A SIMPLE NONCOOPERATIVE BARGAINING MODEL OF CORPORATE REORGANIZATIONS

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THE traditional view of bankruptcy law begins with the idea that diverse general creditors of a firm face a collective action problem when their corporate debtor becomes insolvent. These general creditors now are the firm's residual owners. Under the traditional view, bankruptcy law is designed in the first instance to allow them to act collectively.[1] This characterization of bankruptcy, however, fails to capture what is often at stake when a closely held firm needs to rearrange its capital structure. The debt owed a single senior creditor may well exceed the value of the firm. Because of its security interest in all the firm's assets, this creditor is entitled to priority over the general creditors. Frequently, bankruptcy serves principally to frame the negotiations between this senior creditor and the firm's manager-shareholder.

A bankruptcy proceeding is needed largely because these negotiations cannot be entirely the province of private contracting. If the firm is worth less than what the most senior creditor is owed, the general creditors

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[1] For the most part, bankruptcy scholarship for the last decade has focused on whether bankruptcy had any mission other than overcoming this collective action problem. Compare Elizabeth Warren, Bankruptcy Policy, 54 U. Chi. L. Rev. 775 (1987), with Douglas G. Baird, Loss Distribution, Forum Shopping, and Bankruptcy: A Reply to Warren, 54 U. Chi. L. Rev. 815 (1987). The Supreme Court embraced the view that bankruptcy law should not change nonbankruptcy rights unless some bankruptcy policy justified the change in Butner v. United States, 440 U.S. 48 (1979). A party should not receive "a windfall merely by reason of the happenstance of bankruptcy." *Id.* at 55, quoting Lewis v. Manufacturers National Bank, 364 U.S. 603, 609 (1961).

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should receive nothing, but some mechanism, perhaps a judicial one, is needed to decide whether this condition holds, as the manager-shareholder and the senior creditor cannot be relied on to protect the rights of third parties. Before a court can extinguish the claims of the junior creditors, it must be satisfied that these creditors are in fact entitled to nothing. In the case of a closely held firm, bankruptcy does not solve a collective action problem that the general creditors of a firm face when they are its residual owners. Rather, bankruptcy is best understood as a forum in which two parties negotiate with each other. Bankruptcy's rules have a dual function: to enforce the agreement between these parties and to ensure that this agreement does not compromise the rights of any third parties.

In this article, we focus on the forces that drive the negotiations between a senior creditor and the firm's manager-shareholder. In particular, we show how rules that may be designed to protect third parties affect the relative rights of the two principal players. Noncooperative bargaining theory provides a formal structure for our analysis.[2] We conclude that, once the dynamics of bargaining in bankruptcy are understood, a number of the central assumptions of modern bankruptcy scholarship need to be revised. Although our analysis can be applied to many bankruptcy rules, we focus on two of the most important to illustrate the nature of the problem. These rules are the automatic stay and the new value exception to the absolute priority rule.

Bankruptcy imposes an automatic stay on creditors that prevents them from pursuing their own interests. This rule is perhaps the most important and most uncontroversial part of our bankruptcy law, but it is also one of the least examined. In a model of bankruptcy that does not focus explicitly on the dynamics of bargaining, the automatic stay appears not to affect the value of the rights of a senior creditor. Those who have insisted that rights in bankruptcy should parallel rights outside of bank-

[2] That game theory is now a useful vehicle for the analysis of legal problems has become apparent in recent years. See, for example, Ian Ayres, Playing Games with the Law, 42 Stan. L. Rev. 1291 (1990). Indeed, since we finished our initial draft of this article, we have encountered two different efforts to apply noncooperative bargaining models to corporate reorganizations. See Yaacov Z. Bergman & Jeffrey L. Callen, Opportunistic Behavior in Debt Renegotiations and an Interior Optimal Capital Structure of the Firm without Deadweight Costs (unpublished manuscript, Brown Univ.; and Jerusalem School of Business, July 1990); Lucian Arye Bebchuk & Howard F. Chang, Bargaining and the Division of Value in Corporate Reorganization (Discussion Paper No. 80, Harvard Law School, Program in Law and Economics, December 1990). Both of these papers have a focus different from ours. They do not show how bankruptcy rules, as a general matter, can be captured in a noncooperative bargaining framework through the use of exit options. Nevertheless, these papers, as well as this article, suggest that bankruptcy scholarship over the next decade will exploit this formal tool.

ruptcy have assumed that as long as a creditor could insist on receiving the value of its substantive right in real terms, it would receive as much in bankruptcy as it would outside.[3] The negotiating positions of the parties change dramatically, however, when there is an automatic stay. These changes in position in turn affect substantive outcomes.

Much bankruptcy scholarship in the last decade has looked at the absolute priority rule and, in particular, the right of old shareholders to retain an interest in the firm after bankruptcy if they contribute new value to the firm equal to the value of the equity interest they keep.[4] Because the old shareholders have to give the firm money or money's worth equal to what they are keeping, debates about the new value exception have focused largely on whether courts can accurately assess the worth of the equity of the reorganized firm. Singularly absent in the debate about the new value exception, however, has been any discussion of the way in which it affects negotiations beyond the common assertion that the new value exception increases the amount of bargaining between the former shareholders and the creditors.

Any number of other controversies in bankruptcy, such as the treatment of collective bargaining agreements,[5] postpetition bargaining with prepetition creditors,[6] and classification and voting rules in Chapter 11,[7] raise similar issues. We focus on the automatic stay (and the related issue of exclusivity) and the new value exception to the absolute priority rule both because they pervade bankruptcy negotiations and because a relatively simple bargaining model suggests that much of the traditional thinking about them has to be revised. The traditional view holds that the automatic stay does not itself prevent the secured creditor from enjoying the liquidation value of the assets. Under some circumstances, however, the automatic stay and the dynamics of bargaining may make the liquidation value of the assets irrelevant. Our model suggests that we consider

[3] For an articulation of this view, see Thomas H. Jackson, The Logic and Limits of Bankruptcy Law, 21–27 (1986). See also Douglas G. Baird & Thomas H. Jackson, Corporate Reorganizations and the Treatment of Diverse Ownership Interests: A Comment on Adequate Protection of Secured Creditors in Bankruptcy, 51 U. Chi. L. Rev. 97 (1984).

[4] See, for example, John D. Ayer, Rethinking Absolute Priority after Ahlers, 87 Mich. L. Rev. 963 (1989); Douglas G. Baird & Thomas H. Jackson, Bargaining after the Fall and the Contours of the Absolute Priority Rule, 55 U. Chi. L. Rev 738 (1988); Raymond T. Nimmer, Negotiated Bankruptcy Reorganization Plans: Absolute Priority and New Value Contributions, 36 Emory L. J. 1009 (1987).

[5] See 11 U.S.C. § 1113; NRLB v. Bildisco & Bildisco, 465 U.S. 513 (1984).

[6] See, for example, In re Ike Kempner & Bros., Inc., 4 Bankr. 31 (Bankr. E.D. Ark. 1980); In re EDC Holding Co., 676 F.2d 945 (7th Cir. 1982); In re Ionosphere Clubs, Inc., 98 Bankr. 174 (Bankr. S.D.N.Y. 1989).

[7] See 11 U.S.C. §§ 1122–26.

an alternative legal regime in which there is a "selective stay" that applies only to some creditors. It also suggests that the new value exception to the absolute priority rule, rather than increasing the amount of bargaining in Chapter 11, may have the opposite effect.

In the first part of the article, we identify a prototypical firm that needs to alter its capital structure. The second part examines the structure of the negotiations that would take place if bankruptcy law did not exist and if the rights of third parties did not need to be protected. In the third part, we look at negotiations in a world with bankruptcy in which the rights of third parties are in issue. The last part provides a formal game-theoretic model of the negotiations in both enviornments. The formal model reenforces one's intuitions and provides testable hypotheses about the kinds of bargains parties will reach inside bankruptcy.

I. Closely Held Firms and Firm-specific Skills

Multibillion dollar publicly traded firms file Chapter 11 petitions; so do small family businesses, such as retail stores or restaurants. We focus, however, on a firm ("Firm") that falls into a large intermediate group. This group contains closely held firms that have substantial assets and do substantial amounts of business.[8] Firm has been around for several decades, and its manager is its sole shareholder. In the 1980s, Firm made an effort to expand its operations and borrowed heavily from a creditor ("Creditor") in the process. Creditor took a security interest in all the assets of Firm. The effort to expand proved a disaster. The economy took a turn for the worse at just the wrong time. In the end, Firm had to retrench. The heart of the business may be basically sound, and Firm may still have $10 million a year in sales, but Firm now owes its creditors more than it is worth. Indeed, the amount owed to Creditor alone may exceed the value of Firm. Firm is limping along on a day-to-day basis, but until it sorts out its obligations to Creditor and its many trade creditors, it is not going to introduce new products or expand its customer base. Old buyers may be willing to maintain an existing relationship, but new buyers are unwilling to enter into a new relationship so long as Firm's capital structure and its future as a going concern remain in doubt.

Keeping Firm's existing manager ("Manager") in place as the equity holder may be important. Firm may be worth more if it is kept intact as a going concern run by Manager than it would be if the assets were sold

[8] These firms occupy what is called the middle market and have annual sales that range from $1 to $250 million. For an example of the kind of case we have in mind, see In re Pullman Construction Industries, Inc., 107 Bankr. 909 (Bankr. N. D. Ill. 1990).

to a third party and Manager went to work elsewhere. Her skills, her contacts with customers, and her ability to improve Firm's patented products may make Firm worth much more if she runs it than if anyone else did. Her skills are not fungible, and she must retain the equity interest in Firm to have the right set of incentives.[9] In contrast, the managers of a publicly held firm present fewer problems. Some may be easy to replace. Others may be important, but they are not the principal shareholders of the firm, and their compensation package can be negotiated separately from negotiations over the new capital structure of the firm.

It is sometimes said that Chapter 11 exists to solve a collective action problem that arises when multiple creditors are owed much more than the firm is worth. In this view, Chapter 11 prevents creditors from letting their individual self-interest lead to actions that are destructive of the interests of the group. This image of Chapter 11, however, may not describe Firm.[10] Firm does have many trade creditors, and there may be a number of relatives of Manager who have made unsecured loans, but Creditor has bargained for a priority position superior to that of all other creditors. Because of that priority, the other creditors may well be entitled to nothing. Their principal concern is that their interests are respected even though they are diverse. Their claims against Firm disappear only if Firm is in fact worth less than what Creditor is owed. One of the primary concerns of the law of corporate reorganizations has been to prevent a senior creditor and a firm's shareholders from freezing out intermediate creditors who are in fact the residual owners.[11] These intermediate creditors are given the right to participate in the reorganization for precisely this reason. Among their rights is the right to form a creditors' committee that has investigative powers.[12] The ability of any proponent of a plan of reorganization to reinstate or cash out old loans can be justified for similar reasons. When Firm is worth more than Creditor is owed, the intermediate creditors can reinstate Creditor's loan or pay it off. In either event, they capture for themselves the difference between the value of Firm and Creditor's claim. At least in a world of perfect

[9] The agency costs that led the managers of closely held firms to be residual owners as well are explored in Eugene F. Fama & Michael C. Jensen, Separation of Ownership and Control, 26 J. Law & Econ. 301, 305–7 (1983).

[10] See Randal C. Picker, Security Interests and Common Pools (unpublished manuscript, Univ. Chicago Law School, February 1991).

[11] See Northern Pacific Railway v. Boyd, 228 U.S. 482 (1913). One of us has argued in an earlier article that the absolute priority rule itself was originally designed for exactly this purpose. See Baird & Jackson, *supra* note 4, at 760–66.

[12] 11 U.S.C. § 1103(c)(2).

information, these powers enable the intermediate creditors to protect themselves without undermining Creditor's priority over them.[13]

To highlight the dynamics of bargaining in Chapter 11, one can treat the problem of ensuring that the rights of third parties are respected as a fixed cost of the reorganization. Reaching accommodations with the trade creditors turns out to be relatively easy in many cases. They may not have enough at stake to invest resources in elaborate negotiations, and they may be primarily concerned that all is as it appears to be and that Firm is in fact worth less than what Creditor is owed. Trade creditors will either continue to do business with the debtor on terms that can be reached readily, or they will simply walk away. The interests of relatives who made loans are, as a practical matter, indistinguishable from those of Manager. Even if some general creditors do organize themselves, they frequently settle their claims for cash. Unlike Creditor and Manager, they are not deeply involved in the negotiations over Firm's new capital structure.

We can describe in general terms the goals that the legal rules governing the negotiations between Creditor and Manager should have. Most obviously, these rules should ensure that, when Firm is worth keeping intact as a going concern, Creditor and Manager reach some agreement that results in this outcome. Similarly, they should agree to liquidate Firm when that course is best. If only two parties are negotiating with each other, however, it is likely that they will reach an agreement that puts the assets to their best use regardless of the legal rule.

In addition to ensuring that the assets are properly used, we want to minimize the costs of arranging and rearranging Firm's capital structure over its entire life. If we hold the number of reorganization proceedings constant, everything else being equal as well, reorganization rules that cost less are better than those that cost more. A common objection to Chapter 11 renegotiations is not only that some firms that should be closed down immediately remain open for months or years but also that the process of renegotiation is itself costly. The fees in a Chapter 11 reorganization of a large firm often runs in the tens of millions of dollars.[14] Cases can be found where the fees for smaller Chapter 11's approach the value of the assets of the firm. If these costs can be reduced and the rights of all the relevant parties can still be protected, we should want to do so. We want to ensure that the renegotiations that take place either in Chapter 11 or in the shadow of Chapter 11 cost as little as possible.

[13] 11 U.S.C. § 1124.

[14] The fees in the Revco bankruptcy case have now exceeded $35 million. The case is two years old and there is no end in sight. See Sherry R. Sontag, Revco's Collapse A Symbol, 12 Nat'l L. J. 1 (September 3, 1990).

The most important effect of bankruptcy law, however, may lie in the way its protections for third parties change the bargaining environment in which Creditor and Manager find themselves and, therefore, the division of the reorganized firm on which they would ultimately agree. Creditor and Manager, of course, can anticipate these distributional consequences to some extent. If Creditor can predict that it is likely to receive a small share in the event of a reorganization, it will demand a correspondingly high interest rate at the time of the initial loan. The division of Firm between Creditor and Manager in a reorganization, however, may make a difference even if the parties are fully compensated for the risks that they take. Firm will default more often if it must pay a higher rate of interest to Creditor (assuming the debt level is fixed and the probability distribution of returns of Firm remains unchanged). If there are social costs associated with default—and there almost surely are—giving a smaller share of Firm to Creditor in the event of a reorganization may cause welfare losses.

There are other effects that also need to be taken into account. The value of Firm at the outset itself may turn on how Firm ultimately would be divided between Creditor and Manager if a reorganization later proved necessary. The direction of such changes is not clear. If Manager enjoys a relatively large share of Firm even when Firm cannot pay Creditor anything close to the amount of the original loan, she may have insufficient incentives to take care. Hence, creating legal rules that give Creditor a larger share of Firm in the event of a reorganization might make both parties better off before the fact, even if default were costless. On the other hand, giving Manager a larger share might increase the value of Firm if it induced Manager to invest more heavily in human capital. Manager may have insufficient incentives to develop these skills if she will receive little or no benefit from them when economic reverses force a recapitalization of Firm. One can ameliorate this problem by giving Manager more in good states of the world, but this adjustment works perfectly only if Manager is risk neutral, and she may well be risk averse. (This problem, of course, exists only if Manager would otherwise underinvest in human capital. She might overinvest.)[15] Giving Manager a share of the reorganized firm may also vindicate the ex ante bargain if,

[15] The key original work on investments in human capital is Gary Becker, Human Capital (2d ed. 1980). For a general discussion of the interaction between legal rules and human capital, see Edmund W. Kitch, The Law and Economics of Rights in Valuable Information, 9 J. Legal Stud. 683 (1980). For an analysis of the incentives that managers have to make themselves too hard to replace in a publicly traded firm, see Andrei Shleifer & Robert W. Vishny, Management Entrenchment: The Case of Manager-Specific Investment, 25 J. Fin. Econ. 123 (1989).

in the absence of such a share, Manager would lack incentives to run Firm properly in the period before default.[16]

Creditor and Manager have no way to opt out of bankruptcy's bargaining rules before the fact. Not only is the waiver itself unenforceable as a matter of existing law,[17] but any successful corporate restructuring must effectively deal with the claims of the junior creditors. These cannot be discharged through a two-party bargain between Creditor and Manager. We identify the effects of bankruptcy's rules on the bargaining between Creditor and Manager in this article. In a subsequent paper, we plan to confront directly the question of how Creditor and Manager would divide Firm between themselves when it becomes worth less than what Creditor is owed. For the moment, we note simply that, because of the large role that firm-specific human capital plays in the closely held firm, this division is not obvious as a matter of first principle. Moreover, because parties cannot now waive the effects of bankruptcy and the division it imposes on the parties, we cannot draw strong inferences from the debt contracts that are now reached.

II. Two-Party Negotiations in the Absence of Bankruptcy

Bargaining failures, of course, can occur inside of bankruptcy and out. They are especially apt to arise if Creditor and Manager cannot communicate easily or if there is uncertainty about the value of Firm's assets. Difficulties also might arise if one or the other wants to develop a reputation as a tough negotiator.[18] We shall examine, however, the many cases in which the parties *do* reach a bargain with each other. The two issues that concern us are how the benefits of striking the bargain will be divided between Creditor and Manager and how different legal regimes affect that division.

If one could put bankruptcy's rules and the claims of third paties entirely to one side, the legal landscape would be fairly clear. In the kind of case that we are considering, Manager has rarely signed a long-term employment contract with Firm. Even if she has signed such a contract,

[16] Katherine H. Daigle & Michael T. Maloney, Residual Claims in Bankruptcy: An Agency Theory Explanation (unpublished manuscript, Clemson Univ., August 1990); Robert Gertner & David Scharfstein, A Theory of Workouts and the Effects of Reorganization Law (unpublished manuscript, Univ. Chicago, Graduate School of Business, October 1990).

[17] See United States v. Royal Business Funds Corp., 724 F.2d 12 (2d Cir. 1983). Note, however, that parties can use devices such as security interests in their ex ante agreement to minimize the untoward effects of bankruptcy. See Picker, *supra* note 10.

[18] The pioneering work here is David M. Kreps & Robert Wilson, Reputation and Imperfect Information, 27 J. Econ. Theory 253 (1982); and Paul Milgrom & John Roberts, Predation, Reputation, and Entry Deterrence, 27 J. Econ. Theory 280 (1982).

courts will not specifically enforce it and may refuse to enforce a covenant not to compete if it sweeps too broadly.[19] Hence, when Manager sits down to negotiate with Creditor, she has an implicit threat. She can leave Firm and find work elsewhere. The amount that she can command in some alternative line of work puts a floor on what Creditor will have to give to induce her to continue to manage Firm.

Creditor also enjoys a credible threat. It has a security interest in all the assets of Firm. Once Firm is in default under the terms of the security agreement, as it surely will be by the time Firm's financial condition has deteriorated to its present state, Creditor has the right to seize all of Firm's assets and sell them to the highest bidder.[20] If these assets are more valuable in Manager's control than anywhere else, it is in everyone's interests that they remain in place. But Creditor's ability to sell the assets to a third party once there has been a default puts a lower limit on what it must receive. If Manager does not offer it at least this amount, Creditor will walk away from the bargaining table, seize the assets, and sell them.

Seen from this perspective, Creditor and Manager approach the bargaining table with similar positions. Each has something that the other wants. Because of the default, Creditor has the right to the assets of Firm, but the assets are worth more in Manager's hands than in anyone else's. Creditor and Manager are in a position analogous to any two parties who discover there are benefits from reaching an agreement. Both negotiate in light of the alternatives that are available to each if no deal is reached. At any point, either party can threaten to cut the negotiations short and pursue one of these alternatives. These alternatives, which can be thought of as exit options, define the relevant bargaining range. We would expect Creditor and Manager to reach a deal, in which Creditor would receive at least what it could raise by selling the assets to a third party and in which Manager would receive at least what she could make without the assets.[21]

A view of bankruptcy law that advocates tracking nonbankruptcy rules

[19] See Comment, Post-employment Restraint Agreements: A Reassessment, 52 U. Chi. L. Rev. 703 (1985).

[20] See U.C.C. § 9-504. What constitutes a default is a matter of private contracting. Events of default commonly range from missing a payment to material adverse changes in Firm's financial condition. We refer to the amount Creditor can realize from exercising this right as the "liquidation value of the assets." For purposes of clarity of exposition, we assume that the third party that buys the assets has no ability to negotiate a deal with Manager. If it did, the third party would simply replace Creditor in any bargaining.

[21] This is in fact is the standard prediction of any situation of bilateral monopoly. See Richard A. Posner, Economic Analysis of Law 54–55 (3d ed. 1986).

seems incomplete if it equates Creditor's "nonbankruptcy entitlements" with the liquidation value of the assets and does not take into account the benefits Creditor can capture by reaching a bargain with Manager.[22] The liquidation value of the assets and the value of Manager's alternative wage merely set the stage for the negotiations between the parties. To the extent that one adopts the view that bankruptcy should mimic the outcomes that would exist if no bankruptcy law existed, one would have to worry about the negotiations that would take place if bankruptcy were not in the picture, not simply about the amount that Creditor would realize if it exercised its right to seize the collateral or that Manager would earn if she worked elsewhere.

We should note, however, that the bargaining position of Creditor and Manager, respectively, is different from the one typically faced by two parties who have no preexisting relationship that is being readjusted. Ordinarily, there is less to be lost from failing to reach a deal quickly. While bargaining, parties ordinarily continue to benefit from their initial assets: the seller still enjoys looking at the Van Gogh, and the buyer still earns interest on her money. All that either loses from stretching out the bargaining is her share of the prospective gains from trade. By contrast, Creditor enjoys no return on the assets, and Manager loses the benefit of a higher wage[23] for the length of the negotiations. These losses are over and above the costs of the delay when Firm is put back on course later rather than sooner.

III. The Bankruptcy Regime

Under present law, filing a bankruptcy petition is an option that each of the parties has in addition to liquidating the assets on the one hand or quitting Firm on the other. If one party will do better in bankruptcy than outside, that party will insist on obtaining at least that amount in the

[22] In earlier work, one of us has looked to the liquidation value of assets as the relevant nonbankruptcy baseline. See, for example, Baird & Jackson, *supra* note 3. Although this work recognized the possibility of a going-concern surplus and the need to bargain between Creditor and Manager (see Baird & Jackson, *supra* note 4, at 750–60), it did not recognize the dynamics of bargaining outside of bankruptcy as an integral feature of the nonbankruptcy world.

[23] Manager is still paid a cash wage from Firm after the filing of the bankruptcy petition, but this wage is not as large as what she could make elsewhere. The cash wage is low because of her (now nearly worthless) equity stake and the psychic benefits from running her own shop. See, for example, Michael C. Jensen & Kevin J. Murphy, CEO Incentives—It's Not How Much You Pay, But How, 68 Harv. Bus. Rev. 138 (May–June 1990). In any event, she is likely to take pay cuts as Firm's condition worsens.

nonbankruptcy bargain.[24] Bargaining inside of bankruptcy has much the same character as the bargaining that would take place if bankruptcy did not exist and there were no need to account for the rights of third parties. The same forces, such as the relative need of one party or another to settle quickly, that allow Creditor or Manager to do better in negotiations will be at work in either case. What is different are the exit options and hence the bargaining range. Although the rules of Chapter 11 are quite elaborate (and many of which may have bargaining implications),[25] we focus on the two rules that probably have the greatest effect on the bargaining range: the automatic stay and the new value exception to the absolute priority rule.[26]

A. The Automatic Stay

When a bankruptcy petition is filed, an automatic stay goes into effect.[27] This stay prevents any creditor from levying on assets of the debtor while the creditors and the old equity holders try to agree on a plan of reorganization. Manager enjoys an additional right that buttresses the automatic stay. During the first 120 days after the filing of the petition, the person who controls the debtor—Manager in our example—has the exclusive right to propose a plan of reorganization.[28] This period is routinely extended, and as long as the exclusivity period is in effect, Creditor cannot reach the assets by asking the court to confirm a liquidating plan of reorganization. It is easy, however, to overstate the extent to which the exclusivity period gives control to Manager. Manager's exclusive right to propose a plan imposes no structure on how the parties negotiate any consensual deal. Exclusivity does not alter the structure of offers

[24] We should note, however, that, under existing law, Creditor can file a bankruptcy petition unilaterally only if Firm has fewer than twleve holders of claims that are not contingent as to liability or the subject of a bona fide dispute. 11 U.S.C. § 303(b). If Firm does have twelve or more such holders, Creditor will have to find two other creditors willing to join in the petition. Because Creditor probably can indemnify cofiling creditors for all of the risks associated with the involuntary filing, such as those under § 303(i), the three-creditor requirement in practice puts few burdens on Creditor. See, for example, In re Midwest Processing Co., 41 Bankr. 90, 103–4 (Bankr. D.N.D. 1984).

[25] For example, the classification rules in § 1122 of the Code may create negotiating coalitions that would not be organized outside of bankruptcy. See Robert Gertner, Inefficiency in Three-Person Bargaining (unpublished manuscript, Univ. Chicago, Graduate School of Business, April 1990).

[26] As we discuss below, there is some doubt about whether the new value exception survived the enactment of the 1978 Bankruptcy Code.

[27] 11 U.S.C. § 362.

[28] 11 U.S.C. § 1121.

and counteroffers between the parties. In the absence of an exit option allowing one party to impose a plan, the exclusive right to file a plan determines only the identity of the person who is empowered to present a consensual deal to the bankruptcy court. In the absence of agreement between Manager and Creditor, nothing can happen regardless of whether the exclusivity period has expired. Moreover, the exclusivity period has no effect on Creditor's ability to lift the automatic stay or on a court's willingness to confirm a liquidating plan of reorganization after exclusivity expires. The dynamics of bargaining in bankruptcy turn, not on the automatic stay or the exclusivity period proper, but rather on the inability of Creditor to walk away from the bargaining table and seize and sell Firm's assets. In the rest of this article, for the sake of simplicity, we subsume within the notion of lifting the automatic stay any avenue open to Creditor, such as being able to confirm a liquidating plan, that allows it to reach and dispose of Firm's assets.

The conventional justification for the automatic stay focuses on the collective action problem. If there were many creditors trying to seize the assets of the debtor, their efforts might prove self-destructive. All are better off if each stays its hand. If Firm's assets are in fact worth less than what Creditor is owed, however, one might impose a selective stay and prevent only junior creditors from exercising their rights. If Creditor and Manager are rational, there is no need to stay Creditor from exercising its rights. In this article, however, our purpose is not to discuss the wisdom of staying Creditor's hand but to identify the effects in the bargaining process of denying it the ability to seize the assets and enjoy their liquidation value.

To say that the automatic stay deprives Creditor of its exit option is not to say that Manager will get Firm for free. Manager may be anxious to have Firm reorganized, and to do this she needs Creditor's consent. If she has few opportunities outside Firm, she might be willing to enter into a bargain that gives Creditor more than what it would have received if it had been able to seize and sell the assets. Creditor's bargaining position may be sufficiently strong that it does not need the floor that the ability to seize and sell the assets provides. But just as a seller will fare poorly if a buyer has the upper hand in their bargaining game and the seller puts only a low value on the assets to be sold (and the buyer knows it), Creditor may fare worse if it has a relatively poor bargaining position and does not enjoy a credible exit option.

The nature of Creditor's exit option in bankruptcy turns on its ability to lift the automatic stay. Creditor can lift the automatic stay and reach the assets if it can show both that it is owed more than the property is

worth[29] and that "an effective reorganization is not in prospect."[30] Creditor can also lift the stay if its interest is not "adequately protected." To enjoy "adequate protection," however, Creditor does not need to be given cash payments during bankruptcy. Manager needs to show only that the assets will not lose their nominal value during the course of the reorganization.[31] At best, adequate protection ensures that assets will exist at the end of the reorganization. It does not give Creditor any ability to reach the assets, and hence it gives Creditor no exit option in its bargaining with Manager. In the absence of an exit option, the size of Creditor's share will turn on the kind of bargain it can strike with Manager, not on the liquidation value of the assets.

Much therefore turns on whether Creditor can lift the stay. On the one hand, if firm is not worth keeping intact as a going concern with Manager in place, Creditor has a good chance of being able to lift the stay in many bankruptcy courts. On the other hand, in a case in which Firm does have a going-concern surplus, most courts are unlikely ever to lift the stay (or, in the alternative, express a willingness to terminate the exclusivity period, allow Creditor to file a liquidating plan of reorganization, and then confirm it). The Bankruptcy Code, through its automatic stay and exclusivity period, presumptively deprives Creditor of its exit option. Bankruptcy judges are unlikely to override this presumption simply to change the way Creditor and Manager will agree to divide Firm between themselves in their negotiations.

Because bankruptcy does not affect Manager's right to leave Firm and work elsewhere, her nonbankruptcy exit option remains intact. Hence in her bargaining with Creditor, Manager will continue to insist on receiving at least the amount she can make elsewhere. When the assets remain in Firm and Manager continues to work there, a bargain between Creditor and Manager increases the joint welfare of the two parties. Because of Manager's exit option, Creditor can never receive more than the difference between the value of Firm as a going concern with Manager and the

[29] There is a dispute, not relevant here, about whether Creditor must show simply that no equity is left after all liens are taken into account or must go further and show that its lien exceeds the value of the property. The majority of cases seem to take the former view. See Stewart v. Gurley, 745 F.2d 1194 (9th Cir. 1984); In re Cardell, 88 Bankr. 627 (Bankr. D.N.J. 1988).

[30] United Savings Association v. Timbers of Inwood Forest, 484 U.S. 365 (1988) (Scalia, J.).

[31] *Id. Timbers'* use of nominal, rather than real values is hard to justify, however. The Bankruptcy Code itself uses only the world "value," but the law elsewhere routinely takes account of the temporal dimension when it assesses the worth of an interest in property. See Baird & Jackson, *supra* note 3.

value of Manager's alternative wage. Depending on its bargaining skills relative to Manager's and its need to reach a deal sooner rather than later, Creditor will settle for a share of Firm that is worth something between the amount of this difference and $0.

When looked at from this perspective, the liquidation value of the asset that Creditor would be able to enjoy outside of bankruptcy becomes irrelevant. As long as Creditor has no ability to lift the automatic stay, Manager needs to pay no attention to that value when she bargains. The Bankruptcy Code gives Creditor the right to prevent the confirmation of a plan that does not give it the liquidation value of Firm's assets,[32] but this right does it no good in any negotiations with Manager. With or without this right, Creditor has no way to force Manager to pay it the liquidation value of the assets and no way to extricate itself from the bargaining process.

One might argue that the ability of Creditor to levy on the property and sell it outside of bankruptcy may nevertheless matter. The amount that Creditor could raise through this route might become a focal point of the bargaining. Compromises frequently are reached at conspicuous landmarks, just as boundaries are drawn along rivers and mountain peaks.[33] The assets' liquidation value, however, may not stand out. It may be hard to know how much a third party will pay for the assets. If the amount is not clear, the liquidation value of the assets may not even serve as a focal point of the negotiations.

To paint with broad strokes, a world in which Manager can invoke the bankruptcy process is one in which she negotiates with an exit option while Creditor has none. In many cases (though not in all) Manager ends up with a larger relative share of Firm in the renegotiation in the bankruptcy world than in the nonbankruptcy world, and she will never end up with less. Nonetheless, because both parties can anticipate this effect, Manager should have to agree to a higher interest rate at the time of the initial loan. To know whether existing bankruptcy bargaining rules are desirable, one needs to know more about how the parties would agree in their ex ante bargain to divide Firm in the event of a reorganization. Giving a larger share to Manager may induce her to develop needed firm-specific skills. Giving a greater share to Creditor will lower interest rates. The balance that needs to be struck is not obvious.

[32] Under 11 U.S.C. § 1129(a)(7), Creditor has a right to be paid at least the liquidation value of the assets. It, of course, can (and in many cases will) agree to a plan of reorganization that pays it less than the liquidation value of the assets. Because Creditor cannot receive anything until it reaches a deal with Manager, it may prefer to reach a deal with Manager now and take less than the liquidation value of the assets rather than wait.

[33] See Thomas C. Schelling, The Strategy of Conflict 54–55 (1960).

B. The New Value Exception

Manager cannot force a plan of reorganization on Creditor in which Creditor ends up with a bundle of rights that are worth less than what Creditor would realize if it were able, at that time, to seize those assets and sell them. Under existing law, however, Manager may be able to force a plan of reorganization on Creditor in which Firm continues as a going concern in Manager's hands and Creditor receives a bundle of rights worth only the liquidation value of the assets. Manager keeps the residual. She continues to earn a salary from Firm, and she remains the owner of its stock. In other words, Manager may have what is in effect a call on the stock of a reorganized Firm.[34] Manager can exercise this right only by contributing cash to Firm that is equal to the value of the equity of the recapitalized company. This limitation may prevent Manager from enjoying the entire going-concern surplus because, given the contribution she must make, she can enjoy the surplus only in the form of a wage that is higher than her alternative wage elsewhere. There may be constraints (such as the wage ordinarily paid a manager of such a firm) that limit how much money may be extracted from Firm in this form. Apart from these constraints, however, the new value exception enables Manager to force Creditor to take a share of Firm equal to the liquidation value of Firm's assets. She can capture for herself the difference, the entire going-concern surplus, without needing to reach a consensual bargain.

Whether such a right exists and its exact contours if it does remain unsettled.[35] Those who have argued against the new value exception have

[34] This call on the stock of Firm differs from ordinary calls in that it is exercisable any time during the reorganization. See Jonathan E. Ingersoll, Jr., Theory of Financial Decision Making 298–99 (1987).

[35] The Supreme Court most recently considered the new value exception in Norwest Bank Worthington v. Ahlers, 485 U.S. 197 (1988), but it did not reach the question of whether the 1978 Bankruptcy Code preserved the exception. See *id.* at 203 n.3. Lower courts, most notably the Seventh Circuit, have recently expressed doubts about whether a new capital exception still exists. See, for example, In re Stegall, 865 F.2d 140 (7th Cir. 1989) (Posner, J.); Kham & Nate's Shoes No. 2 v. First Bank, 908 F.2d 1351 (7th Cir. 1990) (Easterbrook, J.).

There is one respect in which the new value exception did not survive the enactment of the 1978 Bankruptcy Code. Under 11 U.S.C. § 1129(a)(10), a plan cannot be confirmed unless one impaired class approves the plan. Because our model assumes that accommodations can be reached with the trade creditors at a fixed price, § 1129(a)(10) does not enter into our account of the new value exception. Reaching an accommodation with them satisfies § 1129(a)(10). If reaching agreement with them were in fact hard, however, one would need to take account of this requirement in modeling the new value exception and the way it altered the dynamics of strategic bargaining when there are three players rather than two.

The legal doctrine at issue here, the absolute priority rule and its exceptions, has spawned

focused primarily on the valuation difficulties that necessarily enter the picture. Creditor may not receive even the liquidation value of the assets if it must rely on a bankruptcy court to determine whether its new interest in the reorganized firm is worth what Manager claims.[36] Our model, however, looks at an antecedent question that has been largely neglected: the way in which Manager's ability to invoke the exception changes the way in which Firm is divided, even if there are no valuation problems. Before we explore this issue, however, we briefly trace the history of the exception and explain how it works.

Creditor enjoys the protection of what is called the "absolute priority rule." Under this doctrine, Creditor is entitled to be paid in full before anyone junior to it receives anything on account of that junior interest. Under § 1129, Manager is not permitted, in the absence of consent, to receive any property under the plan on account for her old interest in Firm as long as Creditor is not paid in full. An exception to this rule, however, grew up under the Bankruptcy Act. In *Case v. Los Angeles Lumber Products,*[37] Justice Douglas noted in dictum that in some cases new capital was necessary for the reorganization and the old shareholders were the only ones willing to provide it: "When that necessity exists and the old stockholders make a fresh contribution and receive in return a participation reasonably equivalent to their contribution, no objection can be made. But if these conditions are not satisfied the stockholder's participation would run afoul of [the absolute priority rule]."[38] If this dictum were good law, then Manager might be able to reorganize Firm and retain control without the consent of Creditor.

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an enormous literature. The doctrine was first analyzed in James C. Bonbright & Milton M. Bergerman, Two Rival Theories of Priority Rights of Security Holders in a Corporate Reorganization, 28 Colum. L. Rev. 127 (1928). Walter Blum explored it in a number of path-breaking articles. See Walter J. Blum, The Law and Language of Corporate Reorganization, 17 U. Chi. L. Rev. 565 (1950); Walter J. Blum, The "New Directions" for Priority Rights in Bankruptcy Reorganizations, 67 Harv. L. Rev. 1367 (1954); Walter J. Blum, Full Priority and Full Compensation in Corporate Reorganizations—a Reappraisal, 25 U. Chi. L. Rev. 417 (1958); and Walter J. Blum, Corporate Reorganization Doctrine as Recently Applied by the Securities and Exchange Commission, 40 U. Chi. L. Rev. 96 (1972). For more recent work, see Ayer, *supra* note 4; Baird & Jackson, *supra* note 4; Nimmer, *supra* note 4.

[36] Creditor may systematically receive less than the assets' liquidation value even where bankruptcy judges do not systematically undervalue the value of the equity interest Manager receives. If, as seems likely, Manager is better informed about the value of Firm as a going concern than the judge, she will exercise the option to retain the equity only in those cases in which the judge has placed a value on it that is likely to be too low. See Kham & Nate's Shoes No. 2, *supra* note 35.

[37] 308 U.S. 106 (1939).

[38] *Id.* at 121.

The new value exception, however, does not allow Manager simply to contribute her human capital in return for equity in the firm.[39] (She could in theory make such a contribution by promising to work for a lower wage than she would otherwise receive.) As its name implies, the new value exception requires Manager to contribute money or money's worth to Firm equal to the value of the residual interest that she retains in Firm. How the new value exception works can be seen most clearly in the counterfactual case in which Manager has no firm-specific skills and the costs of the reorganization are negligible. Creditor has a security interest in all the assets of Firm, and these assets can be sold to a third party for $100. The third party is indifferent between running Firm with or without Manager. Assume that a reasonably capitalized firm would have a debt-equity ratio of 3-1. Under the new value exception, Manager could force the following plan of reorganization on Creditor: Manager would retain all the equity of Firm in return for contributing $25 in new cash to Firm. Creditor would receive a note secured by all the assets of Firm worth $75. It would also receive as a cash distribution the $25 that Manager gave to Firm in return for the equity interest. Manager retains the equity in Firm, but Creditor is given a bundle of rights equal to the value of Firm. One can recharacterize the plan as one in which Creditor takes Firm but is forced to sell its equity interest to Manager at its fair market value.

Actual cases are more complicated. The assets might be worth $100 if sold to a third party, but Firm might be worth $200 if Manager stayed in place and worked for her alternative wage. If we continue to assume that a debt-equity ratio of 3-1 is required, it might seem that Manager would need to put up $50 in new cash, so that Creditor could receive $50 in cash and a note worth $150. Under the absolute priority rule, Creditor is entitled to be paid in full before Manager receives anything and Firm is worth $200. The absolute priority rule, however, gives Creditor no ability to force Manager to continue to work. Creditor can insist only on receiving $100, the liquidation value of the collateral. Moreover, we can put a value on Firm only after Manager's wage is taken into account and noth-

[39] One can argue that this feature of *Los Angeles Lumber* is anachronistic. In the 1930s, corporate law typically prohibited the issuance of stock for the promise of future labor. Some states still do. See, for example, New York Business Corporation Law § 504(a). This prohibition, however, is no longer universal. Model Business Corporations Act § 6.21(b), for example, allows the issuance of shares in exchange for contracts for future services. On the other hand, one can argue that the new value exception already relies upon a nonmarket valuation, and, hence, those who invoke it should not be able to rely on contributions such as future labor that are hard to assess and about which the moving party (Manager) is going to be systematically better informed than anyone else, including the judge.

ing requires that Manager works for only her alternative wage. Assume, for example, that Manager can be paid $100 more than she would make elsewhere. Manager may be able to have the court confirm a plan in which she retains the equity in return for a cash contribution of $25. Creditor may be forced to settle for a note worth $75 and $25 in cash. The total package is worth $100, the liquidation value of the assets. The equity is worth only $25, the amount Manager contributes in cash, because Firm is worth only $100 after the wages to Manager are taken into account and Firm is now encumbered with $75 worth of debt. In other words, even though the new value exception requires Manager to buy the equity at its market value, it still may allow Manager to capture the entire going-concern surplus because of her ability to extract value from Firm through wages and other benefits.

The new value exception gives Manager another way to truncate bargaining with Creditor. In addition to having the right to leave Firm and earn her alternative wage, Manager under the new value exception is also able to force Creditor out of Firm. The new value exception provides her with another threat. Manager will never offer Creditor more in the course of negotiations than it would cost her to force Creditor out unilaterally under the new value exception. In this case, of course, Creditor is the one who literally "exits" from Firm. Nevertheless, the new value exception is best modeled as an additional exit option for Manager. What matters is how a legal rule gives one party or the other a credible threat. In this sense, any ability to cut the bargaining short is an exit option because it puts a floor on what a party will insist on in any bargaining.

Discussions of the new value exception to date have not identified exactly how much of a return Manager can enjoy on her firm-specific skills when she invokes it. Only if Manager can receive a wage that exceeds what she can command elsewhere will it be attractive. The valuation problems that arise if Manager does in fact have this exit option may justify the contours that it has. The contours of these rules, however, are interesting only if there is good reason to give Manager this bargaining weapon in the first instance. We return to this question as well as the effects of the automatic stay in the next part of the article.

IV. Modeling the Bargaining between Creditor and Manager

How changes in the rules governing negotiations affect the division of the gains from agreement is one of the central concerns of bargaining theory. The defining element of bargaining theory—and more broadly, of game theory—is modeling the strategic interaction of linked rational actors. This battle over a surplus that arises from cooperation sets game

theory apart from two polar models of economic actors: that of pure competition, in which actors behave as if they have no effect on market prices, and that of monopoly, in which one actor is a price setter. Game theory occupies the middle ground and should be most useful in settings such as a bankruptcy reorganization in which there are few principal actors.

Our prototypical failing firm represents just such a case. On the one side, we have Manager (or perhaps a small, cohesive group of manager-shareholders); on the other, Creditor, with a security interest in all of the assets of Firm. Firm and Creditor entered into an agreement in good times. As a theoretical matter, that agreement could completely specify the disposition of the assets in bad times, but the agreement almost surely will not do so. As we have noted, Manager ordinarily has not signed a long-term employment contract with Firm, and she is able to quit even when quitting leaves Creditor and her worse off.

The basic renegotiation problem between Creditor and Manager can be expressed in simple terms once we treat the problem of protecting third parties as an exogenous cost. The setting for reaching this decision is critical to the outcome, and two aspects are worth noting. First, neither player can make a single drop-dead, take-it-or-leave-it offer that the other party must either accept or forgo any possibility of reaching agreement.[40] The two can exchange offers and counteroffers for as long as there is anything left over which to bargain. Second, and this tempers the first point, Manager and Creditor may have alternatives to a consensual agreement—exit options—and these will have a substantial effect on the outcome of any consensual bargain they reach.[41]

A. The General Structure of the Model

The bargaining problem that Creditor and Manager face can be modeled as a two-person noncooperative game of alternating offers with exit options.[42] Bargaining between Creditor and Manager occurs through a

[40] One party, of course, can always assert that a particular offer is her final offer, but the other party will not believe her unless the first party has some ability to commit herself in advance to not making any subsequent offers. See Vincent P. Crawford, A Theory of Disagreement in Bargaining, 50 Econometrica 607 (1982); John C. Harsanyi & Reinhard Selten, A General Theory of Equilibrium Selection in Games 4–7 (1988).

[41] This point is widely recognized. In perhaps the best known popular treatment of negotiation strategy, Roger Fisher & William Ury, Getting to Yes: Negotiating Agreement without Giving In (1981), establishing a strong BATNA (Best Alternative to a Negotiated Agreement) is identified as a key source of negotiating power. See *id.* at 101–11.

[42] The alternating offers model is a widely used noncooperative model. See Peter B. Linhart, Roy Radner, & Mark A. Satterthwaite, Symposium on Noncooperative Bargaining:

sequence of offers and rejections or counteroffers proceeding period by period. At the start of the game, Manager chooses between making an offer to Creditor or leaving the bargaining by exercising an exit option. If an offer is extended, Creditor, in turn has two or three choices, depending on whether it has exit options. If Creditor has no exit options, it chooses between accepting the offer, on the one hand, and rejecting it and countering with a new offer, on the other. If Creditor has an exit option, exercising that option is a third alternative. If Creditor rejects and counteroffers rather than accepts or exits, the game begins again, and Manager faces the same choice she did originally. We further assume that once an offer has been extended and accepted, it cannot be revoked.[43] An "exit option," as we use the term, is an ability one party enjoys to alter the structure of bargaining unilaterally, either by changing bargaining regimes or, most often in this article, by bringing bargaining to an end.

A solution to this game is a pair of strategies selected at the beginning of the game. We narrow the range of possible strategy pairs by identifying those that meet two conditions. First, we require that each player's strategy for the entire game must be optimal, given the other player's strategy. Second, we require that the strategy pair is also optimal for the partial games that arise during the play of the entire game. That is, we require that the strategies, first, form a Nash equilibrium and, second, satisfy the more stringent requirement of subgame perfection.[44]

We note as an aside that subgame perfection is a useful and quite conventional requirement in game-theoretic modeling because its practical effect is to eliminate threats that are not credible. Consider the simple game in Figure 1 to illustrate the differences between the Nash and the subgame perfect equilibrium.[45] Player 1 must choose a strategy of right or left. Player 2 must decide whether, in the event Player 1 chooses the

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Introduction, 48 J. Econ. Theory 1 (1989). A more detailed development of the model used here is set forth in Martin J. Osborne & Ariel Rubinstein, Bargaining and Markets 29–48 (1990), which recasts ideas originally presented in Ariel Rubinstein, Perfect Equilibrium in a Bargaining Model, 50 Econometrica 97 (1982). Our exit option model is closest to that developed in John Sutton, Noncooperative Bargaining Theory: An Introduction, 53 Rev. Econ. Stud. 709, 712–15 (1986). See also Ken Binmore, Ariel Rubinstein, & Asher Wolinsky, The Nash Bargaining Solution in Economic Modelling, 17 Rand J. Econ. 176, 185–86 (1986).

[43] If offers can be revoked after acceptance, multiple equilibria may be generated. See Abhinay Muthoo, Bargaining without Commitment, 2 Games & Econ. Behav. 291 (1990).

[44] Accessible discussions of this concept and other related game-theoretic solution concepts may be found in Eric Rasmusen, Games and Information: An Introduction to Game Theory (1989); and David M. Kreps, A Course in Microeconomic Theory (1990).

[45] We have taken this example from Kreps. *Id.* at 421–24.

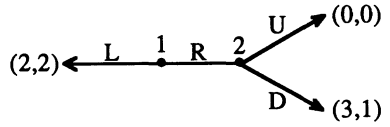

FIGURE 1

strategy right, it will move up or down. If Player 1 chooses to move left, both players receive a payoff of two. If Player 1 adopts a strategy of right, the outcome turns on the strategy Player 2 adopts. If Player 2 adopts the strategy of up, there is a payoff of zero to both players. If Player 2 chooses the strategy of down, there are payoffs of three to Player 1 and one to Player 2. Each player tries to obtain the largest possible payoff for itself and is not otherwise interested in, for example, whether its payoff is larger than the other player's.

In this game, there are two simple Nash equilibria: (1) the strategy pair (left, up) (Player 1 decides it will move left and Player 2 decides to move up in the event that Player 1 moves right); and (2) the strategy pair (right, down) (Player 1 decides to move right and Player 2 decides to move down in the event that Player 1 moves right). A simple Nash equilibrium exists when neither player would want to change strategy given the strategy the other has chosen. The pair (left, up) is Nash because (1) Player 1 will want to adopt the strategy of left if Player 2 will move up after Player 1 moves right; and (2) Player 2 cannot improve its payoff by changing its move if Player 1 moves left. The analysis of the other Nash equilibrium (right, down) is similar. If Player 2 adopts the strategy of down, Player 1 would be content only if it chose right. (If Player 1 adopted a strategy of left, it would receive only two. By moving right, Player 1 could do better given Player 2's strategy of down.) If Player 1 adopts the strategy of right, Player 2 would want to adopt the strategy of down so that it can enjoy a payoff of one rather than zero. The strategy pair (right, up) is not Nash because Player 2 would be better off adopting a different strategy (down) if it knew Player 1 was going to move right.

Even though there are two Nash equilibria in this simple game, there is only one that is subgame perfect (right, down). The original game has only one subgame. (The partial game that exists once Player 1 has chosen right.) In this subgame, Player 2 must decide whether to move up or down. Only the strategy down is Nash. After Player 1 has chosen right, Player 2 has to choose between moving up and moving down. Because the strategy of down is always preferable to up in this subgame, the strategy of up cannot be part of any strategy pair that is subgame perfect.

In this simple game where there is no possibility of repeat play, the

only course of moves we are likely to see is that Player 1 moves right and Player 2 moves down. Player 2 has no way of keeping Player 1 from moving right, and, once Player 1 has moved right, the only sensible move for Player 2 is down. Imposing the requirement of subgame perfection is one formal way to identify this course of moves, both in a simple game such as this and in ones that are much more complicated.

In the rest of the article, we describe the basic shape of our model of bargaining between Creditor and Manager. We examine the solution it produces and explore what it tells us about bargaining in bankruptcy.[46] Before turning to the model itself, however, we should note that the strategic approach we adopt in our article is substantially different from another well-known in bargaining: the axiomatic approach. As originated by John Nash,[47] the axiomatic approach identifies certain minimal conditions that a solution should satisfy and then characterizes the outcomes that satisfy the conditions. The bargaining game itself is defined over a feasible set of outcomes and a disagreement point that sets the outcome if the parties reach no agreement. Nash was able to find a unique solution for the conditions he used. Not only were the conditions appealing, but the solution itself—that the parties each get what they would get if no agreement were reached, plus half of the extra value available—makes some intuitive sense. Nonetheless, the disagreement point—the payoffs to the parties in the event no agreement is reached—is simply taken as a given.[48] Moreover, under the axiomatic approach, no account is taken of the ability of one party to call off bargaining unilaterally and exercise an exit option. Hence, the axiomatic approach offers no easy way to understand bankruptcy rules, such as the automatic stay, whose principal effect is to deny one party the ability to leave the bargaining.

Several words of caution are also in order. Bargaining theory attempts to capture the dynamics of bargaining in a mathematical model. These

[46] Formal proofs of the solutions to the bargaining games discussed in the article are contained in an appendix. It is available on request from us.

[47] See John F. Nash, Jr., The Bargaining Problem, 18 Econometrica 155 (1950); and John F. Nash, Jr., Two-Person Cooperative Games, 21 Econometrica 128 (1953). See also Alvin E. Roth, Axiomatic Models of Bargaining, in Lecture Notes in Economics and Mathematical Systems 170 (M. Beckman & H. P. Künz eds. 1979); and William Thompson & Terje Lensberg, Axiomatic Theory of Bargaining with a Variable Number of Agents (1989).

[48] It is important to note that what we have defined as exit options are not the same as disagreement points in the Nash demand game. See Binmore, Rubinstein, & Wolinsky, *supra* note 42, at 185; Osborne & Rubinstein, *supra* note 42, at 88. The limited experimental work available suggests that the alternating-offers model with exit options does a better job of forecasting the results of actual bargaining than the Nash axiomatic game. See Ken Binmore, Avner Shaked, & John Sutton, An Outside Option Experiment, 104 Q. J. Econ. 753 (1989).

models assume that both parties are rational and that each knows that the other is rational. The models also assume that each party adopts a bargaining strategy that responds to credible threats and ignores those threats that are not credible. The approach suffers from several weaknesses. Because it is premised on the idea that parties behave rationally, this approach at best identifies the general effect of legal rules over the course of many cases. It does not account for actual outcomes of individual cases. Second, unlike many microeconomic models, apparently small changes in the way in which the bargaining process is modeled can lead to dramatically different outcomes. A model that more closely approximates the actual bargaining process may not do a better job of predicting outcomes. Indeed, it may do worse. None of these difficulties, however, prevents one from using a model that captures the general dynamics of bargaining in bankruptcy and that shows how legal rules affect the way Creditor and Manager will divide ownership of Firm when it needs to be reorganized.

We examine four variations on the basic model. The bargaining is the same in all four cases, but the exit options are defined differently: (1) a full exit model, in which Manager can quit the firm at will and Creditor is always free to lift the automatic stay and sell the assets; (2) a permanent stay model, in which Creditor's right to sell is barred permanently while Manager can quit Firm as in (1); (3) a full exit/new value model that is the same as (1), except that Manager has the right to eliminate Creditor's claims against the assets by paying Creditor the liquidation value of Firm's assets; and (4) a permanent stay/new value model that is the same as (2), except that Manager enjoys a new value exit option as in (3). When a going-concern surplus exists, the permanent stay model matches actual bargaining done in or under the shadow of existing bankruptcy law if the new value exception does not exist. The permanent stay/new value model matches actual bargaining if the exception does exist. The full exit models should match actual practice when no going-concern surplus exists. The full exit model, however, is most interesting in cases in which there is a going-concern surplus. In such cases, it captures bargaining under a hypothetical legal regime in which the automatic stay did not apply to Creditor (but continued to apply to the diverse general creditors) or in which Creditor was at all points able to have a liquidating plan of reorganization confirmed. The full exit/new value model posits another hypothetical legal regime. In it, Creditor can always leave the bargaining table, but Manager is also always able to freeze Creditor out by paying it the assets' liquidation value.

To understand the stakes in the negotiations between Creditor and Manager, we need to know three different things: (1) the present value

of the income stream the assets would generate if Manager remained in control of Firm (V_M);[49] (2) the present value of the income stream Manager could obtain elsewhere (W_M) net of the wage she now earns from Firm;[50] and (3) the amount for which the assets could be sold today (V_C). From these three numbers, the parties would also know the total value of what was at stake (Ω). This number is the greater of V_M or the sum of W_M and V_C. In addition, both Creditor and Manager care about how quickly they come to a deal. If the assets are worth more if put to some other use and Manager can earn more in some other job, both sides want to ensure that this happens sooner rather than later. Similarly, if Firm is worth keeping intact as a going concern, both want to get it back on course as quickly as possible. This preference for an agreement sooner rather than later—the relative level of patience (or impatience, depending on your view of the world) of Manager and Creditor—is represented by the discount rates δ_M and δ_C, respectively.[51] We shall assume that V_M, V_C, W_M, δ_M, and δ_C are common knowledge. These values are known to both Manager and Creditor, and each knows that the other knows their value.[52] We also assume that these values remain constant throughout the bargaining and that this fact is also known to both parties.

The central premise of the bargaining model that we are using is that each party prefers agreement sooner rather than later and that this moves

[49] The value of Firm is net of all the costs of reorganization. We assume these costs to be fixed. They include such things as payments to trade creditors and those entitled to priority under 11 U.S.C. § 507(a).

[50] Manager enjoys a return from Firm in two forms. She is paid a wage, and she owns the equity. We assume, as is typically the case, that she continues to earn a wage while Firm is in bankruptcy, but that this cash wage is lower than her alternative wage elsewhere. See note 23 *supra*.

[51] In Rubinstein's original article, he presented two versions of the alternating offers model. One version treated the players as having fixed per-period bargaining costs; the second used fixed per-period discount rates. See Rubinstein, *supra* note 42, at 99. We have generally followed the bargaining literature in considering the fixed discount case. See, for example, Drew Fudenberg, David K. Levine, & Jean Tirole, Incomplete Information Bargaining with Outside Opportunities, 102 Q. J. Econ. 37 (1987); Avner Shaked & John Sutton, Involuntary Unemployment as a Perfect Equilibrium in a Bargaining Model, 52 Econometrica 1351 (1984); Sanford J. Grossman & Motty Perry, Sequential Bargaining under Asymmetric Information, 39 J. Econ. Theory 120 (1986). The basic alternating-offers model itself is not immune to criticism since its back-and-forth offer structure is exogenously imposed. The structure itself seems to mirror reality, but it is not the only one possible. See, for example, Dale O. Stahl II, Bargaining with Durable Offers and Endogenous Timing, 2 Games & Econ. Behav. 173 (1990).

[52] For a more detailed discussion of the idea of common knowledge, see Robert J. Aumann, Agreeing to Disagree, 4 Annals Stat. 1236 (1976); and Ken Binmore & Adam Brandenburger, Common Knowledge and Game Theory, in Essays on the Foundations of Game Theory (Ken Binmore author 1990).

the parties toward agreement.[53] Each time Creditor or Manager turns down an offer the other makes, the benefit of having Firm reorganized and back on track is lost for an additional period of time. For this reason, each party that makes an offer takes into account how anxious the other is to make a deal. The more anxious a party is relative to the other, the less she will receive. She will be more willing than her contracting opposite to accept a smaller share immediately, rather than a larger share at some later point.

There is a single subgame perfect equilibrium for the negotiations between Creditor and Manager under all the legal regimes that we model. In a world of complete information, the parties reach an agreement in the first period. Manager (the one who makes the first offer) makes a proposal just attractive enough so that Creditor is better off taking the proposal than making a counteroffer that, while giving it a larger share, takes longer to put in place and hence is worth less to it.

Many renegotiations in and outside of bankruptcy are not concluded immediately, even when for all practical purposes only two parties are involved and the Chapter 11 proceeding would be over quickly if they reached agreement. To capture these cases and explain why the parties fail to reach agreement quickly, one may have to introduce some informational asymmetry into the model. To be more specific, perhaps the most striking—and in some ways the most disappointing—feature of the perfect information model is that *immediate* agreement is reached if any agreement is reached at all. The essential stationariness of the model generates this result. Without any change in information or opportunities, there are no gains to be had through delaying agreement. In other words, our model is best thought of as a model of a bankruptcy in which there is what is called a "prepackaged plan."[54] In these cases, the negotiations between the parties in the positions of Creditor and Manager are over before bankruptcy. In the bankruptcy proceeding proper, we see only those procedures necessary to obtain a discharge of the claims of the junior creditors.

A more robust model would explain why these negotiations are not always over before the bankruptcy petition is filed and why there is substantial delay even after the petition is filed. Moreover, one would like to be able to explain why negotiations sometimes prove fruitless. Bar-

[53] This idea and the representation of time preferences through fixed discount rates are explored in Peter C. Fishburn & Ariel Rubinstein, Time Preference, 23 Int'l Econ. Rev. 677 (1982).

[54] 11 U.S.C. § 1126(b).

gaining can collapse without a deal being reached.[55] Delay may result if the bargainers are imperfectly informed and the required time between offers is more than de minimis.[56] In the complete information model, we assume that V_M, V_C, W_M, δ_M, and δ_C are common knowledge. A natural extension to an incomplete information model is to assume that Manager has private information about V_M and that Creditor has private information about V_C.

Introducing two-sided asymmetric information may be necessary to capture bargaining without agreement. Introducing incomplete information on only one side would permit the possibility of a delay in agreement, but it would not result in bargaining without agreement. An example in which only the manager knows the size of the going-concern surplus, but both the creditor and the manager know the liquidation value of the assets, illustrates this point. The creditor would still be uncertain about the size of the going-concern surplus, but because the manager knows that amount precisely, she would know whether a deal could be struck. In such a case, a manager who does little to enhance the value of the firm would never enter into bargaining, and any negotiations that did commence would result in agreement.

By way of example, assume that the manager is one of two types: $V_M = 100$ (a type-L manager) or $V_M = 200$ (a type-U manager). Let $W_M = 50$ and $V_C = 75$. In the full exit model, a type-L manager will bolt immediately. The creditor will insist on at least \$75; the type-L manager knows that she can obtain no more than \$25 in any bargain with the creditor, given that the firm is worth only \$100 as a going concern. Because she knows at the outset that the creditor will never offer her as much as she could make elsewhere (\$50), the manager also knows that there is no point in trying to bargain with the creditor. If negotiations are started, the manager must be a type-U manager. Such a manager will be willing to offer the creditor more than \$75 because, even after paying the creditor that much, she would still make more by running the firm than she could make elsewhere. When there are two types of managers, the creditor becomes perfectly informed once the manager makes an offer. When

[55] Pullman Construction, discussed *supra* note 8, was such a case.

[56] See, for example, Grossman & Perry, *supra* note 51, at 145–53; Faruk Gul & Hugo Sonnenschein, On Delay in Bargaining with One-sided Uncertainty, 56 Econometrica 601 (1988); In-Koo Cho, Characterization of Stationary Equilibria in Bargaining Models with Incomplete Information (Working Paper 89-79, H.G.B. Alexander Research Foundation, September 1989). Some recent work, however, suggests that delay may result even when both parties are completely informed. See, for example, Raguel Fernandez & Jacob Glazer, Striking for a Bargain between Two Completely Informed Agents, 81 Amer. Econ. Rev. 240 (1991).

there are three types of managers—add a $V_M = 150$ type-K manager—information would be incomplete, but the creditor would know that a going-concern surplus existed. Negotiations would commence and would end in agreement.

The dramatic effects of different legal regimes on bargaining even when there is complete information, however, are worth studying in their own right. Understanding these effects is a necessary predicate to creating a model that takes account of asymmetric information, and we focus on them in the rest of the article.

B. Modeling Full Exit and Permanent Exclusivity

In our first model, we assume that, at the first moment in time, Manager decides whether to quit and accept her alternative wage W_M (leaving Creditor with the assets, which are worth V_C). If Manager decides not to quit, she makes a proposal to Creditor. Creditor can decide whether to accept this offer, reject it and make a counteroffer, or exercise its option to take the assets of Firm and sell them for V_C (leaving Manager with W_M). In the second model, Creditor lacks this last option. These are the full exit and the permanent stay models, respectively. The full exit model reflects existing law when there is no going-concern surplus. It also reflects the world that would exist if no bankruptcy proceeding were possible at all or if the automatic stay did not apply to Creditor. The permanent stay model reflects the negotiating position of Creditor and Manager that we commonly encounter in bankruptcy and, because parties negotiate in the shadow of bankruptcy law, it reflects their negotiating position outside bankruptcy as well.[57]

The relative value of the exit options each of the players enjoys and the value of the share each would receive if neither exercises an exit option and bargains with each other determines the equilibrium. For this reason, under both models, Creditor will receive one of three things: (1) the liquidation value of the collateral (V_C); (2) the value of what is left after Manager gets the value of her alternative wage ($\Omega - W_M$); or (3) a bargained-for share of the assets (S_C). The last is the share Creditor would receive when both Creditor and Manager find exit either unavailable or unattractive,[58] and it turns out to be

[57] The way in which legal regimes affect bargaining that takes place outside them was first explored in Robert H. Mnookin & Lewis Kornhauser, Bargaining in the Shadow of the Law: The Case of Divorce, 88 Yale L. J. 950 (1979).

[58] Indeed, it is the solution to the original Rubinstein fixed discount model as the interval between offers approaches zero. See Osborne & Rubinstein, *supra* note 42, at 52. Shrinking the interval between offers eliminates the advantage that Manager enjoys by being able to

$$\frac{\Omega \ln(\delta_M)}{\ln(\delta_C) + \ln(\delta_M)}.$$

When Creditor bargains with Manager, the importance of being able to repossess and sell the assets turns on the liquidation value of the assets relative to the value of the share Creditor would receive if it simply bargained with Manager. When there is a going-concern surplus, the importance of the exit option also turns on the liquidation value of the assets relative to what is left if Manager threatened to exercise her exit option, leave Firm, and enjoy her alternative wage ($\Omega - W_M$).

When Creditor and Manager each assess the exit options that both enjoy, they will compare them with the value of their bargained-for shares, S_C and $\Omega - S_C$, respectively. If one party is more impatient than the other, its bargained-for share will be substantially smaller.[59] A central feature of this model is that the exit options do not themselves affect the size of the bargained-for share. Creditor will compare the value of its exit option (V_C) with its bargained-for share (S_C). The focus of bargaining between Creditor and Manager will be on either their exit options or their share of Firm as a whole. The difference between the value of Firm as a going concern (V_M) and what Creditor and Manager would enjoy in the absence of an agreement ($V_C + W_M$) does not itself affect the dynamics of the bargaining.

We call an exit option "weak" if it gives a party less than that party's bargained-for share. For example, when Manager will do better by insisting on her bargained-for share than by exiting ($\Omega - S_C > W_M$), her exit option is weak. Manager's threat to work elsewhere is not credible and will not be a factor in the bargaining. Although we have no hard statistics to back up our intuition, we believe that in most closely held firms Manager's exit option is in fact weak. If this is the case, two factors will determine the division of Firm in a reorganization: (1) the legal rules governing the bargaining (whether Creditor can lift the automatic stay and whether Manager has a new value exit option) and (2) the relationship between the liquidation value of the assets (V_C) and the Creditor's bargained-for share (S_C) and, therefore, indirectly, the value of Firm as a going concern (Ω).

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move first. No rules of bankruptcy or nonbankruptcy law dictate who makes the first offer or how long the other has to wait before responding.

One should also note that, where there is no going-concern surplus, the first two divisions (the liquidation value of the assets on the one hand and what is left after Manager gets the value of her alternative wage on the other) are identical ($V_C = \Omega - W_M$).

[59] We offer a numerical example in the text after note 61 *infra*.

C. *Comparing the Models*

We focus our attention on those situations in which Manager's specific human capital creates a going-concern surplus and, more specifically, on situations in which exit by Manager is weak.[60] More precisely, we first examine the class of cases in which $V_M > W_M + V_C$ (and, therefore, $\Omega = V_M$), $\Omega - S_C > W_M$, and $\delta_M = \delta_C$. Assuming that the relative levels of patience are equal is a useful simplifying assumption because Creditor's bargained-for share (as well as Manager's) is exactly half the value of Firm ($S_C = 0.5\Omega$) when $\delta_M = \delta_C$. In such a case, Manager has a weak exit option when the present value of the alternative wage differential is less than one-half of the value of the whole firm (that is, when $W_M < 0.5\Omega$). We should emphasize, however, that the assumption that $\delta_M = \delta_C$ is one we adopt only for purposes of exposition. Changing it does nothing to alter the basic forces at work in our model. Figure 2 (in four panels) illustrates the division of Firm between Creditor and Manager as a function of the liquidation value of Firm relative to its value as a going concern under different legal regimes when Firm has value as a going concern and when Manager's exit option is weak. Again, the basic result does not depend on the assumption that $\delta_M = \delta_C$. The sum of the payoffs to Creditor and Manager (C and M, respectively) is always equal to Ω, the value of Firm as a going concern. The amount Creditor receives (and Manager as well) turns on the liquidation value of the assets relative to the value of Firm as a going concern and the legal regime in which Creditor finds itself. In the full exit model, shown in panel (i), Creditor receives its bargained-for share (or, under our assumption, half the value of Firm) until the liquidation value of the assets is greater than its bargained-for share. After this point, Creditor's share rises dollar for dollar as the assets' liquidation value rises. In the permanent stay model, illustrated in panel (ii), Creditor always receives its bargained-for share, no matter how large the value of the assets becomes relative to the value of Firm

[60] In our appendix, we solve for all variations under all legal regimes, including those (such as cases in which Manager's alternative wage approaches the value of Firm) that are not likely ever to arise. The problem when no going-concern surplus exists is less interesting. Creditor should be able to lift the stay, and therefore all of the exit options would be available in the resulting bargaining. Given the exit options, Manager will insist on receiving at least her alternative wage W_M, leaving Creditor no more than $\Omega - W_M$. Because Firm is, by assumption, not worth keeping intact as a going concern, that is equivalent to saying that Creditor receives the liquidation value of the collateral, or V_C. In other words, when both parties have these exit options and there is no going-concern surplus, W_M represents both the upper and lower bound of what Manager will receive, and V_C the upper and lower bound of what Creditor will receive. Any projected delay in lifting the stay may, in some circumstances, allow Manager to receive more than W_M.

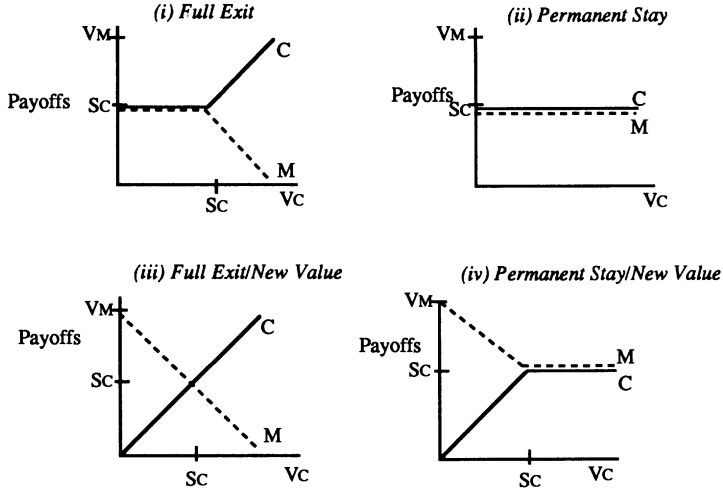

FIGURE 2.—Payoffs versus liquidation value. Manager's exit option is weak: ($\Omega - S_C > W_M$). Going-concern value exists: ($V_C + W_M < V_M$). Key: C = payoff to creditor; M = payoff to manager; S_C = creditor's bargained-for share; V_C = liquidation value of assets; V_M = value of firm as going concern; W_M = manager's net alternative wage.

as a whole. Without an exit option, the liquidation value of the assets ceases to be relevant, even when it is greater than the bargained-for share. In the full exit/new value regime, set out in panel (iii), Creditor receives the liquidation value of the assets in all events, and the bargained-for share becomes irrelevant. In the permanent stay/new value model, shown in panel (iv), Creditor receives the liquidation value of the assets until this amount reaches its bargained-for share. After that point, Creditor receives only its bargained-for share. We discuss the implications of these differences in the next section.

1. The Full Exit and Permanent Stay Models

In the full exit model, Creditor can exit at any time and will therefore always receive at least the liquidation value of the collateral (V_C). Creditor may (or may not) do better than this. In perhaps the most common case, Manager will enjoy all the benefits of keeping Firm intact as a going concern because the value of Creditor's exit option (V_C)—its ability to repossess the assets of Firm—is greater than what it would receive if it continued to bargain with Manager (S_C). That is, in the full exit model, when $V_C > S_C$, Creditor only receives the liquidation value of the assets, and Manager gets the entire going-concern surplus. In this case, lengthy bargaining is relatively unattractive for Creditor, and it can do no better

than demand the value of its exit option, the liquidation value of the collateral. Such a case arises when, for example, the liquidation value of the assets is $3 million, the Manager's alternative wage is $1 million, and Firm is worth $5 million as a going concern with Manager in place. In this case, Creditor receives $3 million, and Manager captures all the going-concern surplus. Manager has less to lose by bargaining than Creditor. The exit option does not strengthen Creditor's hand in bargaining beyond the floor it sets on what Creditor must receive. When liquidation value exceeds the value of its bargained-for share, Creditor cannot receive more than the liquidation value.[61]

In situations under the full exit model in which the liquidation value of the assets is small relative to the value of Firm as a going concern, Creditor will be able to obtain more than the asset's liquidation value and appropriate some or all of the going-concern surplus. When, as we are assuming, Manager's exit option is weak ($\Omega - S_C > W_M$), these cases arise when $V_C < S_C$. Creditor and Manager will each receive their bargained-for share (S_C and ($\Omega - S_C$), respectively). In the full exit model, when Manager's exit option is weak, the payoff to Creditor will be simply the bargained-for share S_C until V_C equals S_C. After this point, Creditor will receive the liquidation value of the collateral. Increases in the liquidation value have no effect on the payoffs until the liquidation value exceeds the bargained-for share.

We should note that our model makes what might seem a counterintuitive prediction. Let the going-concern value of Firm be $5 million, and consider the limiting case of a net alternative wage of $1 and a liquidation value of $2,499,999. If Creditor and Manager have the same discount rate, they will split Firm evenly in the full exit model. To understand this prediction, one must recognize that in this case Creditor's threat to leave the bargaining is no more credible than Manager's. Both exit options are weak and hence do not affect the outcome of the bargaining.

Staying Creditor from exercising its rights produces results identical to those in which Creditor can exit but has an exit option that is weak. If

[61] As noted before, empirical work suggests that this result predicts outcomes more accurately than does the Nash split-the-excess outcome. (The Nash axiomatic approach would predict, if one assumed that $3 million and $1 million were the relevant threat points, that the parties would divide the difference of the going-concern surplus evenly between themselves. Creditor would receive $3.5 million and Manager would receive $1.5 million.) See Binmore, Shaked, & Sutton, *supra* note 48, at 766.

The capture of all of the surplus is similar to the capture of the entire pie by the party with the lower fixed cost of bargaining in the Rubinstein fixed-cost model. See Rubinstein, *supra* note 42, at 107. The fixed exit options seem to operate as a fixed cost of bargaining, at least when exit is relatively attractive for one of the parties. The party with the more valuable exit option then bears a larger cost of bargaining, and thus loses bargaining power.

the threat to levy on the assets is not credible, the threat will not figure in the bargaining. As a comparison of panels (i) and (ii) in Figure 2 illustrates, the full exit and permanent exclusivity worlds produce identical outcomes when $S_C > V_C$. Outcomes are different when, in the absence of a stay, Creditor's threat to levy on the assets is credible (that is, when $V_C > S_C$). In these cases, the automatic stay has bite, and Manager captures relatively more of the value of Firm. Return to the example in which the liquidation value is \$3 million, Firm is worth \$5 million as a going concern, and Manager's exit option is weak. Creditor will receive \$3 million under the full exit model. Creditor has the power to sell Firm's assets for \$3 million, and it therefore will insist on receiving this much in any bargaining with Manager. Creditor does not actually have to exercise the threat, but its ability to exercise it ensures that it receives \$3 million. In the permanent stay model, Creditor lacks the power to repossess the assets. Hence, it receives only \$2.5 million under this legal regime. Creditor has to bargain because it has no exit option. Manager will also settle for her bargained-for share as long as her own exit option is weak. The threat of leaving the bargaining table is hollow if she will receive more if she stays. Manager's net alternative wage, in this example, must be at least \$2,500,001 before it will affect the outcome of the negotiations. In our model, parties always receive their bargained-for shares whenever both lack a credible exit option.

The full exit and permanent stay models capture radically different legal regimes. In one, Creditor is forced to negotiate with Manager, and, in the other, it is free to repossess the collateral. Differences in outcomes turn on whether Creditor's threat to repossess is credible. Creditor fares worse under the permanent stay model compared with the full exit model as the liquidation value of the assets rises relative to the value of Firm as a going concern. Other things being equal, the less Firm has value as a going concern (that is, the more the value of Firm is attributable to the value of the assets themselves), the worse Creditor fares under the permanent stay model when compared with the full exit model.

A sharp discontinuity exists under current law. The permanent stay model tracks existing law when Firm has value as a going concern; the full exit model tracks it when it does not. As the liquidation value of the assets increases relative to the value of Firm as a going concern, Creditor continues to receive only its bargained-for share, rather than the liquidation value of the assets. The difference between the two increases steadily as the liquidation value rises. At some point, however, Manager's alternative wage and the liquidation value of the assets equals the value of Firm ($W_M + V_C = V_M = \Omega$). At this point, there is no going-concern surplus, and Creditor will be able to lift the automatic stay and receive the liquida-

tion value of the assets. The payoff to Creditor suddenly jumps from its bargained-for share to the liquidation value of the assets.

It is hard to find a normative justification for this discontinuity. In a world of uncertainty, the discontinuity introduces a high level of variance into the payoffs, as a minimal difference in the perceived liquidation value of the assets may determine whether the stay is lifted or maintained. As we have shown, the ability to lift the say, in turn, has substantial consequences for the division of Firm between Creditor and Manager.

There is one more point that deserves emphasis. Under both the full exit and permanent exclusivity models, the relative levels of patience of Manager and Creditor determine the division of Firm between them as soon as both have more to lose than to gain by walking away from Firm. Assume Firm is worth \$5 million. Manager has an alternative wage of \$1 million, and Creditor can liquidate the assets for \$1 million. Both are equally patient. This is a case in which, other things being equal, Firm will be divided evenly between Creditor and Manager. (In the full exit model, neither exit option is credible. In a permanent exclusivity model, Manager's exit option remains weak, and Creditor's disappears altogether.) Now assume that, for a given interval, Creditor has a discount rate of .9 and Manager has a discount rate of .8. In other words, when Creditor values enjoying the benefits of having Firm restructured at \$5 million at one moment in time and \$4.5 million at a later moment, Manager will also value it at \$5 million first, but only \$4 million later. Our model suggests that Creditor will receive almost \$3.4 million and Manager less than half that amount.[62] That the liquidation value of the assets and Manager's alternative wage is the same makes no difference when they are small relative to the value of Firm as a whole.

A comparison between these two models suggests that, as the liquidation value of the assets and the amount of Manager's alternative wage decline relative to the value of Firm as a going concern, whatever drives the bargaining process becomes increasingly important. When both exit options are weak, parties will receive their bargained-for shares. Because here relative levels of patience of the parties determine the size of these shares, it seems unlikely that the division of Firm in a reorganization will correspond to what Creditor and Manager would have agreed in their ex ante bargain.

The possibility that relative levels of patience, apart from exit options, determine the outcome of bargaining between parties suggests a more general point. The more legal rules impose on parties a vaguely defined

[62] One gets these numbers by replacing \$5 million for Ω and .8 and .9 for δ_M and δ_C, respectively, in the equation for S_C, which we show in the text around note 58 *supra*.

duty to negotiate, the more the outcome is going to turn on things such as the relative patience of the parties and less on things that might plausibly be part of the ex ante bargain. The model expresses in formal terms objections that have been made to legal rules that impose on parties a duty to negotiate when circumstances change unexpectedly.[63] It also reenforces arguments in favor of doctrines, such as unconstitutional conditions, that have the effect of limiting the scope of bargaining between the government and a private party when there are gains from both working together.[64]

If it were possible, Manager and Creditor would specify in their initial bargain exactly what shares each would receive in the event that the capital structure of Firm had to be rearranged. To the extent that there are gains to be had from specifically allocating ownership interests ex ante, they would do so if transaction costs then were low enough. The parties, however, do not have to choose between precisely specifying the division of Firm in a reorganization on the one hand and remitting the entire matter to future negotiations on the other. It is possible, for example, to define exit options in such a way as to narrow the range over which bargaining will take place and even to eliminate such bargaining entirely. The new value exception is an example of such an exit option, and in the balance of the article we consider the consequences of introducing it into the full exit and permanent stay models.

2. The New Value Models

Our modeling of the new value exception with full exit and with the permanent stay, illustrated in panels (iii) and (iv) of Figure 2, respectively, shows how exit options can narrow the bargaining range available to the parties. In the full exit/new value model captured in panel (iii), Creditor always has the right to lift the stay and be paid the liquidation value of the collateral, but Manager is always free to buy Creditor's interest out for this amount if she chooses. Creditor, in other words, can always insist on this amount, and Manager has an exit option that allows her to ensure that Creditor never receives anything more. Together, these rules means that Creditor always receives V_C and Manager always receives $\Omega - V_C$. Increases in the liquidation value increase dollar-for-

[63] See Clayton P. Gillette, Commercial Relationships and the Selection of Default Rules for Remote Risks, 19 J. Legal Stud. 535 (1990); Douglas G. Baird, Self-Interest and Cooperation in Long-Term Contracts, 19 J. Legal Stud. 583 (1990); and Robert E. Scott, A Relational Theory of Default Rules for Commercial Contracts, 19 J. Legal Stud. 497 (1990).

[64] Richard A. Epstein, Foreword: Unconstitutional Conditions, State Power, and the Limits of Consent, 102 Harv. L. Rev. 4 (1988).

dollar the payoff to Creditor and reduce correspondingly the payoffs to Manager. This result gives Manager all of the benefits of her investment in human capital.

The final model, the permanent stay/new value model set out in panel (iv), gives the basic structure of a legal regime with a stay in which Manager has the right to buy out Creditor for the liquidation value of the assets. In its general form, it represents the bargaining that would exist under current law if the new value exception does continue under the Bankruptcy Code.[65] In this model, Creditor has no exit option, and Manager, in addition to the right to make her alternative wage, has the right to acquire the residual interest in Firm after giving Creditor an interest equal to the liquidation value of the assets. When Firm has value as a going concern, this exit option, this way of threatening to terminate the bargaining, dominates the ability to earn a wage elsewhere. If the liquidation value is low relative to the bargained-for share—when $V_C < S_C$—Manager will exercise the new value right. Over this region, increases in the liquidation value directly increase the payments to Creditor and reduce those to Manager. Once the liquidation value exceeds the bargained-for-share—when $V_C > S_C$—Manager is better off threatening to continue to bargain with Creditor than threatening to pay it the liquidation value of the assets. In these cases, both Creditor and Manager will receive their bargained-for shares. Further increases in the liquidation value relative to the value of Firm as a going concern have no effect on the distributions. Note that, in either case, Manager will always receive at least the entire going-concern surplus. The fourth model differs from the third only in that Creditor's exit option no longer exists; hence, the liquidation value of the assets no longer puts a floor on what Creditor receives.

It is worth focusing on the full exit/new value world for a moment. It is different from all the others in that the exit options always dominate the bargained-for shares. A legal regime with full exit and with the new value exception has a distinct advantage over one with neither because it eliminates the bargained-for share and, hence, the influence of the parties'

[65] The new value exception in practice may be more limiting. The need to inject cash restricts the ability of Manager to capture the going-concern surplus because the surplus can be extracted only through the differential between the wage she receives at Firm and the wage she could earn elsewhere. One should add, however, that our new value model will track existing practice even if the new value exception is not recognized if a debtor is able to offer the business for sale, discourage others from bidding, and repurchase at a price that approximates the liquidation value. See Lynn M. LoPucki, The Debtor in Full Control—Systems Failure under Chapter 11 of the Bankruptcy Code? 57 Am. Bankr. L. J. 247, 256–57 (1983).

relative levels of patience as factors in the division of Firm. When parties settle for their bargained-for share, their respective time preferences determine the outcomes. If, as seems likely, their relatve preferences are not correlated with the size of the shares in bad states of the world on which they would agree in their ex ante bargain, then eliminating bargaining and enhancing exit options seems desirable. Hence, other things being equal, an objection to a regime that tracked the full exit/new value model would not lie in the little room it allowed for bargaining but, rather, in the division of Firm that the exit options produced.

This rule may have serious defects, the most conspicuous being perhaps the valuation difficulties it would bring. A second concern is the allocation of risk in such model. If Manager is risk averse and Creditor risk neutral, risk is allocated optimally if Manager receives a fixed payment in all states of the world. Receiving that amount should be the ex ante bargain that would be struck in a complete information/moral hazardless world. The full exit/new value model result appears to allocate a disproportionate amount of the risk to Manager if liquidation values are less variable than going-concern values. The full exit/new value allocation, however, might be sensible in a world of imperfect information with moral hazard and verification problems.[66]

There are alternative ways in which to create a set of exit options that minimize the extent to which the forces that drive the bargaining process, such as the relative level of patience, determine the division of Firm between Creditor and Manager when Firm's capital structure must be changed. For example, a rule might allow Manager to buy Creditor out for 80 percent of the liquidation value of the assets. A rule that allowed Manager to buy out Creditor for an amount that was greater than the liquidation value would not eliminate the possibility of a division determined by time preferences, but it would reduce its likelihood. Consider, for example, a legal regime in which Creditor could exercise its default right unless Manager paid it 120 percent of the assets' liquidation value. Under this rule, the bargained-for share would matter only when its value fell between the liquidation value of the assets and 120 percent of the liquidation value of the assets (that is, when S_C was greater than V_C but lower than $(1.2\ V_C)$). This is the only range under this legal regime in which both parties would settle for their bargained-for share.

Lawmakers must compare legal regimes that provide complete or nearly complete exit from bargaining with those in which the bargaining dynamics and relative time preferences of the parties determine how Firm

[66] See, for example, Douglas Gale & Martin Hellwig, Incentive-compatible Debt Contracts: The One-Period Problem, 52 Rev. Econ. Stud. 647 (1985).

is divided in the event of a restructuring. A regime in which the exit options eliminate the bargaining range is one in which there is little danger of a bargaining breakdown. Its drawbacks are of two kinds. First, the procedures needed to implement the exit options require a valuation of Firm, which may be quite costly. Second, any particular set of exit options may produce a division of Firm in a reorganization that is itself inconsistent with the ex ante bargain of the parties.

We have not set out a way to identify the division of Firm to which Creditor and Manager would agree ex ante. Because Creditor and Manager have no way of opting out of the bankruptcy process, one can draw few inferences from existing contractual arrangements. We do not ordinarily see debt instruments in which Manager bargains for the option to buy out Creditor for the amount that an arbitrator determines is the liquidation value of the assets. From this, one might draw the weak inference that the ex ante bargain entitles Creditor to some of the going-concern surplus.[67] The intrusive influence of the bankruptcy process, however, keeps us from drawing too many conclusions. Plausible arguments can be made that Creditor's share should be greater or less than the liquidation value of the assets.

V. Conclusion

In our model, time preferences, coupled with exit options, determine the shares the parties receive. The model itself, however, looks only at those corporate restructurings in which the negotiations are between two principal players, both are well informed, and the environment in which they find themselves is static. Much more work needs to be done to know whether our results carry over to more general settings. We see five ways in which the model can be improved. First, we have assumed that all of the parameters remain constant. Asset values may rise or fall during the course of a corporate reorganization, and Manager's alternative wage may change as well.[68] Second, we have assumed that everyone has equal knowledge of such things as the going-concern value of the firm. In many cases, Manager is likely to have better information about the going-concern value because going-concern value turns in large measure on the

[67] One could also draw the inference that valuation difficulties dwarfed the ex ante benefits of giving Manager the going-concern surplus. See Baird & Jackson, *supra* note 4, at 756. One must be wary of drawing even such weak inferences from the absence of such clauses, however. A variety of clauses (such as ones making the debt nonrecourse) may produce the same effect in practice.

[68] Bebchuk and Chang suggest some ways in which such changes may be captured in a noncooperative bargaining model without exit options. See Bebchuk & Chang, *supra* note 2.

value of her firm-specific skills. Manager may also have better information about her alternative wage. If Manager proposes a plan, the required disclosure statement would convey information about the going-concern value of Firm, but she has no obligation to disclose alternative wages or discount rates. Hence, a more general model would reflect these residual information asymmetries.

Third, the model should be expanded to include cases where the general creditors as a group have interests that are sufficiently large to make them players in the negotiations. Even though these cases may not loom large as a practical matter, such a model would fully subsume previous theories of bankruptcy that focused exclusively on the collective action problem. This modification of the model, however, presents a significant technical challenge because the natural back-and-forth structure of the alternating offers model is lost when a third player is introduced. A cyclic offering structure could be used (first Manager, second Creditor, and third the unsecured creditors), but it lacks the intuitive appeal of alternating offers in a two-person setting.

Fourth, a more complete model would ask directly about the kind of division of Firm in bad states of the world that advances the ex ante interests of the parties. Our model might suggest that we consider a legal regime in which the automatic stay did not apply to Creditor. We hesitate, however, to advocate such a legal regime. Quite apart from the need to take into account its effects when there is incomplete and asymmetric information, it is not obvious to what extent the priority of Creditor should be recognized. A large part of the value of Firm may result from investments in human capital on the part of Manager. Here as elsewhere, intuitions need to be tested with a formal model.

Finally, a more robust model would make fewer features of bankruptcy exogenous. For example, a bankruptcy judge's willingness to lift the automatic stay may turn in some measure on the bargaining position that Manager takes. Her unwillingness to offer Creditor the liquidation value of the assets may induce the judge to lift the stay or threaten to lift it.

As with any other model, the empirical predictions it makes provide standards by which it can be judged. The empirical studies of the shares parties receive when a firm is reorganized have largely not been of closely held corporations such as Firm.[69] Such studies are possible, however, and our model does make predictions. For example, it predicts that, when Creditor cannot lift the automatic stay and Manager's exit option is weak, Creditor will receive only its bargained-for share. It should be possible

[69] For one study that does look at closely held firms and concludes that manager-shareholders retain substantial interests in insolvent firms, see LoPucki, *supra* note 65, at 266–69. For empirical studies of large firms, see Daigle & Maloney, *supra* note 16; Julian

to see if Creditor's share of Firm remains constant even when the relationship between the liquidation value of the assets and the going-concern value changes.

In addition to generating testable predictions, our model also allows us to question some of the basic assumptions of bankruptcy scholarship of the past decade. The automatic stay of the secured creditor is neither an uncontroversial nor immutable feature of bankruptcy law. To stay the rights of the secured creditor beyond what is necessary to protect third parties may have only distributional consequences. Rules that enhance exit options, such as the new value exception, may have virtues that have been neglected. Bankruptcy scholarship needs to go beyond examining the collective action problem faced by the residual owners of an insolvent firm. Bankruptcy often exists only to provide a forum in which the rights of third parties are protected while a senior creditor and the old equity holders rearrange the capital structure of the firm. Much may be gained by starting the analysis with the observation that bankruptcy is a bargaining game constrained by exit options.

There is also a more general lesson. There are many legal rules, quite apart from those in bankruptcy, that govern negotiations between parties that have already established an ongoing relationship between themselves. These rules, like bankruptcy rules, have powerful and largely unexamined effects on the kinds of bargains that are struck. A few examples of such legal rules include those governing an employer's right to hire replacement workers, a buyer's right to insist on perfect tender, a seller's right to claim excuse, or a spouse's right to obtain a divorce. These rules inhabit every legal regime from bankruptcy to contract to labor to family law. These negotiations between debtor and creditor, buyer and seller, employer and worker, and husband and wife can all be modeled as noncooperative games in which the legal rules provide exit options. In all these cases, the basic model should take much the same form as the one we have offered in this article and should suggest how changes in the legal rules affect the parties involved.

R. Franks & Walter N. Torous, An Empirical Investigation of U.S. Firms in Reorganization, 44 J. Fin. 747 (1989); Lynn M. LoPucki & William C. Whitford, Bargaining over Equity's Share in Bankruptcy Reorganizations of Large, Publicly Held Conpanies, 139 U. Pa. L. Rev. 125 (1990).

The firm-specific skills of the managers are not a large component of the value of publicly traded firms, and hence the liquidation value of the assets and the value of these firms with the existing managers in place is the same. The automatic stay prevents the senior creditors from cutting the bankruptcy short, but bankruptcy judges are more willing to confirm a plan in which the shareholders were wiped out. For this reason, neither our full exit nor our permanent stay model is apt. One could, however, easily adapt our model to these firms by allowing full exit only after an initial period of bargaining. In this model, Creditor receives the value of its exit option discounted by the amount of time it takes before it will be able to exercise it.