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PRIORITY CONTRACTS AND PRIORITY IN BANKRUPTCY

Alan Schwartz†

INTRODUCTION

Firms create priority rankings among their creditors in three major ways: by issuing secured debt, subordinated public debt, and debt that sometimes results in later creditors subordinating their claims to earlier creditors.¹ The Bankruptcy Code enforces all of these state law priorities. Scholars have extensively explored the efficiency properties of secured debt, and some analysts have begun to question the Code's respect for it. Commentators, however, have devoted relatively little attention to "subordination priorities." These priorities are this Article's primary subject.²

Subordination priorities among private creditors arise as a consequence of the parties' efforts to prevent debt dilution—the devaluing of prior debt by the issuance of subsequent debt. Dilution is a more serious danger than is commonly recognized because dilution may occur without overinvestment.³ Investors who fear dilution will supply less credit, thus creating an incentive for firms to offer contracts that minimize the dilution risk. As shown below, the equilibrium contract for privately held debt protects against dilution with financial covenants.⁴ These covenants significantly restrict the firm's ability to issue

† Sterling Professor of Law, Yale Law School; Professor, Yale School of Management. This Article benefitted from comments received at a Law and Economics Workshop at Stanford Law School and this Symposium on bankruptcy priorities at Harvard Law School. Ian Ayres, Barry Adler, Eric Brunstadt, Kenneth French, and George Triantis also made thoughtful suggestions.

¹ Debt priorities are comprehensively described in Michael J. Barclay & Clifford W. Smith, Jr., *The Priority Structure of Corporate Liabilities*, 50 J. FIN. 899 (1995).

² This Article analyzes priority rankings among a borrower's creditors, not between these creditors and the borrower's shareholders. Thus, the discussion ignores the absolute priority rule. The Article focuses primarily on private debt, and so, does not discuss subordinated public debt issues. It also ignores involuntary creditors such as tort claimants.

³ A firm overinvests when it takes a project that has a negative net present value. Debtors overinvest when they are in trouble. This Article later shows that borrowing firms will dilute prior debt even when clearly solvent.

⁴ Financial covenants require a borrowing firm to maintain a specified relationship between asset and debt values, maintain a specified net worth, restrict the pay out of cash, and restrict or prohibit the granting of later liens.

later debt, and so may be thought to create underinvestment.⁵ A protected lender, however, will seldom insist on its contractual right to block subsequent profitable projects. Rather, the lender will waive covenant protection altogether when a borrower's later project is strong, or will permit the borrower to finance a profitable but diluting project only if the later lender subordinates itself. When the initial lender waives covenant protection altogether, all of the firm's creditors take pro rata; when the lender makes subordination a condition for waiver, the result is a priority ranking in which the initial lender is senior and the later lender is junior.⁶

The Bankruptcy Code upholds contractual priorities by according secured debt senior status and by enforcing subordination agreements. Recent disaffection with the security interest priority has led to proposals to limit the secured creditor's foreclosure right to only a fraction of the collateral's value.⁷ Restrictions on foreclosure are said to be desirable because borrowers issue secured debt to redistribute wealth from creditors with small claims to themselves and to creditors with large claims.⁸

This Article makes four claims relevant to the debate about priorities in bankruptcy. First, the subordination priority (sometimes also called the "covenant priority") is efficient. Thus the Bankruptcy Code's respect for this priority should continue. Second, borrowers that cannot make credible promises to comply with financial covenants may protect lenders against dilution by issuing secured debt. When security is issued to minimize the dilution risk, the secured debt

⁵ A firm underinvests when it fails to take a project that has a positive net present value. Firms underinvest involuntarily when creditors will not finance positive value projects.

⁶ Bank debt often is senior to other debt of the firm. A recent explanation is that making banks senior reduces financial distress costs because banks have the power to disrupt reorganizations and would exercise that power were they junior. See IVO WELCH, *WHY IS BANK DEBT SENIOR? A THEORY OF PRIORITY BASED ON INFLUENCE COSTS*, at B-11 (UCLA Working Paper No. 181-94, 1996) (discussing differences between banks and public bondholders which make banks "better fighters"). This Article offers an alternate explanation: a bank usually is a firm's earliest major lender and the desire to protect against dilution implies making this lender senior.

⁷ E.g., Lucian Ayre Bebhuck & Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy*, 105 YALE L.J. 857, 909-11 (1996) (proposing a 75% fixed-fraction rule); John Hudson, *The Case Against Secured Lending*, 15 INT'L REV. L. & ECON. 47 (1995). Commentators disagree on how large the fraction should be, but a commonly mentioned figure is 80%. Ronald J. Mann, *The First Shall Be Last: A Contextual Argument for Abandoning Temporal Rules of Lien Priority*, 75 TEX. L. REV. 11, 45-49 (1996), advocates making some secured creditors junior to unsecured creditors. The Bankruptcy Reform Commission, recently appointed by Congress to consider revisions in the Bankruptcy Code, held a conference at Harvard this year that was largely devoted to exploring the security interest priority.

⁸ That borrowers may issue secured debt to redistribute wealth from uninformed small creditors was first noted in Alan Schwartz, *Security Interests and Bankruptcy Priorities: A Review of Current Theories*, 10 J. LEGAL STUD. 1, 30-33 (1981). Recent versions of the claim are in Bebhuck & Fried, *supra* note 7, at 882-91; Hudson, *supra* note 7, at 53-57.

priority also is efficient. Third, the distributional explanation for the existence of secured debt is not persuasive in its current form. Together, the second and third claims suggest that the case for restricting the secured debt priority in bankruptcy has yet to be made. Fourth, the ability of firms to make credible commitments to abide by financial covenants would be enhanced were these covenants made legally binding on later lenders whose credit extensions would cause covenant violations.⁹ Under such a legal regime, some borrowers probably would substitute unsecured debt protected by covenants for secured debt because the latter is relatively costly to issue.¹⁰ These substitutions would reduce costs and would not disadvantage creditors with small claims. Because financial covenants commonly permit the borrower to use trade credit and pay wages, trade creditors and employees take pro rata with initial lenders when debt is protected with covenants. In contrast, trade creditors and employees take behind secured lenders.

Part I of this Article explains when the issuance of subsequent debt will dilute prior debt and identifies especially diluting transactions. Part II first shows that the equilibrium lending agreement will protect the early debt with financial covenants, and that these covenants are instrumental in creating priority classes.¹¹ Part II then offers some evidence in support of this theory. Part III argues that risky firms are more likely to issue secured debt than financially sound firms because risky firms are less able to make credible commitments to comply with financial covenants. Part IV explores difficulties with the distributional explanation for the use of secured debt. The Conclusion summarizes the results and develops the proposal to make covenants binding on certain third parties.

I DEBT DILUTION

It is well-known that the issuance of later debt can reduce the value of earlier debt. The goal of Part I is to identify contractible variables¹² that contribute to debt dilution and contractible transactions

⁹ To make a covenant binding against a later lender, the lender's bankruptcy claim would have to be subordinated to the claim of the creditor with covenant protection.

¹⁰ See Ronald J. Mann, *Explaining the Pattern of Secured Credit*, 110 HARV. L. REV. 625, 658-68 (1997).

¹¹ These sections extend and clarify the analysis in Alan Schwartz, *A Theory of Loan Priorities*, 18 J. LEGAL STUD. 209 (1989).

¹² A contractible variable is a variable that parties can observe and verify to a court. For example, contract quantity is a contractible variable because the buyer can observe how much was delivered and verify shortfalls at trial. A seller's production cost is often noncontractible because the buyer seldom can observe it, and also because production costs are expensive to establish in court. Contracts condition only on contractible variables

that commonly are associated with it. Part II then shows that lending agreements restrict or ban these variables and transactions.

A. The Model

In the story here, all parties are risk neutral, the borrowing firm maximizes its wealth, creditors operate in competitive markets and renegotiation is costless. The value of the firm is the value of the projects the firm pursues. The firm expects to do two projects sequentially, both of which it must finance with debt. The firm raises debt privately: it does not sell bonds but borrows either from a bank, a finance company, or an insurance company. Creditors can observe and verify to a court the value of the tangible assets for a project that the borrower commits to pursue but creditors cannot observe the borrower's project portfolio—the set of projects that may become available for later pursuit. The borrower can credibly promise to pay over project returns.

B. Debt Dilution

If the debt issued to finance the borrower's first project is not protected by covenants, it will be diluted when taking the second project increases the firm's risk—the variance of its cash flows. When a borrower's cash flows become more volatile, it is more likely to default. Because the value of a loan falls as the default probability rises, an increase in firm risk attributable to the debt-financed second project thus will reduce the value of the first loan.

To understand more precisely how dilution occurs, observe first that the relevant measure of risk for firms whose equity is not publicly traded is the firm's asset beta (β), which describes how the value of the firm's assets varies with changes in the value of comparable real assets. An asset beta of three would thus imply that when the value of the comparison asset set declines by ten percent, the value of the firm's assets will decline by thirty percent; an asset beta of two would imply a twenty percent decline. Thus, the larger is the firm's asset beta, the more risky is the firm. Because interest rates increase with risk, the rate that the borrower in the model pays on its initial loan is partly a function of the asset beta on the initial project. This interest rate is fixed in the initial lending agreement. Hence, if the borrower's second project increases the firm's asset beta, taking the project must reduce the value of the initial loan.

Assume that the borrower's first project constitutes the fraction x of the firm's value and its second project constitutes the fraction $(1 -$

to avoid moral hazard. Thus, cost-plus contracts are rare because when costs are unobservable, under such a contract the producer has an incentive to inflate costs.

x) of its value. A firm's beta is a weighted average of its project betas. Hence,

$$\beta_{firm} = x\beta_1 + (1 - x)\beta_2 \quad (\text{Equation (1)}).$$

Note that β_1 is the beta of the first project and β_2 is the beta of the second project.

An asset beta—here a project beta—is given by

$$\beta_{project} = \beta_{revenue} \left[1 + \frac{d}{v} \right] \quad (\text{Equation (2)}).$$

The term $\beta_{revenue}$ reflects the variability of the project's cash flows, the term d is the present value of the debt associated with the project, and the term v is the project's tangible present value net of nonfinancing project costs.¹³ Equation (2) has a simple intuition: project risk will increase as the variance of project cash flows increases and as the value of the tangible assets that support project debt falls. In equation (2), project beta increases as $\beta_{revenue}$ and the ratio of project debt to project value (d/v) increase.¹⁴

Equation (1) implies that the borrower's second project will dilute first project debt if the second project has a higher asset beta than the initial project. Overinvestment—the taking of a later negative value project—obviously would dilute,¹⁵ but an efficient later project could also dilute if the difference between its value and the debt that supports it is positive but smaller than the difference between the initial project's value and its project debt (i.e., d/v is larger for the second project).¹⁶

¹³ The v variable refers to tangible value because assets cannot protect the debt unless they can be resold. Equation (2) is adapted from RICHARD A. BREALEY & STUART C. MEYERS, *PRINCIPLES OF CORPORATE FINANCE* 222-23 (5th ed. 1996).

¹⁴ For a similar list of diluting factors, see Schwartz, *supra* note 11, at 228-34; George G. Triantis, *Secured Debt Under Conditions of Imperfect Information*, 21 J. LEGAL STUD. 225, 235-36 (1992).

¹⁵ When the firm's second project has negative expected value, then the debt-to-asset ratio on that project will exceed the ratio on the initial project (which is assumed to be profitable). Taking the second project thus will increase the riskiness of the firm. However, debt financed overinvestment is unlikely when, as in the model here, creditors can observe project quality: a creditor will be reluctant to fund a negative net present value project.

¹⁶ The argument in text implicitly assumes that project risk is a function of project beta alone. Finance specialists will recognize that this assumption is incorrect. A creditor is interested in the variance of the firm's return, and $Var(\text{return}) = \beta^2(\text{var}(\text{comparable asset set})) + \text{var}(\epsilon)$, where "var" is variance and ϵ is the residual return. The first and second terms on the right hand side of this equation are uncorrelated by construction. Hence, a project could be risky even if it has a zero beta (if $\beta = 0$, the variance of the firm's return could still be positive). A project would have a zero beta if its revenues were uncorrelated with the return on any comparable asset set. As an example, a project that is a new manufacturing technique might have a zero beta because there may be no comparable asset set,

A profit-maximizing borrower will take positive value projects whether they dilute or not. A later creditor who would take pro rata will lend on the basis of a less valuable project because the creditor can charge an appropriate interest rate, and also because, under the pro rata rule, the later creditor can reach a portion of the "free assets" supporting the earlier loan.¹⁷ Thus, only early lenders with unprotected debt may experience dilution.

C. Particular Diluting Transactions

Two transactions can substantially reduce the value of earlier debt. In the first, the borrower mortgages the assets of the second project to secure the second loan. To see how secured debt can dilute, recall that the value of a loan is a function of the likelihood of default and the lender's payoff in the default state. A later debt-financed project will increase the likelihood of default if the project has a higher beta than the first project.¹⁸ The beta of a project is unaffected by how it is financed, and it is shown just below that securing the second project reduces the first lender's default payoff. Therefore, when the second project's beta equals or exceeds the first project's beta, securing the second project necessarily dilutes the initial debt.

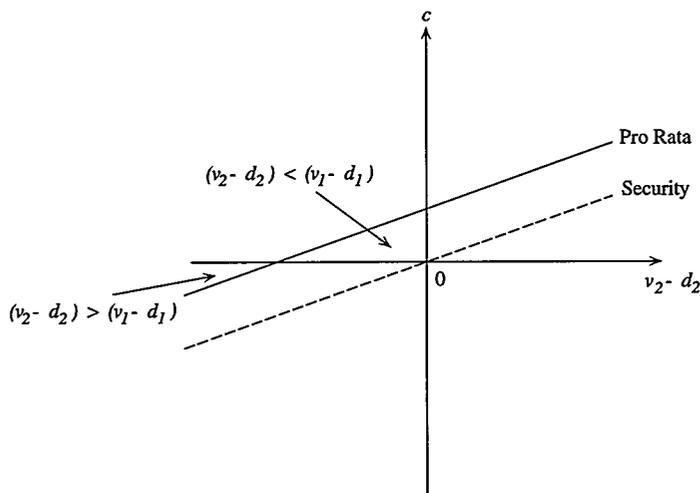
The effect of later secured debt on the first lender's default state dollar payoff is illustrated graphically by plotting the contribution to that payoff that a second project can make (C) against the difference between the second project's insolvency value and the debt on that project ($v_2 - d_2$) (this difference can be negative). The second project's contribution when the pro rata rule applies is represented by the solid line, and its contribution when the second project is secured is represented by the dashed line.

but the project would be risky if the technique may fail. In addition, a project that has a low beta could have a high residual variance and thus pose a high risk to a lender if the firm is very highly leveraged. In this case, while the beta term would suggest that the firm is relatively insulated from macroeconomic trends, the high leverage could make the firm prey to even small shocks in its particular circumstances. These examples are unusual, however. In the ordinary case, betas are positive because project returns usually are correlated with the returns on comparable assets in the economy. Also, in practice, the two terms on the right hand side of the variance equation are positively correlated. Firms with high asset betas commonly also have high residual variances as well (i.e., substantial debt). When there is a positive correlation between the equation's two terms, little generality is lost by focusing on the beta term alone. The text thus considers only project betas (the first term on the right hand side of the variance equation) because this simplifies exposition and will not lead to erroneous conclusions.

¹⁷ Free assets are those assets of the initial project that exceed the debt needed to finance it.

¹⁸ See *supra* Equation (1).

FIGURE 1



The secured lender can take second project assets up to the value of its debt. If these assets are insufficient, the secured lender takes pro rata with the first for its unpaid debt, and so it can share in the first project's assets. Thus, a secured second project contributes positively to the initial lender's default state payoff only when second project assets exceed second project debt ($v_2 - d_2 > 0$). If the second project is financed pro rata, it makes a positive contribution to the first creditor's default state return in two cases: (1) when second project assets exceed second project debt, and (2) when the second project also is insolvent, but by less than the first project ($v_2 - d_2 > (v_1 - d_1)$). In this second case, the initial lender shares in the second project's tangible assets. The solid line in Figure 1, representing the initial lender's pro rata default state payoff, thus always lies above the dashed line.¹⁹

If the second project has a lower beta than the first, whether financing the second project on a secured basis will dilute the initial debt cannot be answered theoretically. The lower project beta implies a lower risk of default, but the later security interest reduces the lender's payoff should default occur. If every possible second project of the borrower could be financed without security, the initial lender's contracting strategy is clear: it should attempt to ban later secured debt. When the borrower is highly leveraged, however, securing the later creditor may be necessary to get a profitable second project financed.²⁰ The parties to the initial loan could respond to this possibility in two ways: by specifying in the lending agreement when later

¹⁹ For the logic underlying Figure 1, see *infra* Appendix.

²⁰ See Elazar Berkovitch & E. Han Kim, *Financial Contracts and Leverage Induced Over- and Under-Investment Incentives*, 45 J. FIN. 765, 773-83 (1990); René Stulz & Herb Johnson, *An Analysis of Secured Debt*, 14 J. FIN. ECON. 501, 512-18 (1985).

secured debt will be permitted, or by banning all later secured debt and using renegotiation to ensure that the borrower can pursue later efficient secured projects. As is shown in Part III, safe (that is, low beta) projects are likely to be financed without security, while risky (that is, high beta) projects are likely to be financed with secured debt. Therefore, later *secured* debt will dilute the initial debt much of the time. Part II uses this fact to argue that the equilibrium financial contract uses the method of banning subsequent secured debt and relying on renegotiation.

In the second especially diluting transaction, the firm borrows in order to pay dividends. Borrowing for this purpose will increase the firm's debt but not the firm's assets. The effect is to increase the firm's riskiness (d/v increases in the beta equation but the variance of cash flows is unchanged).

D. Contractible Factors

Creditors can commonly verify the extent of a firm's debt (d in the beta equation) and whether the firm has issued secured second project debt or leveraged up to pay dividends. The model here assumes, and this Article later attempts to show, that creditors can verify project value (v in the beta equation). The variance of project cash flows is apparently more difficult to verify: firms themselves seldom know this variable exactly but rather make rough estimates. Thus, *if* lending agreements do protect the prior debt against dilution, these agreements will condition on the firm's debt level and its asset value, but not on the variance of its cash flows. Lending agreements will also regulate the later issuance of secured debt and the payment of dividends.

II

FINANCIAL COVENANTS AND PRIORITY

A. Contracting Against Dilution

Part I explained the demand for financial covenants by showing that unprotected debt faces a risk of dilution. To understand financial contracts, the analyst must also explain supply—why firms will issue debt with covenants. The explanation is not obvious because borrowers have countervailing incentives to protect first project debt. Creditors who are protected against dilution will charge lower interest rates, but protective covenants restrict a firm's freedom of action and permit creditors to veto projects. Borrowers apparently could avoid these restraints by paying higher interest rates. To see why they do not, realize that borrowers are in a strategic situation. In the model here, the initial creditor can observe the value of the borrower's first project but cannot observe the set of future (possibly diluting)

projects. A borrower whose second project will probably dilute the first project's debt thus would like to conceal its "type" and pay an interest rate that reflects the market average amount of dilution.²¹ A borrower that will have a good second project would like to reveal its type in order to pay a relatively low interest rate on the initial loan. However, even firms that would like to conceal their types will protect initial large creditors. While the analysis that supports this conclusion is complex, the logic is simple: it is rational for creditors to believe that borrowers who refuse to offer covenant protection will certainly dilute maximally. It is then rational for every borrower but the "maximum diluter" to protect initial creditors and thereby avoid paying the interest rate that is appropriate for the maximum diluter.

The analysis uses the model described in Part I.A and adds the assumption that a borrower's promise to comply with financial covenants is credible (i.e., believable to a lender).²² On all of these assumptions, borrowers will offer financial covenants in the unique equilibrium of a covenant signaling game. In this game, there is a "good" borrower type, b_g , whose later project will not dilute first project debt, and a set of "bad" borrowers whose later projects dilute to varying degrees. A bad borrower is denoted b_a . A particular borrower's type is private information (that is, unknown to lenders). Lenders, however, know the distribution of borrower types (the probability that a borrower is good or bad).

In period one, the borrower observes its type, seeks financing for its initial project, and sends a signal in the proffered loan agreement. The signal will be "offer financial covenants" or "offer no financial covenants." The creditor observes the value of the period one project and the signal and then takes an action, which is financing the initial project at a particular interest rate. A borrower recognized as being bad—i.e., one whose later project will dilute—is charged the interest rate r_a while a borrower recognized to be good is charged the lower interest rate r_g . Creditors believe that a borrower that sends the signal "no financial covenants" is bad with probability one.²³

Respecting the parties' payoffs, creditors earn zero profits under every lending agreement because credit markets are competitive. A borrower's payoff is a function of the interest rate. The higher the later project's debt-to-asset ratio is and the more variable its cash flows are relative to the initial project, the greater the diluting effect of the

²¹ Borrowers have different project portfolios. A borrower's "type" is its project portfolio. When lenders cannot observe project portfolios, they therefore cannot observe borrower types.

²² Part III relaxes this assumption when discussing why some borrowers will issue secured debt rather than debt protected by covenants.

²³ This belief is justified later in this Part.

second transaction. Let the average expected amount of dilution, as a function of the expected value of later projects, be \bar{d} .²⁴ For now, suppose that the interest rate charged to bad borrowers is partly a function of the average amount of dilution: $r_d = f(b, \bar{d})$, where b denotes the other factors affecting the interest rate.

In period two, a bad borrower who offers covenant protection to its initial lender will have to borrow on a subordinated basis to finance its second project: a protected lender will not consent to the later loan unless the later lender subordinates its debt. If the bad borrower refuses to give covenants on its initial loan, it can accord the second lender equal priority with the first and thus borrow from that lender at the "pro rata" rate. This rate is lower than the subordinated rate because a later pro rata lender can reach part of the free assets that sustain the earlier loan. Thus, a bad borrower who refuses to offer financial covenants to its initial lender can expect to earn the difference between the subordinated and the pro rata rate on loan two. This expected difference, z_d , varies inversely with second project quality. If the second project's debt-to-asset ratio and the variance of its cash flows approach that of the first, the subordinated rate on the later loan will approach the pro rata rate. Conversely, if the second project has a high debt-to-asset ratio or highly variable revenues relative to the first, the subordinated rate will be much above the pro rata rate. Therefore, z_d increases as the expected amount of dilution increases.

Creditors will believe that borrowers who refuse to give covenants are bad because good borrowers have no reason to refuse while bad borrowers do. For a good borrower, $z_d = 0$ because this borrower's second project will not dilute, and so will be financed on a pro rata basis whether the borrower protects the initial debt or not. In contrast, a bad borrower gains by refusing to protect the initial debt; only by refusing can it finance its later project pro rata. Thus, initial creditors who observe a refusal to offer covenants would infer that the borrower is bad. Further, the assumption that a borrower can credibly commit to comply with covenants implies that a creditor will charge the same interest rate, r_g , to a borrower who offers covenants as it would charge to a borrower known to be good.

There are four possible outcomes in this signaling game: (1) all borrowers refuse to offer covenant protection; (2) all borrowers protect the early debt; (3) good borrowers give covenants but bad borrowers do not; (4) good borrowers refuse to give covenants but bad borrowers give them. Let U_i be the borrower's payoff in each of these possible outcomes ($i = g$ or b). The first and fourth possible outcomes

²⁴ The initial creditor can calculate \bar{d} because it is assumed to know the distribution of future projects.

are not equilibria. The good borrower's payoff in both of them is $U_g = v_{gl} - r_d$, where v_{gl} is the net present value of the good borrower's initial project and r_d is the interest rate charged to a borrower believed to be bad. This payoff is less than the payoff earned by a borrower who offers covenants, which is $U_g = v_{gl} - r_g$ (because $r_d > r_g$). Hence, the good borrower will always offer financial covenants, thereby eliminating outcomes (1) and (4) as equilibria.

Whether there is a pooling equilibrium in which both borrower types offer covenants (outcome (2) obtains) or a separating equilibrium in which only good borrowers do (outcome (3) obtains) thus turns on the bad borrower's payoffs. A bad borrower's payoff in the separating equilibrium in which it refuses to give covenants is $U_d = v_{bl} - r_d + z_d$. Its payoff in the pooling equilibrium, in which it offers covenants, is $U_d = v_{bl} - r_g$ (because covenants now are assumed to protect the initial lender). Comparing these payoffs, there will be a pooling equilibrium when $r_d - r_g > z_d$. In this case, the interest rate penalty on the initial loan for refusing to give financial covenants exceeds the bad borrower's gain from being able to borrow pro rata to finance the second project.

To see when this inequality is satisfied, it is necessary to revisit the interest rate charged to borrowers believed to be bad, r_d . This rate was initially assumed to be a function of the average expected amount of dilution \bar{d} . This is not an equilibrium interest rate, however. When $r_d = f(b, \bar{d})$, a bad borrower with a relatively good later project—one that dilutes less than the average—will gain by offering covenants and having creditors charge it the good borrower interest rate r_g .

Consider this example: the bad borrower interest rate on the initial project, which reflects the average expected amount of dilution, is 10% and the good borrower interest rate is 6%. Let a particular borrower's later project be sufficiently safe as to dilute minimally. If the borrower refused to protect the initial debt, it would pay the pro rata interest rate on the later loan; if the borrower offered covenants to the initial lender, it would pay the subordinated rate to the later lender. However, because the later project is only slightly more risky than the initial project, the subordinated rate would be, say, only 1% higher than the pro rata rate. Thus, the gain to this borrower from refusing to give covenants is $z_d = 1\%$ but the cost of refusing to give covenants is $r_d - r_g = 4\%$. This above-average bad borrower therefore will pool with the good borrowers by offering covenants to the initial lender.

When above-average bad borrowers pool, however, the average quality of the borrowers who refuse to offer covenants declines. A first project interest rate reflecting the mean of all bad borrower types would thus be too low. An interest rate that instead reflected the mean of below average bad borrower types would also be too low,

since the top half of the bottom half of the borrower distribution would then pool by offering covenants. Following this logic, a creditor's best response to the refusal of a borrower to offer covenants is to charge an interest rate that reflects the maximum amount of dilution that can occur: in equilibrium, $r^*_d = f(b, d_{max})$ where d_{max} is appropriate for the maximum diluter.

When creditors respond to asymmetric information in this way, it is too costly for bad borrowers to refuse to offer covenant protection: the interest penalty becomes $r^*_d - r_g > z_d$ for all but the worst borrower type, who will be indifferent between pooling and separation. Therefore, under the equilibrium financial contract, borrowers protect early substantial debt against dilution with financial covenants.²⁵

This equilibrium is efficient. First-period financial contracts do not give lenders new information about their debtors because every contract is relevantly the same (each has covenants). A lender learns the value of the second project when it is announced, however, and will fund it if it has positive value. This conclusion follows from the assumption that renegotiation is costless.²⁶ When it is, borrowers with nondiluting later projects will get covenant waivers and borrowers with efficient but diluting second period projects will obtain subordinated financing.²⁷ Interest rates also are lower when borrowers protect the early debt. Covenant equilibria are efficient, then, because the lenders always are indifferent to their priority rank while the borrowers finance positive value projects at the least cost.²⁸

²⁵ For readers familiar with game theory, the argument in text is that no separating equilibrium survives the intuitive criterion: every bad borrower would rather be thought good than be recognized as bad. Thus every bad borrower would defect from any separating equilibrium to the pooling equilibrium, which alone survives the intuitive criterion.

²⁶ Regarding the realism of the assumption that renegotiation is costless (in life cheap), subordination agreements are common, but these can exist only because parties renegotiate lending agreements. Debt renegotiation also occurs in connection with solvent firms. See MARK CAREY ET AL., *THE ECONOMICS OF THE PRIVATE PLACEMENT MARKET* 13–14 (Board of Governors of the Fed. Reserve Sys. Staff Study No. 166, 1993); Mitchell Berlin & Loretta J. Mester, *Debt Covenants and Renegotiation*, 2 J. FIN. INTERMEDIATION 95 (1992).

²⁷ An implicit assumption is that early lenders will not behave strategically by refusing waivers or subordination agreements. Jonathan R. Macey & Geoffrey P. Miller, *Corporate Governance and Commercial Banking: A Comparative Examination of Germany, Japan, and the United States*, 48 STAN. L. REV. 73, 90–96 (1995), argue that banks are sometimes too conservative, influencing debtors to reject good projects in order to protect their loans. Commercial lending agreements seldom contain prepayment penalties. Without such penalties, a borrower whose lender will inappropriately refuse a covenant waiver or a subordination agreement can refinance the earlier loan on the market. The lack of prepayment penalties thus offsets a tendency of banks to behave strategically. Also, if the strategic behavior concern is real, firms can eliminate it by issuing debt and equity to investors in equal proportions. See Mathias Dewatripont & Jean Tirole, *A Theory of Debt and Equity: Diversity of Securities and Manager-Shareholder Congruence*, 109 Q.J. ECON. 1027, 1041 (1994).

²⁸ Two caveats should be mentioned. First, this Article does not claim that financial market equilibria are generally efficient, but rather that no inefficiencies are associated

B. Evidence

When covenants are present in a loan transaction, creditors must monitor to ensure compliance. Because monitoring is costly, only an initial creditor who held a substantial amount of the borrower's debt would want covenant protection. Therefore, trade creditors seldom will hold protected debt; they commonly lend too little. Also, because only large later debt can materially reduce the initial creditor's pro rata share, initial lenders should not bar trade credit. These considerations along with the analysis above²⁹ imply that financial covenants should do the following: require the borrower to maintain a specified ratio of debt to assets, prohibit the borrower from incurring further debt (except trade credit), prohibit the borrower from later mortgaging its property, restrict the payment of dividends, and require the borrower to maintain a minimum net worth.³⁰

Data about private lending agreements is difficult to get. This Article takes an indirect approach. There is a large demand by lawyers for form contracts that regulate complex, commonly occurring transactions. Form contracts eliminate the costs of doing deals from scratch, and are usually adaptable to deals with idiosyncratic features. Legal publishing houses supply the demand for forms by publishing contract form books drafted by successful practitioners. The standard books run through several editions, and publishers keep editions up to date by publishing "cumulative supplements" that reflect changes in the law or in practice. Many standard transactions are probably conducted in accordance with the forms set out in widely circulated, current form books.³¹

The forms for unsecured private placement loans are consistent with the predictions derived here. According to those forms, banks and similar lenders commonly prohibit borrowers from incurring any debt except "permitted debt." Trade debt in the ordinary course is

with the use of covenants. Second, a borrower's choice to use covenants is not fully explained under the assumptions made here because the borrower also can reduce the dilution risk by reducing the maturity of the initial loan. When a borrower will choose one or the other response to moral hazard is not considered here.

²⁹ See *supra* Part II.A.

³⁰ A minimum net worth covenant reinforces the debt-to-asset ratio covenant.

³¹ Very large law firms sometimes create and reuse their own forms. Smaller firms and firms for whom lending is not a standard transaction use form books. The analysis below draws from DUNLAP-HANNA PENNSYLVANIA FORMS (Paul C. Heintz ed., 1992); 2D FLETCHER CORPORATION FORMS ANNOTATED (Charles R.P. Keating & Charity R. Miller eds., 4th ed. 1990) (applies mainly to bond issues); 1, 3 JACK KUSNET & JUSTINE T. ANTOPOL, MODERN BANKING FORMS (3d ed. 1981 & Supp. 1992); CLARK A. NICHOLS, NICHOLS CYCLOPEDIA OF LEGAL FORMS ANNOTATED (revised by Mary Joan Cepla & Allen D. Choka rev. vol. 1987); 1 JACOB W. REBY & JAMES A. DOUGLAS, BANKING AND LENDING INSTITUTION FORMS (1992); HOWARD RUDA, ASSET BASED FINANCING: A TRANSACTIONAL GUIDE (1985); SANDRA SCHNITZER STERN, STRUCTURING COMMERCIAL LOAN AGREEMENTS (2d ed. 1990).

always permitted. Later secured debt is always banned: negative pledge clauses in private placements are among the most commonly seen financial covenants.³² A second widely used covenant either restricts dividend payments or prohibits the borrower from paying them altogether. In addition, when the debtor is a small retailer, lenders require frequent repayments; cash is sometimes collected daily, other times weekly.³³ Effective methods of debt dilution are: to secure later debt, to pay out later loan proceeds as dividends, or simply to take the cash. Negative pledge and dividend covenants and the collection practice described above protect against these methods.

A widely used form book observes that “[a]lmost all borrowers . . . will need to incur additional debt while the loan agreement is in effect.³⁴ This form thus permits trade debt, “[d]ebt of the borrower subordinated on terms satisfactory to the [b]ank,” and debt that does not exceed the specified leverage ratios.³⁵ Lending agreements commonly have two such ratios. The first requires the borrower to maintain a specified ratio of current assets to current liabilities. As an example, a form book requires borrowers to “maintain a current ratio of consolidated current assets . . . to their consolidated current liabilities of not less than 120 percent.”³⁶ The second ratio covenant requires the borrower to maintain a specified ratio of “total liabilities to tangible net worth.”³⁷ Lending agreements often bolster ratio covenants by requiring the borrower to maintain specified amounts of working capital or net worth of specified amounts. Finally, common clauses give lenders access to the borrower’s books and records and require borrowers to make frequent financial reports.

This evidence is consistent with the model’s predictions and also supports the plausibility of the assumptions made above that creditors

³² Public debt issues also restrict the borrower’s ability to incur future liens. See Mai E. Iskandar-Datta & Douglas R. Emery, *An Empirical Investigation of the Role of Indenture Provisions in Determining Bond Ratings*, 18 J. BANKING & FIN. 93, 96–97 (1994); Ileen Malitz, *On Financial Contracting: The Determinants of Bond Covenants*, 15 FIN. MGMT. 18, 20–21 (1986).

³³ The commercial practice of periodically paying over cash to lenders is so routine that the Uniform Commercial Code presupposes it. Section 9–306(4)(d) provides that if the debtor commingles cash it receives from the sale of collateral with other funds, the creditor with a right to the cash proceeds of collateral need not trace the source of the debtor’s cash to collect the debt in an insolvency proceeding. However, the creditor cannot attach more than the cash proceeds the debtor received in the ten days before insolvency. See U.C.C. § 9–306(4)(d)(ii) (1996). The statute restricts the creditor’s right to this ten day period because creditors who lend on the basis of cash proceeds routinely collect at intervals of ten days or less.

³⁴ STERN, *supra* note 31, ¶ 5.04[2].

³⁵ *Id.* ¶ 5.04[2][b], [d], [f].

³⁶ 1 KUSNET & ANTOPOL, *supra* note 31, Form 1.24, § b[B].

³⁷ STERN, *supra* note 31, ¶ 6.03[6]. Stern says of the second ratio: “This covenant ensures that the borrower’s leverage will remain reasonable for its business [T]he bank normally seeks a lower leverage ratio [of liabilities to assets than the borrower prefers] to ensure that there is sufficient equity to absorb losses.” *Id.*

can observe the value of the tangible assets that support current projects, and firms can make credible promises to turn over project returns. Regarding the former assumption, net worth and ratio covenants are often conditioned on current asset value rather than historical cost. For example, some standard forms require the borrower to disclose, in connection with "fixtures," "machinery and tools," and "delivery equipment," both "cost" and "value."³⁸ Also, loan covenants require borrowers to furnish frequent audited financial statements prepared in accordance with generally accepted accounting principles. Although these principles permit balance sheets to disclose assets at historical cost, the Financial Accounting Standards Board "encourages" firms, in the notes to these statements, to supplement this disclosure by providing the current cost of plant and equipment.³⁹ Further, the routine promises in lending agreements to turn over cash, and the collection practices established to make those promises credible, suggest that borrowers can make credible commitments to repay.

Lending agreements also protect against overinvestment—the taking of a negative net present value project—that arises through asset substitution. Asset substitution occurs when the borrower substitutes a new project for the project that supported the loan. Three nonfinancial terms protect against this behavior. The first is a security interest in the borrower's capital assets; secured debt dries up the market for these assets because buyers would take them subject to the creditor's lien.⁴⁰ Unlike this indirect sanction, two other widely used nonfinancial covenants police directly against asset substitution. One requires the debtor to remain in the same line of business; any substantial change in the borrower's activity violates the covenant.⁴¹ The other term requires the debtor to maintain its properties in good working order.⁴² This covenant is primarily meant to preserve the value of the assets sustaining the loan, but it will also be violated if the

³⁸ *E.g.*, 1 KUSNET & ANTOPOL, *supra* note 31, at 1-37, 1-40.

³⁹ FINANCIAL ACCOUNTING STANDARDS BOARD, ORIGINAL PRONOUNCEMENTS ACCOUNTING STANDARDS AS OF JUNE 1, 1992, 918, 919 (1992).

⁴⁰ See Clifford W. Smith, Jr. & Jerold B. Warner, *On Financial Contracting: An Analysis of Bond Covenants*, 7 J. FIN. ECON. 117, 126-27 (1979) (arguing that security is taken in part to reduce the risk of asset substitution).

⁴¹ A recent survey recited: "Affirmative covenants . . . include requirements that the [borrowing] firm stay in the same line of business and meet its legal and contractual obligations. They are common in public bonds, private placements, and bank loans." CAREY ET AL., *supra* note 26, at 11.

⁴² See Marcel Kahan & Bruce Tuckman, *Public vs. Private Lending: Evidence from Covenants in THE YEARBOOK OF FIXED INCOME INVESTING 1995* at 264 (1996) (finding such maintenance covenants in 74.5% of the private agreements they analyzed).

debtor substitutes rather than maintains assets.⁴³ The widespread use of these covenants suggests that taking a security interest is not the primary defense against asset substitution.

Finally, the analysis here is consistent with the lack of financial covenants in public debt.⁴⁴ There are two reasons for this. First, covenants commonly are enforced by monitoring and the threat to call a loan or refuse further advances; they seldom are enforced by legal action. Widely dispersed public debtholders seldom monitor. Second, dilution can occur when the firm's second project has positive value. Typically, these projects are funded through renegotiation. Public debt is more difficult to renegotiate than private debt, however, because a borrower would have to make a debt restructuring offer to its bondholders. This is considerably more expensive than negotiating with a single lender.⁴⁵ Hence, if public debt contained financial covenants, borrowers would sometimes have to forego profitable projects.⁴⁶

When financial covenants do exist, they facilitate the creation of priorities. The first lender often will not permit later substantial debt to take pro rata with it. This results in a priority ranking system in which the initial lender is senior, later substantial lenders are subordinated, and smaller debtholders, such as trade creditors, take pro rata with large lenders.⁴⁷

⁴³ A net worth or ratio covenant would protect against asset substitution when the substituted project would violate the criteria in these covenants, but the nonfinancial terms directly police against the phenomenon.

⁴⁴ See CAREY ET AL., *supra* note 26, at 12 (reciting that “[i]ndentures in publicly traded bonds, even for below-investment-grade bonds, generally contain no financial covenants”); Kahan & Tuckman, *supra* note 42, at 13 (reporting that “[n]o study has found these [financial ratio covenants] in public debt indentures”); see also Mitchell Berlin & Jan Loeyes, *Bond Covenants and Delegated Monitoring*, 43 J. FIN. 397, 403-07 (1988) (demonstrating the difficulties inherent in monitoring financial covenants by public debtholders and exploring the possibility of using a delegated monitor). Practitioners claim that when private debt is widely syndicated, the incidence of financial covenants declines. Such debt is much like public debt.

⁴⁵ Among the reasons for this expense, a public debt restructuring must satisfy the Trust Indenture Act, 15 U.S.C. §§ 77aaa-77bbb (1994), which has unanimity requirements for many loan modifications.

⁴⁶ This Article does not attempt to explain why firms sometimes issue private and sometimes issue public debt. For a review of current theories and data that the least risky firms borrow from bondholders, see Shane A. Johnson, *An Empirical Analysis of the Determinants of Corporate Debt Ownership Structure*, 32 J. FIN. & QUANTITATIVE ANALYSIS (1997); MIGUEL CANTILLO & JULIAN WRIGHT, HOW DO FIRMS CHOOSE THEIR LENDERS? AN EMPIRICAL INVESTIGATION (Haas Sch. of Bus., Research Program in Finance Working Paper No. 256, rev. 1996).

⁴⁷ It is sometimes said that covenants are not useful because the absolute priority rule is routinely violated in insolvency reorganizations. To the contrary, a study of bondholder returns in Chapter 11 filings shows that despite violations of the absolute priority rule, financial covenants substantially protect the senior debt. See EDWARD I. ALTMAN & ALLAN C. EBERHART, DO PRIORITY PROVISIONS PROTECT A BONDHOLDER'S INVESTMENT? (N.Y.U. Leonard N. Stern Sch. of Bus. Working Paper No. S-93-15, 1993); see also Paul Asquith &

III

SECURED DEBT AND PRIORITY

A study of covenant priorities also suggests a relatively neglected reason why some firms issue secured debt—to prevent debt dilution. A borrower who issues secured debt is credibly promising not to dilute the initial debt because security gives the first lender a priority in the debtor's tangible assets that later credit extensions cannot affect. This raises the question why some borrowers respond to the dilution concern by issuing unsecured debt protected by financial covenants while other borrowers respond by issuing secured debt.

A possible answer to this question follows from the realization that a borrower's promise to comply with covenants is not always credible. A later lender is not bound by loan covenants even when its advance would cause a covenant violation. Rather, the later unsecured lender takes pro rata with the first, and the later secured lender has priority.⁴⁸ Thus, the initial lender must proceed against the breaching borrower. The lender can disrupt the borrower's business by declaring the borrower to be in default for covenant violations. Also, borrowers who violate covenants incur reputational sanctions. Financially strong borrowers are more likely to be influenced by disruption and reputational penalties than financially weak borrowers. The latter commonly violate covenants by borrowing elsewhere out of necessity—they would die without more funds. Also, they are often insolvent when serious covenant violations come to light. Thus, a weak borrower is difficult to punish. As a consequence, borrowers with risky initial projects may be unable credibly to commit not to violate the standard financial covenants.

To see how this inability to commit may influence a borrower's response to the dilution concern, realize that creditors will likely charge the interest rate to borrowers that cannot commit that is appropriate for the maximum diluter. This rate, recall, is $r^*_d = f(b, d_{max})$. Further, let it cost parties c_s to issue secured debt and c_c to issue cove-

Thierry A. Wizman, *Event Risk, Covenants, and Bondholder Returns in Leveraged Buy Outs*, 27 J. FIN. ECON. 195, 196 (1990) (studying leveraged buyouts between 1980-88 and finding that "[b]onds with strong covenant protection gain value whereas those with weak or no covenant protection lose value").

⁴⁸ One case held a lender who bought secured debt in violation of a negative pledge covenant liable for inducing the borrower to breach its contract with a prior party. *First Wyo. Bank, Casper v. Mudge*, 748 P.2d 713 (Wyo. 1988). This case did not involve a typical lending arrangement. Rather, the plaintiffs had sold their business with payment to be made in installments. The sale contract barred the buyer from encumbering the equipment and inventory, a promise the buyer breached by later borrowing on a secured basis. Apparently, no other case has held a later lender liable, and no case has enjoined enforcement of the later secured loan.

nant debt, where secured debt is the more expensive ($c_s > c_c$).⁴⁹ Then, every firm that can credibly commit to comply with covenants will issue unsecured but protected debt, as shown in the model above.⁵⁰ A firm that cannot credibly commit to comply with financial covenants will issue secured debt when the contracting cost differential between issuing secured and unsecured debt is less than the interest rate penalty that bad (or noncredible) borrowers must pay. Put formally, if the firm borrows $\$k$ to finance its initial project, the borrower will issue secured debt when $c_s - c_c < (r_d^* - r_g)k$, where r_g is the good borrower interest rate.

This contracting cost explanation for the use of secured debt differs from the standard signaling explanation.⁵¹ The latter explanation implicitly assumes that it is costless to issue either kind of debt. Rather, the cost of secured debt in the signaling story results from the secured lender's power to foreclose. This power gives the secured lender more control over a defaulting borrower than an unsecured lender would have, and thus makes secured debt less attractive to borrowers. As a consequence, a borrower who perceives itself as unlikely to experience financial difficulty should be more willing to issue secured debt than a risky borrower would be. The safe secured borrower would pay a lower interest rate, but be unlikely to bear the higher costs of secured credit.

The costly contracting explanation for the issuance of secured debt that is told here differs from the standard signaling story in its assumption about when the borrower bears the cost of secured debt. The costly contracting story assumes that the borrower largely bears this cost up front. In particular, it is costly to issue both types of debt, but secured debt is relatively more costly to issue. The signaling story assumes that only defaulting borrowers bear the cost of secured debt, and they incur this cost ex post.

There is little data respecting the accuracy of these competing assumptions, but the two explanations do generate sharply different predictions about which borrowers will use secured credit. The costly contracting story predicts that the riskiest firms will issue secured debt because they cannot credibly commit to comply with financial covenants; the standard signaling story predicts that the safest firms will issue secured debt because they are unlikely to bear its costs. Every

⁴⁹ This assumption may be plausible because UCC file searches and other expenses associated with secured debt apparently make it costly relative to unsecured debt. See Mann, *supra* note 10, at 658-68.

⁵⁰ See *supra* Part II.A.

⁵¹ The signaling explanation is set out in, for example, David Besanko & Anjan V. Thakor, *Collateral and Rationing: Sorting Equilibria in Monopolistic and Competitive Credit Markets*, 28 INT'L ECON. REV. 671 (1987); Helmut Bester, *Screening vs. Rationing in Credit Markets with Imperfect Information*, 75 AM. ECON. REV. 850 (1985); Schwartz, *supra* note 8, at 14-21.

study of the subject finds that secured debt tends to be issued by risky firms while unsecured but protected debt tends to be issued by sound ones.⁵²

IV

SECURED DEBT AND REDISTRIBUTION

Debt segments into priority classes when borrowers offer covenants or grant security interests. Security-induced priority rankings may have distributional effects because nonparties are bound by the security contract. Bebchuk and Fried recently provided an extensive account of the distributional theory of security which concluded that some restrictions on the secured debt priority in bankruptcy are likely justifiable.⁵³ This account is questionable on theoretical and factual grounds.

Bebchuk and Fried's argument can be summarized in the following way: at a time t , there are two classes of borrowers, those who have issued secured debt to prior lenders and those who have not. Creditors cannot learn which type is which except at prohibitive cost,⁵⁴ but know the borrower distribution (the probability that a borrower has previously issued secured debt). Let this probability be α , and let the interest rate that later creditors would charge to already secured borrowers and unsecured borrowers be r_s and r_w respectively,⁵⁵ where $r_s > r_w$.

If creditors remain uninformed, the market interest rate will be pooling, which means that every borrower pays the same rate r_p , where

$$r_p = \alpha r_s + (1 - \alpha) r_w$$

⁵² See Allen N. Berger & Gregory F. Udell, *Collateral, Loan Quality and Bank Risk*, 25 J. MONETARY ECON. 21, 40 (1990) ("[T]here is a positive relationship between collateral and risk."); John D. Leeth & Jonathan A. Scott, *The Incidence of Secured Debt: Evidence from the Business Community*, 24 J. FIN. & QUANTITATIVE ANALYSIS 379, 383 (1989); Mann, *supra* note 10, at 668-82. Also, large firms often are thought to be less risky than small firms. Recent studies find that large firms issue significantly less secured debt than small firms, and conclude that the standard signaling explanation for the existence of secured debt has little factual support. See Barclay & Smith, *supra* note 1, at 912; Arnoud W. A. Boot et al., *Secured Lending and Default Risk: Equilibrium Analysis, Policy Implications and Empirical Results*, 101 ECON. J. 458, 470-71 (1991).

⁵³ Bebchuk & Fried *supra* note 7, at 880-91 (claiming not that firms issue security only for distributional reasons, but rather, arguing that redistribution often can motivate the use of security).

⁵⁴ Bebchuk and Fried explain:

Our analysis assumes only that voluntary creditors with small claims do not adjust their terms to reflect whether or not a particular security interest has been created, and that a commercial borrower thus does not expect to pay a higher rate of interest to these creditors when it creates a security interest

Id. at 886; see also *id.* at 893 (assuming that nonadjusting creditors will not increase their interest rates to reflect the increased risk to them when the borrower encumbers an asset).

⁵⁵ These are the interest rates that an informed creditor would charge.

The interest rate r_p is a weighted average of the secured and unsecured rates. In the pooling equilibrium, borrowers that previously had issued secured debt pay too low an interest rate on later credit; borrowers without security pay an interest rate that is too high.⁵⁶ Bebchuk and Fried show that the pooling equilibrium can be inefficient.

This distributional theory leaves much unexplained. If creditors are uninformed, every borrower should issue as much secured debt as it can. A borrower who issues secured debt first will get a lower interest rate on the initial loan but would pay only the pooling interest rate r_p , rather than the correct, higher security interest rate r_s , on its later unsecured debt. Thus, Bebchuk and Fried's theory appears to predict what is not observed: every borrower will fully lien its assets. To be sure, there may be reasons why some firms would forego the interest rate gains from issuing secured debt to early lenders. Perhaps security would be too costly for certain borrower types. Creditors, however, would probably learn which borrower types routinely forego security interests, and then also would find out which borrower types routinely issue it. If so, the inefficient pooling equilibrium would vanish. Bebchuk and Fried's account thus is incomplete without an answer to the question why every borrower does not issue as much secured debt as it can.

More importantly, Bebchuk and Fried do not prove that the equilibrium will be pooling (i.e., that every creditor will charge the same weighted average interest rate, r_p). To understand this concern, realize that here, unlike in the covenant story told above,⁵⁷ particular borrowers do not have conflicting incentives. A borrower who has not secured its early debt would want later lenders to know this (the unsecured interest rate r_w is lower than the pooling rate); while a borrower who has issued security would want later lenders to remain uninformed (the security interest rate r_s exceeds the pooling rate). Further, in the model in Part II borrowers had to signal their types by offering financial covenants because borrowers could not credibly disclose the information that creditors wanted to know: this information concerned the expected value of projects that had not been announced or begun, and perhaps would never be pursued. Here, the relevant information apparently can be credibly disclosed, as it is the historical fact whether and to what extent a borrower has liened its assets.

Following these distinctions, let the unsecured borrowers in the Bebchuk and Fried model be able to disclose their debt status costlessly. Then, borrowers that have not issued secured debt will dis-

⁵⁶ See Bebchuk & Fried, *supra* note 7, at 886–87.

⁵⁷ See *supra* Part II.

close this fact to later lenders. Since there are only two types of borrowers in the story, the unsecured borrowers' disclosure will reveal who the secured borrowers are. As a consequence, under costless disclosure the equilibrium is separating: creditors will charge two interest rates— r_w to unsecured borrowers and r_s to secured borrowers. This equilibrium is efficient because interest rates will accurately reflect a borrower's debt status.⁵⁸

Therefore, whether security can be used to redistribute wealth turns on the costs to borrowers of disclosing the nature and extent of their credit obligations. If the typical unsecured borrower's disclosure cost is less than the difference between the pooling and unsecured interest rates ($r_p - r_w$), then the borrower would disclose and there will be a separating equilibrium (in which redistribution is impossible). Bebchuk and Fried do not consider the possibility that borrowers will disclose, but rather argue that the cost to creditors of learning their borrower's debt status would often exceed the gains.⁵⁹ They claim this is largely because UCC file searches are expensive relative to what is at stake in many credit extensions.⁶⁰

Although this may be true, the relevant question concerns the borrowers' disclosure costs, not the creditors' investigation costs. An inversion of Bebchuk and Fried's argument shows that the borrowers' costs may be low enough to make disclosure feasible. If a borrower expects to incur substantial trade credit, the cost to it of supplying trade creditors with current UCC file searches, audited financials, or independent credit reports can be spread over enough transactions to make a disclosure strategy cost effective. In addition, the evidence in Part II.B above shows that lenders routinely require borrowing firms to disclose information about their debt status. These requirements would be pointless if the disclosures would be too costly for most firms to make or unreliable.

This analysis of Bebchuk and Fried also may understate the gains to borrowers from disclosure. Recall that when creditors charge the pooling interest rate r_p , unsecured firms have an incentive to issue secured debt. If creditors anticipate this response, then r_p will not be an equilibrium interest rate. Rather, uninformed creditors will charge

⁵⁸ The Bebchuk and Fried model could be extended to a continuum of borrower types—some borrowers issue more security than others. The equilibrium in such a model also would be separating if borrowers can costlessly disclose their status. Firms that issued below average amounts of secured debt would disclose; firms below the remaining average of silent firms would then also disclose; and ultimately all borrowers except the most highly secured would disclose. This borrower then would be revealed as well.

⁵⁹ Mann, *supra* note 10, at 659–61, has a similar analysis to Bebchuk and Fried and also focuses on the creditor's ability to learn about prior debt rather than on the borrower's ability to disclose it.

⁶⁰ Bebchuk & Fried, *supra* note 7, at 885.

every borrower the secured rate r_s . The gain to an unsecured borrower from disclosure would then be the relatively large difference between r_s and the unsecured interest rate, and borrowers would be more likely to disclose.

The question whether firms often issue secured debt for redistributive reasons cannot be answered on the level of theory alone. If the costs to firms of disclosing whether their debt is secured or not turn out to be high in relation to the gains, the distributional theory becomes more plausible. Similarly, the theory would gain credence if secured debt was more commonly issued by firms a substantial portion of whose debt was widely held and in small amounts (for many creditors of such firms would be rationally uninformed).⁶¹ There apparently is little evidence relating to these and other predictions that might support the theory.⁶²

Bebchuk and Fried have performed a useful service by setting out a clear version of the distributional theory of security and extensively pursuing its normative implications. The theory, however, has theoretical difficulties (e.g., why won't borrowers secure all their debt or reveal their debt status to later lenders?), and empirical gaps (e.g., how high are revelation costs?). Until these difficulties are remedied, the case for restricting foreclosure in bankruptcy is weak.

CONCLUSION

Priority rankings can be created through contracts among a firm's creditors or by the issuance of secured debt. The motive for much contractual priority is a form of moral hazard called debt dilu-

⁶¹ The most widely dispersed debt consists of bonds sold to the public. Firms with unsecured public debt, however, apparently seldom borrow from banks on a secured basis. See James R. Booth, *Contract Costs, Bank Loans, and the Cross-Monitoring Hypothesis*, 31 J. FIN. ECON. 25, 40 (1992).

⁶² Bebchuk and Fried claim:

[T]he most compelling evidence that the use of security interests is often undesirable from the perspective of efficiency is the tremendously widespread use of negative pledge covenants in loan agreements. . . .

A negative pledge covenant would not be used unless it makes both the borrower's shareholders and the unsecured lender better off. . . . [T]he use of the covenant would imply that it would be inefficient to create the security interests prohibited by its terms.

Bebchuk & Fried, *supra* note 7, at 922-23 (footnote omitted). This claim is incorrect. An initial lender prefers a negative pledge covenant because later projects financed with secured debt commonly dilute prior unsecured debt. Dilution can occur when the second project has positive value. Borrowers whose second period projects will be efficient (though possibly diluting) offer negative pledge covenants to persuade lenders to charge the good borrower interest rate. A later project that creates value in excess of dilution will be financed through renegotiation, either on a subordinated, pro rata, or superpriority basis. Thus, the existence of a negative pledge covenant alone cannot support an inference that "it would be inefficient to create the security interests prohibited by its terms." *Id.* at 923.

tion, whereby the borrower reduces the value of prior debt by taking later debt-financed projects that increase the firm's risk. The equilibrium financial contract for private debt contains financial covenants that protect the early debt against dilution. These covenants facilitate the creation of priority classes, because the early debtholders will not share priority with the later when the borrower's later projects are riskier than its earlier projects. These covenant-induced priority rankings are efficient. The Bankruptcy Code's respect for priorities that are created by creditor agreements *inter se* (i.e., covenant priorities) therefore should continue. Further, financially weak borrowers apparently sometimes protect creditors against the dilution risk by issuing secured debt because weak borrowers are less able to commit credibly to comply with covenants. When secured debt and covenants are substitutes (both are issued to protect against dilution), security priorities also are efficient. This together with the inchoate state of the distributional theory of secured debt suggests that restricting the secured creditor's ability to foreclose in bankruptcy would be unwise.

The analysis above also suggests that financial covenants should be made enforceable against later creditors whose advances would result in covenant violations. This reform would not worsen the plight of these creditors. Credit extensions that violate covenants are for substantial sums. Thus, the later lenders, unlike the creditors in the Bebchuk and Fried model, would have enough at stake to investigate their borrower's situation. More importantly, a borrower could credibly disclose whether it had previously issued protected debt or not. A later creditor whom a covenant would place behind a protected initial lender would thus charge the subordinated interest rate because it would know its priority rank. Trade creditors, whose extensions would seldom violate covenants, would continue to take pro rata.

Under the legal regime proposed here, borrowers that today issue secured debt would substitute covenants if covenants reduced contracting costs. Given the expense of secured debt, this condition sometimes would be met. When it was, a legally binding covenant contract would become efficient relative to the security contract it replaced: no creditor would be worse off in the covenant legal regime while the borrower would be better off. The law today restricts borrowers to issuing secured debt or issuing covenants that do not bind third parties. The proposed reform would give borrowers a third contractual choice—to issue covenants that would bind subsequent large lenders. Adding this choice is desirable because parties sometimes would prefer the new contract to the others.

APPENDIX

The contribution of a second project to the initial lender's default payoff (graphed as C) is derived by comparing the lender's default state payoff with and without that project. To simplify, assume that the borrower only incurs debt to finance projects. When there is one project, the initial lender's default state dollar payoff is the value of project assets. When there is a second project, the initial lender's default state dollar payoff under the pro rata rule (with subscripts denoting the projects) is

$$d_1 \left[\frac{v_1 + v_2}{d_1 + d_2} \right].$$

There are two cases to consider. In the first, the second project is worth more than its debt ($v_2 > d_2$). When the second project uses secured debt, the initial lender's dollar payoff is

$$v_1 + (v_2 - d_2).$$

The first lender's pro rata payoff will exceed its payoff when the second project is secured if expression (1) exceeds expression (2). This condition simplifies to

$$0 > d_2 (v_1 + v_2 - d_1 - d_2).$$

When the borrower is insolvent, the term in parentheses on the right hand side is negative (total assets are less than total debt). Hence, whenever second project value exceeds second project debt, the initial lender's default state payoff always is less when the second project is secured than when it is not.

In the second case, second project value is less than second project debt ($v_2 < d_2$). The initial lender will have a higher payoff under the pro rata rule than when the second project is secured if

$$d_1 \left[\frac{v_1 + v_2}{d_1 + d_2} \right] > d_1 \left[\frac{v_1}{d_1 + d_2 - v_2} \right].$$

This comparison simplifies to

$$d_1 + d_2 > v_1 + v_2$$

which always is satisfied when the borrower is insolvent. Because the initial lender does better under the pro rata rule than when the second project is secured in both cases, the solid line in Figure 1 always lies above the dashed line. Secured debt thus always reduces the initial lender's default state payoff.