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Bankruptcy Law as a Liquidity Provider

Kenneth M. Ayotte

Northwestern University School of Law

David A. Skeel Jr.

University of Pennsylvania Carey Law School

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The University of Chicago Law Review

Volume 80

Fall 2013

Number 4

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ARTICLES

Bankruptcy Law as a Liquidity Provider

Kenneth Ayotte[†] & David A. Skeel Jr.^{††}

Since the outset of the recent financial crisis, liquidity problems have been cited as the cause behind the bankruptcies and near bankruptcies of numerous firms, ranging from Bear Stearns and Lehman Brothers in 2008 to Kodak more recently. This Article expands the prevailing normative theory of corporate bankruptcy—the Creditors’ Bargain theory—to include a role for bankruptcy as a provider of liquidity. The Creditors’ Bargain theory argues that bankruptcy law should be limited to solving problems caused by multiple, uncoordinated creditors, but focuses almost exclusively on the problem of creditor runs. We argue that two well-known problems that cause illiquidity—debt overhang and adverse selection—are also caused by multiple-creditor-coordination problems. As such, bankruptcy law is justified in solving these problems in addition to creditor-run problems.

[†] Professor of Law, Northwestern University School of Law,
k-ayotte@law.northwestern.edu.

^{††} S. Samuel Arsht Professor of Corporate Law, University of Pennsylvania Law School, dskeel@law.upenn.edu.

We thank Barry Adler, Douglas Baird, Michal Barzuza, Margaret Blair, Patrick Bolton, Anthony Casey, Jens Dammann, Rich Hynes, Thomas Jackson, Jason Johnston, Randall Klein, Edward Morrison, Dotan Oliar, Richard Squire, Amir Sufi, Fred Tung, and participants at the Conference on Creditors and Corporate Governance at the University of Chicago Law School, the Law and Economics Workshop at the University of Virginia School of Law, the Corporate and Securities Law conference at Vanderbilt University School of Law, and the faculty workshops at Northwestern and UC Berkeley for helpful comments and discussions; Lauren-Kelly Devine and Jin Gu for excellent research assistance; and the University of Pennsylvania Law School for summer funding (Skeel).

With this insight in hand, we argue that many of bankruptcy's existing rules, including debtor-in-possession financing, sales free and clear of liens, and coerced loans, can be seen as liquidity-providing rules that target either debt-overhang problems, adverse-selection problems, or both. Using bankruptcy to solve liquidity problems can create costs, however, such as the risk of continuation bias. We suggest rules of thumb for judges to use in balancing the benefits and costs of these rules. We also connect our theory to the use of bankruptcy for financial institutions, where liquidity concerns loom large.

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INTRODUCTION

The financial crisis generated increased attention on the importance of liquidity, and the dramatic consequences that can follow from illiquidity. At the beginning of the week of March 10, 2008, Bear Stearns held over \$17 billion in cash and a stock market capitalization of over \$7 billion. By the end of the week, Bear required a massive capital infusion from the Federal Reserve to fund its merger with JPMorgan Chase. The assets against which Bear borrowed to fund its operations had suddenly become illiquid. Bear simply could not find a lender willing to lend against them, even on a fully secured basis.¹

Since the financial crisis, liquidity problems have been cited as the cause behind both the decisions to file for bankruptcy and the outcomes of many Chapter 11 cases.² Kodak, the iconic film and imaging company, is a prominent recent example. After failing to capitalize on the trend away from traditional film and toward digital imaging, Kodak shifted focus to monetizing its portfolio of imaging patents through litigation, licensing, and patent sales. As Kodak’s financial condition deteriorated, it found that companies like BlackBerry, Apple, and HTC employed delay tactics to starve the company of cash and gain advantage in litigation. Kodak responded by filing for Chapter 11 bankruptcy in January 2012. The Chapter 11 filing was made to buy time and free up cash, allowing Kodak to maximize the sale and litigation value of its patent portfolio and to reorganize around its core printing business. As Kodak’s lead bankruptcy lawyer explained

¹ Kate Kelly, *News in Depth: Bear Stearns Neared Collapse Twice in Its Frenzied Final Days; Treasury Secretary Pushed for a Low-Ball Bid, Relented; Testy Time for J.P. Morgan CEO*, Wall St J Europe 18 (May 30, 2008). The most extensive discussion of the Bear Stearns collapse is William D. Cohan, *House of Cards: A Tale of Hubris and Wretched Excess on Wall Street* (Doubleday 2009).

² See, for example, Maria Aprile Sawczuk, *Are the Days of Knights Over? Lack of Liquidity Stymies Chapter 11 Cases*, J Corp Renewal (Turnaround Management Association Feb 19, 2009), online at <http://www.turnaround.org/Publications/Articles.aspx?objectID=10642> (visited Nov 18, 2013).

to the court on the first day of the case: “We’re here for liquidity.”³

The goal of this paper is to bring to light the crucial role that bankruptcy law plays in creating liquidity for firms in financial distress, and to incorporate this liquidity-creating function into bankruptcy theory. We define a firm as liquid when it can borrow against its full value, or sell its assets for full value, on short notice.⁴ Firms that suffer from illiquidity may be forced into premature liquidation or going-concern sales at prices below their fundamental values.

The predominant theoretical foundation for corporate bankruptcy is known as the Creditors’ Bargain theory.⁵ This normative theory argues that the scope of bankruptcy law should be limited to solving the particular problems caused by multiple, uncoordinated creditors when firms face financial distress.⁶ Although liquidity may at first seem far removed from these concerns, liquidity and creditor-coordination issues are tightly linked in contemporary finance. Using insights from the theory of financial economics, we examine two well-known causes of illiquidity, the debt-overhang problem⁷ and the adverse-selection

³ See Mike Spector and Dana Mattioli, *Can Bankruptcy Filing Save Kodak? Doubts Persist on Printer, Patent Strategy as Icon Seeks Chapter 11 Protection*, Wall St J B1 (Jan 20, 2012).

⁴ By full values, we mean the values at which the asset would trade or serve as collateral in an ideal environment: one that is free of the debt-overhang and asymmetric-information problems we discuss below.

⁵ See, for example, Thomas H. Jackson, *The Logic and Limits of Bankruptcy Law* 10–17 (Harvard 1986) (providing a framework for understanding the fundamental tenets of bankruptcy law); Douglas G. Baird and 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, 116–25 (1984) (exploring the rights of secured creditors in bankruptcy); Thomas H. Jackson, *Bankruptcy, Non-bankruptcy Entitlements, and the Creditors’ Bargain*, 91 Yale L J 857, 861–68 (1982) (developing the Creditors’ Bargain theory).

⁶ See, for example, Baird and Jackson, 51 U Chi L Rev at 101–09 (cited in note 5).

⁷ See Stewart C. Myers, *Determinants of Corporate Borrowing*, 5 J Fin Econ 147, 149–55 (1977). See also Christopher A. Hennessy, *Tobin’s Q, Debt Overhang, and Investment*, 59 J Fin 1717, 1727–36 (2004) (providing empirical evidence supporting the presence of debt overhang). Existing literature recognizes the connection between bankruptcy and debt overhang, but does not explicitly connect it to liquidity or the multiple-creditor-coordination problems that justify bankruptcy in the Creditors’ Bargain theory. See, for example, Kenneth Ayotte and David A. Skeel Jr, *Bankruptcy or Bailouts?*, 35 J Corp L 469, 476 (2010) (identifying debtor-in-possession financing and sales as solutions to debt overhang); David A. Skeel Jr, *Debt’s Dominion: A History of Bankruptcy Law in America* 56–69 (Princeton 2001) (suggesting equity receivership as a solution to debt-overhang problems in the nineteenth century); George G. Triantis, *A Theory of the Regulation of Debtor-in-Possession Financing*, 46 Vand L Rev 901, 919–20, 925 (1993)

(sometimes called the “asymmetric-information” or “lemons”) problem.⁸ These problems can affect firms generally, but we explain why they are more severe for firms in financial distress, and why they are exacerbated by the presence of multiple, uncoordinated creditors. We argue that solving illiquidity problems should be a recognized goal of bankruptcy law, even under the limited role for bankruptcy advocated by Creditors’ Bargain proponents. Indeed, many provisions of the current Bankruptcy Code can be justified on the basis that they solve illiquidity problems that would destroy value in their absence.

Our theory is useful in several ways. First, it broadens the existing theoretical framework that justifies corporate bankruptcy law. The Creditors’ Bargain theory focuses almost exclusively on the common-pool problem (sometimes called the “grab race” or “creditor-run problem”) as the primary justification for bankruptcy law. In broadening the Creditors’ Bargain framework to include the debt-overhang and adverse-selection problems that cause illiquidity, our theory brings seemingly unrelated issues under a common roof. It reveals that many of bankruptcy’s rules, which have been previously analyzed in isolation, can be recast as attempts to create liquidity by solving debt-overhang problems, adverse-selection problems, or both. Some of these liquidity-creating rules are uncontroversial to bankruptcy practitioners, but lack theoretical justification.⁹ Other liquidity-providing rules are more controversial, and are not handled uniformly by bankruptcy courts.¹⁰ In these cases, our theory provides a useful lens through which these controversies and uncertainties in bankruptcy law doctrine can be examined and critiqued.

(explaining debtor-in-possession financing rules as a solution to debt overhang); Julian R. Franks and Walter N. Torous, *An Empirical Investigation of U.S. Firms in Reorganization*, 44 J Fin 747, 765 (1989) (suggesting deviations from absolute priority as a solution to debt overhang).

⁸ See Stewart C. Myers and Nicholas S. Majluf, *Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have*, 13 J Fin Econ 187, 188–89 (1984); George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q J Econ 488, 488, 497–500 (1970). In the bankruptcy context, see, for example, Barry E. Adler, *Game-Theoretic Bankruptcy Valuation*, 41 J Legal Stud 209, 212 (2012) (exploring creditor private information in a take-it-or-leave-it offer mechanism); Douglas G. Baird and Donald S. Bernstein, *Absolute Priority, Valuation Uncertainty, and the Reorganization Bargain*, 115 Yale L J 1930, 1949 (2006) (explaining how superior information of existing lenders over outside bidders creates incentive for reorganizations over sales).

⁹ See, for example, Part III.B (discussing § 363 sales).

¹⁰ See, for example, Part IV.A (discussing the timing of courts’ valuation of secured claims); Part IV.C (discussing the extension of pre-petition security interests to proceeds under § 552(b)).

We analyze these issues in light of the typical facts of the modern, large Chapter 11 case. Firms tend to enter bankruptcy with their assets fully encumbered by secured debt. The secured debt is held by many creditors. These claims may be traded in secondary markets, making coordination difficult. The secured debt is often held in separate first- and second-lien tranches, whose holders can have very different objectives based on their seniority.¹¹ Financial innovations, such as credit derivatives, can also alter parties' objectives from those based solely on the claims they hold.¹²

Our theory also allows for a fuller consideration of the proper role of bankruptcy for financial institutions, for which liquidity concerns loom largest, as compared to the nonfinancial firms that constitute most Chapter 11 cases. As the Federal Deposit Insurance Corporation (FDIC), along with the Federal Reserve and Treasury, is considering the proper function of the Orderly Liquidation Authority, a substitute resolution mechanism for systemically important financial institutions,¹³ our discussion is relevant to the proper scope of this mechanism and its relationship to bankruptcy. We argue, for instance, that the severe adverse-selection problems faced by troubled financial firms may justify incorporating a financing mechanism analogous to the one established by the Orderly Liquidation Authority into financial-firm bankruptcy cases.

We proceed as follows. Part I revisits the well-known Creditors' Bargain theory of corporate bankruptcy law. Part II expands the baseline theory to include liquidity, introduces the debt-overhang and adverse-selection problems that can cause it, and explains the connection between these problems and the existence of multiple, uncoordinated creditors. It also explains how the recent trend toward creditor control of Chapter 11 cases can be cast as an attempt to create illiquidity for strategic advantage. The creditor-control trend makes bankruptcy's liquidi-

¹¹ These and other coordination problems that drive outcomes in the modern corporate reorganization are analyzed in Douglas G. Baird and Robert K. Rasmussen, *Anti-bankruptcy*, 119 Yale L.J. 648, 651–53 (2010).

¹² See *id.* at 677–85.

¹³ Most recently, the FDIC has signaled that it plans to use a “single point of entry” strategy, which would restructure the parent corporation in a financial institution’s holding company structure, but leave most or all of the subsidiaries intact. See, for example, Federal Deposit Insurance Corporation and the Bank of England, *Resolving Globally Active, Systemically Important, Financial Institutions* *1, 6–7 (Dec 10, 2012), online at <http://www.fdic.gov/about/srac/2012/gsifi.pdf> (visited Nov 18, 2013) (“FDIC-BOE Joint Paper”).

ty-providing role more important in the modern environment, and it has heightened the significance of bankruptcy provisions that were much less critical several decades ago, such as the court's authority to authorize so-called priming liens for new lenders.¹⁴ Parts III and IV connect the strategies for solving illiquidity problems to existing Bankruptcy Code provisions that use these strategies, and then identify a set of unresolved issues in bankruptcy law and show how our liquidity perspective can illuminate them. Part V discusses the costs of using bankruptcy law to provide liquidity to debtors. It then suggests four qualitative principles that govern the appropriate balance between debtor liquidity and respect for nonbankruptcy rights. Part VI discusses the particular issues connecting liquidity, financial firms, and systemic risk.

I. THE CREDITORS' BARGAIN THEORY

The Creditors' Bargain theory is based on a collection of influential work that is most associated with Professors Douglas Baird and Thomas Jackson.¹⁵ This theory acknowledges the valuable role that corporate bankruptcy can play as a collective remedy for creditors. It has two main elements that are relevant for the purposes of our analysis. To focus on a fixed point of departure, we explain these elements as set forth in Professor Jackson's work, *The Logic and Limits of Bankruptcy Law*.¹⁶

The first important element of the theory is that the ideal bankruptcy outcome is the one that would be chosen by a sole owner—a hypothetical individual who owns all of the firm's assets outright as of the bankruptcy petition date.¹⁷ This sole owner's decision about how the firm's assets will be deployed—a liquidation, a reorganization, or a going-concern sale, and the timing of this decision—is the one that the firm and its creditors would collectively agree to make if they could commit to it ex ante, when credit is extended. A sole owner would deploy assets in a way that is economically efficient: she would make the decisions that would maximize the assets' value as a group.¹⁸ Maximizing the value of the pool of assets in bankruptcy would give

¹⁴ A priming lien gives a new lender priority even over lenders with preexisting liens on the same collateral. See 11 USC § 364(d). Section 552(a), which limits existing liens, also has increased in importance. See 11 USC § 552(a).

¹⁵ See note 5.

¹⁶ See Jackson, *Logic and Limits* at 7–19 (cited in note 5).

¹⁷ See Baird and Jackson, 51 U Chi L Rev at 104–09 (cited in note 5).

¹⁸ See *id.*

the debtor and creditors the highest possible recovery in bankruptcy. Anticipating a rule that generates an efficient outcome in bankruptcy, the debtor would be able to borrow at the best possible terms at the outset, when it is healthy. We will call this principle the “Efficiency Principle.”

The Creditors’ Bargain theory argues that without bankruptcy law, it is unlikely that a distressed firm’s assets would be deployed in the way that a sole owner would choose. Under state debtor-creditor law, the general creditors of a defaulting debtor are satisfied on a “first-in-time, first-in-right” principle.¹⁹ An unsecured creditor who seizes the debtor’s assets early enough in time, when the debtor has enough to pay, will receive full payment. Late-arriving creditors are left out in the cold when the assets are not sufficient to pay the firm’s debts.²⁰

This state law-based, individualistic method of satisfying creditor claims can have the effect of destroying value for the collective body of creditors.²¹ Each creditor may know that if all creditors postpone immediate collection, the debtor may survive and produce more value as a going concern than if liquidated piecemeal. At the same time, though, each individual creditor knows that she can be paid in full by pursuing her state law rights if she acts quickly enough. And she knows that other creditors will be thinking similarly. This gives creditors an incentive to race to the courthouse to seize the debtor’s assets. By pursuing their individual rights in a self-interested way, creditors can dismantle a firm that is worth more together than in pieces.²² It is this “common-pool problem” that justifies a collective proceeding in the Creditors’ Bargain theory.²³ Bankruptcy’s automatic stay, which puts all creditor collection efforts to a stop when a petition is filed,²⁴ is perhaps the most familiar mechanism for preventing a common-pool problem.²⁵

The second element of the Creditors’ Bargain theory is the claim that resolution of common-pool problems may require

¹⁹ See Jackson, *Logic and Limits* at 12, 16 (cited in note 5).

²⁰ See *id.* at 7–19 (analyzing the collective action problem and bankruptcy’s role in counteracting it).

²¹ *Id.*

²² See *id.* at 14–17.

²³ Jackson, *Logic and Limits* 11–12 (cited in note 5) (describing the common-pool analysis).

²⁴ See 11 USC § 362(a).

²⁵ See Jackson, *Logic and Limits* at 157–72 (cited in note 5) (analyzing the appropriate scope of the automatic stay).

altering the procedural rights of creditors, but that it typically does not require altering the substantive values of those rights as established by nonbankruptcy law.²⁶ We will refer to this second element as the Normative Butner Principle, named after the Supreme Court case *Butner v United States*,²⁷ which held that substantive rights in bankruptcy are defined by nonbankruptcy law except where bankruptcy law dictates otherwise.²⁸

The treatment of secured credit provides the standard illustration of the argument behind the Normative Butner Principle. If the debtor defaults on its obligation to the secured creditor, state law gives the secured creditor permission to have the collateral seized and sold to satisfy the debt.²⁹ Under state law, a secured creditor has priority over unsecured creditors to the extent of the value of this collateral; the proceeds of the sale are paid to the secured creditor first.³⁰ The unsecured creditors can lay claim to the remaining proceeds of the collateral only if the secured creditor is paid in full.³¹

The Normative Butner Principle acknowledges that bankruptcy law is justified in altering the secured creditor's procedural rights. Bankruptcy law may properly prevent the secured creditor from having the collateral seized once the debtor files a bankruptcy petition. But bankruptcy law should defend the substantive value of this right—namely, the secured creditor's priority over the unsecured creditors to the extent of the collateral's

²⁶ Id at 21 (stating that bankruptcy “does not . . . justify the implementation of a different set of relative entitlements, unless doing so is necessary as a part of the move from the individual remedies system”).

²⁷ 440 US 48 (1979).

²⁸ See id at 54–55. We use the word “normative” to distinguish this principle from the (positive) Butner principle that is more commonly used in practice. This principle follows from the Supreme Court holding, and says that substantive nonbankruptcy rights are honored in bankruptcy *unless the Bankruptcy Code expressly directs otherwise*. Thus, the standard Butner principle is a positive principle that takes the Bankruptcy Code as given, whatever its normative merits. The Normative Butner Principle, by contrast, expresses a viewpoint on what form bankruptcy law *should* take. To the extent that the Code expressly alters a substantive nonbankruptcy right, and this alteration has no bearing on the common-pool problem, it is normatively unjustified according to the Creditors' Bargain theory.

The Creditors' Bargain theory acknowledges the possibility that violations of the Normative Butner Principle may be necessary for the Efficiency Principle to hold under some circumstances. See, for example, Jackson, *Logic and Limits* at 28 (cited in note 5). But it does not explicitly address the liquidity-driven deviations we consider here.

²⁹ See UCC §§ 9-610, 9-615.

³⁰ See UCC § 9-615(a)(2) (providing for the secured creditor's right to proceeds).

³¹ See UCC § 9-615(d) (requiring that any surplus be returned to the debtor).

value as of the time of the bankruptcy filing.³² Under the Normative Butner Principle, the secured creditor should be compensated for the cost to it of any delay of its right to foreclose.³³ Honoring the value of nonbankruptcy rights, the theory postulates, should not hinder the debtor's ability to satisfy the Efficiency Principle, and may in fact facilitate it.³⁴ Respecting substantive rights is further beneficial because it prevents harmful forum shopping: it reduces the incentives of parties to seek or avoid bankruptcy merely to obtain an advantage at the expense of other parties.³⁵

The Creditors' Bargain theory provides a useful starting point for our analysis. Our perspective is in full agreement with the first element of the Creditors' Bargain, namely that bankruptcy law should seek to satisfy the Efficiency Principle. We argue, however, that the Normative Butner Principle is a less useful guiding principle when liquidity problems are present. A proper-functioning law of corporate bankruptcy requires, and indeed already possesses, rules that are intended to increase a debtor's liquidity in order to maximize the value of the estate.³⁶ In some cases we consider, the problems that cause illiquidity

³² See Jackson, *Logic and Limits* at 183 (cited in note 5) (arguing that "adequate protection" should give a secured creditor the same value as it would have had if it had repossessed and sold the collateral under state law).

³³ See Baird and Jackson, 51 U Chi L Rev at 99, 114–16 (cited in note 5), citing Thomas O. Kelly III, Comment, *Compensation for Time Value as Part of Adequate Protection during the Automatic Stay in Bankruptcy*, 50 U Chi L Rev 305, 309–22 (1983).

³⁴ Professor Jackson argues as follows:

A rule that forces general creditors and shareholders to give secured creditors the full value of their claims (including compensation for the time value of money) imposes the cost of a decision to reorganize the firm entirely on the junior classes, who already stand to benefit if the firm succeeds. As a consequence, they have incentives that approximate those of a sole owner, and their decision about how to deploy the debtor's assets will not be distorted by self-interest.

Jackson, *Logic and Limits* at 189 (cited in note 5).

³⁵ See *id.* at 61 (reasoning that undermining secured credit in bankruptcy "will lead the unsecured creditors to opt for a bankruptcy proceeding . . . even when bankruptcy is a poor forum from the perspective of the creditors as a group").

³⁶ Our liquidity-based theory focuses on some (but not all) of the bankruptcy provisions that Professor Robert Scott identified twenty-five years ago as exceptions to the original Creditors' Bargain theory, and explained in risk-sharing terms. See Thomas H. Jackson and Robert E. Scott, *On the Nature of Bankruptcy: An Essay on Bankruptcy Sharing and the Creditors' Bargain*, 75 Va L Rev 155, 156–58 (1989); Robert E. Scott, Book Review, *Through Bankruptcy with the Creditors' Bargain Heuristic*, 53 U Chi L Rev 690, 700–07 (1986). We believe that the provisions we discuss are better viewed as liquidity-producing rules, but we are motivated by a very similar impulse to explain an important dimension of bankruptcy that seems to violate what we call the Normative Butner Principle.

can create a conflict between the Normative Butner Principle and the Efficiency Principle. This requires that bankruptcy law adopt a difficult balancing act between the benefits associated with respecting these principles. To understand how this balancing act might be optimally designed, we must first develop a more complete theory of liquidity and the problems that cause illiquidity.

II. LIQUIDITY

A. Benchmark Case: Full Liquidity in an Ideal World

One of the more puzzling questions is why illiquidity exists in the first place. If a firm is really worth more as a going concern than liquidated, why wouldn't the firm be able to find a buyer willing to purchase the firm at its full going-concern value? Similarly, why wouldn't the firm be able to find a lender who is willing to provide financing to the firm to preserve its going-concern value, if it in fact has any?³⁷

A simple numerical example will help explain the underlying theoretical concern. For the purposes of the example, we will assume that the market interest rate for borrowing and lending between Dates 1 and 2 is 0 percent.³⁸ We will also assume that all parties are risk neutral. Risk neutrality implies that a party values an uncertain stream of payments at its mathematical expected value.³⁹ These assumptions are made solely to keep the

³⁷ Professor Jackson evinces skepticism about illiquidity as a class of problems distinct from the problem that gives rise to creditor runs:

There is often thought to be a different kind of case in which a bankruptcy proceeding is appropriate—the circumstance where the debtor faces what is euphemistically called a *liquidity crisis* It is perhaps, however, more useful to think of this less as a distinct category of cases [than] as another way in which insolvency in the bankruptcy sense [liabilities exceeding assets] is the basic issue. . . . [B]ecause with a “temporary” liquidity crisis it should be possible to borrow against the remaining assets to regain liquidity. Thus, when a cash flow crisis is announced, it is likely that the company is in fact insolvent [T]he creditors as a group would be understandably nervous, and this nervousness would lead them to use individual creditor remedies.

Jackson, *Logic and Limits* at 198–99 (cited in note 5).

³⁸ More specifically, to say that the market interest rate is 0 percent is to say that all investors demand an *expected return* of at least 0 percent on their money. It is not to say that creditors will not demand a positive interest rate on their loans—in our example, positive interest in nondefault states of the world will often be necessary as a way of compensating for the losses that occur in default states.

³⁹ The expected value is calculated by multiplying the probability of each event by the payoff from that event and adding up over events. It captures an average payoff from a random variable. A risk-neutral party will value a random payoff at its expected value;

numerical analysis simple and transparent. Relaxing them to make the example more realistic will not affect the conclusions of our analysis in any meaningful way.

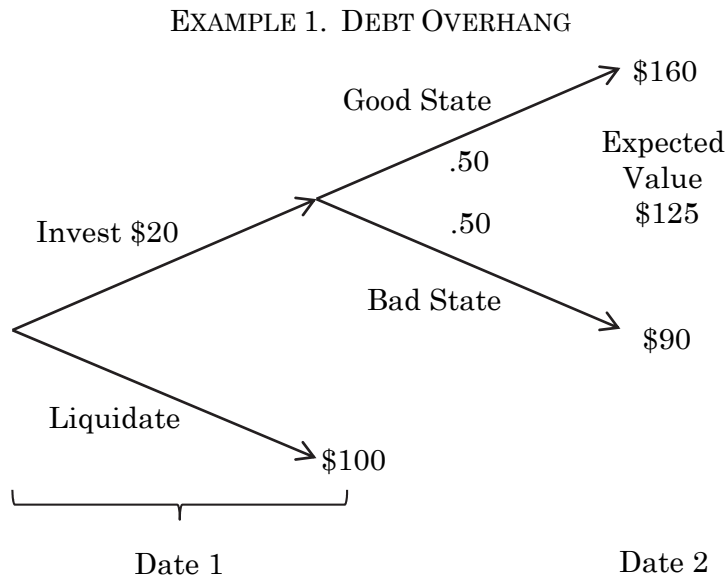
The example takes place over two dates, Date 1 and Date 2. Suppose that at Date 1, a sole-owned firm finds itself facing a cash shortage. It needs to find \$20 in cash quickly at Date 1 to make an investment. The term “investment” should be interpreted broadly: it could be anything that requires money now and has a potential payoff in the future. It might be a decision by the firm to pay its suppliers on time to remain in operation and avoid a shutdown. Or it might be a decision to postpone an immediate sale or merger in favor of continuing its operations in its current form and waiting for a better offer.

Suppose that if the firm does not find the \$20 to make the investment, it is “liquidated” for \$100 at Date 1.⁴⁰ Conversely, suppose that if the firm finds the \$20 and makes the investment, it remains in operation until Date 2, at which time it produces an uncertain cash flow. Following the investment, the firm has a 50 percent chance of a “good” state, which produces a cash flow of \$160, and a 50 percent chance of a “bad” state, which produces a lower cash flow of \$90 at Date 2. Thus, the expected value of the Date 2 cash flow is $.50 \times \$160 + .50 \times \$90 = \$125$ if the investment is made. Our assumption that the market interest rate is 0 percent and all parties are risk neutral implies that the expected value of \$125 at Date 2 would have a market value of \$125 at Date 1.⁴¹ The investment opportunity and payoffs are represented in the figure below as Example 1.

a risk-averse party will generally value a random payoff at an amount less than its expected value.

⁴⁰ Again, liquidation should be interpreted broadly: it could be a sale of the firm as a going concern or a shutdown.

⁴¹ Readers who are uncomfortable with this assumption could equivalently assume that the market interest rate is positive, and all future monetary amounts are not nominal amounts but instead are real amounts that have been discounted to their present values at the market rate. This would not change anything in our analysis.



Clearly, since the investment costs \$20 and raises the value of the firm's cash flows by \$25 (from \$100 to \$125), it is an efficient investment. A sole owner with cash on hand would certainly choose to make the investment.

In an ideal world, nothing would change if the owner had no cash on hand. After all, the firm should always be able to find a way to raise \$20 to fund the investment. One way is to approach a lender, borrow \$20 at Date 1, and promise a repayment of \$20 at Date 2. Since creditors are entitled to payment before the owner, there are no other creditors, and the firm will generate enough future cash to pay off the debt in full even when it produces the low cash flow (\$90), the creditor is assured of repayment. The owner will prefer to take on this new loan, since her ownership interest in the firm is worth $\$125 - \$20 = \$105 > \100 . And, recall, the lender will be willing to lend \$20 at Date 1 and take home a certain \$20 at Date 2, since the market interest rate is 0 percent.

In this simple example, our firm is never illiquid: it can always borrow against the full value of its future cash flows. And whenever a valuable investment exists that a sole owner would make, the firm can find the cash to fund it. But this seems to contradict real-world experience. Why might this be the case? One reason, of course, is that potential lenders are constrained

because they simply do not have the money. A lender would need to have \$20 on hand in our example, and no such lender might exist. While this might be a cause of illiquidity in some instances, it is unlikely to explain the widespread presence of illiquidity in practice. Even in the depths of the financial crisis, many investors had the cash to provide financing to companies who needed it.⁴² A more complete explanation for illiquidity in the real world requires that we dig deeper and understand why investors with cash might not choose to provide it, even though the investment may be efficient. Debt overhang and adverse selection provide us with these explanations.⁴³

B. Illiquidity Caused by Debt Overhang

Let's consider the same numerical example as above, with the exception that the firm is now heavily indebted to existing creditors when the cash need arises.⁴⁴ To make this concrete, suppose that the firm already owes \$130 to an existing lender (Bank), due at Date 2, as a result of past operations and borrowings that took place before Date 1.⁴⁵ Suppose further that Bank is secured by all the firm's assets, and has contractual guarantees from the firm that it will have priority over any new obligations that the firm incurs.⁴⁶

⁴² See Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J Econ Persp 77, 95 (Winter 2009).

⁴³ Moral hazard is also used to explain illiquidity. See, for example, Douglas W. Diamond and Raghuram G. Rajan, *Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking*, 109 J Polit Econ 287, 288–89 (2001); Bengt Holmström and Jean Tirole, *Private and Public Supply of Liquidity*, 106 J Polit Econ 1, 2, 6–12 (1998). Deviations from nonbankruptcy priorities based on moral hazard reasons can be found in Kenneth Ayotte, *Bankruptcy and Entrepreneurship: The Value of a Fresh Start*, 23 J L, Econ, & Org 161, 161–62 (2007). The moral hazard explanation is most useful in the personal and small-business context and less relevant for the large-corporation context, so we do not pursue this rationale further.

⁴⁴ In this example, the firm is ex ante insolvent in a balance sheet sense: the expected value of its assets as of Date 1 (\$125) is less than the face value of its liabilities (\$130). This is not essential to the problem: the debt-overhang problem can arise even if the firm is ex ante balance sheet solvent.

⁴⁵ It is not crucial to pin down what Bank is owed as of Date 1 if the firm liquidates, as long as it exceeds the \$100 liquidation value, so that all liquidation proceeds go to Bank.

⁴⁶ Outside of bankruptcy (or in a world without bankruptcy), the contractual guarantee of seniority is not self-enforcing, but it would likely have some effect against the debtor. If the debtor attempts to violate it by failing to subordinate a later lender, Bank could declare a default, accelerate the loan, and cause a liquidation of the firm that gives Owner nothing. This threat would be sufficient to induce Owner to subordinate later

Now, suppose the firm approaches a new potential lender (Creditor) and asks to borrow \$20 to fund the continuation investment. With the firm already indebted to Bank, Creditor needs to adjust the terms of her debt contract to account for the possibility of incurring losses in default. After all, even if the investment is funded, the low cash flow (\$90) is insufficient to pay Bank the \$130 it is owed, and Bank is entitled to be paid first before Creditor receives anything. As a result, Creditor anticipates receiving payment only in the high cash flow state. Since this occurs with only a 50 percent chance, Creditor must ask for a higher repayment to compensate for this expected loss. In exchange for lending \$20, Creditor will demand a Date 2 repayment of \$40. Receiving \$40 in the good state and nothing in the bad state gives her an expected repayment of \$20, which would be sufficient to encourage Creditor to lend the money. The extra \$20 that Creditor requires is analogous to charging a higher interest rate to compensate for greater default risk.

But in our numerical example, this is impossible. In the good state, there would be only $\$160 - \$130 = \$30$ remaining after Bank is paid in full. Creditor, then, can never be induced to lend. Thus, in the example, we can say that our firm is *illiquid*. Though the investment satisfies the Efficiency Principle, it does not occur, because the firm cannot promise a new lender enough of the firm's future cash flows to make lending worthwhile.

The cause of this debt-overhang problem is that too much of the value of the new investment would be captured by Bank if it were made. If the investment were not made, Bank would be entitled to the entire \$100 value of the firm: it is owed \$130 and is first in line. If Creditor decided to lend the money, Bank would receive \$130 in the good state and \$90 in the bad state: this has an expected value of \$110. In expected value, then, Bank gains \$10 if the investment is made. But the total net gain to society from the investment is only \$5. More than 100 percent of the gains from the investment go to Bank. The owner of the firm (Owner) and Creditor would, collectively, lose \$5 from investment, so they will forgo investment.

It is easy to see, by adapting the example slightly, that debt overhang will not always exist. The severity of debt overhang depends on the amount Bank is owed, which in turn drives Bank's gain from the investment.

lenders, provided that Bank has some ability to monitor Owner's borrowing in the future.

TABLE 1. DEBT OVERHANG ASSUMING DIFFERENT LEVELS OF
PREEXISTING FIRM DEBT

Bank's Date 2 debt claim	Net value of invest- ment (A)	Net gain to Bank from investment (B)	Net gain to Owner and Creditor from investment (A - B)	Does in- vestment occur? (A - B ≥ 0)?
\$130	\$5	\$10	\$-5	No (debt overhang)
\$120	\$5	\$5	\$0	Yes
\$110	\$5	\$0	\$5	Yes
\$100	\$5	\$-5	\$10	Yes

The decision about whether the loan is made and investment occurs depends on whether Owner and Creditor collectively benefit from it. Their collective benefit is the difference between the total value of the investment and Bank's share of that value. As Bank's debt decreases, its share of the investment gains decrease. And when Bank is owed \$100, continuation actually *decreases* the value of the existing loan. This may give Creditor and Owner an additional motive to invest, even if the social value of investment is negative. In such situations, Bank has a fire-sale motive to liquidate the firm. This will become important in an upcoming section.⁴⁷ Debt-overhang-driven illiquidity, then, is more severe when the firm's financial distress is more severe.

C. Solutions to the Debt-Overhang Problem

Theory suggests that there are several possible solutions to the debt-overhang problem. Understanding these solutions will allow us to understand why debt overhang is more severe in the presence of financial distress and uncoordinated creditors;

⁴⁷ See Part II.E.

hence, it is appropriate to resolve these problems in bankruptcy along with common-pool problems. These solutions will also allow us to cast a critical eye on the way bankruptcy law solves illiquidity problems caused by debt overhang.

1. Existing creditors make the new loan.

An alternative to renegotiation is simply to ask Bank to provide the new \$20 loan. Since Bank is the major beneficiary of the new investment, it should be more willing to provide new funds than Creditor. Indeed, if the owner were to make a take-it-or-leave-it offer to Bank to make a \$20 loan in exchange for an additional \$20 repayment due at Date 2, Bank would accept. To see this, note that if no investment occurs, Bank would receive \$100. If Bank invests, its claim on the firm rises in value. In the good state, the \$160 cash flow is high enough to pay Bank in full on both the new and old loans ($\$130 + \$20 = \$150$). In the bad state, Bank again takes home the firm's entire cash flow (\$90). Thus, the expected value of Bank's claim on the firm after investment is $.50 \times (\$150) + .50 \times (\$90) = \$120$. Net of the investment cost (\$20), the Bank's claim on the firm is worth $\$120 - \$20 = \$100$. Since Bank is just as well off by lending, it can be persuaded to lend.⁴⁸ The owner is also better off investing under these terms. Recall that when no investment occurs, the owner's equity stake in the firm is wiped out, since Bank takes the entire \$100. If investment occurs, the owner receives the residual \$10 in the good state after Bank is paid. Thus, consistent with the Efficiency Principle, the loan is made and the investment is funded.

This example illustrates that the debt-overhang problem, like the common-pool problem, is fundamentally a problem of coordinating multiple creditors.⁴⁹ The common-pool problem, in which creditors race to the courthouse to collect their loans, occurs because creditors do not internalize the benefits and costs that their actions impose on other creditors.⁵⁰ A creditor that chooses to pursue its individual, state law collection rights may

⁴⁸ For readers bothered by the assumption that Bank lends despite not being strictly better off, note that the owner could offer Bank \$21 in repayment and the problem would not change.

⁴⁹ It is perhaps more accurate to call the debt-overhang problem a multiple-investor problem rather than a multiple-creditor problem—if the new lender were a new shareholder instead of a new creditor, the problem would be the same. But this does not detract from the issue at hand: that multiple-investor problems of these kinds benefit from the collective proceeding that bankruptcy provides.

⁵⁰ See notes 21–26 and accompanying text.

be causing the premature liquidation of a viable firm, and this may hurt all creditors. The common-pool problem persists because creditors act in their self-interest. The debt-overhang problem is no different in this regard. In our numerical example, Creditor insists on a high repayment because it does not internalize the benefits of its loan that accrue to Bank. When Bank makes the new loan, it internalizes the benefits of the new loan on its old loan, and thus lends at a lower cost to the firm. This causes the debt-overhang problem to disappear.

The downside to relying on capital from existing lenders as a solution to debt overhang is that it may not always be feasible. This is particularly true in the modern distressed-lending environment, where bank lending has evolved from a bilateral, durable relationship to a more complicated, multilateral, and constantly shifting set of relationships. Bank in our example may in fact be comprised of multiple lenders in practice.⁵¹ Large corporate loans are often provided by syndicates of multiple banks.⁵² Syndicated lenders often retain the right to transfer their rights and obligations under the loan to other lenders in the future. While a single agent is typically appointed to act on behalf of the syndicate, major changes to the loan often require unanimous consent.⁵³

Adding further complication, it has become common for multiple lenders to lend against the same collateral with different layers of seniority: a company's secured debt is often comprised of separate first-lien (senior) and second-lien (junior) tranches. Even within a given class of debt, lenders may have differing objectives. Some may hold credit derivatives that lessen or eliminate their true economic exposure on the loan.⁵⁴ Ac-

⁵¹ See, for example, Amir Sufi, *Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans*, 62 J Fin 629, 632–33 (2007).

⁵² The recent credit-bidding cases provide evidence of coordination difficulties in syndicates. The right to credit bid is only valuable to the extent that the secured lender cannot find the cash to finance a bid that would “round trip” back to the creditor. In his dissent in the Philadelphia Newspapers case, Judge Thomas Ambro noted these coordination difficulties. *In re Philadelphia Newspapers, LLC*, 599 F3d 298, 337 (3d Cir 2010) (Ambro dissenting).

⁵³ See id; Gary A. Goodman, Michelle C. Yip, and Robert W. Becker, *Syndication of Real Estate Loans in the Current Market Environment*, 124 Bank L J 16, 23 (2007).

⁵⁴ See, for example, Frank Partnoy and David A. Skeel Jr, *The Promise and Perils of Credit Derivatives*, 75 U Cin L Rev 1019, 1034–35 (2007) (discussing the Tower Automotive bankruptcy).

tive investors, such as hedge funds, may hold claims in multiple layers of the company's capital structure.⁵⁵

When there are many existing lenders, they must be brought around the table and coordinated to decide how the burden of providing the \$20 loan will be allocated. This may be challenging for two reasons. First, the new loan is not profitable on its own. In the example above, the new loan of \$20 with a \$20 new repayment is a good loan to Bank only because it increases the value of Bank's old loan. (Recall, the Creditor acting in his self-interest would refuse to make a \$20 loan with promised repayment less than \$40.) Since the new loan is unprofitable on its own, any individual lender, acting in his self-interest, would much rather avoid providing the new money and free ride, hoping that other creditors will provide the new funds that will increase the value of his old loan. This free rider problem, caused again by the presence of multiple creditors, increases the chance that the debt-overhang problem will persist.

Second, if the existing lenders occupy different layers of seniority, or if some lenders have altered their economic exposure through derivatives and others have not, they will benefit differentially from the new loan.⁵⁶ This makes the negotiation over the provision of the new loan more difficult. Those who benefit more from the new loan will likely be asked to provide a greater share of the new money. Even if the parties agree that the burdens of the new loan should be proportional to the benefits received from it, the calculation of these benefits will not be easy in practice.⁵⁷

⁵⁵ See, for example, Baird and Rasmussen, 119 Yale L J at 669–75 (cited in note 11).

⁵⁶ For example, suppose the \$130 owed to existing lenders is comprised of a \$110 first-lien piece and a \$20 second-lien piece. Then the new loan would benefit the second-lien lender much more than the first-lien lender. The first-lien lender would not gain at all from the new loan: it would receive \$100 in liquidation and $\$100 (.50 \times \$110 + .50 \times \$90)$ from continuation, while the second-lien lender would go from \$0 in liquidation to \$10 in continuation ($.50 \times \$20 + .50 \times \0).

⁵⁷ The Chapter 11 case of American Remanufacturers is one example of a liquidation that can occur from lack of coordination. The senior and junior liens proposed competing debtor-in-possession (DIP) loans to the debtor to fund its continuation. Seeing that the debtor preferred the senior lenders' proposal, the junior lender group objected to the terms of this loan, citing ambiguous language in the intercreditor agreement between the two lender groups. The court held in favor of the second-lien lenders. The first-lien lenders then decided to allow the case to convert to a Chapter 7 liquidation rather than renegotiate over the terms of a different loan. In Chapter 7, second-lien lenders received nothing. See Mark Berman, *Second-Lien Financings Part II: Anecdotes and Speculation—the Good, the Bad, and the Ugly*, 25 Am Bankr Inst J 24, 24–25, 57–59 (Mar 2006).

2. Renegotiation.

A second solution to the debt-overhang problem allows a new lender to provide the new funds, but requires the existing lender's help. If the owner can renegotiate with existing lenders before making the investment, the illiquidity problem can be cured. To see this in our example, suppose Owner makes the following take-it-or-leave-it offer to Bank: she promises to borrow from Creditor to fund the investment, but only if Bank agrees to reduce its senior debt claim from \$130 to \$110.

Will Bank accept a take-it-or-leave-it offer of this kind? Bank knows that if it refuses, the owner will not be able to fund the investment, due to the debt-overhang problem we uncovered above. If investment does not occur, Bank will be left with \$100, as we saw above. If Bank does accept the offer, it would receive \$110 in the good state and \$90 in the bad state. This has an expected value of \$100, so Bank would accept.

With the debt reduction in place, the owner can now induce Creditor to provide the new money. In the good state, after paying Bank \$110, there is $\$160 - \$110 = \$50$ left over to pay Creditor. This is enough to convince Creditor to lend: recall that a promise of \$40 will give Creditor an expected payoff of \$20 ($.50 \times \$40 + .50 \times \$0 = \20). If Creditor lends with a repayment promise of \$40, moreover, there will be \$10 left over for the owner in the good state ($\$160 - \$110 - \$40 = \10). Thus, the owner is better off from investment as well.

The drawback of relying on renegotiation is the same as the drawback of relying on the old creditors to lend the new money: it may not be feasible, particularly when there are many existing creditors. Coordinating the old creditors in order to renegotiate the debt on short notice would be difficult. Even if coordination were costless, each individual bank would be tempted to free ride, hoping that the other banks would agree to the debt relief. And when there are different layers of senior debt, the benefits to renegotiation will differ across creditors. Thus, renegotiation is less likely to be a viable solution in the presence of multiple, uncoordinated creditors.

3. Full seniority for the new lender.

A third solution to the debt-overhang problem is to make the new lender senior in priority to the existing lender. If the new lender knows that he will move to the front of the priority line, he will be more willing to lend, and at a lower rate of inter-

est.⁵⁸ To see this in our numerical example, suppose Creditor is now given a priority position ahead of Bank. Being first in line, the owner will offer a repayment of \$20, and the Creditor will accept. Now that Creditor is senior, the firm will always generate enough cash flow to pay the Creditor in full, even in the bad state. Since Creditor requires only a \$20 repayment, the owner's payoff following investment will be $\$160 - \$130 - \$20 = \10 in the good state and \$0 in the bad state.

Relative to the first two solutions, the benefit of new-lender priority is that it does not require active participation by the existing lenders. It does require that the existing lenders bear the cost of the new loan by subordinating themselves to it in priority. The drawback to making new debt senior is that it works a bit too well, creating an overinvestment problem: the owner will now prefer to invest even in some new investments that a sole owner would reject. To see this, suppose we change the numbers so that, in the bad state, the firm pays only \$60, with all other numbers unchanged. A sole owner would now prefer liquidation to investment: it costs \$20, but increases the expected value of the firm from \$100 to $.50 \times \$160 + .50 \times \$60 = \$110$, a gain of only \$10. But when the owner can raise new senior debt, she will choose to invest. The owner receives nothing in liquidation, but she would receive \$10 in the good state if she invests. Senior financing, then, can create an overinvestment problem that violates the Efficiency Principle.

4. Limited seniority for the new lender.

The problem with giving the new lender full seniority is that it forces the existing lender to bear the entire cost of the investment, whether or not it succeeds. As a result, it gives the new lender too little incentive to be concerned about whether the new investment is efficient or not. One way to tackle this problem is limited seniority: The new lender is allowed to be senior to existing lenders, but only to the extent of the value added by the investment. The existing lenders remain senior to the extent of the liquidation value of the firm.

In our numerical example, suppose the owner, in exchange for the \$20 loan, offers the lender a \$20 repayment backed by a first priority right to any increase in the firm's value that the

⁵⁸ See, for example, Michelle J. White, *Public Policy toward Bankruptcy: Me-First and Other Priority Rules*, 11 Bell J Econ 550, 563 (1980); Elazar Berkovitch and E. Han Kim, *Financial Contracting and Leverage Induced Over- and Under-Investment Incentives*, 45 J Fin 765, 766 (1990); Triantis, 46 Vand L Rev at 927 (cited in note 7).

investment creates. Thus, if the good state occurs, Creditor's loan has a first claim on the \$60 increase in value (\$160 – \$100) that continuation made possible. But Bank remains senior to Creditor to the extent of the first \$100 in firm value, since the firm was worth \$100 before the investment.

In our numerical example, this limited seniority would encourage Creditor to lend. Since there is \$60 available in the good state, there is more than enough available to pay Creditor the \$40 she would require. By giving Creditor seniority over only the new value, Creditor becomes more cautious than under absolute seniority. If we changed the numbers so that the cash flow in the good state is less than \$140, Creditor would refuse to lend.

While the limited seniority described here does a better job than full seniority in preventing overinvestment, it does not fully eliminate it. If the cash flow in the good state is at least \$140 but less than \$150, Creditor would lend under limited seniority. But the investment would not satisfy the Efficiency Principle. The overinvestment problem persists under limited seniority because Owner and Creditor force Bank to take a \$10 loss when the bad state occurs. Because Bank is forced to absorb some of the losses from continuation, Owner and Creditor have too much incentive to invest.

It might seem at first pass that limited seniority is unrealistic, because it requires that the benefit of the new investment be somehow identified and separated from the value of the firm that would persist in the absence of the investment. As we will discuss in Part V.A, the Bankruptcy Code's existing approach to debtor-in-possession (DIP) financing can resemble this limited-seniority concept, depending on the timing of collateral valuation.

5. Sell assets free of existing debts.

A fifth solution is to sell the firm to a new buyer before the investment must be made. This solution requires that the buyer can take the assets free and clear of the existing debt.

A sale free and clear of debts is very similar to the limited-seniority solution. By paying out the proceeds of the sale to the existing debt, these creditors are made senior to the extent of the sale price, which should be at least the liquidation value of the firm. But once the buyer owns the firm's assets free and clear of debts, she can offer a new lender a senior claim, or simp-

ly fund the investment herself if she has the cash on hand.⁵⁹ Either way, the benefits of the investment do not flow to the existing debt. The new owner is a sole owner, and this means investment will be consistent with the Efficiency Principle. The free-and-clear sale, in fact, does even better than the limited-seniority solution because it creates no incentive for overinvestment. Unlike limited seniority, the existing debt is not forced to bear any of the downside risk when the bad state occurs.

An important downside to this solution is that a sale may be difficult to accomplish quickly at a price that yields full value for the firm's assets. Potential buyers may have liquidity issues of their own, and buying a whole firm requires more investigation than does a continuation loan. The need for time is likely driven by imperfect and asymmetric information about the value of the assets; this is the topic of the next Section.

6. Conclusion: solutions to debt overhang and nonbankruptcy rights.

This Section discussed five solutions to the debt-overhang problem. The first two solutions, relying on existing lenders and renegotiating, do not require any changes to the substantive priorities that would otherwise exist between existing lenders and new lenders outside of bankruptcy. Thus, if they occur inside bankruptcy, they are fully consistent with the Normative Butner Principle. But we also concluded that these methods are unlikely to be fully effective when creditor-coordination problems are present.

The last three solutions—full and limited seniority and free-and-clear sales—do not require overcoming creditor-coordination problems. But they generally require substantive departures from nonbankruptcy rights in order to create liquidity. In Part IV, we will see that the Bankruptcy Code includes provisions that are close parallels to these three solutions.

D. Illiquidity Caused by Adverse Selection

In the last Section, we showed that illiquidity can result from debt overhang: a firm may not be able to borrow against its

⁵⁹ In theory, the existing lender could credit bid for the assets, acquire them, and then sell the assets to the buyer, thus achieving essentially the same result even if the lender is unable to finance the investment directly. But this sequence of events would require at least as much coordination as renegotiation, so we set it aside for similar reasons.

full value due to the distortions caused by existing debt.⁶⁰ But we maintained the unrealistic assumption that all parties were equally informed about the firm's future. In this Section, we discuss a second cause of illiquidity, asymmetries of information. There are many possible reasons why some parties have more information about a firm's value than others. Most important for our analysis, it is likely that parties with an existing relationship with the firm, such as existing managers and lenders, will have access to inside knowledge and experience. These parties can forecast the firm's future value more accurately than outside parties due to inside information.

As we will see, problems of adverse selection make illiquidity problems more severe. The intuition is quite simple: when a less informed potential lender sees a more informed existing lender backing away (in other words, refusing to lend), the uninformed lender will be rationally hesitant to step in. The knowledge that the existing lender is choosing to exit conveys information that the firm's prospects may be poor. Like the debt-overhang problem, these problems are more severe when the firm is more severely financially distressed. They are also more severe when there are problems of coordinating multiple creditors.

Let us continue with our earlier numerical example, adding an informational advantage for Owner and Bank. The firm will continue to be worth \$100 in liquidation, and this value is known to everyone. The \$20 investment will produce \$160 in the good state, and \$90 in the bad state, as before. From the perspective of an outsider, like Creditor or a potential buyer of the firm (Buyer), there is still a 50 percent chance of the good state and 50 percent chance of the bad state occurring at Date 2. But suppose that Bank and Owner have superior information, in the form of a private signal observable only to them at Date 1. If Bank and Owner get a good signal, then they know that the good state will occur with a 90 percent chance. And if they get the bad signal, the good state will occur with only a 10 percent chance.⁶¹

⁶⁰ See Part II.B.

⁶¹ We assumed that the probability of success from the point of view of the Creditor (that is, the unconditional probability of success) is .50. Thus, the probability of getting the good signal is the solution (x) to the following equation: $x \times .90 + (1 - x) \times .10 = .50$. The solution to the equation is $x = .50$.

Though Creditor does not observe the signal, Creditor knows that Bank and Owner will have observed it before they make any decisions about investment. Let's assume one more source of uncertainty for Creditor. In some states of the world, Bank may be unable to provide the \$20 to fund the continuation investment for reasons unrelated to the firm's value. This might occur for many reasons. As we noted earlier, with medium-sized or large firms, it is rare that there is only a single existing lender; more often bank loans are made by many lenders as part of a syndicate. And bank loans often consist of separate first-lien and second-lien pieces. This may make coordination difficult enough that a new loan from existing lenders on short notice is not feasible.⁶² Bank might not be able to fund the loan for other reasons, such as an agency problem within Bank. As an example, Bank might be particularly reluctant to risk extending more money to the now-bankrupt firm, even if the loan's overall prospects are positive, because a second failure would affect its reputation severely. Bank might also be unable to make the loan because it has liquidity needs of its own.⁶³ Whatever the reason, an outside lender will likely find it difficult to assess whether Bank has the ability to fund the loan or not.

Suppose that Creditor knows that 50 percent of the time, Bank will have the ability to fund the investment. Coordination or other problems would preclude investment 50 percent of the time, whether or not firm's prospects are good. But Creditor does not know exactly when Bank can potentially fund the investment and when it cannot. When Creditor is approached to provide a loan, Creditor will know only that Bank passed on the opportunity.

To see that asymmetric information makes illiquidity more severe, let's consider a case in which Creditor would lend in our symmetric information example above, but will not lend with asymmetric information. Suppose that Bank's existing senior debt obligation is \$120 instead of the \$130 we assumed above; thus, Bank's debt is low enough that the debt-overhang problem alone does not cause underinvestment.⁶⁴ If Bank and Owner do not receive any signal that conveys an information advantage,

⁶² Syndicates often appoint a lead arranger to manage the loan and monitor the borrower. Hence, the presence of many lenders in a syndicate does not necessarily make an informational advantage of existing lenders unrealistic.

⁶³ If Bank's reason is a liquidity need, the value of liquidity to Bank may need to be taken into account in any calculation of efficiency. We will return to this in a later section.

⁶⁴ See Part II.B.

investment will always occur, even though Creditor is lower in priority than Bank. Whenever Owner offers Creditor the chance to invest \$20 for a \$40 repayment, Creditor will accept. The fact that Bank passed up the loan opportunity will not convey any information to Creditor, except that Bank is unable to lend.⁶⁵

Now, let's reintroduce asymmetric information. Suppose that Owner offers Creditor the same deal—a \$20 loan in exchange for a \$40 repayment promise that is junior to Bank. The offer is made, though, after Creditor and Bank observe the signal, and Bank chooses not to make the loan. Should Creditor accept the offer? Being aware of his information disadvantage, Creditor will be more hesitant to lend, because he will draw inferences from Bank's refusal to participate. To understand how Creditor will reason through the problem, consider Example 2A below:

EXAMPLE 2A. ADVERSE SELECTION

	Good signal	Bad signal
Bank is able to lend	Bank lends Expected value of loan: $.90 \times (\$40) + .10 \times (\$0) = \$36$	Bank does not lend Expected value of loan: $.10 \times (\$40) + .90 \times (\$0) = \$4$
Bank is unable to lend	Bank does not lend Expected value of loan: $.90 \times (\$40) + .10 \times (\$0) = \$36$	Bank does not lend Expected value of loan: $.10 \times (\$40) + .90 \times (\$0) = \$4$

⁶⁵ The same would be true if Creditor observes the same signal as Bank and Owner. Creditor will be willing to invest whenever the good signal is realized and will not lend when the bad signal is realized.

There are three possible cases in which Bank chooses not to make the loan. The bottom row of the table corresponds to two cases in which Bank is unable to lend, whether or not the signal is good or bad. The third alternative, in the top right corner of the table, is that Bank is able to fund the loan, but Bank finds it unprofitable because Bank received the bad signal. In the event Bank receives the bad signal, the loan is worth only \$4 to Creditor; it is worth \$36 when the good signal is received. For Creditor to properly value the loan opportunity, he must calculate the expected value of the opportunity *given that Bank refused the loan*. Thus, Creditor only considers the three possibilities in boldface.⁶⁶ This is the essence of adverse selection: though the value of the loan is high in two of the four cases, the low value of the loan arises in two of the three cases (67 percent) that are actually offered to Creditor. If Creditor rationally analyzes the value of the loan, then, he will arrive at an expected value of $.33 \times (\$36) + .67 \times (\$4) = \$14.67$. Since \$14.67 is less than the \$20 cost of providing the loan, Creditor should reject the loan opportunity.

It is worth emphasizing the illiquidity problem that adverse selection creates and its causes. In the state where the good signal is received but Bank is unable to lend, the investment is not made and the firm liquidates. This is true even though investment satisfies the Efficiency Principle: a sole owner would certainly make a \$20 loan when success is certain. Yet no lending occurs in this state of the world. The illiquidity problem flows from asymmetric information. If Creditor receives the same signal as Bank and Owner, then Creditor would prefer to make the loan whenever the good signal occurs. This is consistent with the Efficiency Principle. But when Bank has superior information about the loan and refuses to make it, Creditor rationally worries that the loan is a “lemon”—a low-quality loan that an informed lender would not make.⁶⁷

⁶⁶ Owner will always want to approach Creditor when Bank refuses to lend because continuation is the only way for Owner to capture upside. One caveat, though, is that there must be a friction that prevents Bank from bribing Owner to liquidate in the bad state when Bank has money. Otherwise, the loan would not be offered to Creditor in that state, thus changing Creditor's perception of the state. Given that these bribes are unlikely to occur in the real world (due in large measure to coordination issues discussed in this paper), this seems like a reasonable assumption.

⁶⁷ From a policy perspective, this does not necessarily mean that a legal change that encourages lending whenever Bank refuses to lend is preferable to the illiquidity problem we find here. If lending occurs whenever Bank would refuse, the underinvestment caused by illiquidity would be cured, but there would also be inefficient continua-

Illiquidity caused by adverse selection is more severe to the extent that creditor-coordination problems are more severe. To see why creditor coordination is important, suppose that Bank has an informational advantage over Creditor, but Bank can always overcome coordination problems. This makes it more likely that Bank can simply fund the loan itself. If this is true, then Owner can convince Bank to lend whenever a sole owner would lend. The fact that Creditor is unwilling to lend due to its information disadvantage will not affect the efficiency of investment.

The severity of financial distress also affects information-driven illiquidity. To see this, suppose we reduce Bank's existing debt from \$120 to \$100. Owner can now offer Creditor a larger repayment promise to compensate for the asymmetry of information. Suppose Owner now offers Creditor a repayment promise of \$55 for the \$20 loan. Since there will be $\$160 - \$100 = \$60$ left over in the good state after Bank is paid, the promise to pay \$55 to Creditor in the good state is credible. Though Creditor will still expect a 67 percent chance of failure given that Bank did not lend, Creditor will anticipate a higher expected value of the loan, given the higher promised repayment. This is represented below in Example 2B:

tion in the states where Bank gets the low signal. Given the numbers in Example 2A, lending in all states is worse than the illiquidity solution. But if the signal decreases in strength from .90 to .70, it is preferable from an efficiency standpoint to generate lending whenever Bank would refuse. The best possible outcome is to use Bank's information to liquidate when the bad signal occurs, but to overcome the illiquidity problem when Bank receives the good signal but has no cash.

EXAMPLE 2B. ADVERSE SELECTION

	Good signal	Bad signal
Bank has \$	<p>Bank lends</p> <p>Expected value of loan: $.90 \times (\\$55) + .10 \times (\\$0) = \\$49.50$</p>	<p>Bank does not lend</p> <p>Expected value of loan: $.10 \times (\\$55) + .90 \times (\\$0) = \\$5.50$</p>
Bank does not have \$	<p>Bank does not lend</p> <p>Expected value of loan: $.90 \times (\\$55) + .10 \times (\\$0) = \\$49.50$</p>	<p>Bank does not lend</p> <p>Expected value of loan: $.10 \times (\\$55) + .90 \times (\\$0) = \\$5.50$</p>

With a higher promised repayment, the expected value of the loan is $.67 \times (\$5.50) + .33 \times (\$49.50) = \$20.17$. The expected repayment is sufficient to compensate Creditor for the \$20 loan, and Creditor will be willing to lend.⁶⁸

E. Strategic Illiquidity Creation and Senior-Creditor Control

Perhaps the most important trend in large Chapter 11 cases has been the use of illiquidity as a strategic weapon by senior creditors. By controlling the debtor's access to liquidity when the firm is in financial distress, lenders acquire significant informal control over distress outcomes.⁶⁹ Recent empirical scholarship

⁶⁸ There may be a second, more subtle reason why financial distress exacerbates the adverse-selection problems that cause illiquidity. As we saw in Part I above, the debt-overhang problem occurs because continuation increases the value of Bank's existing loan. And this is more likely when Bank is owed more (in our numerical example, debt overhang occurs whenever Bank is owed more than \$120). When Bank is owed more, then Bank's unwillingness to lend is a stronger signal to Creditor that the loan is unprofitable. In the debt-overhang situation, Creditor will reason that Bank should be the most willing lender because Bank has the opportunity to increase the value of its existing loan by providing a new one.

⁶⁹ See Barry E. Adler, Vedran Capkun, and Lawrence A. Weiss, *Destruction of Value in the New Era of Chapter 11* *2 (Working Paper, Oct 24, 2006), online at <http://ssrn.com/abstract=1291620> (visited Nov 18, 2013); Elizabeth Warren and Jay L. Westbrook, *Secured Party in Possession*, 22 Am Bankr Inst J 12, 12 (Sept 2003); David A. Skeel Jr., *Creditors' Ball: The "New" New Corporate Governance in Chapter 11*, 152 U Pa

has confirmed this trend,⁷⁰ and other scholars have proposed bankruptcy reform mechanisms to combat its influence.⁷¹ Hedge fund lenders, in particular, have been accused of cutting off credit strategically to increase the value of their investments in distressed firms.⁷²

Our discussion so far suggests that the creditor-control trend can be seen as a problem of illiquidity. Existing research emphasizes that senior creditors do not have formal control over a company's decisions.⁷³ Instead, they acquire informal control by controlling a debtor's access to the funding that is necessary for the firm's survival. Senior creditors would have little ability to influence the debtor if other lenders were readily available to step in, refinance the existing lenders, and fund the firm's valuable investments.

Our adverse-selection example above helps explain why existing senior creditors have an incentive to generate an informational advantage over other lenders and use this advantage to create cash shortages. Creating an environment of illiquidity conveys two advantages to Bank. First, when Bank has the ability to overcome coordination problems and make new loans, the new loan can be made at attractive terms that are not constrained by competition from other lenders like Creditor. In our example above, Owner knows that if Bank refuses to lend, Creditor will also refuse, no matter what repayment terms are offered.⁷⁴ This can have the effect of giving Bank market power:

L Rev 917, 919 (2003); Douglas G. Baird and Robert K. Rasmussen, *The End of Bankruptcy*, 55 Stan L Rev 751, 784 (2002).

⁷⁰ See, for example, Kenneth M. Ayotte and Edward R. Morrison, *Creditor Control and Conflict in Chapter 11*, 1 J Legal Analysis 511, 514 (2009) (finding that bankruptcy sales are more likely and traditional reorganization less likely with debtors that have oversecured secured creditors).

⁷¹ A clever mechanism to counteract the potential destructive effects of the creditor-control trend has been proposed by Professor Anthony Casey. See Anthony J. Casey, *The Creditors' Bargain and Option-Preservation Priority in Chapter 11*, 78 U Chi L Rev 759, 806 (2011).

⁷² It has been alleged that the Tower Automotive bankruptcy was triggered by hedge funds that cut off credit in order to make money on a short position in the company's stock. See Henny Sender, *Hedge-Fund Lending to Distressed Firms Makes for Gray Rules and Rough Play*, Wall St J C1 (July 18, 2005).

⁷³ See, for example, Baird and Rasmussen, 55 Stan L Rev at 784–85 (cited in note 69) (discussing lenders' efforts to exert indirect influence without taking formal control).

⁷⁴ In our view, bankruptcy's role in generating outcomes consistent with the Efficiency Principle is more important than preventing Bank from lending at an above-market interest rate. To the extent that Bank anticipates being able to lend at supracompetitive rates in bankruptcy, competition at the initial stage (before Bank

Bank can charge the firm any price for the loan such that Owner prefers continuation to liquidation, without the threat of competing loan offers from outside lenders like Creditor. Bank can derive similar benefits by proposing to purchase the debtor's assets at a fire-sale price.⁷⁵

Second, illiquidity may prevent continuation loans, thus creating a fire sale that is in Bank's interest when Bank cannot make the loan itself. Fire-sale biases occur when continuation creates a downside risk to Bank's claim that is greater than the upside potential. In our example, suppose Bank is owed \$105. If a new loan is made and investment occurs, Bank would gain only \$5 ($\$105 - \100) if the good state occurs, but would lose \$10 ($\$100 - \90) if the bad state occurs. When a fire-sale bias is present, Bank will prefer liquidation when it cannot fund the continuation loan itself. By acquiring information that outside lenders do not have, Bank can create an illiquidity problem that will discourage Creditor from making a continuation loan, even when the loan would satisfy the Efficiency Principle.⁷⁶

F. Solutions to the Adverse-Selection Problem

In this Section, we summarize some of the potential solutions to illiquidity caused by asymmetric information and their potential hazards. The next Part will demonstrate that some of these solutions can be found in the Bankruptcy Code.

acquires its informational advantage) should reduce the interest rate on Bank's loan to compensate for this anticipated outcome in bankruptcy.

⁷⁵ The overall implications for the Efficiency Principle of a sale to Bank at a below market price are complex. Although such a sale diminishes the value of the estate, the benefits accrue to an existing creditor, Bank. Bank often will have made its loan in contemplation of bankruptcy, during the period shortly before bankruptcy. See, for example, Ayotte and Morrison, 1 J Legal Analysis at 523 (cited in note 70) (finding that most secured-credit facilities appear to have been arranged during the year before bankruptcy). In some cases, as with Lehman's sale of its brokerage assets to Barclays in September, 2008, a lender that has not funded the debtor prior to bankruptcy provides financing for the purpose of facilitating the sale. Unlike Bank, a new lender often will not have an information advantage over other potential lenders. If the proposed sale price is inadequate, the debtor can reject the transaction, which reduces the risk of a fire sale. If the debtor agrees to a sale at a price that seems low, and there is no evidence that the buyer has promised continued employment or other compensation to the debtor's managers, the low price may simply suggest that the value of continuing the business is limited.

⁷⁶ In Examples 2A and 2B, Bank's signal is not sufficiently strong to discourage Creditor from lending when Bank is owed only \$105. But if Bank's signal is stronger (for example, if it is a perfect signal of the good or bad state), then Creditor will not lend. From an ex ante standpoint (that is, before Bank knows whether the state is good or bad), the probability of the good state is .50. Hence liquidation benefits Bank in expected value terms because Bank receives \$100 in liquidation and $.50 \times \$105 + .50 \times \$90 = \$97.50$ in continuation.

1. Disseminate information to uninformed parties.

One way to overcome Creditor's unwillingness to lend is to take steps to reduce Creditor's informational disadvantage. As we have already seen, if Creditor has access to the same signal as Bank, then Bank's refusal to lend does not cause Creditor to draw a negative inference about the firm's future prospects. This, of course, may be easier said than done. Creditor might be given full access to the firm's books and records,⁷⁷ but it is unlikely to possess the kind of soft, qualitative information that Owner and Bank would have about the firm's future prospects for success by virtue of their historical relationship with the firm.

2. Disadvantage informed parties.

A second way to solve information-driven illiquidity is to restrict the participation of the party with the informational advantage. In our numerical example, suppose that Bank is only permitted to lend if Creditor is first offered the loan with the same terms and refuses. In this situation, too, Creditor will not have the occasion to draw negative inferences from Bank's behavior, and Creditor should be more willing to lend. This solution might be imperfect for several reasons. First, it is not always immediately knowable which parties actually have superior information about the Debtor (the Owner). If Bank is comprised of a syndicate of lenders, should all lenders be prevented from taking the loan offer at the outset? Are existing lenders the only potential lenders with an information advantage?

3. Issue information-insensitive claims.

A third solution to asymmetric information is to give the new lender a claim whose value is less sensitive to the private information of other parties. Senior claims are the least information-sensitive claims: because they are first in line and thus most likely to be paid in full, their value depends least on the firm's future success or failure.⁷⁸

⁷⁷ Under Rule 2004, creditors have broad rights of examination. FRBP 2004.

⁷⁸ Claims with a short maturity are less informationally sensitive than claims that come due later, but they are more vulnerable than priority claims.

Senior claims, then, solve both the debt-overhang and adverse-selection problem. For example, suppose Creditor is offered a \$20 repayment, senior to Bank. Creditor will always make the \$20 loan, because Creditor need not care whether Bank receives the good or bad signal. No matter what happens, the firm will generate enough cash to pay Creditor in full. In this sense, the value of Creditor's senior claim is insensitive to the private information possessed by Owner and Bank.

III. BANKRUPTCY LAW'S LIQUIDITY-PROVIDING RULES

With our theoretical tools in hand, we can now introduce some of bankruptcy's liquidity-providing rules. These rules can be justified as rules that are intended to solve illiquidity problems caused by debt overhang, adverse selection, or both. Many of these rules require a departure from the Normative Butner Principle: they involve a reallocation of the substantive rights to which parties are entitled under nonbankruptcy law.⁷⁹

Noting that the rules herein are intended to solve liquidity problems does not mean that these rules solve them in the best possible way. In the next Part, we analyze the efficacy of these rules. One important takeaway from our preceding theoretical discussion is that ideal rules will be, in general, quite complicated. We have seen that honoring nonbankruptcy rights can lead to underinvestment, but deviating from them can lead to overinvestment. A thorough analysis of liquidity-providing rules should take into account both potential problems. We consider these issues more carefully in Part VI.

⁷⁹ Creditors' Bargain theorists acknowledge that defining a substantive deviation is not always clear-cut in practice, particularly when bankruptcy affects the outcome that would arise if state law rights were fully respected. The approach we take to defining a substantive deviation here is based on our reading of Professor Jackson's work, and proceeds as follows. Start by assuming that the rights of general unsecured creditors—for example, the rights to sue and collect on judgments—are suspended, so that a piecemeal liquidation does not occur due to a creditor run. Then, assume that a given action is taken in bankruptcy (that is, the firm borrows \$20 and continues). Compare the parties' payoffs in bankruptcy to payoffs under a hypothetical bargain in which property rights under nonbankruptcy law are fully respected. A substantive deviation has occurred if the bankruptcy outcome alters property rights in a way that is payoff relevant for some party in some state of the world. Under our definition, a nonconsensual priming lien would certainly qualify as a substantive deviation from a secured creditor's nonbankruptcy rights, because Owner could not give a claim to a new lender in continuation that is senior to an existing secured creditor outside of bankruptcy without consent. The right of the existing secured creditor to veto a new priming loan would give the secured creditor the ability to extract a greater payoff in the hypothetical bargain than this creditor would receive when a non-consensual priming lien is allowed.

A. Seniority Rules

Our theoretical discussion confirmed that senior financing is a solution to both debt-overhang and adverse-selection-driven illiquidity. The Bankruptcy Code recognizes this through the mandatory priority rules given to those who lend to a debtor in bankruptcy. These seniority rules and their connection to the debt-overhang problem have been analyzed in previous work.⁸⁰ We add to this work by connecting these issues to liquidity provision and asymmetric information. In Part V, we also provide novel normative analysis of these rules in light of the modern bankruptcy environment, in which a firm's entire asset base tends to be encumbered by secured debt.

1. Administrative-expense priority.

Lenders to a debtor in bankruptcy are called debtor-in-possession lenders, and their priority is governed by § 364 of the Bankruptcy Code.⁸¹ Sections 364(b) and 364(c)(1) in particular allow a DIP lender to take the highest priority unsecured claim, known informally as administrative-expense priority.⁸² This allows a DIP lender to be senior to the existing unsecured debt. This deviates from the Normative Butner Principle, since outside of bankruptcy an unsecured lender cannot be subordinated to another unsecured lender without consent.

2. Security interests.

Bankruptcy has other classes of rules that create seniority and support new lending by freeing up collateral that would not be available otherwise. The strongest of these is the ability to prime an existing security interest under § 364(d). The ability to give a DIP lender a priming lien clearly violates the Normative Butner Principle, since outside of bankruptcy earlier secured creditors (putting aside unusual exceptions)⁸³ have priority over later secured lenders in the same collateral and cannot be

⁸⁰ See Triantis, 46 *Vand L Rev* at 927 (cited in note 7).

⁸¹ 11 USC § 364.

⁸² Section 364(c)(1) permits priority that is senior to other administrative expenses, in addition to the general unsecured creditors. This section does not attempt to rationalize the "super" part of superpriority (the relative priority of the DIP loan relative to other administrative expenses like attorney fees). Hence we are not distinguishing § 364(b) and § 364(c)(1).

⁸³ The main exception, not relevant here, is the special priority given to purchase money security interests. See UCC § 9-324.

primed without their consent. By setting a high hurdle for approval, though, the Code makes priming liens without consent rare in practice.

A second and more common way that the Bankruptcy Code frees up collateral is by eliminating the effectiveness of negative covenants. These contractual clauses are promises by the debtor either to refrain from granting security over certain assets to any future secured lender, or to subordinate any future lenders in priority of payment. Outside of bankruptcy, these clauses are effective, because violation by the debtor would trigger default and allow the holder to pursue its state-law collection remedies. If the negative pledge is violated knowingly, the holder also might have rights to an injunction or an equitable lien that would elevate the priority of the existing loan above the later loan.⁸⁴ These threats would likely be sufficient to stop a debtor from attempting to violate negative covenants outside of bankruptcy. Inside bankruptcy, by contrast, any threat of suit that would come from violating the negative-pledge clause would be nullified by bankruptcy's automatic stay. And no court, to our knowledge, has limited or conditioned a DIP loan, or granted a lien to a prebankruptcy lender, based on a negative-covenant violation by a DIP loan.

With negative covenants effectively nullified, § 364(c)(2) and (3) permit the debtor to grant new liens on unencumbered property and junior liens on encumbered property, respectively. It has become quite common for debtors to use their leasehold interests, which commonly contain negative pledge clauses, as collateral for DIP loans.⁸⁵

A related way the Bankruptcy Code frees up collateral is by limiting the postpetition effect of a pre-petition security interest under § 552(a).⁸⁶ Outside of bankruptcy, a floating lien will attach automatically to any new collateral generated by the debtor.⁸⁷ Once bankruptcy occurs, the security interest no longer attaches to collateral generated postpetition. The liquidity-enhancing effect of § 552(a) is limited to some extent by § 552(b), which protects the secured creditor by extending the creditor's security interest to any proceeds. If the debtor sells some of the

⁸⁴ See Carl S. Bjerre, *Secured Transactions Inside Out: Negative Pledges, Property and Perfection*, 84 Cornell L Rev 305, 318 (1999).

⁸⁵ See, for example, Ayotte and Morrison, 1 J Legal Analysis at 523 (cited in note 70).

⁸⁶ See 11 USC § 552(a).

⁸⁷ See UCC § 9-204(a) (authorizing after-acquired property clauses).

lender's prebankruptcy collateral during the bankruptcy case, § 552(b) gives the lender a lien on the proceeds of the sale.⁸⁸

The balancing act between liquidity creation in § 552(a) and the protection of secured creditors' substantive rights in § 552(b) can be seen as a way of targeting debt-overhang problems. The creation of new collateral during the case is more likely to be a direct result of new investment and continuation than is the mere conversion of existing collateral from one form to another. Sections 552(a) and (b), then, can be seen as a deviation from the Normative Butner Principle that encourages new investment by preventing existing creditors from capturing its benefits.

The distinction between new collateral and proceeds can be ambiguous in some circumstances. Apparently recognizing the potential for § 552(b) to undo the benefits of § 552(a), the drafters of § 552(b) explicitly authorize the bankruptcy court to limit an existing creditor's lien on proceeds if this is justified by "the equities of the case."⁸⁹

B. Sales Free and Clear of Liens and Obligations

When collateral is sold outside of bankruptcy, a security interest usually follows collateral to a buyer and also attaches to the proceeds of the sale in the hands of the borrower.⁹⁰ Thus, if the original borrower does not pay the loan in full, the secured lender has the option to recover from either the original borrower or the buyer of the collateral. These nonbankruptcy rules have the virtue of protecting the secured lender from a below-market sale of collateral, and from an absconding debtor who sells collateral and dissipates the proceeds of the sale. But this strong protection of secured creditors can have the effect of creating debt-overhang and adverse-selection problems that discourage new investment.

⁸⁸ See 11 USC § 552(b).

⁸⁹ We discuss the "equities of the case" exception, and use our debt-overhang analysis to analyze the conflicting interpretations it has occasioned, in more detail in the next Part. See Part IV.C.

⁹⁰ The most important exceptions to this rule remove the lender's lien or security interest if the lender consents or the collateral is sold in the ordinary course of business. See UCC § 9-315(a)(1) (creating exception for consent); UCC § 9-320(a) (creating an exception for buyer in the ordinary course).

1. Alleviating debt overhang.

The debt-overhang problem, recall, occurs when an action is socially beneficial, but is not chosen by the borrowing firm. It occurs because existing lenders receive a benefit from the action that exceeds its social value, through lower default risk or higher recovery in default.⁹¹ To see this in the simplest way, consider again the numbers in Example 1, but suppose that investment can occur only by selling the assets to Buyer before Date 1. Suppose also that in default, Bank always chooses to recover from the collateral in the hands of Buyer first, rather than pursuing the claim against the Owner.

Anticipating this, Buyer would not choose to purchase the firm's assets for any price. The sale would do nothing to alleviate debt overhang, because Buyer is in the same position that Owner was in before the sale: the firm's cash flows will go to repaying Bank before Buyer receives anything. Buyer, then, would not choose to invest if he makes the purchase. Buyer would liquidate the assets for \$100, and the entire \$100 would go to Bank. Thus, Buyer is not willing to pay any positive price for the assets.

Buyer would refuse to purchase the assets even if Bank chose to recover first from the purchase price in the hands of Owner and then from Buyer. Buyer will never pay any price (call the purchase price P) more than Bank is owed for the assets. Because Bank's claim will not be fully satisfied by the sale price, Buyer will expect to be liable for a residual claim (call this residual claim R , which is equal to $\$130 - P$) from Bank after Bank takes the purchase price in partial satisfaction of its claim. Anticipating that residual liability, Buyer will discount P by the obligation of R . But discounting the purchase price increases R , which further reduces P , and so on. Some simple algebra will show that there is no positive price that Buyer is willing to pay under these circumstances.⁹²

Intuitively, this happens because the sale expands Bank's potential recovery. Before the sale, Bank could only recover from the assets. After the sale, Bank can recover from both the assets and the purchase price. Provided that this increase in recovery is greater than the potential benefit from the investment, as it is in this example, the sale—and thus the investment—does not occur due to debt overhang. By permitting sales free and clear of

⁹¹ See Part II.B.

⁹² If Owner makes the investment, the firm's assets are worth $\$125 - \$20 = \$105$. So Buyer is willing to pay up to $P = \$105 - R$. But $R = \$130 - P$. There is no P that solves these simultaneous equations.

Bank's security interest, § 363 counteracts the debt-overhang problem and can facilitate beneficial investment.

2. Alleviating adverse selection.

Another benefit of the free-and-clear sale is to limit adverse selection caused by informational advantages about liabilities. This is most transparent in the context of successor liability from corporate torts, though the benefit can also apply in the context of liens whose value may be uncertain.⁹³ Outside of bankruptcy, these liabilities may travel with the assets to a buyer. The selling firm and its lenders are likely to have superior information about the value of these uncertain liabilities. Following the same logic as in our other adverse-selection examples, an outside buyer might be rationally concerned about the size of these liabilities given that the seller is trying to sell the firm. The buyer might wonder why the seller and its lenders are not financing a continuation of the firm themselves. The buyer might rationally discount the price or refuse to purchase altogether. In allowing a firm to be sold free and clear of these uncertain liabilities, the buyer need only worry about the value of the assets, and this can facilitate efficient sale transactions that would otherwise be hampered by adverse selection.

C. Rules That Provide Coerced Loans

We saw in Examples 2A and 2B that the coordination problems of existing lenders combined with an information disadvantage of new potential lenders can give rise to illiquidity due to adverse selection. In the state where a good signal is received by Bank but Bank cannot make the new loan, Creditor may be rationally concerned that the loan opportunity is a bad one and refuse to lend any new money to the firm.

The same issues are present when the issue is not lending for new investment, but lending to refinance existing lenders who wish to terminate their loans to the debtor. Consider an oversecured lender—one whose collateral value exceeds the value of its claim.⁹⁴ Outside of bankruptcy, an event of default in

⁹³ We should note that the extent to which bankruptcy sales cut off successor liability remains somewhat unsettled. But the risk of successor liability is considerably greater outside of bankruptcy than in bankruptcy.

⁹⁴ Though we focus on the oversecured lender, the same discussion would apply to the undersecured lender with respect to the secured portion of its claim. In a world of full liquidity, there would be little harm in allowing an existing secured lender to opt out of

the loan agreement will almost surely permit this oversecured lender to terminate the loan, seize the collateral, and liquidate it to satisfy the debt. The repossession threat may allow the secured creditor to negotiate a new loan on different (and perhaps more favorable) terms with the debtor, or to demand full payment in cash.

In a world of full liquidity, honoring this procedural repossession right inside bankruptcy would not pose a problem for satisfying the Efficiency Principle. If the firm is worth more as a going concern than liquidated, yet the secured creditor refused to continue lending (due to coordination problems or some other reason), the debtor could simply refinance: it could borrow from a new secured lender to pay off the old secured lender in full.

Bankruptcy law does not, however, honor the secured creditor's procedural right to repossess. Instead, it attempts to honor the substantive value of this right by forcing the secured creditor to accept a loan whose value approximates the secured creditor's payoff if the right were respected. The Creditors' Bargain theory does not provide a complete explanation for why this coerced-loan approach is used.⁹⁵ By introducing adverse selection, we can explain why the coerced loan approach can be a particularly useful way to balance the debtor's need for liquidity and the secured creditor's nonbankruptcy rights.

bankruptcy and force the debtor to either pay the value of the collateral immediately, or surrender it. (Allowing secured lenders to demand their total claim would implicate the common-pool problem, but the secured portion would not.) To be sure, any ongoing lender would require compensation for the time value of money, which the existing undersecured lender would not be entitled to receive under existing law due to the Supreme Court's decision in *United Savings Association of Texas v Timbers of Inwood Forest Associates, Ltd.*, 484 US 365, 382 (1988). This would affect the distribution of surplus between the secured creditor and the general creditors. But it would not affect the efficiency of the continuation decision: in a world of full liquidity, providing appropriate compensation for the time value of money is always possible whenever the going-concern value of the firm is positive.

⁹⁵ Professor Jackson recognizes that the Creditors' Bargain theory does not explain why a secured creditor is given a coerced loan rather than the right to receive immediate payment:

The creditors' bargain theory suggests only that it may be necessary to keep the collateral, so that the debtor's "going concern" value may be captured (or the other advantages of a collective proceeding may be realized). It does not, itself, explain why a secured creditor is not entitled to be paid, in cash, immediately after the initiation of a bankruptcy proceeding. To explain, as the theory does (and as the Bankruptcy Code itself implies, *see* § 362(d)(2)) that the aggregate maximizing solution is to leave property with the estate when it is "necessary to an effective reorganization," does not answer the question of how a secured creditor's pre-bankruptcy rights are protected.

Jackson, 91 Yale L J at 872 n 71 (cited in note 5).

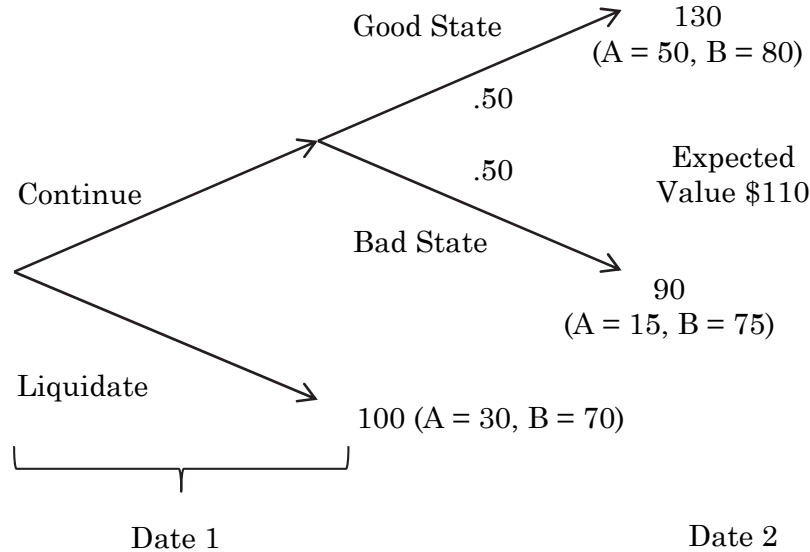
To see this more concretely, consider a modified version of our example that involves both asymmetric information and debt overhang together. Suppose the firm's total value comes from two assets, A and B. The continuation and liquidation values of Assets A and B are in Example 2C. In this example, continuation does not require that new money be invested; it only requires that Assets A and B remain under the control of Owner, who we assume will always seek continuation.⁹⁶

Suppose Bank A is owed \$28 at Date 1 and is secured by Asset A. Since Asset A can be liquidated for \$30 at Date 1, Bank A is oversecured. Bank B is owed \$90 at Date 1 and is secured by Asset B. Since Asset B is worth \$70 at Date 1, Bank B is undersecured. Continuation is efficient, because the expected value of the firm is \$110 if it continues, while the liquidation value is \$100.

Suppose the firm's loan from Bank A is in default, and the default gives Bank A the right to seize the firm's assets and liquidate them to satisfy its debt. Owner can avoid this fate and continue if it can borrow \$28 from Creditor. This money will be used to refinance Bank A to avoid liquidation. In other words, Creditor's loan will be used to pay Bank A in full, so that Owner can keep control over both assets.

⁹⁶ In the example, Owner always receives nothing, so it is not clear from the example alone why Owner has a preference for continuation. One reason might be an intrinsic, nonmonetary private benefit from continuation, such as a desire to keep the firm in operation or preserve jobs. In a more realistic numerical example, Owner's equity will always have some chance of receiving value, however small, from continuation.

EXAMPLE 2C. COERCED LOAN



As in Examples 2A and 2B, suppose that there is a 50 percent chance that Bank A is unable to lend for reasons that are unrelated to the firm's quality. Suppose, as before, that Bank A and Owner receive a signal that reveals the true state with probability .90, but this signal is unknown to Creditor. We also suppose that Bank B has no special knowledge and is uninvolved in the negotiation, perhaps due to coordination issues.

As we saw, it might be possible to continue if Creditor is promised enough of the continuation value of the firm. But the debt overhang created by Bank B makes this difficult to achieve. Bank B has priority over other creditors to the extent of Asset B's value, and thus receives the increase in B's value due to the continuation decision. Thus, the highest repayment that Owner can possibly make to Creditor is \$50, the value of Asset A when the good state occurs. As a result, Table 2C represents the value of this opportunity to Creditor.

TABLE 2C. COERCED LOAN

	Good signal	Bad signal
Bank A is able to lend	Bank A keeps loan in place Expected value of loan: $.90 \times (\$50) + .10 \times (\$15) = \$46.50$	Bank A requires repayment Expected value of loan: $.10 \times (\$15) + .90 \times (\$50) = \$18.50$
Bank A is unable to lend	Bank A requires repayment Expected value of loan: $.90 \times (\$50) + .10 \times (\$15) = \$46.50$	Bank A requires repayment Expected value of loan: $.10 \times (\$15) + .90 \times (\$50) = \$18.50$

Using the same logic as in our earlier asymmetric-information examples, Creditor values the loan at only $.67 \times (\$18.50) + .33 \times (\$46.50) = \$27.83$. Since Creditor would expect to lose money from lending the \$28 at any possible interest rate, she will refuse to make the continuation refinancing, and liquidation will occur. The firm is illiquid in the state where Bank A and Owner receive the good signal but Bank A is unable to lend.⁹⁷

Bankruptcy law recognizes this potential illiquidity problem. The oversecured creditor's right to terminate is stayed, and the Code effectively coerces the lender to continue providing credit at the rate provided in its prebankruptcy contract. The creditor is not compelled to continue lending indefinitely, however. If the lender can show that its security interest is not adequately protected, the court must lift the stay and allow the re-

⁹⁷ If Bank's information advantage is not as large, Bank or Creditor might lend, but at a higher interest rate. This also contributes to illiquidity, as it "consumes" the available collateral at a faster rate. Thus, the ability to give seniority to other lenders as a cure for illiquidity expires more quickly.

possession.⁹⁸ The creditor would need to show the likely decline in the collateral's value over time, and the inability of the debtor to provide any substitute compensation.

In the context of our example, this is similar to requiring Bank to keep the loan in place unless it can demonstrate to a judge that the bad signal was received. In this sense, one might think of bankruptcy's coerced-loan approach as an information-forcing rule. If the secured creditor's right to repossession were respected, neither Bank (who can be paid in full by taking its collateral) nor Owner (who has a preference for continuation) has an incentive to reveal negative information to Creditor. Staying repossession creates an incentive for Bank to reveal its negative information to avoid making an unprofitable loan to the firm in the bad state.

A second benefit of the coerced-loan approach is that it buys time, which can be beneficial for two reasons. First, time may help outside lenders and buyers acquire information to level the playing field with insiders. Potential lenders or buyers often require time to conduct due diligence to properly value the debtor's assets. The debtor may make crucial decisions that convey information about its future, such as assuming and rejecting contracts, selling divisions, and retaining or dismissing employees. The less asymmetry of information there is between insiders and outsiders, the lower the risk of underinvestment due to illiquidity. Outsiders will not draw as negative an inference from an existing lender's decision to withdraw from the firm, and will thus be more likely to invest.

Second, time may be beneficial in resolving the coordination issues that prevent insiders from lending when their inside information is positive. To the extent that time remedies these problems that lead to underinvestment, the coerced-loan approach can be valuable even if courts have no ability to discern the private information of insiders.

1. Defining substantive rights in coerced loans.

In Example 2C, we did not specify the interest rate on Bank A's loan—that is, the amount that Bank A would be due at Date 2 if it chose to continue its loan rather than repossess at Date 1. We focused on Creditor's decision about whether or not to refinance Bank A, given that Bank A chooses to withdraw. But the interest rate on Bank A's loan is relevant to understanding

⁹⁸ See 11 USC § 362(d)(1).

whether Bank A is receiving the substantive value of its right to repossess when it is compelled to lend during the case. In general, giving a secured creditor a coerced loan at a prebankruptcy interest rate does not necessarily protect the substantive value of its repossession right. Interest rates may have changed after the loan was originated, making the contract interest rate a below-market rate. Courts are unlikely to be able to identify the bad state with sufficient timeliness and accuracy to prevent the secured creditor from taking a loss. Thus, the secured creditor may be taking on default risk that it would not be willing to bear given the interest rate on the loan. By adopting this coerced-loan approach, bankruptcy law sacrifices respect for substantive rights.⁹⁹

Even if the law sought to respect substantive rights as closely as possible, this concept can be quite subtle when asymmetric information is present. Informally, in the context of our example, we might say that the Bank A's procedural right to liquidate the collateral and take \$28 is stayed, but respect for substantive rights requires that the Bank A must receive a loan whose future payment stream has a "value" of \$28 to Bank A. The value of the loan to Bank A has been described equivalently as the price Bank A would receive by selling the loan in the marketplace.¹⁰⁰

In a world of symmetric information, the value of the loan to Bank A and its market price are indeed the same. But Example 2C shows that these values are different when asymmetric information is present. Suppose Bank A's existing loan gives it a right to receive \$50 at Date 2. If Bank A tried to sell this loan, Table 2C shows that Bank A would receive a sale price of \$27.83, due to adverse selection. Loan buyers, like the new lenders we consider in Example 2C, will draw a negative inference about the loan from Bank A's decision to sell, and rationally discount the price. Since this market price is less than its \$28 liquidation value, Bank A's substantive right is not respected according to the sale price definition of value. But the true, fundamental value of the loan to Bank A is \$32.50, which is

⁹⁹ For an early discussion of this issue and criticism of some courts' use of below-market interest rates, see James F. DesMarais, Note, *The Proper Discount Rate under the Chapter 11 Cramdown Provision: Should Secured Creditors Retain Their State Law Entitlements?*, 72 Va L Rev 1499, 1506 (1986).

¹⁰⁰ See Jackson, 91 Yale L J at 873 (cited in note 5).

more than sufficient to protect the substantive value of Bank's liquidation right.¹⁰¹

Under the sale-price definition, moreover, the coerced-loan approach would accomplish nothing—it would be no more effective in preventing inefficient liquidation than simply respecting the secured creditor's procedural right to repossess. Whenever the secured creditor can be given a coerced loan that would sell for \$28 in the marketplace, the debtor could just as easily refinance by giving a new lender a new loan with the same terms. Asymmetric information explains why bankruptcy law's coerced loan approach can be an efficient way to balance the debtor's liquidity needs against the substantive value of a secured creditor's right.

2. Caveats.

To fully assess bankruptcy's coerced-loan approach to secured credit, we need to weigh its liquidity-creating benefits against its potential costs. One potential cost is the inefficient use of Bank A's signal. When Bank A gets the bad signal, it is efficient to liquidate. To the extent that Bank A cannot convincingly reveal its negative signal to a judge, or to the extent that judges are biased in favor of continuation, coerced loans can lead to inefficient continuation when the bad signal is received.¹⁰²

A second caveat is that the ability of Bank A to sell the loan is not a perfect substitute for the ability to repossess collateral when Bank A has a liquidity need of its own. In a world of asymmetric information, an attempt to sell the loan would result in a discount due to adverse selection. In Example 2C, suppose Bank A is never permitted to repossess (even in the bad state), but can freely sell the loan, as is the case in practice. A loan buyer will do the same calculation as Creditor did in considering whether or not to purchase Bank A's loan. The decision to sell

¹⁰¹ The value of the loan to Bank following the good signal is \$46.50. Following the bad signal, the loan value is \$18.50. The good signal occurs with probability .50, so the value of the loan to Bank from the point of view of an outsider that could not observe the signal is $.50 \times \$46.50 + .50 \times \$18.50 = \$32.50$, assuming that Bank is never permitted to withdraw the loan.

¹⁰² In Example 2C, the expected gains from avoiding inefficient liquidation exceed the expected losses from inefficient continuation even if liquidation is never permitted. But this is not always true: the reverse might be true in a different numerical example. For evidence that bankruptcy judges lift the stay promptly when small Chapter 11 debtors do not have a realistic prospect of reorganization, see Edward R. Morrison, *Bankruptcy Decision Making: An Empirical Study of Continuation Bias in Small-Business Bankruptcies*, 50 J L & Econ 381, 389–99 (2007).

the loan may be due to Bank A's liquidity need, but it may also be due to private, negative information that Bank has about the firm's prospects. Thus, the loan would sell for less (no more than \$27.83 in our numerical example) than Bank would receive by liquidating the collateral (\$30).

IV. NORMATIVE ANALYSIS OF BANKRUPTCY'S LIQUIDITY-PROVIDING RULES

In this Part, we take a closer look at the liquidity-providing rules we described in the last Part. We focus in particular on several key uncertainties raised by the rules and suggest how they should be resolved from a liquidity perspective.

A. Timing Rules for Valuing Secured Claims

The Bankruptcy Code protects a secured creditor's interest in collateral in several ways. One of these is the ability of the secured creditor to force a lifting of the automatic stay by demonstrating that its collateral is not adequately protected. Another is the right of a secured creditor to receive at least the value of its secured claim¹⁰³ in a cramdown plan of reorganization. The Code is not clear, however, on *when* this protected interest is to be determined. Should the collateral value be based on the value of the collateral at the bankruptcy filing date? Or should it be based on the date that the creditor requests the protection (the date of a motion for adequate protection, or the date when a cramdown plan is to be confirmed)? In practice, courts have reached differing decisions on early versus late valuation.¹⁰⁴

Our analysis suggests that valuing the secured claim as of the beginning of the case may be crucial to creating liquidity. To see this, consider the context of our debt-overhang problem in Example 1. Suppose that Bank has a security interest in all the debtor's assets, and suppose the bankruptcy petition is filed at Date 1.

Consider, first, the early valuation approach that fixes collateral value at the beginning of the case. In our example, this implies that the collateral will be valued as of Date 1. Section 506(a) requires that Bank's total claim of \$130 would be bifur-

¹⁰³ The value of the secured claim is the value of the collateral when the creditor is undersecured, and the amount owed when the creditor is oversecured.

¹⁰⁴ See Eugene R. Wedoff, *The Valuation of Secured Claims in Bankruptcy: A Framework* *22–30 (unpublished manuscript, 2003).

cated into a secured claim set equal to \$100—the value of the collateral absent the investment at Date 1—and a \$30 unsecured deficiency claim equal to the loan amount less the secured claim. Creditor could make a DIP loan that would have administrative-expense priority and would thus be senior to Bank's unsecured deficiency claim.

This scenario bears closest resemblance to the limited-seniority solution we analyzed in Part III.C.4. If Creditor provided the \$20 DIP loan so that the firm could make the investment, Creditor can be granted seniority to the extent of the \$60 surplus that would be created in the good state. Bank would have seniority only to the extent of its \$100 secured claim. If the bad state occurs, Bank takes the entire \$90.

This limited-seniority solution, recall, allows the new lender to be senior to the existing lenders, but only to the extent of the value created by the investment. In the absence of asymmetric information, this results in the investment being made whenever it is consistent with the Efficiency Principle, though it also results in too much investment.¹⁰⁵

Suppose, instead, that courts adopt the late-valuation approach. Bank could then request a valuation of its collateral at Date 2 and receive protection up to that value. Suppose Creditor provides the new money for investment and takes a claim with administrative-expense priority. When the good state occurs, Bank will argue that the value of its secured claim is \$130, not \$100. This would make Bank senior to the extent of its entire \$130 claim. As Example 1 demonstrates, this creates a debt-overhang problem that leads to underinvestment. Offering Creditor a DIP loan that has administrative-expense priority or a junior lien would not be sufficient to encourage Creditor to make the loan.

¹⁰⁵ In Part II.C.4, we emphasized that this limited-seniority solution creates some incentive for overinvestment by Owner and Creditor, since Bank loses in the bad state but does not gain in the good state. To the extent this loss is preventable, it is efficient to do so. Requiring adequate protection for Bank is one way to do this. Suppose there is an interim stage between Dates 1 and 2 during which the probability of the good or bad state becomes more apparent. If the bad state appears likely, Bank could make a motion for the judge to lift the automatic stay and seize collateral based on a lack of adequate protection. The quicker Bank and the court are to recognize the bad state and prevent it, the more protected is Bank, and consequently, the less severe is the overinvestment problem that would be created by limited seniority.

B. Section 364(d) Priming Liens

The most aggressive approach in the Bankruptcy Code to create liquidity for the debtor is the § 364(d) priming lien. This allows a new DIP lender to take a first-priority lien against collateral that is subject to an existing security interest without permission of the secured lender being primed. For a court to approve a DIP loan, it must be convinced that two conditions are satisfied. First, the debtor must be unable to obtain the loan by other means, such as giving the DIP lender administrative-expense priority, junior liens on encumbered assets, or senior liens on unencumbered assets. Second, the creditor whose security interest is primed by the DIP loan must be adequately protected.¹⁰⁶

In a world of full liquidity, these two conditions are never simultaneously satisfied. If the firm's value is high enough to provide adequate protection to the secured creditor being primed, then the new lender should be willing to make a DIP loan using other means. Conversely, if a lender is not willing to make a loan using other means, then asset value is too low to provide a primed creditor with adequate protection.¹⁰⁷

In a world of illiquidity, however, these two conditions can be simultaneously satisfied.¹⁰⁸ Consider a court that uses the late valuation approach in our example above. Creditor would not be willing to make a DIP loan that is junior to Bank because of debt overhang. On the other hand, the cause of the debt overhang—that the new investment increases the value of Bank's

¹⁰⁶ See 11 USC § 364(d)(1)(B).

¹⁰⁷ To see this in a simple example, suppose the debtor at Date 1 owns assets worth \$10 in liquidation. Bank is owed \$10 and has a security interest in all of the debtor's assets. The debtor asks for a priming DIP loan of \$2 that will raise the value of the firm's assets by \$3, to \$13. In this case, Bank can argue that Creditor should be willing to take a junior lien, since there is \$3 of value available to Creditor after Bank is to be paid first. Hence, the first of the two necessary conditions is not satisfied. Now suppose that the \$2 loan increases the value of the firm's assets by only \$1, to \$11. Creditor is not willing to take a junior lien, since there is only \$1 available after Bank is paid. But if Creditor receives a \$2 priming lien, then Bank is not adequately protected. Its \$10 secured claim is reduced to $\$11 - \$2 = \$9$ by the priming DIP loan.

¹⁰⁸ To see this, change the example above in note 107 so that Bank is owed \$12 instead of \$10. Suppose, as above, the \$2 loan raises the value of the firm by \$3, to \$13. Creditor providing the DIP loan would not be willing to take a junior lien, since there is only \$1 of value available to Creditor after Bank is to be paid the first \$12. Hence, the first of the two necessary conditions is satisfied. Bank is also adequately protected because the \$10 secured claim retains its value: the \$13 collateral pays Creditor first, leaving $\$13 - \$2 = \$11$ for Bank.

collateral—can provide Bank with adequate protection despite Bank being primed by Creditor.¹⁰⁹

This is not to say that courts should be willing to grant non-consensual priming liens with regularity, even when both conditions appear to be satisfied. If Bank is indeed adequately protected through the increase in collateral value, Bank should be willing to consent to the priming DIP loan. A nonconsensual DIP loan should only be approved, then, when a coordination failure makes it untenable for Bank to consent, despite Bank receiving adequate protection. Such problems may be rare, but they can occur.¹¹⁰

A corollary of our argument is that a judge's willingness to approve a priming DIP loan under § 364(d) should depend on the timing of collateral valuation. If a court follows the early valuation method, thus preventing existing lenders from enjoying the benefits of continuation, judges should be less willing to approve priming liens. It is more likely that administrative-expense priority or some other, weaker form of protection will be sufficient to induce any loan that satisfies the Efficiency Principle. But when courts follow the late valuation method, it becomes more likely that investment increases the value of existing secured creditors' claims. In such a scenario, a debtor can make a more plausible case that the requirements of § 364(d) are satisfied. The investment might increase the value of the secured creditors' collateral; hence, the creditor is adequately protected despite being primed by the DIP loan. And because of debt over-

¹⁰⁹ One might argue that a judge's power to authorize a nonconsensual priming lien remains unnecessary, since Bank would consent to being primed whenever the new loan does not reduce the value of its lien. This argument is valid if Bank is a single active lender, but may not be true if the lien is held by multiple, uncoordinated creditors. For example, consider a unitranche loan, in which one secured loan is carved into senior and junior tranches by way of a side agreement among lenders. The senior lender might favor immediate liquidation when continuation would benefit the secured lenders collectively. In exigent circumstances where the loan must be approved quickly, these coordination issues may be difficult to resolve on short notice.

¹¹⁰ This might occur for several reasons. Suppose the lien is carved into senior and junior tranches. The value of the lien might increase in the aggregate due to the DIP loan, but the junior piece might benefit from the priming loan while the senior piece does not (or vice versa). With sufficient time and liquidity, the junior lender would simply compensate the senior lender for its consent, but this may be infeasible on a short time horizon. Bank might also want to withdraw for reasons unrelated to the value of the collateral, as we suggest in our adverse-selection examples. See text accompanying notes 67–68.

hang, the debtor could not obtain the money without a priming lien.¹¹¹

C. Section 552(b) Liens on Proceeds

Section 552 addresses debt-overhang concerns in a fashion quite similar to the treatment of DIP financing under § 364. Section 552(a) cuts off the after-acquired property clause in an existing lender's security agreement, thus preventing the lender's lien from attaching to collateral the debtor acquires during the case. What § 552(a) gives to the debtor, however, § 552(b) partially takes away in order to protect the lender's prebankruptcy interest.¹¹² If the debtor sells some of the lender's prebankruptcy collateral during the bankruptcy case, § 552(b) gives the lender a lien on the proceeds of the sale unless the bankruptcy court concludes that the "equities of the case" suggest that the lien should be limited.¹¹³

Courts have struggled to construe equities-of-the-case exceptions. In an important recent case, *In re Terrestar Networks, Inc.*,¹¹⁴ the court describes two general approaches to the exception.¹¹⁵ The first approach is based on a perception that the principal purpose of the exception is

to ensure that secured creditors do not receive a windfall benefit when a trustee uses assets of the estate, for example, to finish uncompleted inventory, and it is also used to adjust recovery by a secured creditor in situations where there is an improvement or decline in the post-petition collateral.¹¹⁶

¹¹¹ A less aggressive approach in this case, consistent with our limited-seniority solution, would be to allow the DIP loan to prime the existing lender only to the extent of the new value created by continuation. In a world of symmetric information, where debt overhang is the only cause of illiquidity, this would cure debt overhang while minimizing risk of overinvestment. If adverse selection is present, this solution would not provide a complete solution to illiquidity, and the more traditional priming lien may be necessary. We thank Randall Klein for this suggestion.

¹¹² For an example of a court's broad interpretation of § 552(b) effectively limiting the reach of § 552(a), see *In re Bumper Sales*, 907 F2d 1430, 1439 (4th Cir 1990) (holding that § 552(b) applied not just to proceeds, but to "proceeds of proceeds").

¹¹³ 11 USC § 552(b)(1).

¹¹⁴ 457 BR 254 (Bankr SDNY 2011).

¹¹⁵ *Id.* at 271.

¹¹⁶ *Id.*, quoting *In re Barbara K Enterprises, Inc.*, 2008 WL 2439649, *8 (Bankr SDNY).

Courts adopting this approach tend to construe the exception narrowly. Other courts have suggested that they have more expansive authority.¹¹⁷ Given that broad wording of the exception, the *Terrestar* court inclined toward the second approach, and in any event, rejected the lender's much narrower interpretation.¹¹⁸

The focus in the case law on fairness and preventing windfalls obscures the true efficiency benefit of the equities-of-the-case exception, which is the prevention of debt overhang. Restricting a secured creditor's lien when the value of the lien is enhanced by the estate's assets is not valuable because it allocates value "fairly" between pre-petition secured and unsecured creditors, however fairness might be defined.¹¹⁹ Instead, the exception is valuable because it allows the proceeds of new investment to be available to back a DIP loan, thus providing incentive for the new loan and investment to occur in the first instance.

Our liquidity-providing perspective offers a rationale for the intuitions that bankruptcy judges appear to be struggling with in this area. If debt overhang exists, an existing lender can benefit even in circumstances in which an increase in the value of the lender's lien does not stem from the use of identifiable, unencumbered assets that were already part of the bankruptcy estate. New financing that keeps the debtor in business may enhance the value of the lender's collateral. DIP financing might, for example, allow the debtor to continue paying employees to stay on board to maintain the collateral. Or it might simply give the debtor more time to market the collateral appropriately when it would otherwise be sold at a fire-sale price. This

¹¹⁷ See, for example, *Terrestar*, 457 BR at 272; *In re Mullen*, 172 BR 473, 479 (Bankr D Mass 1994) ("Congress obviously did not wish to limit the exception to those circumstances. The standard for application of the exception—'the equities of the case'—gives the court the broadest possible charter."); *In re Cardinal Industries, Inc.*, 118 BR 971, 981 (Bankr SD Ohio 1990) ("As enacted, the provision may be even broader than the version commented upon in the legislative history cited.").

¹¹⁸ *Terrestar*, 457 BR at 272–73 (denying the lender's motion for summary judgment). The lender had argued that the exception should only apply if "secured creditor's collateral has appreciated in value through the use of unencumbered assets from the debtors' estates." *Id.* at 270.

¹¹⁹ Creditors can anticipate the effects of any bankruptcy rule and price it into their loans through the interest rate. Thus, the distributional consequences of a rule are less important than the incentives it creates to maximize or minimize the value of the estate. This point is well recognized by Creditors' Bargain theorists. See Jackson, *Logic and Limits* at 41 (cited in note 5) ("Dismissing the potential rights of a lender by referring to them as 'windfalls,' then, obscures analysis. The relevant question is whether the presence of an ipso facto clause can be justified, and, if justified, whether such a clause is worth the inevitable strategic costs it creates.").

suggests that courts should apply the exception more expansively in cases where the value of the lender's collateral appears to be increasing as a result of continuation DIP financing. This is particularly true when the collateral is not valued as of the beginning of the case.

D. Prebankruptcy Commitments to Make Loans

One very puzzling feature of current bankruptcy law from a liquidity perspective is its treatment of prebankruptcy lending commitments that the debtor has not yet tapped (or has not yet fully tapped) as of the time of bankruptcy. Although these lending commitments—which bankruptcy law refers to as “financial accommodations”—could serve as an important source of liquidity for some debtors, bankruptcy law prohibits a debtor from assuming the contracts.¹²⁰ In effect, the promise is automatically terminated as of the date that the debtor files for bankruptcy.

The most frequent explanation of the prohibition emphasizes changed circumstances. It would not be fair to the lender, the reasoning goes, to force it to extend financing to a firm that has now demonstrated its financial instability.¹²¹ But this explanation is transparently unpersuasive. A debtor's basic power to assume contracts and bankruptcy's invalidation of ipso facto provisions are premised on a conclusion that the debtor's counterparties should be required to continue dealing with the debtor so long as the debtor can show that it is capable of honoring its contract. Similarly, in defending the debtor's right to reinstate an existing loan, the drafters of the 1978 Code said: “The holder of a claim or interest who under the plan is restored to his original position, when others receive less or get nothing at all, is fortunate indeed and has no cause to complain.”¹²² It is not clear why the debtor can reinstate a loan or other contract, but cannot enforce a lender's commitment to provide new funds.

Perhaps lawmakers were concerned that debtors would try to assume the loan agreement and then assign (that is, transfer)

¹²⁰ See 11 USC § 365(c)(2) (prohibiting assumption or assignment if “such contract is a contract to make a loan, or extend other debt financing or financial accommodations, to or for the benefit of the debtor, or to issue a security of the debtor”).

¹²¹ See, for example, Robert E. Ginsberg and Robert D. Martin, eds, 1 *Ginsberg & Martin on Bankruptcy* § 7.02[A][3] at 7-11 to -12 (Aspen 4th ed Supp 1998) (“It would be inequitable to force a party to lend money to a debtor with little hope of repayment.”).

¹²² *Bankruptcy Reform Act of 1978*, S Rep No 989, 95th Cong, 2d Sess 120 (1978), reprinted in 1978 USCCAN 5787, 5906.

the loan to a third party, rather than using the commitment to fund their own reorganizations.¹²³ This explanation is more plausible, but it raises the question whether debtors that wish to assume the contract, not to assign it, should be permitted to do so. In our view, they should be.¹²⁴ In many cases, the inability to assume a loan contract may not prove problematic. The debtor may persuade the existing lender or a new creditor to extend a debtor-in-possession loan. But in other cases, information asymmetries may make it impossible for a debtor to raise financing even if continuation is efficient. At least where information asymmetries are likely, as with loans collateralized with all of the firm's assets, the prohibition may undermine a debtor's liquidity and move bankruptcy law away from the Efficiency Principle.¹²⁵

Removing the prohibition on enforcing prebankruptcy commitments could of course have an effect on a debtor's access to credit *ex ante*. A lender might be less willing to make open-ended commitments such as lines of credit, or might tighten the terms, since the lender would be obligated to honor the commitment if the debtor later filed for bankruptcy. But we do not see this as problematic. If lenders did tighten the terms of their credit commitments, debtors might file for bankruptcy sooner than they currently do, which could be beneficial if, as many scholars believe, debtors often file too late. Moreover, a debtor who wished to assume a loan commitment after filing for bankruptcy would need to demonstrate its ability to perform on the loan.¹²⁶ This would limit the risk to the prebankruptcy lender *ex post* and thus diminish lenders' need to adjust the terms of the credit they extend *ex ante*.

¹²³ Under § 365(f), a debtor can assign a contractual obligation to a third party even if the contract prohibits assignment, unless nonbankruptcy law prohibits assignment.

¹²⁴ The relationship between assumption (in § 365(c)) and assignment (in § 365(f)) is the subject of a great deal of confusion and a longstanding circuit split. Compare *In re Catapult Entertainment, Inc.*, 165 F3d 747, 750–51 (9th Cir 1999) (adopting the “hypothetical test”), with *Summit Investment and Development Corp v Leroux*, 69 F3d 608, 613 (1st Cir 1995) (adopting the “actual test”). The adjustment we describe in the text would state as a matter of federal bankruptcy law that promises to lend can be assumed but not assigned, and thus would not be affected by the circuit split, which turns on the effect of nonbankruptcy law that prohibits assignment.

¹²⁵ If information asymmetries are not a problem, as with repurchase agreements collateralized by treasuries or other securities, the prohibition does not interfere with efficiency. For further discussion, see Part VI.A.

¹²⁶ See 11 USC § 365(b)(1)(C) (requiring the debtor to cure any defaults and provide “adequate assurance of future performance” if it wishes to assume a contract).

E. Sales Free and Clear: Defining the Value of a Lien

We saw in Parts III.B and IV.D.2 that the ability to sell assets free and clear of liens and other obligations contributes to liquidity provision in two ways. First, it alleviates debt overhang by limiting a secured creditor's recovery to the sale price of the collateral. Second, it can alleviate adverse selection by allowing a buyer to take free of obligations of a hidden or uncertain value.

A sale free and clear of liens in bankruptcy requires that one of the elements of § 363(f) be met. One of those elements is § 363(f)(3), which allows for a sale free and clear of a lien as long as the sale price is "greater than the aggregate value of all liens" on the property.¹²⁷ This has led to a controversy and a disagreement among courts.¹²⁸ When secured creditors are collectively owed more than the value of the collateral, does the "value" of a lien mean the face amount the creditor is owed, or the value of the collateral?¹²⁹ This is particularly important when a debtor wishes to sell free and clear of a second lien when the first lien is itself undersecured.

Our theory suggests that defining the value of the lien as the value of the collateral, not the face amount of claims against the collateral, has an important liquidity-providing benefit. Buyers are unlikely to buy an asset at the face value of a claim when this amount exceeds the value of the asset. And we saw that, due to debt overhang, a buyer is unlikely to purchase property that remains subject to an existing lien. The ability to sell free and clear gives the buyer an incentive to buy and invest, and this can yield outcomes that are closer to satisfying the Efficiency Principle.

V. THE COSTS OF LIQUIDITY-PROVIDING RULES

The discussion thus far has sought to incorporate liquidity issues into the normative analysis of bankruptcy and has argued that the current bankruptcy laws are replete with previously underappreciated liquidity-providing provisions. By counteracting debt-overhang and asymmetric-information problems, these

¹²⁷ 11 USC § 363(f)(3).

¹²⁸ The debate is summarized, with citations to the cases, in Evan F. Rosen, Note, *A New Approach to Section 363(f)(3)*, 109 Mich L Rev 1529, 1540–41 (2011).

¹²⁹ The best-known case adopting the face-value approach is *In re PW, LLC*, 391 BR 25, 40–41 (BAP 9th Cir 2008). The leading case concluding that a sale need only give the secured creditor the economic value of its lien is *In re Beker Industries Corp.*, 63 BR 474, 475–76 (Bankr SDNY 1986).

rules can move bankruptcy outcomes closer to the Efficiency Principle than a bankruptcy framework that hewed rigidly to the Normative Butner Principle. The last Part suggested ways that existing bankruptcy rules can be interpreted to achieve these benefits.

Even if the rules were applied consistently, they would not perfectly achieve the Efficiency Principle. Moreover, because judges are imperfect and have imperfect information, they will inevitably misapply the rules to some extent. As a result, the liquidity-providing rules have costs as well as benefits. In this Part, we begin by taking a closer look at the most important costs of the liquidity-generating rules. We then develop a series of qualitative principles for determining when courts should lean more toward enhancing a debtor's liquidity and when they should lean more toward respecting substantive rights.

A. Identifying the Principal Costs

Bankruptcy's liquidity-providing rules can produce at least two related costs as compared to strict application of the Normative Butner Principle: overinvestment and fire sales. We take up each in turn.

Even in the absence of judicial error, the liquidity-generating rules can create a risk of overinvestment under some circumstances. As noted earlier, under the most carefully tailored adjustment to the Normative Butner Principle for addressing debt-overhang problems other than a sale—limited seniority—a new lender may agree to make an inefficient loan under some circumstances because part of the cost of a bad outcome will be borne by the existing lender. The possibility of judicial error in applying the liquidity-generating rules magnifies this risk. The simplest and best-known illustration involves the forced loan implicit in the delay in a secured creditor's right to foreclose. If the court gives an oversecured creditor a below-market rate of interest on its loan during the pendency of the bankruptcy case, the liquidity this creates may contribute to an inefficient continuation of the debtor's business or facilitate an ill-advised investment.¹³⁰ A priming lien that does not fully pro-

¹³⁰ Note that these costs are analogous to the costs of inefficient continuation in bankruptcy of a business whose assets are not fully encumbered. In the years immediately after the enactment of the 1978 Code, debtors that filed for bankruptcy often had significant unencumbered assets. The most famous example of inefficient continuation under these circumstances was the Eastern Airlines bankruptcy. See Christopher W. Frost, *Asset Securitization and Corporate Risk Allocation*, 72 *Tulane L Rev* 101, 132 n

tect the existing lender's interest in its collateral could have the same effect.

Ex post, inefficient continuation of a business or pursuit of an ill-advised investment undermines the Efficiency Principle by diminishing the overall value of the estate. The prospect of overinvestment also has several undesirable ex ante effects. Particularly with financially precarious or risky debtors, a lender that faces the prospect of bearing some or all of the costs of inefficient investment in the event of bankruptcy will charge higher interest rates or pass on the expected costs to the debtor in other ways. In the extreme, the higher costs may make it impossible for the debtor to pursue otherwise desirable investments. The prospect of overinvestment may impose additional costs on the eve of bankruptcy, as pointed out by Professors Baird and Jackson in their original work on the Creditors' Bargain model. To avoid bearing the costs of overinvestment, lenders may take extraordinary steps to fend off a bankruptcy filing. The costs of battling over the forum are deadweight costs of a bankruptcy framework that facilitates overinvestment.¹³¹

It bears emphasis that strict adherence to the Normative Butner Principle would be a highly imperfect response to these costs. As we have seen, if lawmakers removed bankruptcy's liquidity-generating rules and insisted on compliance with the Normative Butner Principle, a debtor might be unable to pursue even efficient investments. The Normative Butner Principle solves one problem—overinvestment—but it contributes to a different problem—underinvestment.¹³² An approach that addressed the underinvestment problem while minimizing the likelihood of overinvestment would better honor the Efficiency Principle.

The second potential cost of bankruptcy's liquidity-generating rules comes in the context of asset sales. Recall that bankruptcy's liquidity-providing rules can substantially reduce the risk of fire sales by facilitating efficient investment, and that adjustments such as consistent use of the economic-value stand-

146 (1997) (describing how the court allowed the debtor to unsuccessfully continue to use cash in an attempt to save the dying airline). The firms that have filed for bankruptcy in the past two decades have nearly always been fully encumbered when they did so.

¹³¹ See note 35 and accompanying text.

¹³² Like overinvestment, underinvestment has both ex post and ex ante efficiency costs. Ex post, it undermines the value of the debtor. Ex ante, it can increase credit costs, since some of the benefits of a forgone investment might otherwise accrue to the existing lender's collateral.

ard for sales free and clear of an existing lien would enhance bankruptcy's liquidity-providing function. One can imagine a scenario under which the economic-value standard could be used to facilitate a fire sale, however, rather than to prevent fire sales. If a debtor proposed a fire sale to a preferred buyer who subsequently rehired the owner to continue running the business, for instance, the sale could divert value from the debtor's existing lender and other creditors. The prospect of such sales could trigger the same kinds of ex ante effects discussed above: anticipating the potential diversion of value, lenders will charge more when they lend, and they may take costly steps to prevent debtors from filing for bankruptcy.¹³³

As with overinvestment, the costs of a potential fire sale are the flip side of an important benefit of bankruptcy's liquidity-providing rules and should be seen in this light. An approach that facilitates asset sales is preferable to strict compliance with the Normative Butner Principle, even if it does not prevent fire sales in every case. But it would be better still if there were a way to distinguish between good sales and more problematic ones.

B. General Principles for Controlling the Costs

If, as we have argued, bankruptcy's liquidity-generating rules provide obvious benefits as compared to a framework that eschewed liquidity concerns, but also can impose costs (particularly if misapplied), how can benefits be maximized and the costs minimized? In this Section, we outline a series of general principles for achieving this objective.

Before turning to our recommendations, we should first note that the current bankruptcy rules already include a very important mechanism for curbing the risk of overinvestment: the debtor's obligation to provide adequate protection of a secured creditor's lien. As already discussed, if the debtor fails to protect the value of the lien, the lender can ask the court for compensatory payments or other relief from the automatic stay.¹³⁴ Protection of the full value of the lender's lien as of bankruptcy is es-

¹³³ It is important to note that the risk of a fire sale can be avoided in either of two ways. First, an existing lender can bid up to the actual value of the property, by making either a credit or cash bid. Alternatively, another bidder may emerge if the proposed sale is subject to a robust auction under conditions that do not chill bidders from coming forward. Potential fire sales to third parties will therefore impose costs and interfere with the Efficiency Principle only if these correctives are ineffective.

¹³⁴ See 11 USC § 362(d)(1) (providing relief from the stay if a creditor is not adequately protected). Adequate protection is defined in 11 USC § 361. See Part III.C.

essential for minimizing the risk that some of the value of the lender's property interest will be used to fund inefficient investment. The adequate-protection requirement also is important as a constitutional matter—a bankruptcy law that failed to provide such protection would likely violate the Takings Clause.¹³⁵

In addition to confirming the importance of adequate protection as a baseline, our analysis suggests four basic rules of thumb to guide courts whether to focus more on liquidity or on respecting existing lenders' substantive rights. The first rule of thumb is that the court should seek to determine why a debtor's existing lender is unwilling to make an additional loan before applying any of bankruptcy's liquidity-providing rules. We cannot overstate the importance of this consideration. The simplest solution to the debt-overhang and information-asymmetry issues in current bankruptcy practice is for the debtor's existing lender to provide new funding. If the existing lender is capable of making a new loan but declines to do so, this is strong evidence that invocation of bankruptcy's liquidity-providing rules could lead to inefficient continuation. By contrast, if the lender is unable to make a loan, due to limitations on its own funding, coordination problems, or the strictures of its loan agreement, the court should be much more willing to permit the debtor to make use of the liquidity-providing rules.

Bankruptcy judges are particularly well positioned to apply the first rule of thumb. If the original lender opposes a coerced loan or a priming lien, it will need to produce evidence as to the reasons it declined to lend—evidence that the lender could have made the loan but did not because of doubts about the debtor's prospects (that is, a bad signal). The debtor will have a full opportunity to challenge this evidence by identifying other obstacles to the loan. The creditors committee and other parties can weigh in as well. As a result, the bankruptcy judge will have considerably more information than a creditor that is considering making a loan outside of bankruptcy.¹³⁶

¹³⁵ See, for example, Frances F. Gecker, Comment, *The Recovery of Opportunity Costs as Just Compensation: A Takings Analysis of Adequate Protection*, 81 *Nw U L Rev* 953, 953 (1987) ("Congress accepted this fifth amendment limitation on its [bankruptcy] power when it enacted the 'adequate protection' provision of the Bankruptcy Reform Act of 1978."); *United States v Security Industrial Bank*, 459 US 70, 75 (1982) (limiting Congress's bankruptcy powers via the Takings Clause).

¹³⁶ For a similar argument about bankruptcy judges' comparative advantage in another context, determining whether to cut off a debtor's "right of redemption" in Chapter 11, see Richard M. Hynes, *Reorganization as Redemption*, 6 *Va L & Bus Rev* 183, 191,

Potential lenders might of course anticipate courts' use of the first rule of thumb by structuring their loans in ways that minimize the risk that coordination problems or other impediments would preclude them from making subsequent loans. In effect, the risk of a coerced loan in bankruptcy might discourage loan fragmentation. In our view, this antifragmentation incentive would be an important added benefit of the first rule of thumb.¹³⁷

A second rule of thumb stems from the recognition that debt overhang is more serious in some contexts than in others. A key factor here is the nature of the benefits that will accrue in the event of continuation. If the benefits will accrue to the collateral of an existing lender, a court should be more aggressive in creating liquidity, even if this creates a risk of interfering with the existing lender's substantive rights. By contrast, if the benefits are more intangible and less directly linked to the creditor's collateral, a court should protect the existing lender's substantive rights. In the latter case, a new lender should be willing to finance the continuation without violating the existing lender's entitlement.

Suppose, for instance, that the debtor's most valuable asset is a portfolio of patents, as in the recent Kodak bankruptcy, and that an existing lender has a security interest in the patents. Suppose further that a new lender will provide additional financing, but only if it is given a priming lien on the patents. If the benefits of the new funding, and thus of the continuation of the debtor, would primarily arise as an increase in value of the patent portfolio, a court should view the request for a priming lien in a favorable light. If the benefits were more likely to increase the value of the business as a whole, on the other hand, without altering the value of the patents, the court should view the request much more skeptically, since a second lien on the patents and a security interest in the debtor's other assets should suffice to support the new lender's loan.

227–30 (2011). Professor Hynes argues that, although courts cannot effectively determine the optimal disposition of a debtor's assets, they are well positioned to make the decision of when to cut off the debtor's right to find replacement financing or to attempt to persuade its lenders to refinance their loans to the debtor.

¹³⁷ Lenders who are particularly concerned about being subject to a coerced loan may structure the loan to make it effectively bankruptcy proof. This possibility, and current impediments to this strategy, is explored in detail in Douglas G. Baird and Anthony J. Casey, *No Exit? Withdrawal Rights and the Law of Corporate Reorganizations*, 113 Colum L Rev 1, 11–13 (2013).

This illustration has important implications for courts' treatment of priming liens. In recent years, courts have been highly reluctant to authorize priming liens unless the existing lender consented to the priming lien.¹³⁸ Our analysis suggests that this stance is too stingy in cases where the benefits will derive from the collateral securing an existing lender's loan. An important benefit of encouraging new loans in this context is that it might reduce the risk that an existing lender will force a premature liquidation.¹³⁹

A third rule of thumb focuses on the effects of information asymmetries. If the likelihood of information asymmetries is high, new lenders are less likely to participate when existing lenders refuse. In these situations, courts should be particularly attuned to liquidity concerns. If the debtor's bankruptcy is sudden and unexpected, for instance, information asymmetries will often be greater than if the bankruptcy was less of a surprise. In the example we have been considering, for instance, based loosely on the Kodak case, the court should be skeptical of the existing lender's request that the automatic stay be lifted in short order and the lender be permitted to foreclose on the patent portfolio.

Generating information about the debtor may require time. In the sudden and unexpected bankruptcy, courts might consider authorizing more aggressive liquidity-providing measures, such as priming liens, in a small amount over a short horizon at the outset of the case. This could create a "breathing spell" to allow the debtor and potential lenders time to evaluate the debtor's going-concern value, without unduly jeopardizing the value of the primed lender's lien. If the debtor cannot find financing after the breathing spell is over, it is more likely that the debtor has no going-concern value and should be liquidated. But the extra time might enable an efficient continuation and restructuring that would fail otherwise.

Finally, the analysis also has implications for a court's decision whether to approve a proposed sale of assets to a third party. Courts should view a proposed sale much more skeptically if

¹³⁸ According to recent evidence, 80 percent of priming liens are liens that prime a lender's own prebankruptcy security interest. Ayotte and Morrison, 1 *J Legal Analysis* at 525 (cited in note 70). Priming liens that benefit a new lender are uncommon.

¹³⁹ We therefore agree with a comment made by Professor Harvey Miller at a major American Bankruptcy Institute conference several years ago. When asked to identify the change that would most improve the Bankruptcy Code, Professor Miller proposed that the standards for approving priming liens be relaxed.

the debtor's owners or other decision makers will have a continuing role with the assets after they are in the buyer's hands, since these are conditions under which a fire sale could occur. Because bankruptcy's liquidity-providing rules, as we have described them, can make continuation loans easier to obtain, courts also should resist claims that a sale must be approved very quickly,¹⁴⁰ and they should resist restrictions on participation in the sale process such as stringent qualified bidder requirements.¹⁴¹ By diminishing the effects of debt overhang and asymmetry of information, bankruptcy's liquidity-providing rules can significantly reduce the pressure courts increasingly have faced to approve asset sales in the first several weeks of a case.

These general principles are, as we have acknowledged, rough rules of thumb. But they may help courts to better balance the debtor's need for liquidity to fund beneficial investments with protection of existing lenders' substantive rights.

VI. LIQUIDITY IN FINANCIAL INSTITUTION BANKRUPTCIES

The final Part of this Article brings us full circle, back to where we began. The collapse of Bear Stearns in early 2008 and of other financial institutions later in the year provided dramatic evidence of the importance of liquidity and the speed with which it can disappear. For some, the crisis also raised the question whether bankruptcy can handle the financial distress of a large financial institution.¹⁴²

¹⁴⁰ The sale of many of Lehman Brothers' key assets to Barclays four days after Lehman filed for bankruptcy was an exceptional case from this perspective, and the bankruptcy judge acknowledged it as such. Although he agreed to approve the sale despite the absence of a meaningful auction, he concluded that was necessary to maximize the value of Lehman's estate and cautioned the parties to treat the sale as highly unusual. See *In re Lehman Brothers Holdings Inc.*, 445 BR 143, 153–54 (Bankr SDNY 2011).

¹⁴¹ If coordination problems prevent an existing lender from protecting its lien, for instance, the court should be more cautious about approving a proposed sale. From this perspective, the Supreme Court's recent holding that lenders must be permitted to credit bid is a welcome safeguard, since it will enable at least some lenders that would not be capable of making a cash bid to protect their interests. The Supreme Court pointed out, for instance, that government agencies can credit bid but are prohibited by law from making cash bids. See *RadLAX Gateway Hotel, LLC v Amalgamated Bank*, 132 S Ct 2065, 2070 n 2 (2012).

¹⁴² Simeon Djankov, *Bankruptcy Regimes during Financial Distress *2* (World Bank May 2009), online at <http://www.doingbusiness.org/~media/FDPKM/Doing%20Business/Documents/Miscellaneous/tbd/bankruptcy-regimes-during-financial-distress.pdf> (visited Nov 18, 2013).

By enacting the Dodd-Frank Act in 2010,¹⁴³ Congress sought to address these issues for the largest and most interconnected financial institutions. If a systemically important institution is in financial distress, Title II of the legislation, the Orderly Liquidation Authority, authorizes regulators to take over the institution.¹⁴⁴ In all other cases, bankruptcy is the resolution option of choice for financial institutions that fall into financial distress, just as it is for other corporations.¹⁴⁵ Since the enactment of the Dodd-Frank Act, regulators have repeatedly emphasized that bankruptcy will be used in the vast majority of cases, even when a very large institution fails.¹⁴⁶

Financial institution defaults are distinctive in two important respects. First, their default can have serious spillover effects for other financial institutions and the financial system as a whole. Concerns about systemic effects are particularly pronounced if the financial institution has significant derivatives or repurchase agreement exposure.¹⁴⁷ Second, the liquidity of a financial institution can evaporate instantly if it is thought to be financially troubled, and considerable value may be lost if there is even a minor delay in replacing this liquidity. In the discussion that follows, we use the liquidity-based perspective we have advocated in this Article to shed light on each of these issues and suggest adjustments that would enhance bankruptcy's effectiveness for financial institutions.

A. Derivatives and Third-Party Effects

Unlike with most companies, the failure of financial institutions can have serious spillover effects. The failure of a major financial institution or institutions could jeopardize the payment or settlement systems, for instance, or could destabilize other financial institutions that have significant contractual relationships

¹⁴³ Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Pub L No 111-203, 124 Stat 1376 (2010).

¹⁴⁴ See Dodd-Frank Act §§ 201–17, 12 USC §§ 5381–94.

¹⁴⁵ See Dodd-Frank Act § 202, 12 USC § 5382(e)(1).

¹⁴⁶ See, for example, *FDIC-BOE Joint Paper* at *2 (cited in note 13) (“The U.S. would prefer that large financial organizations be resolvable through ordinary bankruptcy.”). For an earlier example of this theme, dating back to the beginning of the legislation process, see US Department of the Treasury, *Financial Regulatory Reform: A New Foundation* *77 (June 17, 2009), online at http://www.treasury.gov/initiatives/Documents/FinalReport_web.pdf (visited Nov 18, 2013) (indicating that “[b]ankruptcy is and will remain the dominant tool for handling the failure of a [large financial institution]”).

¹⁴⁷ We have discussed these systemic risk issues in detail elsewhere. Ayotte and Skeel, 35 J Corp L at 493–96 (cited in note 7).

with the troubled firm.¹⁴⁸ Of particular concern both before and after the recent crisis has been the effect of default on repurchase agreements, derivatives, and other financial contracts.

The existing bankruptcy laws exempt these contracts from the automatic stay and other core bankruptcy provisions,¹⁴⁹ based on a concern that delaying counterparties' ability to sell any collateral and exit from their contracts will minimize the spillover effects of a financial institution's failure.¹⁵⁰ An important concern was the potential impact of the stay on the counterparties' own liquidity needs. According to this reasoning, exempting repos and derivatives from the stay would minimize the consequences of a debtor's default. The recent financial crisis has raised considerable questions about the exemptions and has led to increasing calls for their amendment or repeal.¹⁵¹ In the discussion that follows, we focus on the implications for this debate of the liquidity issues we have explored throughout the Article.

If we focus at first on the liquidity needs of the debtor, it quickly becomes apparent that repos and derivatives cannot simply be lumped together, as the implications of exemption from the stay are quite different in the two contexts. Start with repos. Although repos are essentially secured loans, they function quite differently than a traditional loan secured by most or all of a debtor's assets. With a traditional loan, asymmetric

¹⁴⁸ The Dodd-Frank Act's rapid resolution or "living will" requirement is designed to limit these systemic effects by requiring systemically important financial institutions to prepare a plan explaining how they would minimize disruption in the event of a default. For a somewhat skeptical assessment of the living will requirement, see Nizan Geslevich Packin, *The Case against the Dodd-Frank Act's Living Wills: Contingency Planning following the Financial Crisis*, 9 Berkeley Bus L J 29, 74–87 (2012).

¹⁴⁹ The safe harbors exempt repos and derivatives from the automatic stay, see, for example, 11 USC § 362(b)(7) (exempting repos), 11 USC § 362(b)(17) (exempting swaps), and from bankruptcy's preference and fraudulent conveyance provisions, see 11 USC § 546(e) (protecting margin payments) and 11 USC § 546(f) (protecting repo payments). Unlike other counterparties, repo and derivative counterparties also can enforce so-called ipso facto clauses—contract provisions that make bankruptcy an event of default. See, for example, 11 USC §§ 559–61 (exempting repos, swaps, and netting agreements respectively from bankruptcy's anti-*ipso facto* clause rules).

¹⁵⁰ See *Statement by Oliver Ireland, Associate General Counsel, Board of Governors of the Federal Reserve System, before the Subcommittee on Commercial and Administrative Law, Committee on the Judiciary, US House of Representatives*, 85 Fed Reserve Bull 310, 311 (1999) ("The right to terminate or close out protects [financial institutions] . . . on an individual basis, and by protecting both supervised and unsupervised market participants, protects the markets from systemic problems of 'domino failures.'").

¹⁵¹ See, for example, Mark J. Roe, *The Derivatives Market's Payment Priorities as Financial Crisis Accelerator*, 63 Stan L Rev 539, 552–53 (2011); Stephen J. Lubben, *The Bankruptcy Code without Safe Harbors*, 84 Am Bankr L J 123, 138 (2010).

information is a serious issue, since the existing lender has much better information about the debtor's prospects than third parties. Repos are generally collateralized by treasuries and other highly liquid securities, which suggests that the existing lender will not have better information about the value of the collateral than a third party.¹⁵² Even with more opaque collateral, such as the mortgage-backed securities that figured prominently in the crisis, there is no reason to believe that an existing lender will have an information advantage vis-à-vis third parties in assessing the value of the collateral.

We can put the same point in somewhat different terms. With a repo, the lender is lending primarily based on the securities in question, not based on the going-concern value of the debtor.¹⁵³ As a result, the debt-overhang and asymmetric-information concerns that justify bankruptcy's liquidity-providing rules do not loom particularly large. From a liquidity perspective, the current exemption from the stay is therefore defensible. Any argument for altering the current treatment must therefore be based on other concerns.

In our view, the most compelling argument for imposing a stay on the lender (technically, the repo buyer) stems from the risk that the lender will not maximize the sale price of the securities collateralizing the repo transaction. Because the lender is only entitled to the amount owed by the borrower (repo seller), and any excess belongs to the debtor's estate, the lender does not have an incentive to obtain the highest possible price when it sells the securities if, as is generally the case, the securities are worth more than the lender is owed. A lender's failure to maximize the sale price diminishes the overall value of the debtor's estate, and thus undermines the Efficiency Principle. This problem will only arise, however, if the value of the securities is uncertain. With highly liquid securities such as Treasury Bills, the risk of an inadequate sale price is low. As a result, these

¹⁵² David A. Skeel Jr and Thomas H. Jackson, *Transaction Consistency and the New Finance in Bankruptcy*, 112 Colum L Rev 152, 177 (2012).

¹⁵³ From this perspective, a repo is thus more similar to a securitization of assets of the debtor than to a traditional secured loan. If the pricing of a repo were based on a debtor's creditworthiness, on the other hand, the repo would begin to look more like a traditional secured loan.

concerns would at most justify a stay on repos involving less liquid securities.¹⁵⁴

With credit-default swaps and other derivatives, the exemption from the stay is likely to be considerably more problematic from a liquidity perspective. The debtor's going-concern value is a central feature in the pricing of a credit default swap or other derivative. The margin—or collateral—that a debtor is required to post is based both on the current value of the contract and on the risk that the debtor will default. Either to meet increased collateral requirements if the parties keep a derivative in place, or to replace it if the debtor's counterparty terminates at the time of bankruptcy, the debtor will need to liquidate existing assets or borrow against the value of the firm. As a result, from a liquidity perspective, the case for imposing at least a limited, across-the-board stay—and thus a coerced loan from the debtor's counterparties—is stronger with derivatives than with repos.

This reasoning has a somewhat counterintuitive implication for the Dodd-Frank Act's requirement that more derivatives be cleared through clearinghouses.¹⁵⁵ The clearinghouse interposes itself between the two parties to the derivative, effectively guaranteeing each party's obligations by serving as the buyer to each seller and the seller to each buyer. With a cleared derivative, the risk that a bankruptcy filing by the debtor will jeopardize its counterparties' liquidity is greatly reduced, since the clearinghouse will fulfill the debtor's obligations to the counterparties.¹⁵⁶ But the clearinghouse's presence does not diminish the debtor's own liquidity concerns. If the clearinghouse terminates a derivative or insists on additional collateral, the debtor faces the same funding dilemma as with an uncleared derivative: it may need to sell assets or borrow against its assets. Because clearinghouses alleviate the liquidity concerns of the debtor's counterparties but

¹⁵⁴ For a similar conclusion based on different but related reasoning, see Skeel and Jackson, 112 Colum L Rev at 176–80 (cited in note 152) (arguing for a stay on repos that do not have cash-like collateral).

¹⁵⁵ See Richard Squire, *Clearinghouses and the Rapid Resolution of Bankrupt Financial Firms*, 99 Cornell L Rev *32–44 (forthcoming 2014), online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2185064 (visited Nov 18, 2013) (describing and defending clearinghouses).

¹⁵⁶ Although the counterparty is protected, the imposition of a stay would of course have implications for the liquidity of the clearinghouse itself. But the financial structure of a clearinghouse is likely to be less opaque than either of the counterparties to a derivative, and clearinghouses are backed both by their members and, with systemically important clearinghouses, by Federal Reserve funding. See, for example, Dodd-Frank Act § 804, 12 USC § 5463 (power to designate systemically important financial market utilities); Dodd-Frank Act § 806, 12 USC § 5465 (access to Federal Reserve discount window).

not the debtor's own liquidity concerns, the case for a stay seems, if anything, stronger for cleared than for uncleared derivatives from a liquidity perspective.

B. The Need for Immediate Liquidity

The other distinctive issue in financial institution failures is the speed with which the institution's liquidity dries up. Although a financial institution's repo financing can be replaced, for instance, as discussed above, even a short delay can create a liquidity crisis. Simply the rumor that one of Bear Stearns's counterparties had refused to roll over its financing appears to have triggered an immediate liquidity crisis.¹⁵⁷ Under the resolution rules of the Dodd-Frank Act, regulators have immediate access to large amounts of funding from the Treasury if they take over a troubled, systemically important financial institution. The FDIC is permitted to borrow up to 10 percent of the book value of the institution as of the time of the intervention—which for the largest institutions would mean well over \$200 billion—and up to 90 percent of its actual post intervention value.¹⁵⁸ Because regulatory intervention is designed to be secret, the FDIC can have the initial financing in place from the moment it intervenes. Advocates of the new resolution rules have pointed to this financing as a signal advantage of Dodd-Frank's administrative approach to resolution.¹⁵⁹

A financial firm that files for bankruptcy does not have access to the same kind of immediate liquidity. The bankruptcy judge sees the case for the first time after the debtor files for bankruptcy, and other creditors must be notified of a proposed financing arrangement and given an opportunity to raise objections at a hearing.¹⁶⁰ Even if a bankruptcy judge approves interim financing very quickly, there is invariably at least a short time lag between the bankruptcy filing and the approval of financing. Moreover, the value of a financial firm is highly uncertain at the time of bankruptcy, which makes information

¹⁵⁷ Cohan, *House of Cards* at 12–33 (cited in note 1).

¹⁵⁸ See Dodd-Frank Act § 210, 12 USC § 5390(n)(6).

¹⁵⁹ See, for example, Randall D. Guynn, *Are Bailouts Inevitable?*, 29 *Yale J Reg* 121, 138 (2012) (arguing that “an emergency source of short-term government funding is as crucial for the continuing operations of a financial institution as raw materials are for the continuing operations of a manufacturing business”).

¹⁶⁰ See, for example, 11 USC § 364(b)–(d) (requiring notice and a hearing prior to approval of debtor-in-possession financing).

asymmetry issues particularly severe and may make it impossible for the debtor to arrange new financing.

It is important not to overstate these infirmities. Financial institutions benefit from bankruptcy's liquidity-producing rules, just as other firms do. The automatic stay on ordinary creditors functions as a coerced loan, for instance, as does the debtor's ability to halt payments to its creditors. And a financial institution may be able to arrange at least some new financing, particularly if it makes preparations for the financing before filing for bankruptcy. Although Lehman filed for bankruptcy with almost no advance preparation, for instance, it arranged for financing from Barclays to facilitate the sale of its assets to Barclays.¹⁶¹ But information asymmetries loom much larger for financial firms that file for bankruptcy than for other firms, and the consequences of inadequate liquidity at the outset of the case also are larger.

One response to these issues would be to give financial institutions that file for bankruptcy access to financing on the same or comparable terms as the Dodd-Frank resolution rules.¹⁶² Alternatively, and in our view preferably, the Federal Reserve's discount window could be extended to the holding companies (or related entities) of financial institutions that filed for bankruptcy, permitting them to borrow from the Fed on a collateralized basis as commercial bank subsidiaries do. Assuring immediate access to liquidity has important downsides, such as the risk that the liquidity will be used to fund inefficient continuation. But the information-asymmetry problems are sufficiently severe at the outset of a financial institution bankruptcy that access to immediate liquidity may be justified.

CONCLUSION

In this Article, we have sought to introduce a new element to bankruptcy theory: the role of liquidity. Although liquidity has always been an essential feature of the restructuring process, its importance has dramatically increased as the nature of

¹⁶¹ See generally Ben Hallman, *A Moment's Notice*, 30 Am Law 87 (Dec 1, 2008) (describing Lehman's bankruptcy filing and the sale to Barclays).

¹⁶² A recent proposal (authored by Professor Thomas Jackson for a Hoover Institution working group) for a new Chapter 14 for large financial institutions would permit the debtor to make immediate payments to vulnerable counterparties, subject to a possible clawback, but does not provide for immediate access to liquidity. See Thomas H. Jackson, *Bankruptcy Code Chapter 14: A Proposal*, in Kenneth E. Scott and John B. Taylor, eds, *Bankruptcy Not Bailout: A Special Chapter 14* 25, 40–44 (Hoover 2012). One of us (Skeel) is a member of the working group.

corporate borrowing has changed. Rather than a single financing bank, the firms that file for bankruptcy now often have borrowed from a syndicate of banks, under loan agreements that may have both first and second liens as well as additional complexities. We have shown in this Article that debt-overhang and information-asymmetry problems can be particularly severe in this environment, and can prevent debtors from financing profitable projects.

To a remarkable extent, the drafters of the current bankruptcy laws anticipated these concerns. Although liquidity issues are largely absent from the scholarly literature, the bankruptcy laws include a variety of provisions that facilitate coerced loans or sales, and help to address the concerns we have identified. Courts have not always applied these provisions optimally, however. We therefore have provided a set of rules of thumb for determining when to invoke bankruptcy's liquidity-providing rules, on the one hand, and when to enforce an existing lender's nonbankruptcy entitlements, on the other. Our analysis suggests, among other things, that courts should be more willing to grant priming liens and to otherwise limit an existing lender's security interest. A greater attention to liquidity issues could help address some of the most troubling dimensions of current bankruptcy practice, such as evidence that some existing lenders use their loan agreements and other levers of control to force fire sales of a debtor's assets. Overall, however, our analysis suggests that the current bankruptcy rules work remarkably well. Our emphasis on the crucial role of liquidity has helped, we hope, to better explain why the current rules work as well as they do, while also suggesting a few key refinements.