations on the basis that the payment of a fee for a vote violates public policy. However, these challenges have not been successful.11

Because issuers control the structure of the consent solicitation, they have the ability to apply significant pressure on bondholders. This relationship appears to present the possibility that issuers will be able to compel bondholders to consent to amendments in transactions in which the consent fee does not entirely compensate for the decrease in value flowing from the amendment. Because the consent fee is paid only to those bondholders who deliver a consent, one might plausibly argue that bondholders will consent to a bad deal. Bondholders might rationally decide that agreeing to a disadvantageous amendment and receiving a consent fee is preferable to assuming the risk of receiving no fee and nevertheless having the amendment approved. Commentators analyzing these legal relationships have concluded that consent solicitations are similar to two-step, front end loaded stock acquisitions and have stated that bondholders may be placed in a Prisoner's Dilemma.12 If these analyses were correct, bondholders would be unable to negotiate collectively with issuers (absent a binding contract under which bondholders were required to act collectively), and bondholders would be compelled to consent to transactions not in their best interest. However, recent empirical evidence indicates that bondholders frequently are able to negotiate with issuers and obtain better terms.13

This Article examines why issuers frequently cannot present bondholders with an offer that draws on collective action problems to force the acceptance of the offer by the bondholders. The analysis is restricted to publicly offered bonds. For a number of reasons, privately placed debt presents fewer opportunities for coercion. A prior business relationship among various purchasers, which facilitates cooperation, may be more likely with respect to privately placed debt. Privately placed debt often has more significant protection for the bondholders than public debt with the same level of seniority.14

11. See infra notes 20-39 and accompanying text.
12. See infra notes 84-89 and accompanying text.
13. See infra note 90 and accompanying text.
greater protection afforded holders of privately placed debt no doubt arises, at least in part, because counsel for the purchasers often negotiates the terms of the debt directly with the issuer. These negotiations are in contrast to the negotiation of the covenants of publicly issued debt, which are between the issuer and the underwriters. These factors may combine to diminish collective action problems for holders of privately placed debt. For similar reasons, holders of syndicated commercial loans are less likely to face collective action problems.

Because other commentators have argued that consent solicitations are coercive, this Article contemplates consent solicitations in which an issuer is proposing an amendment to the governing indenture that will have a material adverse effect on the outstanding bonds, and, as a result, an adversarial relationship develops between the issuer and the bondholders. In some circumstances, the relationship may not be adversarial. For example, if the amendment will have a minuscule effect on the value of the bonds, bondholders might properly decide that the cost of performing an extended analysis of the issue outweighs the cost of consenting to a reasonable offer. Alternatively, cooperative relationships might arise where an issuer proposes to increase the aggregate value of its outstanding bonds in connection with an extraordinary transaction that also would benefit the corporation as a whole.

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15. See generally Brudney, supra note 14, at 1830 (discussing the process by which these covenants are negotiated). That is not to imply that issuers impose the terms of the covenants of publicly offered bonds on the underwriters (and their counsel). See id.; Tauke, supra note 14, at 23 ("To protect [their] reputational interests, bond underwriters will endeavor to negotiate terms that provide adequate protection of bondholders' interests."). But see Riger, supra note 14, at 219 ("Essentially, the indenture is only a depository of terms fixed by the issuer."). In fact, the indenture is customarily drafted by counsel to the underwriter(s), id. at 223 n.75, with the comments of the issuer incorporated if all participants agree. Moreover, the underwriter(s) may incorporate concerns of the prospective purchasers received during the marketing period, before the indenture is finalized. As a practical matter, many of those comments may represent accumulated wisdom, as prospective purchasers in prior offerings of other issuers may have declined to purchase bonds citing the inadequacy of the covenants. However, underwriters clearly are subject to conflicting incentives. Because they are hired by the issuer, and may hope to be hired by the issuer in future offerings, underwriters have an interest, not shared with the purchasers of the bonds, in agreeing to covenants that are favorable to the issuer. Id. at 216. These conflicting interests play a role in causing public bonds not to benefit from covenants that are as strict as those contained in privately placed debt. Other distinctions, such as the number or relative sophistication of the purchasers, also may be important factors.

16. See Roe, supra note 2, at 274 n.130.

17. If the amendment does not adversely affect the bondholders as bondholders, the bondholders' consent to the amendment generally is not required under the indenture. E.g., Model Simplified Indenture, supra note 2, § 9.01(4).
whole. In other cases, disinterested observers might conclude that bondholders are holding out when presented with consent solicitations that offer a positive return, in an attempt to appropriate gains from the stockholders. This Article does not consider those types of transactions.

Part I of this Article discusses the legal principles applicable to consent solicitations in which a fee is paid in exchange for delivery of a consent. Part I first summarizes the cases that have addressed the legality of consent solicitations. Those cases, which held that these consent solicitations are lawful, were decided solely on the basis of state law. However, certain provisions of federal securities law are potentially applicable to consent solicitations. Part I then considers the potential effect of two federal securities acts, the TIA and the Securities Exchange Act of 1934, on consent solicitations. Part I concludes that bondholders have a powerful argument that the TIA, coupled with contractual terms frequently included in indentures, prohibit issuers’ counting votes obtained through customary consent solicitations.

Part II of this Article evaluates the economic structure of the consent solicitation process. That part first reviews the known analysis of the consent solicitation process as a single-game Prisoner’s Dilemma. This analysis first considers a class of bonds held by two bondholders. The examination is then expanded to incorporate a single consent solicitation with multiple bondholders. Both single consent solicitations in which there is a fixed fee per bond and consent solicitations in which there is a fixed aggregate fee, to be allocated among all consenting bondholders, are reviewed.

Part II of this Article then identifies reasons why consent solicitations should be modeled as repeated games, i.e., games in which each bondholder has a non-zero probability of facing a similar consent solicitation in the future (with respect to the same or another issuer). Part II then demonstrates that under plausible assumptions concerning the strategies that the bondholders will consider and the likelihood that each bondholder will face a second consent solicitation in the future, an issuer will be unable to create a Prisoner’s Dilemma, and compel bondholders to consent to an amendment, unless the bondholders are made almost whole. That is, under these assumptions, issuers will be unable to assure that bondholders will consent unless the fee paid for a consent almost entirely compensates for the decrease in the value of the bonds arising from the amendment (and any other simultaneous transactions). These assumptions are sufficient to determine that frequently bondholders will not be in a Prisoner’s Dilemma. That result implies that issuers will be unable to assure that bondhold-

18. See infra note 92.
ers will consent to inadequate offers. However, that result leaves uncertain how bondholders will respond to any particular consent solicitation.

Part III of this Article then expands on the models described in part II by making assumptions concerning the likelihood that other bondholders will consent. These additional assumptions permit the examination of a proposed regulatory revision. Under this proposal, after termination of each consent solicitation, each significant institutional investor would be required to disclose whether it delivered a consent. The analysis in part III concludes that such a requirement could provide significant additional protection to bondholders from "coercive" consent solicitations.

I. THE LEGAL ENVIRONMENT


A leading case construing the extent to which issuers may properly offer their bondholders consideration in exchange for a consent to an amendment to the governing indenture is Kass v. Eastern Air Lines, Inc.20 In Kass, holders of convertible debentures were offered either $35 in cash or $125 in merchandise for each $1000 in face amount of each of five classes of bonds for which a consent to an amendment to the respective indenture was given.21 The issuer intended to pay a dividend as part of a reorganization. Because covenants in the indentures prohibited the payment of the dividend, the issuer solicited consents for an amendment, considered at a bondholder meeting, that would have permitted the distribution.22 The plaintiffs alleged that because the payment was to be made only to those bondholders who voted in favor of the amendment, the offer was improper either as vote buying or as a breach of implied covenants of good faith and fair dealing.23

As to the first of the plaintiffs' theories, the court, construing Schreiber v. Carney,24 stated, "The purposes and object that would support a conclusion that an agreement is void or against public policy are ... summarized [in Schreiber] as fraud or an attempt to disenfranchise other shareholders."25 The court stated that there could be no claim

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21. Id. at 1076-77.
22. Id. at 1076.
23. Id. at 1078.
24. 447 A.2d 17 (Del. Ch. 1982).
of fraud,\textsuperscript{26} as the terms of the offer were fully disclosed. The court analyzed the possibility of disenfranchisement as follows:

The fact that the offer in this case is one made publicly to all voters on the same terms—that each bondholder is free to accept or reject it—precludes, in my opinion, a conclusion that it disenfranchises any voter or group of voters (although the same could not perhaps be said were the offer of consideration in exchange for a bondholder’s vote not made to all bondholders on the same terms).\textsuperscript{27}

The court similarly disposed of the plaintiffs’ second argument. Relying on 

\textit{Katz v. Oak Industries Inc.},\textsuperscript{28} the court construed the scope of the implied covenants of good faith and fair dealing as turning on whether the parties “would have agreed to proscribe the act later complained of . . . had they thought to negotiate with respect to that matter.”\textsuperscript{29} Applying this test, the court stated:

Each holder is offered the opportunity to accept or reject the consideration offered. \textit{Each will continue to own bonds} and thus each has an economic incentive of the same kind to evaluate the question whether any threat to the value of his or her bonds posed by the amendment is more or less valuable than the consideration offered for his or her consent. I recognize the ways in which the structure of the consent payment complicates that choice and increases the risk of withholding consent. But, even if one chooses to characterize that deliberate increase in risk as “coercive” (a murky concept of limited analytical utility), I cannot conclude that it is wrongfully so on this record.\textsuperscript{30}

In considering both arguments, the court emphasized that the offer was made to all bondholders. This reasoning implies that offers that are not made to all holders, and possibly offers that are made to all

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\item \textsuperscript{26} 12 Del. J. Corp. L. at 1080.
\item \textsuperscript{27} Id.
\item \textsuperscript{28} 508 A.2d 873 (Del. Ch. 1986).
\item \textsuperscript{29} 12 Del. J. Corp. L. at 1081 (quoting Katz v. Oak Indus. Inc., 508 A.2d 873, 880 (Del. Ch. 1986)). \textit{See generally} Brudney, \textit{supra} note 14, at 1845-49 (discussing the possible application of the covenants of good faith and fair dealing); Kenneth Lehn & Annette Poulsen, \textit{Contractual Resolution of Bondholder-Stockholder Conflicts in Leveraged Buyouts}, 34 J.L. & Econ. 645, 657 (1991) (stating that the covenants do not create separate substantive rights); Riger, \textit{supra} note 14, at 225 (analyzing the implied covenant of good faith and stating, “Delaware courts find the implied covenant of good faith breached only if the language of the indenture indicates that, had the parties who negotiated the indenture thought of the act complained of as a breach of the implied covenant, they would have agreed to proscribe it.”); Tauke, \textit{supra} note 14, at 123-33 (discussing the effect of the implied covenant of good faith on the rights of bondholders); Andrew L. Bab, Note, \textit{Debt Tender Offer Techniques and the Problem of Coercion}, 91 Colum. L. Rev. 846, 862-63 (1991) (describing alternative theories concerning the contours of the implied covenant of good faith). Some issuers now expressly disclose in the prospectus covering the bonds that any consents obtained in connection with exchange offers or tender offers will be included. \textit{E.g.}, Profitt’s, Inc., Prospectus, 43.4% Convertible Subordinated Debentures Due 2003, Registration No. 33-70000, at 30 (Oct. 19, 1993). \textsuperscript{30} 12 Del. J. Corp. L. at 1082 (emphasis added).
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bondholders through a mechanism that disadvantages certain bondholders, may violate either public policy or the implied covenants of good faith and fair dealing.

In a consent solicitation coupled with an exchange offer or a tender offer, i.e., an exit consent, consenting bondholders do not "continue to own [the] bonds." Continuity of ownership was an integral part of the analysis in Kass. Kass therefore suggests that exit consents might violate the covenants of good faith and fair dealing. However, that factual pattern had arisen in Katz v. Oak Industries Inc. Katz concerned a consent solicitation/exchange offer in which bondholders were offered the right to exchange bonds for payment certificates that were to be payable shortly after the closing of a contemplated extraordinary transaction. To tender, a bondholder had to consent to amendments to the corresponding indenture, which were adverse to the bondholders. The court held that the transaction did not violate the implied covenants of good faith and fair dealing. The language in Kass that appears to condition the ability of an issuer to make such an offer on the consenting bondholders remaining subject to the amended terms of the indenture therefore offers little protection for bondholders under indentures that have no express provision prohibiting the payment of a fee for delivering a consent.

In Katz, however, the plaintiffs also relied on express language in the indenture to argue that the consent solicitation was not permitted. The indenture had a "sterilization provision," under which the issuer could not vote securities that it held in its treasury. The court stated:

That the consent is to be given concurrently with the transfer of the bond to the issuer does not in any sense create the kind of conflict of interest that the indenture's prohibition on voting treasury securities contemplates. Not only will the proposed consents be granted

31. A partial offer without proration, in which the issuer accepted consents in the order in which they were delivered, might be construed as excluding bondholders who were not institutional investors.
32. Cf. Lacy & Dolan, supra note 2, at 70 n.114 (stating that offers made to fewer than all bondholders may be suspect). The increasing frequency of consent solicitations may make it more difficult for plaintiffs to meet the test that the parties would have proscribed the arrangement had they thought to negotiate with respect to the matter. This prominence suggests that those drafting indentures consciously exclude such a provision. See also supra note 29.
33. See supra text accompanying note 30.
34. 508 A.2d 873 (Del. Ch. 1986).
35. Id. at 876.
36. Id. at 877.
37. Id. at 881. But see Bab, supra note 29, at 868 ("The issuer is thus seeking to take away a bargained-for contractual protection from any remaining bondholders that no reasonable bondholder could expect would be eliminated. By doing so, the issuer is breaching its implied duty of good faith.").
38. Katz, 508 A.2d at 881. It is not clear why the court in Kass did not discuss any sterilization provisions, which are discussed infra at notes 46-63 and accompanying text.
or withheld only by those with a financial interest to maximize the return on their investment in [the issuer's] bonds, but the incentive to consent is equally available to all members of each class of bondholders.\textsuperscript{39}

These cases have been analyzed by a number of commentators. Some commentators have considered alternative bases for voiding votes of bonds for which the issuer has paid a fee, or noted theories in other contexts that might be so applied, including the following: that a sterilization provision should be interpreted in a manner that does not prevent its circumvention and that permitting such consent payments will result in such a circumvention;\textsuperscript{40} that bondholders may have a right to rely on other bondholders voting in accordance with the best interests of the bondholders as bondholders;\textsuperscript{41} that such payments might violate a proposed fiduciary duty owed by the issuer to the bondholders;\textsuperscript{42} that indentures should be construed in accordance with the reasonable expectations of the parties,\textsuperscript{43} in which case issuers

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\item \textsuperscript{39} Katz, 508 A.2d at 881.
\item \textsuperscript{40} Bab, supra note 29, at 869.
\item \textsuperscript{41} Coffee & Klein, supra note 2, at 1262-63; Bab, supra note 29, at 873 ("There is no case law that decides whether bondholders should be held to a duty analogous to that of shareholders to vote in accordance with their best interests as stockholders. Most cases, however, indicate that courts are hostile to any suggestion that would extend duties to bondholders beyond their contracts.").
\item \textsuperscript{42} Bratton, supra note 2, at 118-19 (discussing decisions addressing whether there is a fiduciary duty owed to bondholders); Brudney, supra note 14, at 1836-45 (noting that there is no support in case law for the existence of a fiduciary duty from an issuer to holders of non-convertible bonds); McDaniel, supra note 2, at 443 (identifying the possibility that issuers may owe a fiduciary duty to their bondholders); Riger, supra note 14, at 226 (noting that such a duty was held not to exist in Metropolitan Life Ins. Co. v. RJR Nabisco, Inc., 716 F. Supp. 1504 (S.D.N.Y. 1989)); Tauke, supra note 14, at 9, 52-53 (noting that the prevailing judicial view is that there is no fiduciary duty owed to bondholders); Bab, supra note 29, at 856-60 (noting that fiduciary duties exist only if the debtor is insolvent, if there has been fraud or if there has been some statutory violation); Note, supra note 2, at 1864-65 (noting that courts have rejected the creation of such a duty). \textit{See generally} Klein et al., supra note 14, at 674 n.94 (stating that it would be impracticable to define the contours of a fiduciary duty owed by an issuer to its bondholders or to enforce any such duty); Tauke, supra note 14, at 52-65 (discussing the merits of creating such a fiduciary duty).
\item \textsuperscript{43} Bratton, supra note 2, at 119-20; Riger, supra note 14, at 228-31; Tauke, supra note 14, at 78-80. Even if covenants in indentures are not interpreted in a manner that implements bondholders' reasonable expectations, the bondholders may have an action under § 11 or § 12(2) of the Securities Act of 1933, 15 U.S.C. §§ 77k, 77l(2) (1988), or Rule 10b-5, 17 C.F.R. § 240.10b-5 (1994). \textit{Cf.} McMahan & Co. v. Whereshouse Entertainment, Inc., 900 F.2d 576, 580 (2d Cir. 1990) (stating that a factually accurate description of a put right in an indenture that was triggered by certain events, unless approved by the "Independent Directors," could be found by a jury to be misleading where there were a number of omissions, including the omission of the statement that "Independent Directors" had no fiduciary duty to bondholders), \textit{cert. denied}, 501 U.S. 1249 (1991); Harris v. Union Elec. Co., 787 F.2d 355, 362-66 (8th Cir.) (holding that there was sufficient evidence to support a jury's finding that a prospectus was misleading where the prospectus did not adequately disclose that a covenant providing refunding protection could be circumvented with another provision), \textit{cert. denied}, 479 U.S. 823 (1986). \textit{But see} Morgan Stanley & Co. v. Archer
would not be able to enter into transactions that, although not prohibited by the express terms of the covenants, nevertheless conflict with the bondholders' reasonable expectations; and that an indenture might be construed as a contract of adhesion, in which case such votes might be voided.44

With the substantial amount of literature reviewing these cases, little needs to be added for the purposes of this Article. Notwithstanding the various theories proposed by commentators, there is little support in case law for an argument by a bondholder attempting to void a vote based on consents for which the issuer has paid a consent fee, at least where the offer has been made to all bondholders. However, indentures frequently are governed by the law of New York or another jurisdiction. Thus, decisions of courts in Delaware may be of less significance than they are with respect to issues of internal corporate governance.45

B. The Trust Indenture Act of 1939

To some extent, sterilization provisions are incorporated by reference into indentures for publicly sold bonds by virtue of the TIA.46 In three contexts, the TIA provides that bonds owned by the obligor of the bonds (or by persons controlling, controlled by or under common control with the obligor) are disregarded in determining whether a stated percentage of the bondholders has concurred in any action or consent.47 Those provisions are the following: (i) a majority48 of the bondholders may direct the trustee's exercise of any remedy;49 (ii) a corresponding provision relieving the trustee from liability for certain acts taken in accordance with such a direction;50 and (iii) an optional

Daniels Midland Co., 570 F. Supp. 1529, 1538-43 (S.D.N.Y. 1983) (denying the plaintiff-bondholder's motion for summary judgment on a claim under Rule 10b-5 that the issuer improperly failed to disclose the issuer's ability to circumvent a covenant restricting the refinancing of the bonds with debt bearing a lower rate of interest). See generally Royce de R. Barondes, The Bespeaks Caution Doctrine: Revisiting the Application of Federal Securities Law to Opinions and Estimates, 19 J. Corp. L. 243, 256 n.74 (1994) (discussing the scope of disclosure obligations of reporting companies in this context); Tauke, supra note 14, at 72-77 (discussing Harris).

44. Bab, supra note 29, at 866 (stating that indentures are not contracts of adhesion). See Metropolitan Life Ins. Co. v. RJR Nabisco, Inc., 716 F. Supp. 1504, 1521 (S.D.N.Y. 1989) (holding that publicly offered bonds should not be construed under the law applicable to contracts of adhesion).

45. Cf. John C. Coffee Jr., Coercive Debt Tender Offers, N.Y. L.J., July 19, 1990, at 5, 6 (stating that there is a "substantial chance" that a New York court would not follow Katz).

46. Lacy & Dolan, supra note 2, at 70.


48. Indentures provide for voting by bondholders weighted by the principal amount of bonds owned. For simplicity, the term "majority of the bondholders" is used in this Article to refer to persons holding bonds representing a majority in principal amount of the relevant class of bonds.


provision under which the indenture may permit seventy-five percent of the bondholders to agree to the postponement of any interest payment for up to three years. These requirements of the TIA typically are reflected in an indenture by providing that in determining the holders required to deliver any consent, bonds held by the issuer (or a controlling or controlled person or a person under common control) are disregarded. Plaintiff's therefore may be able to argue persuasively that reference also should be made to relevant principles of statutory construction in interpreting sterilization provisions.

This analysis requires identification of the precise mechanics of a consent solicitation. A consent solicitation may be structured as an offer by the issuer on the following terms: the offer will expire at a specified time on a specified date, subject to extension by the issuer by announcement made not later than the close of business on the next following business day; the issuer may withdraw the offer at any time before the amendment is executed; and the bondholders will be free to withdraw any consent until the amendment is executed.

Rule 0-2(f) under the TIA defines "control" as "the power to direct the management and policies of a person . . . whether through the ownership of voting securities, by contract, or otherwise." Bondholders can argue that issuers have obtained control either (i) "by contract" or (ii) "otherwise." An issuer that has obtained a consent has obtained the right to have the bonds voted in a particular fashion. This arrangement clearly is a contract; if a bondholder subsequently brought suit to enforce a covenant that was amended with the bondholder's consent and for which the bondholder's consent was required, the suit would be dismissed on the basis that the issuer's action complied with its contractual obligations as amended. Although such an issuer does not generally control the management and policies of the bondholders that deliver consents, the term "control" should be interpreted as including the ability to direct the management and policies of the bondholders as they relate to the transaction or transactions in question (i.e., the bondholder vote). For example, whether bonds are held by a firm controlled by the issuer for purposes of determining whether those bonds may be counted in a vote should not

52. See, e.g., Model Simplified Indenture, supra note 2, § 2.09.
53. Cf. Coffee, supra note 45, at 7 n.11 (stating that courts could look to the definition of the term "beneficial owner" as used in Rule 13d-3(a) under the Securities Exchange Act of 1934, 17 C.F.R. § 240.13d-3(a)); Roe, supra note 2, at 249 n.47 ("The lack of a real choice, a future court may hold, so undermines the policy of individualized consent embodied in section 316(b) of the Trust Indenture Act that recapitalization by such consents, like recapitalizations by vote, must be prohibited.") (citation omitted).
54. E.g., AT&T Credit Corporation, Consent Solicitation Statement/Prospectus 21 (Mar. 10, 1993).
depend on whether the issuer has the power to cause the bondholder to declare a dividend.\textsuperscript{56}

However, in these circumstances, it is not clear whether the issuer "controls" the voting of the bonds at the time they are voted, because the contractual power of the issuer arises only upon the effectiveness of the vote, i.e., the contractual rights arise simultaneously with the exercise of the vote. Fortunately, the resolution of the application of the TIA to these arrangements does not turn on the presence or absence of an instant in time between the formation of the contractual power to control the vote and its exercise.

The rules under the TIA expressly define control as including the specified power, "whether through the ownership of voting securities, by contract, or otherwise."\textsuperscript{57} Therefore, the functional equivalent of the contractual power to vote the bonds should be sufficient to constitute "control."\textsuperscript{58} In a consent solicitation, the issuer will receive acceptances by the expiration date. Since the issuer is afforded adequate time to determine whether the requisite number of consents has been received before the issuer decides whether to postpone the expiration date, the issuer has the ability to determine whether the amendment is approved. This arrangement should be considered sufficient to constitute control.

It is unlikely that any bondholder would withdraw a consent during this period, because it is unlikely that any new information will become available during that period that would cause a bondholder to revise its assessment. Even though it is unlikely that bondholders would withdraw their consents, the existence of the right to withdraw means that the power to direct the vote is to some extent shared. As a result, one could argue that no person who shares control with another independent person is a controlling person for this purpose. It is clear, however, that an individual does not lose the status of a controlling person merely because the requisite power is shared with others.\textsuperscript{59}

\textsuperscript{56} Cf. Louis Loss, Fundamentals of Securities Regulation 402 (2d ed. 1988) ("It does not follow, however, that one member of such a group controls in all contexts. For example, whether a secondary distribution by one member requires registration under the Securities Act raises essentially a question of fact in each case whether that person has enough influence with the group to be able to obtain the issuer's signature on a registration statement.").

\textsuperscript{57} 17 C.F.R. § 260.0-2(f) (1994) (emphasis added).

\textsuperscript{58} This argument would be less persuasive as to securities offered by a prospectus that expressly contemplated the voting of bonds for which a consent fee shall have been paid by the issuer. See supra note 29.

\textsuperscript{59} Loss, supra note 56, at 402 ("Control may rest with a group of persons, such as . . . a number of business associates."); A. A. Sommer, Jr., Who's "in Control"?—S.E.C., 21 Bus. Law. 559, 576 (1966) (stating with respect to a similar definition of "control" in Rule 405 under the Securities Act, 17 C.F.R. § 230.405, "There are innumerable instances in which a single person does not appear to have actual operating control or the power to control. Then the problem is to identify the group which is in control and those who constitute the group.").
If bondholders were to prevail in their argument that an issuer has "control" of bondholders whose bonds are tendered in a consent solicitation, as that term is used in the rules under the TIA, it would be difficult for an issuer to count votes obtained in a consent solicitation for which a fee was paid. A typical indenture provides as follows: "In determining whether the Holders of the required principal amount of Securities have concurred in any direction, waiver or consent, Securities owned by the [issuer] or an Affiliate shall be disregarded . . . ."60 The term "Affiliate" is defined as "any person directly or indirectly controlling or controlled by or under direct or indirect common control with the [issuer]."61 These provisions implement the requirement of the TIA described above62 that bonds owned by the issuer not be counted in certain votes. However, these quoted indenture terms do not state that they apply only to the extent required by the TIA. Because no basis for construing this definition differently in different contexts within the same indenture is evident, such an interpretation would be anomalous.63 Therefore, if issuers conducting consent solicitations are considered to be persons "controlling" bondholders who deliver consents, the terms of the applicable indenture may prevent consummation of the consent solicitation seeking to amend any provision of the indenture.

Courts deciding whether a consent solicitation is lawful have not previously discussed this argument. In the absence of a controlling decision, it is not certain that this argument would be successful. However, bondholders have forceful arguments to prevent these consent solicitations.

C. The Securities Exchange Act of 1934

The legal context in which consent solicitations occur also involves the Securities Exchange Act of 1934 (the "1934 Act").64 Two aspects

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60. Model Simplified Indenture, supra note 2, § 2.09.
61. Id. § 1.01.
62. See supra notes 47-51 and accompanying text.
63. Some indentures expressly provide that terms defined in the TIA or the rules under the TIA that are used in the indenture have the meanings assigned in the TIA or those rules. See, e.g., Model Simplified Indenture, supra note 2, § 1.03. As to bonds issued under those indentures, the sole question is whether the issuer "controls" the bondholders who deliver a consent, as that term is used in the rules under the TIA.
of consent solicitations may cause the transactions to be regulated under the 1934 Act. First, a consent solicitation for bonds, like any other solicitation of consents, may be subject to section 14(a) of the 1934 Act. Section 14(a) of the 1934 Act prohibits the solicitation of proxies or consents in respect of securities registered under section 12 of the 1934 Act in contravention of any rules promulgated by the SEC. Since bonds are not typically listed on an exchange, they are not typically registered under section 12 of the 1934 Act, and section 14(a) of the 1934 Act therefore usually is not applicable to consent solicitations for bonds.

Second, if a consent solicitation is coupled with an exchange offer, the consent solicitation fee may be integrated into the exchange offer, making both subject to the provisions of the 1934 Act regulating tender offers. In that case, the consent solicitation/exchange offer

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68. If the bonds are convertible into stock, they are considered to be equity securities for purposes of the 1934 Act, 15 U.S.C. § 78c(a)(11) (1988), 17 C.F.R. § 240.3a11-1 (1994), and may be subject to registration under § 12(g) of the 1934 Act, 15 U.S.C. § 78l(g) (1988).
70. Coffee & Klein, supra note 2, at 1269. The authors cite Playtex FP Group Inc., [1989 Transfer Binder] Fed. Sec. L. Rep. (CCH) ¶ 78,954 (Nov. 22, 1989 [sic]), in which the Division of Market Regulation stated that it would not recommend enforcement action under Rule 14e-1(b), 17 C.F.R. § 240.14e-1(b), with respect to a proposed consent solicitation/tender offer. A consent solicitation, sought for amendments to various indentures, was scheduled to expire five business days before the expiration of the related tender offer. Playtex, [1989 Transfer Binder] Fed. Sec. L. Rep. (CCH) at 78,789. The Division stated, “Because Holders must submit a Consent to tender a class of Existing Debt Securities but will receive a Consent Payment only for Consents submitted prior to the Solicitation Expiration Date, [the offeror] would be required to keep the applicable Tender Offer open for a minimum period of ten business days from the date of notice of the Solicitation Expiration Date, including any extensions thereof.” Id. at 78,790. That position assumes that the termination of the consent solicitation constitutes a decrease in the consideration offered in the tender offer. Id. at 78,787.
could be subject to sections 13(e), 14(d) and 14(e) of the 1934 Act and the rules thereunder. Section 14(e) of the 1934 Act prohibits fraudulent or manipulative practices with respect to any tender offer. Rule 14e-1 under the 1934 Act requires that tender offers be held open for twenty business days (and at least ten business days from the date of notice of an increase or decrease in the consideration to be paid or the percentage of the class sought). The rules under section 14(e) of the 1934 Act would thus prevent an issuer from commencing a consent solicitation that would expire a short period of time before the exchange offer if the consent solicitation were integrated into the exchange offer. However, the requirements that an offer be made to all holders, that the highest consideration paid in the tender offer be paid to all holders who tender and that partial offers be prorated generally would not apply to debt tender offers, as those provisions relate only to tender offers for equity securities.

In 1990, FMR Corp. and The Prudential Insurance Company of America petitioned the SEC to adopt a new rule that would prohibit the solicitation of consents from holders of securities during a tender offer for the securities, unless the tender offer were to remain open at least ten business days after the announcement of the results of the consent solicitation. The petition may remain under consideration at the SEC. Staff members of the SEC have explained that the SEC's rulemaking process is lengthy, and that the SEC's failure to act

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It is not obvious why a consent solicitation for amendments to an indenture that are sufficiently extensive to constitute the issuance of a new security under the Securities Act, see supra note 64, should not, by definition, be an exchange offer.

76. See Coffee, supra note 45, at 7 nn. 15-16 and accompanying text (noting that during the mid 1980's, the staff granted no-action relief to some issuers of investment grade debt).
81. Lacy & Dolan, supra note 2, at 68.
as of this time does not imply that the SEC will not proceed further with such a rule.\textsuperscript{83}

\section*{D. Conclusions}

For the purposes of this Article, the most significant aspect of the legal environment regulating consent solicitations is that consents obtained by issuers in these transactions are not necessarily void. However, consents obtained in transactions in which offers are not made in a manner that affords all bondholders an equal ability to participate may be suspect even if the indenture has no express terms requiring such treatment.

\section*{II. Analysis of the Consent Solicitation Process}

The situation faced by bondholders when issuers propose a consent solicitation may be modeled as a Prisoner's Dilemma.\textsuperscript{84} The literature describing the consent solicitation process as a Prisoner's Dilemma is diverse. The analysis developed first in the related context of two-step, front end loaded acquisitions. A seminal article published in 1980 argued that companies' charters allow front end loaded acquisitions to permit the elimination of free riders to the ultimate aggregate benefit of the shareholders.\textsuperscript{85} On a similar basis, commentators have

\begin{center}
\begin{tabular}{|c|c|c|}
\hline
& Confess & Hold Out \\
\hline
Confess & (5 yrs, 5 yrs) & (6 mos, 20 yrs) \\
\hline
Hold Out & (20 yrs, 6 mos) & (1 yr, 1 yr) \\
\hline
\end{tabular}
\end{center}


stated that the consent solicitation process is "coercive." Some have merely asserted that bondholders may be coerced. Others have set forth simple quantitative examples of a single consent solicitation, demonstrating the potentially coercive effects. Most recently, Professors Kahan and Tuckman have presented a game theoretic analysis demonstrating that a single consent solicitation in which a fixed fee is offered for a consent may be coercive. This part first presents a simple model of a consent solicitation as a Prisoner's Dilemma.

Notwithstanding collective action problems, bondholders frequently have been able to negotiate collectively with issuers in these contexts. It has been stated that "issuers have not yet fully exploited the

86. E.g., Note, supra note 2, at 1863 ("[B]ondholders confront a prisoners' dilemma reminiscent of the front-loaded, two-tiered tender offers that most commentators have characterized as coercive in the context of mergers and acquisitions.").
87. Brudney, supra note 14, passim.
88. Coffee & Klein, supra note 2, at 1228-29.
89. Kahan & Tuckman, supra note 2, at 504-07. In addition to a customary solicitation in which a fee is paid only if the amendment is approved, the authors also consider a consent solicitation in which a fee is paid to each bondholder who delivers a consent, even if the associated amendment is not approved. Id. at 506. It seems implausible that a corporation would voluntarily make an offer in which, under some circumstances, the corporation would be obligated to pay a fee and receive no benefit in return. Such offers are therefore not included in the analysis described in this Article.
90. Coffee & Klein, supra note 2, at 1218; Kahan & Tuckman, supra note 2, at 512 (noting that press releases indicated that bondholder groups formed in at least 12 of 58 consent solicitations reviewed, representing 21% of those consent solicitations, and that 42% of issuers modified consent solicitations after an initial failure to obtain a sufficient number of consents); Bab, supra note 29, at 878-79; Coffee, supra note 45, at 7.

Professors Kahan and Tuckman found abnormally high bond returns around the dates on which the issuer announced a transaction that required bondholders' consent. Kahan & Tuckman, supra note 2, at 510. They suggest that this correlation supports "the hypothesis that bondholders are able to act in concert," id., in addition to the direct evidence of bondholders forming coalitions and not approving some amendments. This indirect evidence seems unpersuasive absent additional information. One would expect that issuers will often initiate consent solicitations when they are in a dire financial position and are presenting a plan for recovery or when they have the opportunity to engage in an unusual transaction that may offer unusually high returns but requires bondholders' consent. One would expect a firm's securities to increase in value upon the announcement of such a transaction. It is not clear that the abnormal returns identified by Professors Kahan and Tuckman were not the result of such a factor.

This effect has been identified in a related context. One study found that bonds rated BBB or below experience positive abnormal returns for the period from two months before the initial announcement of a transaction in which the issuer was to be acquired through consummation. M. Mark Walker, Determinants of Bondholder Wealth Following Corporate Takeovers (1980-1988), 33 Q.J. Bus. & Econ. 12, 23 (1994) (finding the return to be statistically significant). The same study found that bonds rated above BBB had a negative abnormal return during similar periods. Id. at 22-23. The results suggest that frequently extraordinary transactions that involve consent solicitations may benefit holders of non-investment grade debt. However, issuers planning extraordinary transactions may try to expropriate gains that otherwise would
potential for coercive indenture amendments,” which might explain the discrepancy between predicted behavior and reality. In some contexts, the ability of a bondholder to free ride, i.e., receive the benefits of a transaction that benefits all bondholders without bearing a proportionate share of any inherent costs, may prevent an issuer from effectively coercing bondholders. This Article argues that another aspect of the context of the consent solicitation process can cause bondholders presented with a consent solicitation not to be in a Prisoner’s Dilemma. Professors Coffee and Klein have noted that “[a]n important characteristic of the hypothetical facts [of the Prisoner’s Dilemma] is that the ‘game’ is a one-shot choice involving people who are not able to communicate with one another.” However, they do not attempt to assess the significance of the assumption. This part incorporates the possibility of repeat games and shows that, in many circumstances, bondholders will not face a Prisoner's Dilemma.

The models in the remainder of this Article assume that there is no simultaneous exchange offer, i.e., the consent solicitation is not an exit consent. That assumption does not limit the generality of the analysis. The decision made by a bondholder presented with a single consent solicitation will depend on the value of the bonds if the consent solicitation is unsuccessful, the value of the property the bondholder will own after delivering a consent to an amendment that is approved, the value of the bonds if a consent is not delivered and the solicitation is successful, and the probability that the consent solicitation will be successful. These values are the relevant factors, and a bondholder will respond in the same manner to either (i) a simple consent solicitation or (ii) a consent solicitation coupled with an exchange offer, if the

be realized by holders of investment grade debt (or to impose on them additional risk).

91. Coffee & Klein, supra note 2, at 1250.

92. For example, a company on the verge of bankruptcy proceedings in which bondholders could be expected to receive 20% of the face amount of their bonds might be offered to exchange their bonds for securities worth 40% of the face amount of the bonds, subject to the exchange of 95% of the bonds. Each holder might be tempted to hold out and retain a bond whose value would be increased as a result of the recapitalization. See, e.g., Roe, supra note 2, at 236-43 (citing one such case of a holdout). See generally McDaniel, supra note 2, at 429 (discussing bondholders who hold out); Note, supra note 2, at 1860-63 (discussing bondholders who hold out in this context). However, another commentator stated, “[A]t least in situations when bankruptcy is not imminent, rational bondholders have good reason not to reject an otherwise acceptable offer at a premium [to the market price] merely because there is an ambiguous possibility that holdouts may ultimately receive a larger premium.” Brudney, supra note 14, at 1859.

93. Coffee & Klein, supra note 2, at 1226 n.57; see also id. at 1253; cf. Roe, supra note 2, at 274 n.130 (noting that repeat games may foster cooperation among members of bank syndicates).

94. In the case of a consent solicitation coupled with an exchange offer or a tender offer, the relevant value of the property to be owned after delivering a consent is the value of the property to be owned after consummation of the exchange offer or the tender offer.
two offers provide identical values of the property to be owned if the offer is accepted, assuming the other values and the relevant probabilities are the same.

For example, assume that there are two possible offers that an issuer may make to its bondholders. The first offer is a simple consent solicitation in which, for each $1000 of principal amount of bonds, a bondholder is offered $300 for a consent to an amendment that would decrease to $500 the value of bonds having a face amount of $1000. The second offer is a consent solicitation/exchange offer in which the same bondholders are offered the opportunity to exchange each $1000 in face amount of bonds for new securities worth $800, while the previously outstanding bonds would be worth $500 if the amendment is approved. As long as all bondholders assign the same values to the various outcomes, the response of the bondholders to these two offers will be the same, with one caveat. The value of bonds not exchanged in an exchange offer may be affected by the percentage of the bonds that were exchanged. For example, if the bonds delivered in exchange are to be senior to the class of bonds as to which the offer is made, the value of bonds that are not exchanged will be affected by the principal amount of the bonds that are exchanged. This effect might be important to a bondholder in evaluating any particular consent solicitation. However, such an offer is equivalent to an offer in which the range of possible values of the unexchanged bonds as a function of the percentage of bonds tendered is replaced by a single amount representing the expected value.95

The intuitive concept is that each bondholder, in deciding whether to deliver a consent in a consent solicitation/exchange offer, weighs the value of the bonds as they are proposed to be amended and compares that value to the value of the bonds if no amendment is made and the sum of the value of the consent fee plus the value of the property to be received in exchange, incorporating an assessment of the relevant probabilities. Since the value of the bonds after implementation of the amendment is considered by a bondholder in determining whether to consent, that a consenting bondholder never holds bonds with the amended terms does not affect the outcome of the consent solicitation. The models of simple consent solicitations set forth below are therefore similarly predictive of the results of consent solicitations coupled with exchange offers.

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95. Throughout this Article, these large, sophisticated investors are assumed to be risk neutral, i.e., they are assumed to be indifferent among all choices with the same expected value. An investor may eliminate unsystematic risk, which refers to risk that affects a single asset or a small group of assets, Stephen A. Ross et al., Corporate Finance 298 (2d ed. 1990), by owning a diverse portfolio of assets. Id. at 305; George E. Pinches, Essentials of Financial Management 134 (4th ed. 1992); McDaniel, supra note 2, at 436. Because most holders of bonds are institutional investors, see infra note 105 and accompanying text, it is reasonable to assume that they will be able to diversify their portfolios sufficiently to be risk neutral in this context.
A. Consent Solicitations as a Single-Game Prisoner's Dilemma

It is easiest to understand a model applied to a numerical example. Our first model of the consent solicitation process assumes that there are two primary bondholders. Each owns $30 million in principal amount of a class of an issuer's bonds, of which $60,000,001 are outstanding, and each primary bondholder values the bonds at 100% of their principal amount. A third person, who owns $1 in principal amount of bonds, has irrevocably consented to an amendment to the indenture, and both primary bondholders are aware of this consent. The amendment requires the consent of a majority of the bondholders if it is to be approved and, if implemented, will decrease the value of each bond to two-thirds of its face amount. The issuer makes the following offer to each of the holders of $30 million of bonds (with each aware that the other is being made the offer): The issuer will pay a total of $15 million if an amendment to the indenture is approved. Each bondholder decides whether to accept without knowing whether the other has consented. If both consent, the $15 million fee is split equally between the two bondholders.

This situation may be represented in a familiar decision matrix:

<table>
<thead>
<tr>
<th>Bondholder 2</th>
<th>No Consent</th>
<th>Consent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bondholder 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Consent</td>
<td>(30, 30)</td>
<td>(20, 35)</td>
</tr>
<tr>
<td>Consent</td>
<td>(35, 20)</td>
<td>(27.5, 27.5)</td>
</tr>
</tbody>
</table>

This situation presents a typical Prisoner's Dilemma. For Bondholder 1, regardless of the decision that Bondholder 2 makes, Bondholder 1 prefers to consent. Such a strategy, which yields the participant's strictly greatest return regardless of the strategy selected by the other participant, is called a "dominant strategy." The situation is symmetric, and Bondholder 2 similarly prefers to consent. The result (consent, consent) is referred to as a "dominant strategy.

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96. Indentures typically do not permit the issuance of bonds in such a small principal amount. E.g., Model Simplified Indenture, supra note 2, exhibit A, ¶ 11 (providing for denominations of integral multiples of $1000). This amount has been selected to present a simple illustration.

97. In this context, the term "strictly greatest" is used to exclude strategies that in some cases yield a return that is equal to the return generated with another strategy. See Eric Rasmusen, Games and Information: An Introduction to Game Theory 28, 31 (1989).

98. Id. at 28.
equilibrium.” However, if both consent, each is in a position that is valued at $27.5 million, whereas if neither consents, each gains $2.5 million.

This result, which is unfortunate from the bondholders’ perspective, is typical of a Prisoner’s Dilemma and is the basis for categorizing consent solicitations as “coercive.” Each bondholder would be better off if he or she could enter into a binding contract not to consent, but it is assumed, for various reasons, that such an agreement would not be entered into. The consent solicitation could be made more “coercive.” For example, the terms of the consent could provide that the first bondholder to tender would receive the entire consent payment, but those modifications are not required in the two-bondholder model for the issuer to assure approval of the indenture modification.

This offer is unusual in that the aggregate consent fee is specified, as opposed to the specification of a fee to be delivered for any particular consent. This simple model is equivalent to a consent solicitation coupled with an exchange offer in which an offer is made for only $30 million of bonds with proration, i.e., a partial offer. An offer structured with a fixed fee of $7.5 million for each $30 million of bonds for which a consent is delivered, regardless of the size of the majority approving the amendment, is represented by the following matrix:

<table>
<thead>
<tr>
<th>Bondholder 1</th>
<th>No Consent</th>
<th>Consent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bondholder 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Consent</td>
<td>(30, 30)</td>
<td>(20, 27.5)</td>
</tr>
<tr>
<td>Consent</td>
<td>(27.5, 20)</td>
<td>(27.5, 27.5)</td>
</tr>
</tbody>
</table>

In this case, there are two Nash equilibria, both bondholders consenting and both bondholders not consenting. Since the preferred action to be taken by each bondholder depends on the action taken by the other bondholder, it is difficult to predict the outcome that will be observed in practice. It is important to note that there remains a rational outcome, both consenting, that is worse for each bondholder than an alternative outcome, both not consenting. Since both bondholders might rationally choose to consent and achieve an undesirable

99. Id. The equilibrium is also a “Nash equilibrium,” which means that no participant has an incentive to deviate from that participant’s strategy if the other participant does not deviate. Id. at 33.

100. For ease of reference, this Article uses the terms “partial offer” and “offer with proration” to identify a partial offer for consents from holders of the minimum amount of bonds required to approve the amendment in question, in which the aggregate consent fee is specified and is split among all bondholders who consent to an amendment that is approved.
outcome, one might categorize this framework as potentially coercive. Possible methods for predicting the outcome in such a context are revisited below.

**B. Models with Multiple Bondholders**

As noted above, notwithstanding these models, bondholders presented with consent solicitations frequently are able to overcome the collective action problems and negotiate with issuers, i.e., the attempts to coerce the bondholders frequently are not effective. That actors are able in practice to engage in collective decisionmaking suggests that the typical models are not properly specified, as they predict results that do not occur. Others have attributed the ability of bondholders to resist the coercion of a Prisoner's Dilemma to vulture funds. However, refining the assumptions of the Prisoner's Dilemma model demonstrates that bondholders that are not vulture funds may overcome collective action problems.

The first level of additional sophistication follows from the fact that generally there is a small number of bondholders to whom any particular consent solicitation is addressed. It has been estimated that ninety to ninety-five percent of publicly offered bonds are held by investors.

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101. See Kahan & Tuckman, supra note 2, at 500 (categorizing solicitations that support such an equilibrium outcome as "structurally coercive").

102. See infra notes 124-30, 151-54 and accompanying text.

103. See supra note 90 and accompanying text.

104. Bab, supra note 29, at 883. See generally Coffee & Klein, supra note 2, at 1233-42 (analyzing coercive offers as solving hold out problems in various contexts, including distressed corporations). Vulture funds are entities formed to purchase assets or securities of distressed properties or firms. Jerry M. Rosenberg, Dictionary of Investing 358 (1993); Theodore J. Gage, Vulture Funds, 90s Style, Often Aide Survival, Corporate Cashflow Magazine, Sept. 1993, at 53 (noting that the increased leverage incurred by companies in the 1980's created increased opportunities for these investors); Steven Lipin, Boston Firm Puts Final Touches on "Vulture" Fund, American Banker, Sept. 28, 1990, at 1; Anne Schwimmer, Vulture Funds Draw Assets from Top 200, Pensions & Investments, Jan. 25, 1993, at 28.

Professors Coffee and Klein suggest that the presence of vulture funds within bondholder groups reduces issuers' ability to coerce bondholders because they buy bonds with the expectation of a significant, e.g., 30%, short term return. Coffee & Klein, supra note 2, at 1214. It is not clear why vulture funds should demand a greater return than other sophisticated investors, although other factors, such as the absence of other business relationships with the issuer, may make such bondholders more willing to hold out. However, this Article below identifies another reason why the existence of vulture funds may make consent solicitations less likely to coerce bondholders. Parts II.C and III of this Article demonstrate that bondholders are more likely to resist coercive offers where there is an increased likelihood that the bondholders will be presented with a second consent solicitation in the future, by the same or another issuer, and bondholders' voting histories are publicly available. As vulture funds are unusually likely to be faced with subsequent consent solicitations, their increasing prominence increases the likelihood that bondholders will be able to resist potentially coercive offers. The likelihood that these investors may be repeat players may therefore increase the value of the bonds to all holders.
stitutional investors. Ownership of most separate classes of non-investment grade bonds typically is spread among fifteen to thirty investors. The composition of owners of non-investment grade bonds is relevant because the vast majority of consent solicitations are directed to holders of non-investment grade bonds. As among institutional investors, non-investment grade bonds are increasingly held by mutual funds, as opposed to insurance companies and banks, which may affect the likelihood that bondholders will adopt confrontational strategies in response to consent solicitations.

We will assume that there are eight bondholders, with each holding $7.5 million in face amount of bonds having a value of $7.5 million, and that the issuer is offering an aggregate payment of $15 million in a partial offer with proration, if the bondholders approve an amendment that would reduce the bonds' aggregate value by one-third. It is also assumed that a majority of the bondholders is required to consent for the amendment to be approved.

This situation also may be presented in a matrix:

**Table 3: Eight Bondholders**

<table>
<thead>
<tr>
<th>Other Bondholders, Number Who Consent</th>
<th>0, 1, 2 or 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Consent</td>
<td>(7.5, 52.5)</td>
<td>(7.5, 52.5)</td>
<td>(5, 50)</td>
<td>(5, 50)</td>
<td>(5, 50)</td>
</tr>
<tr>
<td>Bondholder 1 Consent</td>
<td>(7.5, 52.5)</td>
<td>(8, 47)</td>
<td>(7.5, 47.5)</td>
<td>(7.1, 47.9)</td>
<td>(6.9, 48.1)</td>
</tr>
</tbody>
</table>

*Payoff to (Bondholder 1, All Other Bondholders (in the Aggregate)) ($ millions)*

With these assumptions, no bondholder is worse off if he or she consents. A bondholder may benefit by consenting in a number of circumstances. Thus, one would expect a rational bondholder to consent. All bondholders consenting is again a Nash equilibrium, but it is not a dominant strategy equilibrium, because Bondholder 1 is indiffer-

105. Roe, supra note 2, at 259; Bab, supra note 29, at 882 (addressing non-investment grade bonds). But see McDaniel, supra note 2, at 415 ("The bond market no longer is (if it ever was) the exclusive domain of institutional investors able to fend for themselves.").

106. Bab, supra note 29, at 882. This information may be slightly misspecified for the purposes of this Article. Some bonds are issued under an open-ended indenture, which means that more than one class or series of bonds may be issued from time to time under the indenture. Such an indenture may provide that classes of similar securities are aggregated for purposes of determining the number of holders required to consent to an amendment. E.g., International Business Machines Corporation, Registration Statement on Form S-3, Registration No. 33-33590, at 11 (Feb. 22, 1990). (The author participated in the preparation of that registration statement.)

107. Kahan & Tuckman, supra note 2, at 500.


109. The bondholder with a $1 investment is eliminated.
ent between consenting and not consenting if fewer than four other bondholders consent.

However, by adding other bondholders, a more complex problem may arise. For example, if the issuer offers $8 million, with all other terms being the same, the situation may be represented by the following matrix:

**Table 4: Eight Bondholders with a Decreased Consent Payment**

<table>
<thead>
<tr>
<th>Other Bondholders, Number Who Consent</th>
<th>0, 1, 2 or 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bondholder 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Consent</td>
<td>(7.5, 52.5)</td>
<td>(7.5, 52.5)</td>
<td>(5, 43)</td>
<td>(5, 43)</td>
<td>(5, 43)</td>
</tr>
<tr>
<td>Consent</td>
<td>(7.5, 52.5)</td>
<td>(6.6, 41.4)</td>
<td>(6.3, 41.7)</td>
<td>(6.1, 41.9)</td>
<td>(6, 42)</td>
</tr>
</tbody>
</table>

*Payoff to (Bondholder 1, All Other Bondholders (in the Aggregate)) (\$ millions)*

In this example, Bondholder 1 is better off if he or she does not consent and four other bondholders deliver consents. However, if five or more other bondholders deliver consents, Bondholder 1 will benefit from consenting. Since the problem is symmetric, the decision to consent or not to consent will depend on an assessment of the likelihood that a total of four other bondholders will consent as compared to the likelihood that five, six or seven other bondholders will consent. The *ex ante* probability that fewer than four other bondholders consent is irrelevant, because each bondholder receives the same result in that case.\(^\text{110}\)

The situation in which the issuer offers an aggregate consent fee of up to $8 million by offering $1 million to each bondholder who consents (if the amendment is approved) is illustrated in Table 5.

**Table 5: Eight Bondholders with a Decreased, Fixed Consent Payment**

<table>
<thead>
<tr>
<th>Other Bondholders, Number Who Consent</th>
<th>0, 1, 2 or 3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bondholder 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Consent</td>
<td>(7.5, 52.5)</td>
<td>(7.5, 52.5)</td>
<td>(5, 40)</td>
<td>(5, 41)</td>
<td>(5, 42)</td>
</tr>
<tr>
<td>Consent</td>
<td>(7.5, 52.5)</td>
<td>(6, 39)</td>
<td>(6, 40)</td>
<td>(6, 41)</td>
<td>(6, 42)</td>
</tr>
</tbody>
</table>

*Payoff to (Bondholder 1, All Other Bondholders (in the Aggregate)) (\$ millions)*

This example has results similar to those of the immediately preceding model. However, the magnitude of the relative benefit of consenting is decreased in all cases, other than the case in which all

\(^{110}\) This assumption is reconsidered below. See *infra* notes 151-54 and accompanying text.
bondholders consent. In addition, the advantage of withholding a consent if only four other bondholders consent is increased. This example demonstrates the effect of requiring that such offers not be partial offers. If the offer is a partial offer for the minimum amount of bonds required to approve the amendment, the issuer can increase the extent of the potentially coercive effect of the offer.111

It is difficult to draw any further conclusions from these examples. There is no unique rational assumption that can be made as to the probability that any other bondholder will consent. This analysis is not entirely fulfilling, because it has not yielded a unique result, and the expected response of the bondholders depends on the dollar amounts involved. Moreover, since the ambiguity arises from the small amount paid for the consent, one would expect an issuer to preclude this ambiguity by increasing the amount of the fee paid for the consents.

C. Multiple Consent Solicitations

The previous examples considered a single consent solicitation. This analysis may be refined by considering that bondholders may be presented with a number of consent solicitations over a period of years. To simplify the analysis, it is assumed that the principal amounts of the bonds that are the subject of subsequent consent solicitations are identical and any discounting is neglected.112

The intuitive concept is that if the transaction is repeated a number of times, the participants may have a greater incentive to cooperate. One might first try to make a simplifying assumption—that the bond-

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111. One might argue that these two examples are not comparable and overstate the effect of requiring the offer to be for any and all bonds. The issuer will pay less for approving the amendment if fewer than all bondholders consent where the consent fee is a fixed amount per bond tendered. For example, in the offers pictured in Tables 4 and 5, if seven bondholders deliver consents, the issuer pays an aggregate consent fee of $8 million where the offer is a partial offer, while the issuer pays only $7 million where the fee is a fixed amount per consent.

It is nevertheless reasonable to compare these two offers on this basis. These two examples are included to demonstrate the possible effect of requiring an issuer to make the offer for all bonds, which is discussed infra at notes 152-53 and accompanying text. In that context, an issuer may formulate its aggregate fee to be paid by first determining the aggregate value of the bonds if no amendment is made to the indenture and comparing that value to the value of the property to be owned by all bondholders, other than the consent fee, if the bondholders consent to the amendment. The issuer may then formulate an aggregate consent fee representing some fraction of the excess. An issuer might decide that if a fixed fee is used (i.e., an offer for all bonds), the issuer can afford to make the fee slightly higher, because fewer than all bondholders may consent. However, it seems plausible that an issuer would reject such a fee structure, because it would create a possibility that the issuer would place the bondholders in a better position than they were before the offer.

112. The absence of discounting will be partially offset by the expectation that the principal amount of bonds that are the subject of a consent solicitation in the future may be larger, on average.
holders would be presented with a fixed number of consent solicitations in the future. Unfortunately, that assumption would eviscerate the assumption of multiple transactions. If each bondholder would be better off by consenting, backwards induction would unravel the problem. Each bondholder would deliver a consent for the last consent solicitation. However, each bondholder would also deduce that everyone would consent in the last solicitation and would therefore consent in the penultimate solicitation. This reasoning would be applied recursively, and each bondholder would ultimately decide to consent in the first solicitation.  

However, the assumption of a specified number of iterations is not realistic. A more plausible assumption is that each bondholder believes that there is a finite, non-zero probability that any consent solicitation will be followed by another consent solicitation with respect to another class of bonds. It is assumed that each bondholder will choose one of two strategies: (i) a "grim" strategy of withholding consent only if no other bondholder previously consented or (ii) "cheating," i.e., always consenting. This analysis also assumes that Bondholder 1 owns one percent of the outstanding principal amount of the relevant class of bonds, that the amendment requires the consent of $100\alpha$ percent of the bondholders to be approved, that Bondholder 1 knows that $100\alpha-1$ percent of the bonds are held by

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113. This situation is referred to as the "Chainstore Paradox." Rasmusen, supra note 97, at 88.

114. This type of assumption is frequently employed in game theory. See, e.g., Roger B. Myerson, Game Theory: Analysis of Conflict 364-65 (1991) (addressing repeated games with a discount factor); Rasmusen, supra note 97, at 93; Jean-Francois Mertens, Repeated Games, reprinted in Game Theory and Applications 77 (Tatsuri Ichiishi et al. eds., 1990); Eric Rasmusen, Judicial Legitimacy as a Repeated Game, 10 J.L. Econ. & Organization 63 (1994) (analyzing stare decisis as a repeated game). The theoretical analysis in this part II relies heavily on Rasmusen, supra note 97, a general textbook on game theory. An approach similar to that contained in this part II.C of this Article, but concerning repeated games with a discount factor, is contained in Myerson, supra, at 323-52. The particular application contained in this Article of the intellectual tools of game theory does not purport to be a novel development in game theory. Moreover, that the results of a consent solicitation may be affected by the fact that the game may be repeated also should not be considered unique. This possibility in this context and related contexts has been expressed to the author by H. Kurt von Moltke, a practitioner, over a number of years. Similarly, the value of reputations and the significance of "repeat plays" has been discussed qualitatively by legal commentators in corporate law contexts. E.g., McDaniel, supra note 2, at 434 (stating that for market constraints to cause issuers not to exploit bondholders that benefit from inadequate covenants, there must be "repeat plays"); Ian Ayres & Peter Cramton, Relational Investing and Agency Theory, 15 Cardozo L. Rev. 1033, 1055-56, 1061 (1994) (stating that reputations can "resolve" the Chainstore Paradox, and qualitatively discussing the value of "implicit contracting" in repeated games in which it would be costly to negotiate and enforce explicit agreements). However, the author is not aware of any other application of these principles to this context with the assumptions contained in this part II.C on the basis articulated in part II.E.
miscellaneous investors who will deliver consents and that the remaining bondholders are institutional investors who may be repeat players and whose history with respect to delivering consents is public information. Bondholder 1 also assumes that no other institutional investor cheats. These assumptions create an upper bound on the "coercion" imposed on each bondholder, by assuming that each relevant bondholder holds the crucial vote, and therefore these assumptions test whether Bondholder 1, and all other relevant bondholders, face a Prisoner's Dilemma.

The following variables are defined in the model: \( \theta \) equals the probability that there will be a following consent solicitation, \( f \) equals the aggregate fee paid by the issuer for the consents, \( a \) equals the expected value of the bonds held by Bondholder 1 for a particular consent solicitation where every bondholder agrees with the other bondholders (i.e., they do not deliver consents) and \( g \) equals the expected value of the bonds held by Bondholder 1 in the grim outcome in which everyone consents. If Bondholder 1 cheats in the first consent solicitation, with a probability \( \theta \) Bondholder 1 will receive a second consent solicitation, in which case the bonds subject to the solicitation would have a value of \( g \). The expected value of that possible second consent solicitation is given by

\[
\theta \left( g + \frac{f}{100} \right),
\]

because all bondholders will consent, causing the fee to be divided among all bondholders. If Bondholder 1 receives a second consent solicitation, there is a similar likelihood that the bondholder will receive a third consent solicitation, and so on. This series is given by the following sum:

\[
(g + \frac{0.01f}{\alpha}) + \theta(g + \frac{f}{100}) + \theta^2(g + \frac{f}{100}) + \theta^3(g + \frac{f}{100}) + \ldots
\]

\[
= g + \frac{0.01f}{\alpha} + \frac{\theta}{1 - \theta} \left[ g + \frac{f}{100} \right]
\]

115. The percentage required for most amendments under the Model Simplified Indenture is 66.7%. Model Simplified Indenture, supra note 2, § 9.02. Professors Coffee and Klein have stated that most indentures require approval by a supermajority to amend covenants. Coffee & Klein, supra note 2, at 1223 n.50.

116. This fee is to be distributed pro rata among bondholders who deliver a consent.

117. Recall that if \( \theta<1 \), the following series, \( \theta + \theta^2 + \theta^3 + \ldots \), equals \( \frac{1}{1-\theta} \). This result is arithmetically equivalent to the value of an infinitely repeated game where each successive play of the game has a discounted value. See Rasmusen, supra note 97, at 90. This formula may be familiar from the context of gross-ups of amounts paid to employees to provide net payments after deducting federal income taxes.
Similarly, the value of not cheating would be given by:

\[ a + \theta a + \theta^2 a + \theta^3 a + \ldots = a + \left( \frac{\theta}{I - \theta} \right) a \]

The profit (or loss) from cheating will equal the difference between these two sums. If the value of cooperating with the other bondholders in all solicitations exceeds the value of cheating in the first game and receiving the grim outcome in all subsequent solicitations, Bondholder 1 will not face a Prisoner’s Dilemma. By setting the value of the two sums equal to each other, the critical value for the probability that there will be a second consent solicitation, \( \theta_{\text{CRITICAL}} \), can be derived. If the probability that there will be a second consent solicitation is greater than \( \theta_{\text{CRITICAL}} \), a bondholder who knew that he or she had the deciding vote would withhold a consent, because the benefit of having the other bondholders hold out in future consent solicitations would outweigh the benefit from cheating in the first consent solicitation.

We define \( \gamma \) as representing the fraction that the aggregate consent fee paid represents of the excess of the aggregate value of the bonds if there is no amendment over the aggregate value of the bonds if the amendment is approved. More succinctly, \( \gamma \) is the fraction of the gains that is shared with the bondholders.\(^{118}\) The result, derived in the Appendix, is as follows:

\[
\theta_{\text{CRITICAL}} = \frac{\left( \frac{\gamma - \alpha}{\alpha} \right) \left( \frac{I}{I - \gamma} \right)}{I + \left( \frac{\gamma - \alpha}{\alpha} \right) \left( \frac{I}{I - \gamma} \right)}
\]

A few aspects of this result merit identification. If the fraction of the gains that the issuer offers to share with bondholders is less than the percentage required to approve the amendment,\(^{119}\) Bondholder 1 will not be in a Prisoner’s Dilemma. Other examples may illustrate this result. If three-quarters of the gains are paid to bondholders as a consent solicitation fee and two-thirds of the bondholders are required to approve the amendment, Bondholder 1 will not be in a Prisoner’s Dilemma if there is at least a thirty-two percent chance that there will be a second consent solicitation.\(^{120}\) The significance of the supermajority voting requirements is highlighted by considering that if three-quarters of the gains are paid to the bondholders as a consent solicitation fee and only fifty-one percent of the bondholders are re-

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118. Algebraically, \( f = \gamma (100a-100g) \).
119. This assumption may be expressed arithmetically as \( \gamma < \alpha \).
120. Arithmetically, if \( \gamma = .75 \) and \( \alpha = .67 \), \( \theta_{\text{CRITICAL}} = .32 \).
quired to approve the amendment, the probability that there will be a second consent solicitation must be at least sixty-five percent if Bondholder 1 is not to be in a Prisoner's Dilemma.\textsuperscript{121}

The model indicates that unless the aggregate consent fee represents substantially all the gains from the amendment to the indenture, bondholders will not be presented with a Prisoner's Dilemma if the governing indenture has a supermajority provision and bondholders believe that there is a significant possibility that there will be a second consent solicitation. There is a possibility, however, that an issuer could compel bondholders to consent by offering to share substantially all the gains. In addition, issuers that may have to reenter the capital markets may not be willing to incur the wrath of bondholders, who may feel wronged if they are placed in a Prisoner's Dilemma, if the majority of the benefit of the transaction must nevertheless be shared with the bondholders.\textsuperscript{122}

This analysis also highlights the importance of the prohibition in the TIA on the impairment of a bondholder's right to principal or interest.\textsuperscript{123} If the amendment is approved, issuers structuring a consent solicitation may modify the value of the bonds by varying the nature of the changes in the covenants (or, in the case of an exchange offer, varying the terms of the new securities). They also may modify the amount of the aggregate consent fee. To make a consent solicitation more "coercive," an issuer might either increase the aggregate fee or decrease the post-consent value of the bonds. This provision of the TIA creates a floor on the value of the bonds after the consent solicitation and therefore restricts an issuer's ability to coerce bondholders by substantially decreasing the post-amendment value of the bonds.

If the offer is instead structured as a specified fee of $\gamma(a-g)$ paid in successful solicitations to each one percent of the outstanding bonds for which a consent is delivered, the result is simpler. The value of cheating in the first play will exceed the value of not consenting only if $\gamma>1$.

\textbf{D. The Significance of Nash Equilibria}

That some institutional investors have petitioned the SEC to adopt additional rules protecting bondholders\textsuperscript{124} indicates that, at a minimum, bondholders sometimes feel pressured into delivering a consent. The above discussion has carefully avoided predicting that bondholders will present a united front to issuers in any particular context. For example, reviewing the single-game example depicted in Table 5, all

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{\gamma} & \textbf{\alpha} & \textbf{\theta_{\text{CRITICAL}}}
\hline
0.75 & 0.5 & 0.65
\hline
0.8 & 0.51 & 0.69
\hline
0.51 & 0.5 & 0.74
\hline
\end{tabular}
\caption{Example Table}
\end{table}

\textsuperscript{121} Arithmetically, if $\gamma=.75$ and $\alpha=.51$, $\theta_{CRITICAL}=0.65$. The results are sensitive to changes in the percentage of the gains split with the bondholders. If $\gamma=.8$ and $\alpha=.67$, $\theta_{CRITICAL}=0.49$, and if $\gamma=.8$ and $\alpha=.51$, $\theta_{CRITICAL}=0.74$.

\textsuperscript{122} See infra note 141.

\textsuperscript{123} See supra note 10 and accompanying text.

\textsuperscript{124} See supra note 81 and accompanying text.
bondholders consenting and no bondholders consenting are both Nash equilibria. Game theory has provided a sub-category of Nash equilibria—trembling hand perfect Nash equilibria, which has been described as requiring that each strategy "must continue to be optimal for the player even if there is a small chance that the other player will pick some out-of-equilibrium action (that the other player's hand will 'tremble')." Professors Kahan and Tuckman have shown that both those equilibria in the single-game example depicted in Table 5, all bondholders consenting and no bondholders consenting, are trembling hand perfect.

If the goal of the analysis is to predict the outcome of the game, there is not always an obvious way in which to select one of a number of Nash equilibria. In addition, the play in games may not be predicted accurately by the Nash equilibria. Attempting to predict the results of the consent solicitation therefore would be much more complex than the analysis set forth above. In particular, such an analysis would have to include the possibility that more bondholders than the critical number delivered consents, decreasing the return from cheating. If the value of the worst outcome, not consenting where the amendment is approved, is substantially worse than the other options, that disparity, coupled with an uncertainty as to the likelihood of the various outcomes, may make a bondholder unwilling to hold out in the hope of obtaining the most preferred option of all bondholders holding out. As demonstrated above, bondholders often will not be in a Prisoner's Dilemma when they are presented with consent solicitations and those bondholders will not always have a dominant strategy of delivering a consent.

E. Reexamination of the Assumptions

These examples have assumed that the issuer has to pay the same amount to each bondholder who delivers a consent. That requirement is integral to limiting issuers' powers of coercion. If the aggregate payments to bondholders are greater than the decrease in the bonds' value arising from the amendment, i.e., the bondholders have an aggregate increase in wealth, it is difficult to argue that the bondholders are being coerced. If this situation is nevertheless described as "coer-

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125. Rasmusen, supra note 97, at 109.
126. Kahan & Tuckman, supra note 2, at 506.
128. See generally id. at 133-85 (discussing Nash equilibria and alternatives).
129. For example, a more detailed analysis might assume that there are 20 bondholders and weigh the payoff to a bondholder assuming that there was an equal, independent probability that any other bondholder would consent, which would permit creation of a probability distribution for the payoff to the bondholder if he or she consented or failed to consent.
130. See infra notes 151-54 and accompanying text for a model incorporating these modifications.
"cive," it is difficult to muster sympathy for the bondholders' plight. However, the issuer might be able to create a frenzy and force the delivery of consents if it did not make the offer to all holders or if it accepted the consents for a portion of the bonds on a first-come, first-served basis. The right of bondholders to receive any offer given to other bondholders, implied by the court in *Kass v. Eastern Air Lines, Inc.*,131 is therefore critically important. Perhaps it should not be surprising that since consent solicitations have become more common, some participants in offerings of non-investment grade debt have provided in the respective indentures that any such fees for consents must be offered to all holders.132

This analysis identifies the reason why bondholders may act collectively. One might object to this analysis on the basis that it has assumed that the same bondholders participate in each consent solicitation and that the bondholders know whether the other bondholders have cheated in the past, since bond holdings generally are not required to be publicly disclosed.133 As the investment bank that originally underwrote the debt often makes a market in the debt,134 that firm may have a very good idea who owns the bonds and therefore may be in a position to facilitate dissemination of that information. However, just as an underwriter is between the conflicting interests of the issuer and the prospective bondholders when cove-
nents are negotiated, an underwriter will be subject to conflicting pressures during a consent solicitation. The bondholders with whom the underwriter placed bonds, and with whom the underwriter may wish to place bonds in the future, may seek information concerning the identities of the other bondholders. However, the underwriter's valuable prospects for underwriting future offerings may be jeopardized by assisting bondholders in this context. In fact, the issuer might separately engage the underwriter to facilitate the consent solicitation. As a result, underwriters may ultimately decline to facilitate the exchange of information among bondholders. In any event, it is irrelevant whether investment bankers form a material link in the dissemination of information concerning the bondholders or whether others play a more vital role. Empirical evidence demonstrates that the bondholders in the past frequently have been able to take collective action, so there is some mechanism by which the identities of a significant percentage of bondholders is disseminated.

The assumption that the same group of investors is faced with the consent solicitation does not undermine the analysis. Reality is probably more accurately reflected by assuming that the bondholders are randomly selected. However, each bondholder generally will act in a similar fashion under this relaxed assumption, as long as the investors in all groups are aware of each investor's history of voting. Bondholder 1's grim strategy is based on being paired with a fellow institutional bondholder that previously delivered a consent (and who therefore may cheat in the present solicitation). Whether Bondholder 1 actually lost money as a result of the other bondholder's prior cheating is not relevant to Bondholder 1's choice of a strategy. Each consent may be directed to a group of bondholders consisting of some investors to whom one or more consent solicitations have been previously directed and others who have not previously received consent solicitations. There is no obvious, universal reason to conclude that this fact would significantly affect the analysis set forth above, which has been constructed to analyze the general effect of the possibility of subsequent consent solicitations (and not to predict the result in any particular consent solicitation). The model in part III may partially accommodate that additional complexity.

The role of the investment bank that originally underwrote the debt in making a market also may provide another relationship that will diminish the benefit to bondholders from cheating. An interesting ar-

135. See supra note 15.
136. See supra note 90.
137. There may be some correlation, however, because an underwriter may be more likely to sell debt securities to a particular subset of the investing public. Cf. 1 Louis Loss & Joel Seligman, Securities Regulation 335 n.31 (3d ed. 1989) (citing a study that found that certain types of firms and industries tend to engage specific investment banks for their underwriting business).
article by David Hirshleifer and Eric Rasmusen concludes that the prospect of banishment from a group in which it is profitable to belong may permit the group to avoid free-riding.\textsuperscript{138} If the paradigm of trading of bonds is that the underwriter makes a market by selling to, and buying from, a group of customers with whom the underwriter also places equity securities in initial public offerings, investment banks that are aligned with the bondholders may have another tool to prevent cheating. As stocks typically rise from ten to fifteen percent immediately following their initial offering,\textsuperscript{139} any bondholder that cheats on other bondholders may find that it has more limited opportunities to purchase stocks at the initial offering price.\textsuperscript{140} There may be a similar limit on the extent to which issuers attempt to create truly coercive solicitations if they expect to issue underwritten securities in the future.\textsuperscript{141}

It is important to recognize the restriction of the analysis to the possible strategies analyzed above.\textsuperscript{142} Although this limit on the analysis in this Article seems reasonable, there may be alternative, plausible assumptions that would provide contrary results. For example, one could assume that a bondholder followed a “mixed strategy,” in which the bondholder’s action in any particular situation is randomly selected (although the actions need not have the same probability of being selected).\textsuperscript{143} Mixed strategies have not been considered, as it seems sufficiently implausible that bondholders would adopt such a strategy to justify incorporation of the greater complexity required to analyze mixed strategies.\textsuperscript{144} It is more difficult to dismiss alternative

\begin{itemize}
\item \textsuperscript{138} David Hirshleifer & Eric Rasmusen, Cooperation in a Repeated Prisoners’ Dilemma with Ostracism, 12 J. Econ. Behav. & Organization 87, 105 (1989).
\item \textsuperscript{140} This Article does not attempt to quantify this additional incentive, which may in fact not be significant. It is mentioned only for completeness. Cf. Roe, supra note 2, at 275 n.130 (noting that recalcitrant banks may not be offered the opportunity to participate in subsequent loan syndications).
\item \textsuperscript{141} Cf. Coffee & Klein, supra note 2, at 1254 n.136 (noting that the market did not well receive an issue of bonds by an issuer that had previously aggressively interpreted a protective covenant to the detriment of its bondholders); Kahan & Tuckman, supra note 2, at 508 (“[Coercive] proposals may hurt the issuer’s reputation and increase its future costs of raising capital.”); Tauke, supra note 14, at 49 (“The need to return regularly to the bond market for raising capital will serve as a deterrent to such corporations’ taking action contrary to the best interests of the bondholders and thereby increasing their future costs of capital.”).
\item \textsuperscript{142} See supra text accompanying notes 114-15.
\item \textsuperscript{143} See supra note 97, at 69.
\item \textsuperscript{144} Intuition suggests that any person who is delegated the power by his or her employer to decide whether a consent should be delivered will hesitate to adopt a strategy based on a random selection. Such a strategy might be difficult to justify if the outcome were poor.
\end{itemize}
pure strategies, such as a grim strategy that is pursued only for a limited number of future games in response to some other bondholder’s cheating or more complex strategies combining cheating and cooperating. In some contexts, this type of strategy may be most successful. It is not feasible to identify and analyze all plausible strategies and strategy combinations, which may be very numerous. For this reason, this Article has assumed the adoption of a simple strategy that seems at least as plausible as other, more complex strategies.

F. The Need for Relief for Issuers

Bondholders’ failure to approve any particular amendment may adversely affect the ability of a company to enter into a transaction that benefits the firm as a whole. One might therefore consider whether the regulatory environment should enhance companies’ ability to coerce bondholders. If the bonds are subject to redemption, the question is really whether a firm should be able to enter into a transaction that benefits shareholders and thereby allocate some new, additional risk to bondholders who may not share in the benefits of the transaction. Even if the bonds may not be redeemed, indentures often provide that the covenants may be “defeased,” i.e., that failure to comply with the covenants will no longer permit the trustee to declare the bonds to be in default, upon delivery to the trustee of funds or government securities that will meet the scheduled payments on the bonds. The author’s review of fifty-eight prospectuses for bonds issued in the fourth quarter of 1993 that were rated below Baa by Moody’s disclosed fifty that had some type of defeasance provision. It strains credulity to argue that public bondholders (or, perhaps more accurately, the underwriters’ counsel) seriously bargain for the omission of a defeasance provision to retain the power to hold up transactions beneficial to the issuer, although bondholders may properly be

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145. See Rasmusen, supra note 97, at 119-20 (noting a round-robin tournament for a 200-repetition Prisoner’s Dilemma game in which participants competed against a single competitor in each round and strategies could not be updated during play that was won by a strategy of tit-for-tat, i.e., cooperating in the first round and thereafter choosing the opponent’s play in the prior round, even though the strategy would not beat any other strategy in a one-on-one contest).

146. See generally Coffee & Klein, supra note 2, at 1216 (discussing the characterization of coercion as either permitting issuers to evade their contractual obligations or solving the problem of holders who hold out).

147. Klein et al., supra note 14, at 661 n.32; Model Simplified Indenture, supra note 2, § 8.01.

concerned with the type of securities that may be delivered to defease the covenants.\footnote{149. As a technical matter, the indenture may provide that the covenants are not defeased until the preference period for the transfer of the securities to the trustee has passed. An indenture also may permit "complete defeasance," under which bondholders lose not only their covenant protection but also relinquish their right to pursue any claim for payment against the issuer (although the trustee and the issuer may remain obligated to perform certain ministerial functions, such as facilitating exchanges of the securities). Model Simplified Indenture, supra note 2, § 8.01 note 8. A discussion of the potential consequences of a defeasance under the Internal Revenue Code or the Investment Company Act of 1940 is beyond the scope of this Article.}

The absence of a defeasance provision in some indentures is more likely a result of counsel using an old precedent when the indenture is prepared, or the absence of any significant financial covenants in the indenture, diminishing the provision's utility.\footnote{150. However, a defeasance provision may be useful to avoid other covenants, such as a restriction on mergers.}

In this context, the plight of issuers that do not have defeasance provisions in their indentures merits no more attention.

III. Requiring Disclosure of All Votes

The previous models have indicated that in many circumstances, bondholders that are the subject of a consent solicitation will not be presented with a Prisoner's Dilemma. The models neglected consent solicitations in which the proposed amendment was not approved. This assumption reflects the expectation that the identities of bondholders who consent will be less accessible if the amendment is not approved. However, the assumption understates the disadvantages of delivering a consent, and it is not clear that the assumption is accurate. If the bondholders knew that a particular bondholder had "cheated" in a prior consent solicitation, the other bondholders would probably expect that bondholder to cheat in the present consent solicitation, independent of whether the prior consent solicitation was approved. One method of diminishing issuers' ability to coerce bondholders would be to require public disclosure of the names of beneficial holders of some material amount of bonds and identification of those who have previously delivered a consent to an amendment in exchange for a fee. These modifications would be less intrusive than a ban on consent solicitations but would nevertheless facilitate market discipline of bondholders who cheat on other bondholders.\footnote{151. One might argue that bondholders would find public availability of the names of bondholders and their prior voting records to be more intrusive than an outright ban on exit consent solicitations and the payment of a fee in a consent solicitation. There is no obvious basis on which to judge that objection in the absence of a survey of bondholders.}

Part II.C of this Article highlights the importance of analyzing in some detail economic arguments. It is difficult to adopt or reject naked assertions that bondholders may be coerced without undertaking
an analysis such as that contained in part II.C. Similarly, although mandating disclosure of the identities of bondholders who accept consent solicitations for a fee seems likely to decrease the value of cheating, further analysis is required to determine whether the beneficial impact of such a rule would be significant in practice and outweigh the intrusion of the rule. A final, less conventional economic model is considered to assess the efficacy of such a regulation.

This model makes the following assumptions: a consent solicitation is presented to the holders of a class of bonds that is owned by twenty bondholders, each owning five percent of the class; at least two-thirds of the bondholders are required to approve the amendment; the bondholders adopt one of two strategies, (i) always consenting, i.e., cheating, and (ii) not consenting in the first solicitation and consenting in the second consent solicitation only if more than fifty percent of the bondholders are known to have consented in a prior consent solicitation; the bondholder being analyzed, Bondholder 1, assumes that there is an equal likelihood that any other bondholder will be of either of the two types; and the probability that there will be a second consent solicitation is one-half. These specific assumptions are selected to create a representative example; a more general model would be too complex for the purposes of this Article.

Part B of the Appendix demonstrates that if all cheating is publicly disclosed after the consent solicitation is terminated, and the aggregate consent fee is prorated among all consenting bondholders in a partial offer, the aggregate consent fee must be greater than seventy-eight percent of the gains in the consent solicitation if Bondholder 1 is to have a higher expected value from always cheating. However, if cheating is publicly disclosed only if a consent solicitation is approved, the aggregate consent fee must be greater than sixty-two percent of the gains if Bondholder 1 is to have a higher expected value from always cheating. This example indicates that requiring disclosure of all consents may have a significant effect on bondholders' decisions.

If the consent fee is not prorated among consenting bondholders in a partial offer, so that the fee paid to each bondholder who consents to an amendment that is approved equals $\gamma(a-g)$, and bondholders' votes always become public, the fraction of the gains that must be shared with bondholders must equal at least eighty-eight percent if a bondholder is to have a higher expected value from cheating. The import of this result merits reemphasis. This model does not contain the uncertainty of the models in part II, where two outcomes were plausible. If Bondholder 1 believes that each other bondholder is equally likely to select either strategy, that there is a fifty percent

152. Where consents are made public only if the amendment is approved, a bondholder will have knowledge that more than one-half of the bondholders consented only where the first consent solicitation is successful.
153. The bondholders are assumed to make their random selection independently.
chance of a second consent solicitation and that two-thirds of the bondholders are required to approve the amendment and all votes become public, Bondholder 1 will hold out unless the fee equals or exceeds eighty-eight percent of the gains of the transaction.

The prospect of future consent solicitations also may cause a bondholder to withhold consent where all information concerning cheating is publicly available in subsequent consent solicitations even if he or she believes that each other bondholder is more likely to cheat than to hold out. For example, if all votes become public, two-thirds of the bondholders are required to approve the amendment, the consent fee is not prorated (i.e., the offer is not partial), there is a sixty-seven percent chance that there will be a subsequent consent solicitation and the bondholder believes that there is a sixty percent chance that any other bondholder will cheat, the consent fee must equal or exceed seventy-three percent of the gains if Bondholder 1 is not to hold out.

The term "gains" refers to the difference between the value of the bonds, as amended, and the pre-amendment value of the bonds. If the proposed amendment would decrease the value of the bonds by fifty percent and the offer were for all bonds, with $\gamma=.88$, a bondholder who consented to an amendment that was approved would have property equal to ninety-four percent of the bonds' original value. The ability of issuers to coerce their bondholders is substantially restricted where the proposed amendment cannot entirely eliminate the post-amendment value of the bonds. This aspect of the model again highlights the importance of the provisions of the TIA that limit the scope of the amendments. Without these provisions (or a similar contractual arrangement), an amendment could decrease the post-amendment value of the bonds to zero, increasing the issuer's powers of coercion.

Again, the vast array of plausible strategy combinations makes impracticable any attempt to specify fully all possible outcomes. This model has nevertheless demonstrated that where there is a significant possibility that bondholders may be presented with a second consent solicitation, requiring all votes to be made public after the vote is taken on the amendment may materially limit an issuer's ability to coerce bondholders. In addition, the possibility of subsequent consent solicitations may limit an issuer's ability to coerce bondholders, even where each bondholder believes that it is more likely than not that each other bondholder will cheat. This model provides a basis for understanding why bondholders may withhold consent to amendments that others' models have characterized as coercive.

**Conclusion**

This Article has considered the opportunity of issuers to compel bondholders to approve various indenture amendments. This Article

154. See supra notes 10, 123 and accompanying text.
has attempted to explain why bondholders have been able to act collectively and resist offers others have identified as coercive. The possibility of subsequent consent solicitations may play a major role in bondholders' ability to act collectively, which has arisen in practice.

This Article also has demonstrated that bondholders' access to the identities of other bondholders and the response of those other bondholders to prior consent solicitations may significantly limit an issuer's ability to coerce bondholders. However, since there are no formal mechanisms by which that information is disseminated, the outcome of any particular consent solicitation may be materially affected by a factor unrelated to the merits of the offer—the extent to which information is available as to the particular class of bonds. Moreover, if underwriters play a material role in the dissemination of that information, individuals considering the regulatory environment might be concerned with the possibility that issuers could choke dissemination of crucial information by engaging the investment bank that originally underwrote the bonds in question to perform other services, with the express or implied understanding that the identities of bondholders would not be publicly disseminated.

This Article does not purport to conclude that regulatory intervention is necessary in this context. The purchasers of bonds generally are sophisticated investors able to understand the risks they are assuming. In the absence of a disparity in bargaining power or sophistication, there is a diminished need to regulate these purely commercial transactions. However, this Article has identified a less intrusive alternative to be considered if regulatory restrictions on consent solicitations are to be proposed—mandatory disclosure of actions that bondholders take in response to consent solicitations for publicly held bonds. An economic analysis indicates that this regulatory revision would materially limit the extent to which corporations could "coerce" their bondholders. The advantage gained by regulating consent solicitations in this fashion is that the mechanism permits the market to determine which amendments should be approved. Some transactions requiring bondholder consent may increase the value of each class of securities. Alternative regulations based on attempting to ban specific categories of consent solicitations may ultimately harm bondholders, by eliminating the ability of bondholders and issuers to agree to mechanisms that can police investors who improperly hold out.
APPENDIX

A. Multiple Bondholders—Model from Part II.C

Assumptions:
1. Bondholder 1 owns 1% of the outstanding principal amount of the bonds.
2. To approve the amendment, bondholders holding more than $100\alpha\%$ of the bonds must consent, where $\alpha<1$, and bondholders holding $100(\alpha-.01)\%$ of the bonds are known to have granted irrevocable consents.
3. The aggregate fee paid to all bondholders who consent is equal to $\gamma(100a-100g)$, where $\gamma\leq1$.
4. Terms $a$ and $g$ are as defined in the text.

For Bondholder 1, the value of cheating is given by the following sum:

$$g + \frac{.01}{\alpha} \gamma(100a - 100g) + \theta(g + \gamma(a - g)) + \theta^2(g + \gamma(a - g)) + \ldots$$

$$= g + \frac{.01}{\alpha} \gamma(100a - 100g) + \frac{\theta}{1 - \theta} (g + \gamma(a - g))$$

The value of not cheating is given by the following sum:

$$a + \theta a + \theta^2 a + \ldots = a + \frac{\theta}{1 - \theta} a$$

Setting the two values equal to each other yields the following:

$$g + \frac{\gamma}{\alpha} (a - g) + \frac{\theta}{1 - \theta} (g + \gamma(a - g)) = a + \frac{\theta}{1 - \theta} a$$

Simplifying and solving for $\theta_{\text{critical}}$ yields

$$(g - a) + \frac{\gamma}{\alpha} (a - g) = \frac{\theta}{1 - \theta} (a - g)(1 - \gamma)$$

$$\theta = \frac{\left[\frac{\gamma - \alpha}{\alpha}\right] \left[\frac{1}{1 - \gamma}\right]}{1 + \left[\frac{\gamma - \alpha}{\alpha}\right] \left[\frac{1}{1 - \gamma}\right]}$$

We can quantitatively demonstrate the accuracy of our assumption that maximizing $\theta_{\text{critical}}$ is achieved by assuming $\gamma$ approaches 1. Define $\Theta(\alpha, \gamma) = \theta_{\text{critical}}$. Taking the partial derivative of $\Theta$ with respect to $\gamma$: ...
Since this partial derivative is always positive if 0<\alpha<1, and we are only concerned with consent solicitations where 0<\alpha<1, \Theta is maximized by maximizing \gamma.

If the fee were structured as a fee of \gamma(a-g) for each bondholder, independent of the number of bondholders who consented, the analysis is as follows:

\[
g + \gamma(a - g) + \frac{\theta}{1 - \theta} (g + \gamma(a - g)) = a \frac{I}{1 - \theta} \Rightarrow \gamma = I
\]

B. MULTIPLE BONDHOLDERS—MODEL FROM PART III

Assumptions:
1. Bondholder 1 owns 5% of the outstanding principal amount of the bonds; the remaining bonds are owned by 19 other investors, each owning 5%.
2. Two-thirds of the bondholders must agree to the amendment for it to be approved.
3. If the consent fee is prorated in a partial offer, there is an aggregate fee paid to all bondholders who consent, \( f = \gamma(20a - 20g) \). If the consent fee is not prorated among consenting bondholders, and the offer is for any and all bonds, each bondholder who consents is paid a fee of \( \gamma(a - g) \) if the amendment is approved.
4. Terms \( a \) and \( g \) are as defined in the text.
5. There is a 50% likelihood, \( \theta \), that the same bondholders will be presented with a subsequent consent solicitation.
6. Define \( n \) as the number of bondholders, other than Bondholder 1, who cheat in the first consent solicitation.

1. A Bondholder’s Vote Always Becomes Public

Bondholder 1 may select one of two strategies:
(a) always consenting (i.e., cheating) or
(b) not cheating in the first consent solicitation and consenting in subsequent solicitations only if more than 50% of the bondholders cheated in the first consent solicitation.

This percentage has been selected because if a consent solicitation is almost approved in the first transaction, some bondholders who did
not cheat in the first transaction may find the prospect of cheating too tempting in the second consent solicitation.

a. If the aggregate fee is prorated in a partial offer

The value of strategy (a) is given by the following sum:

\[
[P(n \leq 12)]a + \sum_{i=1}^{7} [P(n = 12 + i)] \left[ g + \frac{5}{65 + 5i} f \right]
+ \left[ \frac{\theta}{I - \theta} \right] \left( [P(n \leq 9)]a + [P(n > 9)](g + .05 f) \right)
= 1.4165 a + .5835 g + .6153 \gamma(a - g)
\]

The value of strategy (b) is given by the following sum:

\[
[P(n < 14)]a + [P(n \geq 14)]g
+ \left[ \frac{\theta}{I - \theta} \right] \left( [P(n \leq 10)]a + [P(n > 10)](g + .05 f) \right)
= 1.6444 a + .3556 g + .3238 \gamma(a - g)
\]

Setting the two equal to each other yields \( \gamma = .78 \).

b. If the consent fee is not prorated (an any and all offer)

The value of strategy (a) similarly equals the following:

\[1.4165 a + .5835 g + .5835 \gamma(a - g)\]

and the value of strategy (b) is as follows:

\[1.6444 a + .3556 g + .3238 \gamma(a - g)\]

Setting the two equal to each other yields \( \gamma = .88 \).

2. A Bondholder's Vote Becomes Public Only if the Amendment Is Approved

Bondholder 1 may select one of two strategies:

(a) always consenting (i.e., cheating) or
(b) not cheating in the first consent solicitation and consenting in subsequent solicitations only if the first consent solicitation was rejected.

The consent fee is prorated among consenting bondholders.

The value of strategy (a) is given by the following sum:

\[.9165 a + .0835 g + .005766 f\]

\[+ \left[ \frac{\theta}{I - \theta} \right] [.9165 a + .0835 (g + .05 f)]\]

\[= 1.8330 a + .1670 g + .1988 \gamma(a - g)\]

The value of strategy (b) is given by the following sum:
\[0.9682 \alpha + 0.0318 \gamma + \left[ \frac{\theta}{1 - \theta} \right] [0.9682 \alpha + 0.0318 (\gamma + 0.05 \beta)]\]
\[= 1.9364 \alpha + 0.0636 \gamma + 0.0318 (\gamma - \alpha)\]

Setting the two equal to each other yields \(\gamma = 0.62\).

C. Bondholders' Votes Always Become Public, with Different Constants

Under the same assumptions as under the model in B.1.b., above, except that the probability that any bondholder will select strategy (a), cheating, is 0.6, and the probability that there is a second consent solicitation is 0.67, the value of strategy (a) is as follows:

\[0.6919 \alpha + 0.3081 (\gamma + \gamma(\alpha - \gamma)) + \left[ \frac{\theta}{1 - \theta} \right] [0.1861 \alpha + 0.8139 (\gamma + \gamma(\alpha - \gamma))]\]
\[= 1.0697 \alpha + 1.9606 \gamma + 1.9606 (\gamma - \alpha)\]

The value of strategy (b) is as follows:

\[0.8371 \alpha + 0.1629 \gamma + 2.0303 (0.3325 \alpha + 0.6675 (\gamma + \gamma(\alpha - \gamma)))\]
\[= 1.5122 \alpha + 1.5181 \gamma + 1.3552 (\gamma - \alpha)\]

Setting the two values equal to each other yields \(\gamma = 0.73\).