A Normative Theory of Business Bankruptcy

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1. Introduction

This article views bankruptcy through the lens of a single theory. Scholars, especially those of an economic bent, are coming to agree that a business bankruptcy law should function to reduce the cost of capital for firms. There appear to be few papers, however, that evaluate the basic structure of a modern bankruptcy code by a cost of capital yardstick alone. This partly is because disagreement exists about whether a bankruptcy law should pursue goals in addition to capital cost reduction. The novelty of this essay lies in its single minded application to bankruptcy of the cost of capital metric and in its argument that only this metric should matter. The essay focuses on US law for convenience.1 Its conclusion holds that a bankruptcy law

1Germany has recently amended its bankruptcy law to resemble more closely the American law and Italy is considering similar revisions. Thus, an analysis of American law may have more than parochial significance. An excellent history of American bankruptcy law is Skeel (2001). A thoughtful description of current conflicts among bankruptcy scholars is Baird (1999).
seriously committed to capital cost reduction would be considerably smaller and less centralized than the law we now have.

1.1 Early bankruptcy theory.

Modern bankruptcy theory began with the recognition that a bankruptcy system sometimes is necessary to solve a collective action problem among the creditors of an insolvent firm. Insolvency may be a function of economic distress, financial distress or both. Economic distress occurs when the firm cannot earn revenues sufficient to cover its costs, exclusive of financing costs. Such a firm has negative economic value. A firm is in financial distress alone if it would have positive earnings were it not required to service its debt. Since a firm’s debt is sunk when insolvency occurs, the existence of debt is irrelevant to the question whether the firm should be continued or not. Social welfare is then maximized when economically distressed firms are liquidated but financially distressed firms are continued under altered capital structures.

Creditors are less interested in saving firms than in whether assets exist to satisfy their claims. If assets exist, creditors will attempt to seize them; and this likely will yield a piecemeal liquidation. When a firm is experiencing only financial distress, however, the creditors’ total insolvency state payoff would be maximized were the firm continued. Saving a firm, though, will often require creditors to coordinate their collection efforts, and coordination costs sometimes are high. As a consequence, reasonable equilibria exist in which, without regulation, financially as well as economically distressed firms are liquidated piecemeal. A bankruptcy system can avoid these inefficient equilibria by staying creditor collection efforts so that a state

\[\text{equilibrium.}\]

\[\text{Ghosal and Miller (2003), at 281-84, contains a concise description of the game among creditors. In the contexts considered here, they show that liquidation is the likely outcome.}\]
official has time to decide whether the firm is worth saving.3

The next step is to specify how a bankruptcy system should do its job. The economic view was favorable to a market approach. More concretely, a state official should auction insolvent firms to the market, free of current claims, distributing the proceeds to creditors. If economic value would be maximized by a piecemeal liquidation, the highest bids will be for individual assets; if continuing the firm as an economic entity would maximize value, then the highest bids would be for the firm as a unit.4 On this view, the Swedish system, which runs mandatory auctions, is preferable to the American system which, in Chapter 11, distributes the firm to current claimants through a judicially supervised bargaining process between the claimants and the firm’s owners.5

Early theorists held that bankruptcy systems should follow absolute priority strictly. The absolute priority rule requires creditors to be paid in the order that the firm’s contracts created.6 An implication of the rule is that equity -- the owners -- should receive nothing because the residual claim on an insolvent firm is worth nothing. Only distributional goals could justify violating absolute priority, but using a bankruptcy system to pursue distributional goals is questionable on two grounds. First, the goals are difficult to implement because parties can undo

3The canonical statement of this approach to bankruptcy is Jackson (1986). Adler adds that bankruptcy law must reconcile “mutually insupportable obligations”. Adler (2002).

4Auction approaches are advocated in Baird (1986) and Jensen (1991).

5There is a recent trend to sell firms or parts of firms in Chapter 11. See Skeel (2003); Baird and Rasmussen (2003b); Baird and Rasmussen (2002); Same authors (2001). This trend is discussed in Part 5 below.

6For example, “A good bankruptcy law should maximize the ex post value of the firm, with an appropriate distribution of this value across claimants, one that respects the priority of claims among the various classes of creditors.” Aghion (1998).
distributional rules through the price term or through other terms. For example, if a bankruptcy system is amended to reduce senior creditor claims in order to shift wealth to junior creditors, senior creditors will respond with increased interest rates or more rigorous lending terms. Bankruptcy systems thus cannot achieve distributional objectives in the long run. Second, distributional objectives sometimes are cast in social terms (e.g., the law should attempt to save jobs), but early theorists believed that a bankruptcy system is a poor vehicle for achieving social goals.

1.2 Current bankruptcy theory

Modern theory relates the results of a bankruptcy procedure to earlier stages in the life of the borrowing firm. An ex post efficient bankruptcy system would maximize the payoffs that creditors receive from insolvent firms. For example, a system that rescues only financially distressed firms is better for creditors than a system that attempts to rescue all firms. Turning to the borrowing stage, a competitive credit market will reduce the amounts that lenders can require solvent firms to repay when the lenders’ expected insolvency payoffs increase. Thus, interest rates fall as the efficiency of the applicable bankruptcy system increases. The lower is the market interest rate, in turn, the larger is the set of positive value projects that firms can fund with debt. A good bankruptcy law also improves investment incentives. Firms choose investment levels to maximize net expected profits. Because these profits rise as the interest rate falls, an efficient bankruptcy law increases the firm’s incentive to invest effort in debt funded projects.

A number of concrete implications follow from a serious commitment to capital cost reduction, of which four are briefly summarized in this Introduction. First, the US bankruptcy
Code gives trustees or debtors in possession what are called “avoiding powers”.\(^7\) These powers permit the insolvent party or its representative to recover back certain pre-bankruptcy payments to creditors and to challenge liens that may not have been taken in full compliance with state law. The avoiding powers have been a central feature of bankruptcy law for a century, but their existence requires a better theoretical grounding. This is because the powers appear to function primarily to decrease the value of the bankrupt firm rather than to increase it. For example, let the trustee successfully use an avoiding power to demote a creditor from secured to unsecured status. The firm’s assets will be reduced by the trustee’s litigation costs but the total value available for distribution to creditors will not otherwise increase. A consistent practice of using the avoiding powers to police the use of secured credit thus will increase the cost of capital. Second, parties should be permitted to write contracts that permit customers and suppliers to cease dealing with an insolvent firm. As is shown below, when solvent parties have exit rights, debtors could still pursue efficient projects but would have difficulty continuing inefficient projects. Consequently, interest rates would be lower under free contracting than these rates now are, when contracts for exit rights are prohibited. Third, the Code authorizes bankruptcy courts to reimburse junior creditor expenses whose effect is to increase the amount available for distribution to the juniors, but the Code reimburses little senior creditor spending. This compensation scheme encourages rent seeking by the juniors, who sometimes litigate to defeat absolute priority rather than to increase the value of the insolvent firm. A better scheme would delegate the reimbursement decision to the debtor in possession. The debtor has no incentive to subsidize rent seeking and would sometimes enlist the seniors in the task of value maximization. Fourth, bankruptcy

\(^7\)This phrase apparently was introduced into the scholarly literature in Jackson (1984).
systems should be default procedures, just as corporate codes today are largely default procedures. Maximizing creditor payoffs will sometime requires rules tailored to parties’ particular circumstances. Hence, any bankruptcy system, however well designed, will be suboptimal some of the time.

This summary shows that while assigning the goal of capital cost reduction to a bankruptcy system is unlikely to be controversial, a serious pursuit of the goal would have important implications. A bankruptcy law with no avoiding powers, that suppliers and customers could contract out of, that reverses the scheme for compensating creditor expenses, and that is only a default procedure that parties are free to vary would differ greatly from the law we now have. Part 2 below argues for the centrality of the capital cost reduction criterion when evaluating bankruptcy systems by explicating the relationship between interest rates and a firm’s ability and incentive to pursue projects. Part 3 criticizes central features of the US Bankruptcy Code, such as the avoiding powers, whose performance receives poor grades under a cost reduction metric. Part 4 shows that default bankruptcy systems, that let parties contract ex ante for the procedure they prefer, dominate mandatory systems. Part 5 develops criteria for deciding when courts should enforce contracts, now becoming common, that require a distressed debtor to pursue a specified liquidation strategy, should it fail, in return for refinancing or forbearance. Part 6 is a conclusion that lists omitted issues and attempts briefly to justify excluding social goals from the purview of a business bankruptcy law.

Before reaching the analysis, it will be helpful to note two positive “macro” consequences of using bankruptcy law in a more single minded way to reduce the cost of debt capital. First, firms hold real options on potential projects because investing in a project today eliminates the
firm’s ability to gather more information about the project’s desirability. The value of an option increases in the variance of possible returns. Thus, a firm’s decision whether to pursue a project is importantly a function of its cost of capital, while the firm’s decision when to pursue a project is importantly a function how uncertain the firm’s economic environment is. From a private point of view, the value of the firm’s option to delay is increasing in the degree of uncertainty the firm faces. From a public point of view, however, because interest rates are positive the social cost of delaying good projects also is increasing in the degree of uncertainty. This essay treats uncertainty indirectly. The US Code contains many standards that confer substantial discretion on the bankruptcy and district courts to resolve bankruptcy issues. Firms free to choose often would prefer to substitute more explicit contractual rules for the law’s standards. This preference is grounded below on the interest rate reducing property of free contracting, but since rules increase predictability relative to standards, an increase in contractual freedom will reduce uncertainty and thus will accelerate the pursuit of good projects.

The second macro implication holds that reducing the cost of debt capital will reduce the cost of capital generally. The equity hold a call option on a levered firm because shareholders can buy the firm by repaying the debt. The strike price for exercising equity’s option thus is the firm’s cost of credit. Reducing this cost – i.e., reducing the strike price – makes stock more valuable to own. Hence, it becomes easier for firms to raise equity capital as their country’s bankruptcy system becomes more efficient.

2. The modern view: interest rates and investment.

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8These standards are summarized in Schwartz (2001) at 187-89.

2.1 Bankruptcy systems and the interest rate

The relationship between the performance of a bankruptcy system, a firm’s cost of capital and its incentive and ability to pursue projects can be exhibited with a simple model. There are six important assumptions:

A1: The borrowing firm is run by an owner/manager.

A2: Creditors are imperfect monitors of payoff related actions that the firm takes after it borrows.

A3: Capital markets are competitive.

A4: Creditors can predict the mean of their payoffs in the default state.

A5: A “firm” is the project that it pursues.

A6: Creditors and the firm are risk neutral.

Assumption A1 is made because this essay is not concerned with the agency problem between managers and shareholders. Assumption A2 captures the agency problem between the firm and its creditors, which is that the firm can affect the creditors’ expected return by what it does after it borrows. Assumption A3 is realistic and A5 is innocuous and made for convenience. A4 and A6 are domain assumptions. A4 rests on the view that professional creditors have considerable experience with default\(^\text{10}\) and A6 is more accurate when applied to firms than to individual persons.\(^\text{11}\) The analysis below thus applies to transactions between creditor professionals and

\(^{10}\)The model assumes that the firm borrows from a bank or other private lender. The firm thus has “medium” or “low” credit quality, as high quality firms borrow from public sources. See Denis and Mihov (2003).

\(^{11}\)Individuals sometimes start businesses with credit card debt. Because persons are risk averse, the availability of the discharge and a high exemption level encourage entrepreneurial activity by providing some insurance against business failure. See Wei and White (2003). Failure insurance, however, creates moral hazard. Hence, a business bankruptcy law that applies
corporate borrowers.

The borrowing firm has a project that requires capital of $I$ to do, which the firm must raise externally. The project succeeds with probability $p$ and then earns $v$ (in present value terms) net of production costs; $v$ is drawn from a positive, compact support $V_a \subset \mathbb{R}_+$ by a cumulative distribution function $G_a(v)$. Because the firm is its project (see A.2), the expected value of the firm is $v_a = \int_{V_a}^\wedge v dG_a(v)$. An insolvent firm is assumed to enter a bankruptcy system and continue to function until the system runs its course. This implies, and it is shown below, that the value of the firm’s project in the insolvency state is partly a function of the bankruptcy system that is in place. Denote the set of feasible bankruptcy systems as $S$, so that the system in place is $s_i \in S$.

The insolvent firm’s return $v(s_i)$ is drawn from $[0, v(s_i)]$ by a cumulative distribution function $G(v)$. The system costs $c(s_i)$ to run. A bankruptcy system thus can distribute to the creditors of an insolvent firm at most the sum $x(s_i) = v(s_i) - c(s_i)$.

The firm promises to repay creditors the sum $F$. Because the credit market is competitive, $F$ is the smallest sum that creditors can demand to fund the project. The risk free interest rate is assumed to be zero, so that a borrowing firm’s interest rate is a function only of the riskiness of its project and the properties of the bankruptcy system that is in place. Creditors in competitive markets earn zero pure profits, so creditors who lend $I$ must expect to receive $I$ in to individual proprietorships must resolve a tradeoff between risk and incentives. This tradeoff is not modeled here because risk neutral firms would not insure. For an analysis of the risk/incentive tradeoff when consumers borrow, see Adler, et al (2000).
From now on, subscripts are suppressed for ease of exposition except where it is important to stress the dependence of relevant variables on the properties of a particular bankruptcy system.

This expectation can be written as

\[ I = pF + (1 - p)(x(s_i)) \]  

The first term on the right hand side of this equation is the creditors’ expected return in the solvency state and the second term is the creditors’ expected return in the insolvency state. It is assumed that \( v > F \), so that the firm is solvent when its project succeeds, and that \( F > v(s_i) \) so that the firm is insolvent when its project fails.

Equation (1) implies a value for \( F \), which now is seen to be partly determined by the applicable bankruptcy system:

\[ F(s_i) = \frac{I - x(s_i)(1 - p)}{p} \]  

Because \( p > 0 \), \( F(s_i) \) declines as \( x(s_i) \) increases. Intuitively, the more that creditors expect to receive in the insolvency state, the less will creditors require the firm to repay in the solvency state.

The firm’s effective interest rate is

\[ r(s_i) = \frac{F(s_i)}{I} - 1 \]  

Since \( I \) is a constant – it is the sum the firm needs to do its project – the effective interest rate is increasing in \( F \), the sum the firm is required to repay.\(^{12}\) And this sum, it has just been shown, is a function of the creditors’ insolvency state return, falling as this return rises.

\(^{12}\)From now on, subscripts are suppressed for ease of exposition except where it is important to stress the dependence of relevant variables on the properties of a particular bankruptcy system.
A bankruptcy system affects both elements of the insolvency state return. Thus, the firm’s insolvency state value is higher in a system that liquidates economically distressed firms and saves financially distressed firms than value would be in a system that attempted to save all firms. The insolvency return also is increased when system costs fall. If auctions would generate at least as much value as Chapter 11 reorganizations, but at lower cost, then an economy with a bankruptcy system that requires auctions would, other things equal, have lower interest rates than those that US firms now pay. Perhaps obviously, F, and thus r, also will increase if creditors receive only a fraction of the insolvency return v(s_i), so that systematic violations of absolute priority increase firms’ cost of capital. And to summarize, bankruptcy systems have an important effect on interest rates: the bankruptcy system that maximizes bad state returns to creditors minimizes the interest rates that firms must pay to finance projects.

2.2 Interest rates and investment

A. Funding efficient projects.

Society prefers firms to pursue projects with positive expected returns. Denoting W as social welfare, a firm thus should undertake a project that costs I to do if

\[ W(s_i) = pv + (1 - p)[x(s_i)] - I \geq 0. \]

The first term on the right hand side is the expected value if the project succeeds; the second term is the expected value if the project fails. To derive the minimum project return needed for social efficiency, denoted \( v \), let \( W = 0 \). Then

\[ v = \frac{I - x(1 - p)}{p} \]

The right hand side of Expression (3) is identical to the right hand side of Expression (2). Since (2) solves for the minimum repayment promise the firm must make to obtain financing and (3) solves
for the minimum expected return to obtain social efficiency, Proposition 1 follows:

Proposition 1: It is socially efficient for firms to take all projects that creditors will finance.

In the model, creditors bear the costs of a firm’s failure, in consequence of which creditors will fund only those projects that society would want pursued.

This Proposition may seem controversial because the analysis assumes away externalities. Two are worth noting: A firm’s failure may harm (a) the local community; (b) persons injured by the firm’s tortious acts. Regarding communities, Part 6 will argue that a market exists among firms and the local communities that want them so there actually is no externality. Regarding tort victims, firms purchase insurance to protect assets that are at stake for them. A firm of value $V$ with debt $D$ has $V - D$ at stake. Creditors, however, require firms to have insurance that protects the creditors’ interests. Therefore, the typical firm will purchase insurance of $V - D + D = V$. Because accident victims seldom have claims that exceed the value of the firm, the incentives of firms and the requirements of creditors combine to insure that in the usual case there is no tort externality.

Firms will not insure against torts that greatly exceed the value of the firm, such as the claims brought by asbestos and dalkon shield victims. Tort victims are creditors whose claims reduce the assets available to others, however. To the extent that creditors can foresee large tort claims, the resultant interest rate increases will internalize this externality. Some scholars recently have contested this point, arguing that firms which anticipate large tort claims will issue secured debt. Because tort victims are only general creditors, security permits the firm to share with creditors the gains from externalizing accident costs to the victims.\textsuperscript{13} There are two difficulties with

\textsuperscript{13}See Bebchuk and Fried (1996); Hudson (1995).
this claim. The claim falls as a matter of theory because massive harms are difficult to anticipate. A firm will not choose a capital structure that would be optimal only in states of the world that the firm has no reason to believe will occur. The claim falls as a matter of fact because firms that do anticipate large tort claims (e.g., the cigarette companies) have less secured debt than otherwise comparable firms rather than more. All in all, then, tort externalities are rare, so Proposition 1 stands as stated.

Turning to the borrower’s incentives, the interest rate imposes on firms the expected costs of failure so that (in a bankruptcy system that follows absolute priority) a firm’s expected return, when it borrows, becomes \( \pi(s_i) = -I + p(v - F) + (1-p)(0) \), where the second term on the right hand side is the firm’s net return in the solvency state and the third term is its return in the insolvency state. Substituting for \( F \) from Expression (1) above and solving for the minimum return the firm must expect to earn in order to go forward also gives Expression (3). This yields

**Proposition 2:** A profit maximizing firm will pursue the projects that creditors will finance, which are the projects that society prefers.

A bankruptcy system that pursues efficiency should therefore maximize the set of fundable projects, which is best done by increasing the creditors’ net insolvency return. Expressions (2) and (3) show that as this return increases a project must return less in the good state for it to be both socially efficient and undertaken.

As an illustration, if the success probability for a project is .8, the project costs 100 to do and the insolvency return available for distribution to creditors is 80, creditors will require the firm

\[ 1^4 \text{See Listoken (2004). Listoken suggests that firms anticipating large tort liabilities also anticipate the possibility that they will experience financial distress; firms then reject secured debt because it gives creditors considerable power in default states.} \]
to repay 105 when the project succeeds. If the insolvency return fell to 50, then creditors would require the firm to repay 112.5 in the success state. Under the former, relatively efficient, bankruptcy system, the firm will take the project if its good state return would exceed 105. In contrast, the relatively inefficient bankruptcy system would cause the firm to reject the project if its good state return would be between 105.01 and 112.5, because the firm would realize nothing after it repaid the debt, though in this range the project would generate expected returns in excess of production costs. To summarize, because higher bad state payoffs to creditors imply a larger set of fundable projects, and because society wants firms to pursue every project in the fundable set, a bankruptcy system should maximize creditor payoffs.\footnote{Relevant here, \citeauthor{longhofer1997} show that systematic violations of absolute priority create credit rationing; some firms cannot finance good projects.}

\textbf{B. Pursuing projects efficiently.}

A bankruptcy system also affects the effort level that firms financing with debt choose when pursuing projects. In the model above, the probability that the firm’s project would succeed, \( p \), was implicitly assumed to be exogenous; \( p \) did not depend on what the firm did. To make the story more realistic, let the solvency probability partly be a function of the firm’s efforts, and partly be a function of a stochastic state variable denoted \( \theta \).\footnote{The state variable \( \theta \) can be thought of as demand for the firm’s products or as a composite of input prices. A firm that exerted high effort might still fail if demand fell sufficiently or input prices rose sufficiently.} Effort is assumed to involve not only money, but also the diligent and intelligent application of skill. Thus, it is difficult for creditors to know whether a borrowing firm chose the optimal effort level. In addition, it would be very costly to describe in a contract the various efficient actions the firm should take in each of the many possible states of the world that could materialize. For these reasons, this essay makes
The paragraph states the contract theory implication of Assumption A2, that creditors cannot observe payoff relevant actions the firm takes after it borrows. Also, the model assumes that the firm finances with debt, which is plausible in light of A2. Debt is the optimal contract when creditors cannot observe effort and can observe project returns imperfectly. See Povel and Raith, “Optimal Debt with Unobservable Investments” (2004).

The success probability is assumed to increase in the firm’s effort level, but effort is costly. Thus, society prefers the firm to exert effort in increasing the probability of project success until the marginal gain from further effort equals the marginal cost. The firm, however, will only exert effort until its private marginal gain equals marginal cost. Because the firm must share its success state return with creditors – it must compensate creditors for bearing the risk of nonpayment --, the firm’s private marginal return is lower than the social marginal return. As a consequence, firms choose a lower effort level when pursuing debt financed projects than is socially optimal.

An inefficient bankruptcy system exacerbates this underinvestment effect by widening the gap between the creditors’ good and bad state returns. When this gap widens -- when the bad state return falls --, the interest rate increases and the firm’s incentive to exert effort falls. The underinvestment effect also can exacerbate the financing effect described above. A decline in the success probability as a result of lower effort may reduce the expected value of a project’s success state return to below the critical level $v$ needed to support a loan; and then the project cannot be financed at all. Therefore, an inefficient bankruptcy system yields both a suboptimally low set of debt financed projects and a suboptimally low level of effort invested in funded projects.

This and the next three paragraphs contain a formal statement of the underinvestment effect. Readers who find the intuitive explanation sufficient should skip to the summary section below. Denote the effort level the firm chooses as $e$. The probability that the firm’s project
More precisely, it is assumed that: (i) \( p(e; \theta) \) is differentiable and strictly concave in \( e \); (ii) \( \lim_{e \to 0} p'(e; \theta) = \infty \); (iii) \( p(\infty, \theta) < 1 \). Assumption (ii) holds that it is efficient for the firm to choose a positive effort level while assumption (iii) holds that the probability of insolvency is positive even at the maximum effort level.  

succeeds, denoted \( p(e; \theta) \), is increasing in the effort level. Recalling that the insolvency return is \( v(s_\text{i}) - c(s_\text{i}) = x(s_\text{i}) \), society wants the firm to maximize \( W = p(e; \theta)v + (1 - p(e; \theta))x - e - I \) with respect to \( e \). The socially optimal level of effort is

\[
(4) \quad p'(e; \theta)(v - x) = 1
\]

The firm, however, does not choose effort to maximize the social return \( W \) but rather chooses effort to maximize its net revenue. It is initially assumed that absolute priority is followed, so that the firm solves

\[
\max_{e > 0} p(e; \theta) p(e; \theta)(v - F) + (1 - p(e; \theta))(0 - e). 
\]

The solution to this maximization problem is

\[
(5) \quad p'(e; \theta)(v - F) = 1
\]

The left hand side of Equation (5) is lower than the left hand side of Equation (4) because \( F \) is larger than \( x \). To show this, substitute for \( F \) from Expression (3), which yields \( F \geq x \) if

\[
\frac{I - x(1 - p)}{p} \geq x, \text{ which simplifies to } I \geq x. \text{ This inequality holds by assumption because the firm is supposed to be insolvent -- it cannot repay } I -- \text{ when its project fails. Recall that } F \text{ falls as } x \text{ increases, and } x \text{ increases with the efficiency of a country’s bankruptcy system. This yields Proposition 3: The gap between the socially optimal level of investment in debt financed projects and the actual investment level shrinks as a country’s bankruptcy system becomes more efficient.}

The firm exerts a suboptimal level of effort because it must share a portion of the success state return with its creditors. This makes success relatively less attractive to the firm, and

\[
18\text{More precisely, it is assumed that: (i) } p(e; \theta) \text{ is differentiable and strictly concave in } e; (ii) } \lim_{e \to 0} p'(e; \theta) = \infty; (iii) p(\infty, \theta) < 1. \text{ Assumption (ii) holds that it is efficient for the firm to choose a positive effort level while assumption (iii) holds that the probability of insolvency is positive even at the maximum effort level.}
\]
therefore makes effort less valuable. As Equation (5) shows, the firm’s effort level declines as the sum that creditors require the firm to repay in the solvency state, $F$, becomes larger. Since $F$ is increasing as the net insolvency return falls – as the bankruptcy system becomes less efficient – the less efficient a country’s bankruptcy system is, the less efficiently will firms in that country pursue projects.

This underinvestment effect is worsened if the bankruptcy system violates absolute priority. To show this, suppose that the firm anticipates being able to exact the sum $g$ from creditors to ensure a smooth bankruptcy process if the firm’s project fails. The firm thus solves

$$
\max_{\theta, \theta} \max_{e \geq 0} p(e; \theta)(\nu - F) + (1 - p)(e; \theta))(g).
$$

The solution to this is

$$
(6) \quad p'(e; \theta)(\nu - F - g) = 1
$$

The left hand side of Equation (6) is less than the left hand side of Equation (5); the firm exerts less effort when the applicable bankruptcy system fails to follow absolute priority. This yields

**Proposition 4:** The gap between the socially optimal level of investment and the actual investment level widens as a country’s bankruptcy system fails to follow absolute priority.

When the firm gets a positive payoff in the insolvency state, it has less incentive to avoid insolvency. Another way to put this result is to observe that absolute priority violations partly insure the firm against project failure. This insurance, in turn, creates moral hazard.

The underinvestment effect exacerbates the financing effect derived above. The success probability $p(e; \theta)$ declines as the firm exerts less effort. As $p(e; \theta)$ falls, $\nu$, the minimum success state return required to make a project credit worthy, increases.19 This is because the firm must

---

19: To check this statement, differentiating Expression (3) with respect to $p$ yields

$$
\frac{-x}{p^2} < 0.
$$

Hence, $\nu$ increases as $p(e; \theta)$ falls.
earn more in the success state to compensate creditors for the increased likelihood that they will realize only the low failure state return. Since $v$ is a hurdle value, the set of fundable projects shrinks as $v$ rises.

2.3 Summary.

A bankruptcy system should function to maximize the return that creditors earn when firms fail. The larger is this return the lower is the interest rate that creditors demand to lend. A lower interest rate is efficient for two related reasons. First, the set of economically viable projects that firms can pursue becomes larger as the interest rate falls. Second, the effort that firms exert in pursuit of funded projects increases toward the optimal level as the interest rate falls. As is seen below, this focus on interest rates and investment will sometimes conflict with a traditional bankruptcy goal: to treat all creditors equally. Because price equals cost in competitive markets, however, creditors are treated equally over time, in the sense that creditors are compensated for whatever costs the regnant system imposes on them. Bankruptcy law’s intermittent efforts to realize ex post equality in particular cases have never been adequately justified. The policy task thus is to choose the efficient system.

An implicit premise in the analysis to here is that the firm makes only three decisions: it chooses whether to pursue a project, how to finance the project and what level to invest in the project. A firm that is in financial or economic distress, however, has two more decisions: when to enter the bankruptcy system, and which bankruptcy procedure to choose (if there is more than one). When the firm’s bankruptcy payoff would be zero, the firm may make the latter two decisions inefficiently. In particular, the firm has an incentive to delay entry into the system in the

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20 The equality goal requires each creditor to receive a pro rata share of the debtor’s assets unless the creditor has a property right, as for example by holding a mortgage.
hope that its fortunes will improve, thereby probably wasting assets, or to choose the procedure that maximizes private benefits for the firm, thereby probably reducing the creditors’ bankruptcy payoffs. Part 4 considers the extent to which the conclusions reached so far should be modified to take into account the disincentive that a strict adherence to the absolute priority rule creates for distressed firms to preserve value. Part 3 first considers the implications of these conclusions for contexts where bankruptcy initiation or the choice of a bankruptcy procedure is not a problem.

3. Legal Applications

3.1 The avoiding powers

It will be helpful, when discussing the avoiding powers, to derive a definition. Under the Bankruptcy Code, the “bankrupt estate” is defined as the set of assets that is available for distribution to general creditors. Much of the Code attempts to maximize the estate so defined. This can be done in two ways: (a) increase the value of the insolvent firm; (b) shift assets from other claimants to the general creditors. Method (a) is desirable because when firm value increases, it is possible to increase the bad state payoff of at least one creditor without decreasing the payoffs of any other creditors. Thus, the effective pursuit of method (a) will reduce the cost of capital. Method (b) is undesirable because when the estate is defined as the set of assets available to general creditors, the trustee and other parties are encouraged to reduce the payoffs to those claimants who are not general creditors. Since these efforts are costly, the consistent pursuit of method (b) necessarily reduces the total value available for distribution to all claimants, and so necessarily increases the cost of capital. This reasoning yields a definition used below: A bankruptcy law implements a “bankruptcy reason” if (i) compliance with the law will increase the

21See Bankruptcy Code §541(a).
value of the insolvent firm or (ii) the law improves the incentives of firms to invest optimally in projects. A bankruptcy reason, that is, follows from the basic goal of a bankruptcy law: to reduce the cost of debt capital for firms. Part 3 next argues that, apart from the prohibition on fraudulent conveyances, none of the avoiding powers implements a bankruptcy reason.22

A. Policing secured credit

The Code gives the trustee the rights of a lender that had extended credit to and simultaneously obtained a judicial lien on the property of the debtor on the day the bankruptcy petition was filed.23 These rights exist whether or not any such creditor actually existed.24 Under the laws of every state, a lien creditor can “defeat” – that is, subordinate – the lien of a creditor whose security interest or real property mortgage had not been properly perfected.25 Consequently, if proper perfection of an actual security interest had not occurred as of the date of the petition, the trustee can use her lien creditor powers to defeat that interest. The effect of defeat is to reduce the priority of the secured lender to that of a general creditor.

The Code also permits the trustee to assume the status of an actual creditor.26 To understand the effect of this provision, suppose that an actual lien creditor had attached property of

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22 A fraudulent conveyance occurs when a firm sells assets at below market prices. Such sales reduce the value available for distribution to creditors.

23 Under the Bankruptcy Code, the trustee and a Chapter 11 debtor in possession have the same powers. The word “trustee” thus also refers to the Chapter 11 debtor.

24 The trustee also has the status of a “bona fide purchaser of real property” of the debtor who had perfected the transfer “at the time of the commencement of the case, whether or not such a purchaser exists.” See Bankruptcy Code §544(a).


26 See Bankruptcy Code §544(b).
the debtor after the debtor made a secured loan but before the mortgagee had properly perfected; perfection occurred after the lien but prior to bankruptcy. The trustee could not defeat the security interest with her lien creditor powers because those powers come into existence as of the date of bankruptcy, and perfection had occurred by then. The actual lien creditor, however, could have taken the property had bankruptcy not intervened. The Code permits the trustee to assume the status of this creditor and thereby defeat the secured lien. This defeat subordinates the secured lien in its entirety, even if the actual lien creditor was attempting to enforce a smaller debt than the debt of the secured creditor. Secured lenders commonly do perfect properly, but the casebooks are filled with examples of their occasional mistakes; and the Code gives the trustee an incentive always to ask whether a mortgage on the debtor’s property is vulnerable to attack.

This set of avoiding powers is traditionally justified as increasing the sanction that state law imposes on nonperfecting creditors. The state law sanction for failing to perfect in timely or appropriate fashion is to subordinate the secured lien to the lien of an actual later lien creditor or an actual later secured lender, and then in an amount no greater than the later creditor’s claim. To this sanction the Code adds the relegation of the entire secured claim to general creditor status.

A bankruptcy reason cannot support this Federal intervention into state law security laws. No new value is created when a secured creditor becomes one more general creditor, but value is destroyed in the amount of the trustee’s investigation and litigation expenses. In addition, increasing the sanction for noncompliance with state law increases the incentive of creditors to take precautions. Both of these effects raise the costs of secured lending and thus raise capital costs for firms. This set of avoiding powers should be repealed, then, because the powers do not implement a bankruptcy reason, and also because a state can increase the sanction for
noncompliance with its recording laws should a need appear.

B. Preferences

(i) Monetary transfers

The trustee can recover payments to a creditor made in the 90 days before bankruptcy unless (a) the creditor made a contemporaneous transfer to the debtor; or (b) the payment was made in the ordinary course of the debtor’s business. Payments in the former category do not reduce the value of the firm because cash out is replaced with cash or goods in. The exception for payments in category (b) has a similar justification. Shipments in the ordinary course, over time, will offset payments in the ordinary course, so that the typical set of transactions will not deplete the firm’s value. To see what the law prohibits, let a creditor lend $100 on July 1, payment due on January 1. At the creditor’s urging, the firm repays $50 on September 15. It files for bankruptcy on October 2. The trustee can recover back the $50 payment and distribute it among the full set of general creditors.

The preference law is partly mandatory, in the sense that a debtor cannot waive its duty not to pay particular creditors in full shortly before bankruptcy except by giving a creditor security. A law dedicated to capital cost reduction, in contrast, would make the preference law a default. The better rule would permit an insolvent firm to pay whomever it chose whenever it chose, unless the lending agreement provided otherwise.

Giving the firm an unfettered right to pay may appear to contradict the thesis here because the prohibition of preferences is said to prevent depletion of the estate through eve of bankruptcy payments. This justification overlooks an important distinction. The seizures of the debtor’s

\(27\) The preference law probably deters few such payments because a preferred creditor is not punished; it need only give the money back. A rigorous, clarifying statement of this received
property that concerned early bankruptcy theorists were beyond the ability of a firm to prevent, except by filing a petition. In the absence of a filing, creditors will attach property pursuant to judicial orders. The debtor itself can prevent late cash drains by not making payments, however. Creditors can threaten suit, but the debtor can respond with a credible threat to file. Thus, it is the ability of the debtor to get a stay, rather than the ability to recover preferences, that preserves the estate while the system decides what to do next.

The issue, then, is why a firm would want to default asymmetrically – to pay only some creditors in full before bankruptcy. A distressed firm would reject this strategy when its continuation value would exceed its debt ($V > D$). Continuation is efficient in this case. The firm’s best payment strategy is to offer each creditor a sum just low enough to prevent the creditor from suing. This preserves all of the revenue generating assets – preserves $V$ – while minimizing the firm’s cash drain. A firm that cannot realize this strategy through bargaining, because some creditors insist on payment in full, will then file. The pro rata rule of distribution followed in bankruptcy minimizes total payments to creditors while the automatic stay preserves assets. Thus, a distressed firm would not default asymmetrically when continuation would be efficient.\footnote{This justification for making bankruptcy distributions according to the pro rata rule is in Von Thadden, et al (2003).}

The firm could prefer asymmetric default when liquidation would be efficient, however. In this case, insiders may cause themselves to be paid first, or the firm’s principals may want to secure the good will of important lenders. Both the payor and the payee in these transactions are better off, so the case for banning preferences must rest on the penchant of asymmetric default to

\footnote{This justification for making bankruptcy distributions according to the pro rata rule is in Von Thadden, et al (2003).}

wisdom is in Adler (1997). A good summary of traditional justifications for permitting the trustee or debtor to recover preferences is Tabb and Brubaker (2003) at 441-44.
increase the firm’s cost of capital. It is difficult to make this case for two reasons: credit costs are unlikely to increase, and when they would, the firm could commit ex ante not to default asymmetrically. Regarding the former reason, permitting the firm to pay some creditors in full would be equivalent to securing these creditors, who in effect would be foreclosing prior to a full liquidation. Offering such “security” would be unlikely to increase the firm’s total interest costs because competition would compel creditors who anticipate being favored to lower their interest rates, while creditors who anticipate being disfavored would raise their interest rates. Because there is only a transfer ex post, the resultant interest rate reductions and increases should exactly offset.

A creditor who is uncertain whether the firm will prefer anyone, however, may charge an interest rate that assumes it will not be preferred. Because this would be a high rate, a firm’s best response would be to offer a “no preference” covenant, promising creditors that if it became insolvent it would pay all unsecured creditors pro rata. This covenant would be enforceable just as negative pledge clauses, covenants to maintain specified ratios between debt and assets and covenants to achieve specified earnings or net worth targets are enforceable. A violation of the covenant would trigger immediate acceleration of the debt, and would also impose good will costs. The firm also could precommit not to pay insiders by requiring insiders to guarantee the debt. A possibly better solution to the uncertainty concern would permit parties to specify in the lending agreement that the preference sections of the current Code (or some of them) would apply to pre-
The preference law may help to prevent similarly situated creditors from being treated unequally. As said above, the pursuit of ex post equality is without justification. Creditors are treated equally ex ante: they adjust to the law in place, and so earn zero expected profits in any bankruptcy regime. Daniels and Triantis (1995) argue that the preference law encourages early exit by an informed creditor because the creditor knows it will have to disgorge payments made shortly before bankruptcy. According to these scholars, early exit is good because it signals to the market that the debtor is distressed, and thus facilitates rescue. This view is questionable on the argument here because a viable debtor would file rather than fully payoff a large loan, and an unviable debtor could not be rescued. In addition, Part 4.1 below shows that when early rescue is a possibility, parties have available to them contracts that would encourage it more efficiently than the preference law appears to do.

Credit costs thus are unlikely to increase in consequence of making the preference law a default, but it is a separate question whether creditors should be required to contract into the preference law (or use covenants), or should be required to contract out. Firms would prefer a contracting in default. To see why, realize that current preference law appears not to implement a bankruptcy reason. Requiring the preferred creditor to disgorge does not increase the total value available to creditors; rather, disgorgement reduces the payoff of the preferred creditor in order to increase the payoffs of all creditors by a total sum equal to the sum that has been disgorged. This transfer is costly: the insolvent firm must compensate the trustee or debtor in possession for searching out and recovering preferences. Creditors anticipate the later value loss, so that the preference rules today raise interest rates. Thus, typical parties would reject a default that replicated current law.31

(ii) Securing antecedent Debt

The trustee can defeat a mortgage lien given within 90 days of bankruptcy to secure an antecedent debt. The prohibition on security transfers, unlike the prohibition on monetary transfers, may increase creditors’ bad state payoffs, but this possibility cannot justify the law. To understand

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the Code’s possible contribution, realize that an insolvent firm may sometimes have an opportunity to overinvest: to pursue a project that has a negative net present values but also has a sufficiently high upside to return the firm to solvency if the project succeeds. The firm may take such a project because it could capture much of the upside value while creditors bear the entire downside risk. Suppose then that a firm has such a project available to it, but needs external financing. New creditors will not lend into bad projects, but an existing creditor might if given security.

To see why, let a creditor hold a debt whose expected value is below face. The creditor is asked to make a new loan, but loans into bad projects will have values below face when made. The creditor may nevertheless finance the bad project if it is given security for the prior unprotected debt. The resultant increase in the creditor’s expected insolvency payoff for the earlier loan may more than offset the creditor’s expected loss on the new bad loan. Hence, a firm that can secure antecedent debts may be able to finance a negative net present value project -- to overinvest. The preference law precludes this possibility by permitting the trustee to avoid the late lien, thereby preserving value for creditors as a group.32

An existing creditor, however, may be the best, or only, source of new financing for a financially distressed firm. This creditor too may refuse to lend if its existing debt remains unprotected. Thus, the prohibition on security transfers makes it harder for distressed firms to obtain working capital. The issue is whether it is better to risk chilling new financing for possibly salvageable firms in order to deter overinvestment by probably failing firms. The former appears to be the more serious danger. Distressed firms commonly need working capital but few firms, it seems, have attractive overinvestment opportunities: the availability of a negative value project

32This consequence of §547 was identified in Adler (1997).
with an upside large enough to restore the firm to solvency.\textsuperscript{33} Relaxing the prohibition on security transfers, so that financially distressed firms could borrow more easily, thus would increase the value of troubled firms on net.\textsuperscript{34} An objection to this claim is that giving firms the power to secure antecedent debts would reduce certainty for creditors as a group, but this objection lacks force. Firms today can secure prior debts if they do so more than three months before bankruptcy, and creditors who care can deter this practice with negative pledge clauses.

To summarize, the avoiding powers create incentives for the trustee and other parties to waste the bankrupt firm’s resources in the service of redistributing value among creditors. These rent seeking efforts seldom, if ever, increase the total value available to all. The presence of avoiding powers in a bankruptcy law thus increases net capital costs.

3.2 Compensating experts

Creditors often retain experts such as lawyers, investment bankers and accountants during the course of a Chapter 11. The Code authorizes the bankruptcy court to reimburse many junior creditors’ expert expenses\textsuperscript{35} and courts commonly grant reimbursement requests.\textsuperscript{36} Apart from

\textsuperscript{33}Eckbo and Thornburn (2003) rejects the overinvestment hypothesis on Swedish data. The authors explain this result with the theory that the managers of distressed firms have a strong incentive to invest conservatively in order to preserve private benefits of control. Andrade and Kaplan (1998), in a study of defaulting debtors, also reports (at 1445)：“... we find no evidence that distressed firms engage in risk shifting/asset substitution of any kind.” Similarly, Dahiya, et. al (2003) finds little evidence of overinvestment in a sample of firms that received DIP financing.

\textsuperscript{34}The issue discussed here reappears during bankruptcy when debtors in possession ask courts to approve working capital loans from prior lenders who demand cross collateral clauses (i.e., who will lend only if their prior unsecured debt is covered by new mortgages). Bankruptcy courts have been sympathetic to these requests, but this type of financing may not survive appellate attack. See In re Saybrook Manufacturing Co., 963 F.2d 1490 (11th Cir. 1992) (holding that bankruptcy courts lack the power to approve cross collateral financing).

\textsuperscript{35}Creditors are authorized to form committees to assert their interests and the court can reimburse the expenses for professional services that these committees incur. See §§330(a) and
attorneys’ fees in some cases, senior creditor expert expenses are not reimbursed.\footnote{LoPucki and Doherty (2004).} A compensation scheme based on a bankruptcy reason would reverse this allocation, authorizing the payment of compensation to seniors but not to juniors.

To see why, consider a simple model in which the insolvent firm has a senior creditor whose claim is in the money and a junior creditor whose claim is not.\footnote{Section 9-610 of the UCC permits secured creditors to contract for the recovery of reasonable attorneys fees incurred in connection with repossession out of “the cash proceeds of disposition” and these contracts are enforced in bankruptcy. \S 506(b). The Code otherwise makes no provision for the reimbursement of senior creditor expert expenses. A reorganization plan that reimburses senior expenses for professionals would be confirmable but the extent of senior compensation under plans appears unknown.} Parties may employ experts for productive or for redistributional reasons. An investment banker acting for a creditors’ committee would be productive if she helped to develop a better business plan for the insolvent firm. She would be rent seeking if she attached an inflated value to the plan she proposed in order to increase the junior’s stake in the reorganized company. Courts seldom can distinguish clearly between productive and redistributional spending because often the same expert activity – proposing and evaluating a plan – can have both effects.\footnote{Firms commonly are in Chapter 7 when the senior claim is out of the money; the focus here is on Chapter 11. The analysis below follows Bris, et al. (2004).}

In this model, the senior creditor would not spend productively – to increase firm value -- because, her claim being in the money, there is value enough. The junior creditor has an incentive

\footnote{Juniors may attack absolute priority by, among other things, attempting to subordinate senior liens, attempting to recover preferences from seniors, proposing an inflated value for the firm, delaying proposing a plan unless compensated, and proposing a high variance business strategy for the reorganized firm (which can reduce the value of senior debt).}
to spend productively because he is the residual claimant. On the other hand, the junior also has an incentive to engage in rent seeking because his payoff increases as the value of the senior claim falls. Thus, this essay has just shown that juniors or their representative will spend to defeat senior liens. A court that could distinguish efficient from inefficient spending would only reimburse productive junior expert costs; and this would eliminate redistributional spending by both creditor types.

The Code, however, creates perverse spending incentives on the assumption that courts cannot make this distinction. The senior today primarily spends defensively, to fend off the junior’s redistributional efforts, while the junior allocates his spending between productive and redistributional activities, depending on which would most increase his payoff. As a consequence, cases exist in which the senior could make a constructive contribution but will not because her claim is in the money; and the junior could make a constructive contribution but will not, because he does better litigating to subordinate the senior claim. Total firm value falls in consequence, both because value enhancements are foregone and because the court sometimes reimburses junior efforts to defeat absolute priority. A reimbursement scheme animated by a bankruptcy reason instead would attempt to increase senior and reduce junior spending.

A simple reform would authorize the bankruptcy court to reimburse senior spending on experts but not junior spending. It may be possible to do better. To see how, suppose that the insolvent firm itself wanted to maximize value. The firm likely is more competent than the court at distinguishing spending by type. Therefore, the firm would be less likely than the court to compensate the juniors for rent seeking, and would enlist the seniors in value maximization when feasible. The reimbursement power thus should be given to the debtor in possession. Regarding the key assumption, there is an increasing tendency to write compensation contracts with the firm’s
managers (often new ones) that reward the managers for effective turn around efforts. Also, while the managers of insolvent firms have incentives sometimes inefficiently to extend the firm’s life and otherwise to consume private benefits, they seemingly could seldom profit from subsidizing rent seeking by others. Whether the reimbursement power should be given to the court or the to firm, however, a focus on capital cost reduction shows that the power is used perversely today.

3.3 Opting out by solvent parties

Parties cannot contract out of the current Code.\(^{40}\) To see why this matters, realize that in the analysis above creditors already had transferred money or goods to the insolvent firm or rendered services to it. These creditors are owed debts. Some creditors, however, have contracts requiring them to provide goods or services to or to buy goods or services from a firm that later becomes insolvent. Such a creditor may prefer to cancel the contract rather than to continue dealing with an insolvent contract partner. The default rule in commercial law permits a solvent firm to exit.\(^{41}\) The bankruptcy default rule once required the creditor to continue to deal but, prior to 1978, a party could expressly condition its future performance on the solvency of a contract partner, or on the partner’s avoidance of bankruptcy. Today, terms with such conditions, termed “ipso facto” clauses, are unenforceable.\(^{42}\) As a consequence, an insolvent firm that has entered bankruptcy may “assume” an ongoing contract and thereby require the solvent firm to perform it.

\(^{40}\) The rule against contracting out applies to the United States and Continental systems. Parties can effectively contract out of the English bankruptcy law by using the floating charge; this permits the secured party to take the collateral in the event of bankruptcy. The secured lending agreement thus becomes a contract that permits the secured party to avoid bankruptcy whenever the return from foreclosure would exceed the return from participating in the system. The efficiency properties of the floating charge are analyzed in Armour and Frisby (2001).

\(^{41}\) See Uniform Commercial Code §2-609.

\(^{42}\) E.g., §365(e).
The prohibition on ipso facto clauses inefficiently increases firms’ capital costs. To see how, consider a model in which the firm has a financial creditor – the investor – and a supplier – the seller. As before, the firm has a project that requires the sum I to pursue, and whose success probability is partly a function of the effort the firm exerts. The firm’s project cannot succeed without the seller’s product. The seller’s production cost is a random variable j, drawn from [0, j^h] by a cumulative distribution function F(j). The investor supplies funds to permit the firm to operate. A successful project returns v_s drawn from a positive compact support V_s; v_s is sufficient to pay off the seller and the investor. An unsuccessful project returns v_f drawn from a positive compact support V_f. It is assumed that I > max \{v_f\} > j^h. The former inequality holds that no failed project will earn enough to pay off the investor; the latter inequality holds that it may turn out to be efficient for the seller to perform on some unsuccessful projects. The seller, however, prefers breach whenever its production cost turns out to exceed the contract price, which is denoted k.

An insolvent buyer will sue a breaching seller, and the threat of suit will ensure efficient ex post trade if the court can find the buyer’s expectation damages accurately. These damages will be max\{v_f - k, 0\}. The seller thus will perform when its loss (j - k) would be less than the buyer’s loss (v_f - k), which the seller would have to pay as damages; and the seller will breach otherwise. The value of the firm’s project, v_f, is the present discounted value of future returns, however, and courts seldom can observe predicted future returns perfectly. Thus, a court may err in calculating damages. In a standard formulation, the possibility of judicial error is represented by denoting the expected damages that the seller would pay on breach, estimated from when the seller learns what its production costs would be, as E(d) = max\{v_f - k + \epsilon, 0\}, where E(\epsilon) has mean zero and positive

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43 The analysis that follows is drawn from Che and Schwartz (1998).
variance. In less technical words, courts are assumed to find expectation damages accurately on average, but in any given case a court may err on the high or the low side.

The possibility of judicial error implies that the expected damages the seller faces, when it must decide whether to perform or breach, will exceed the true damages. From the seller’s point of view, the damage distribution is truncated at the lower tail: the seller does not benefit from a court’s highly negative errors, because the buyer pays no damages when the seller breaches, but the seller is harmed by the court’s highly positive errors, because the buyer’s damages are unbounded from above. The seller must pay the damages a court finds, however large they turn out to be.

In a world where courts can err, a solvent seller could be compelled by the threat of an erroneously high damage judgment to render an inefficient performance (when the seller’s cost to perform would exceed the buyer’s value from performance). The seller will exit rather than perform inefficiently, however, when its loss would exceed even its excessive damage estimate. In this case, the buyer’s damage remedy functions as an exit fee.

An ipso facto clause would prevent inefficient continuance or the payment of exit fees. The seller would exercise its right under the clause to exit without paying damages whenever its performance cost would exceed the price. An insolvent buyer could pay the seller not to exit only when it would be efficient for the seller to perform; that is, when the return from the buyer’s project would exceed the seller’s cost. Otherwise, the buyer would lack the liquidity to prevent exit. Ipso facto clauses thus replicated the ability of accurate expectation damages to ensure efficient trade. Conversely, making these clauses unenforceable permits insolvent firms sometimes to continue inefficient projects.

Turning to the contract stage, the seller and investor will anticipate that the buyer may continue an inefficient project or that the seller will have to pay a bribe in order to exit. Both
possibilities reduce the solvent parties’ payoffs below those that would have obtained were costless seller exit possible. Part 2 has shown that when creditors’ bad state payoffs decline, creditors require the firm to increase the sum it must pay to them in the event of project success. Prohibiting contracting out thus increases credit costs.

In Congress’ view, the prohibition of ipso facto clauses follows from a bankruptcy reason. If solvent parties could costlessly refuse to deal with bankrupts, it was believed, there would be mass exits of suppliers and customers from insolvent firms. These exits would have the same result as an unregulated creditor right to collect: financially as well as economically distressed firms would be liquidated. This view is mistaken. As just shown, a firm whose projects generate returns in excess of costs can compensate solvent parties for the costs of dealing with it; an economically distressed firm, whose projects generate less than they cost, cannot compensate solvent parties. Therefore, it is the prohibition of ipso facto clauses, not their presence, that reduces the value available for distribution to creditors. A bankruptcy reason thus cannot support the refusal to enforce contacts that permit customers and suppliers to condition their continued performance on the solvency of their contract partners.

4. Contracting for bankruptcy procedures

This essay has argued that a business bankruptcy system should reduce capital costs for borrowing firms, showed that traditional parts of the US Code should be repealed because they actually increase capital costs, and argued that permitting solvent parties to opt out of whatever system is in place also will reduce capital costs. The essay now focuses on a unique feature of bankruptcy systems in Western countries: these systems are mandatory, in the sense that parties cannot use lending agreements to require or induce the borrowing firm to use a particular bankruptcy procedure. In the US, the insolvent debtor decides when to enter a bankruptcy system
and can pick, subject to ultimate court approval, which of the state supplied procedures it will use. The prohibition on procedural contracts distinguishes bankruptcy from other branches of business law. For example, parties to commercial contracts (when insolvency is not an issue) can use the state supplied courts, or contract for a dispute resolution system such as arbitration. Part 4 will show that the prohibition on procedural contracts raises capital costs relative to a system that permits these contracts. This showing raises the question whether the penchant of firms to incur debt over time and from multiple creditors creates practical obstacles to the writing of procedural contracts. Part 4 concludes with two claims: the obstacles to coordinating on “bankruptcy contracts” likely could be overcome; and there is no harm in permitting parties to try.

4.1 The bankruptcy initiation problem

Parties free to contract apparently would require the debtor to choose a bankruptcy procedure that would give the debtor nothing if it filed for bankruptcy. This contract would maximize ex post creditor returns, with the efficiency effects that Part 2 describes. Driving the firm’s bad state payoff to zero, however, would create a disincentive for the firm to use the procedure. Rather, the insolvent firm would have an incentive to delay filing; for it receives nothing if it files today but could consume resources if it files tomorrow.44 A contract that gives the insolvent firm a portion of the insolvency return ameliorates this problem, but would worsen the firm’s incentive to invest. Thus, at the lending stage, parties face a tradeoff between two incentive problems: to encourage the firm to exert optimal effort; but to induce the firm, conditional on project failure, to enter a bankruptcy system without first wasting assets. The relative strength of

44Decamps and Faure-Grimaud (2002) also show that when the game between the owners of a levered firm and its creditors is analyzed in a dynamic option framework, the owner’s option always induces excessive continuance; the firm, left to its own devices, will operate longer than is optimal.
these conflicting incentives turns out to vary with the parties’ circumstances, so that no single contract would be optimal all of the time. It follows that no single mandatory bankruptcy system would be optimal all of the time.45

Continuing with a multi-period variant of the model introduced in Part 2, after the firm borrows, it exerts effort in period one. As before, project success is a function of the firm’s effort level and a stochastic state variable. The project’s “type” is realized in period two. The project will be (i) a success for sure that returns the value $v_s$; (ii) a failure for sure that returns $v_f$; or (iii) a success that will return $v_s$ with probability $p$ if run as originally planned, but will return $v_s$ with probability $q > p$ if further credit is extended and the project is restructured. The firm agrees to repay lenders the sum $F$ where $v_s > F > v_f$; thus, the firm is solvent only if the project succeeds. In period two, the firm observes a “signal”, private to it, that reveals the type of project it turns out to have. In period 3, creditors and the market can observe the project’s type. In this variant of the model, it is efficient to extend further credit to type (iii) projects in period 3 or before: the marginal increase in the expected value of success is assumed to justify the additional infusion of funds. In period 4, project returns are realized. A rescue of a type (iii) project is assumed to be futile by that time: bad projects commonly deteriorate. Of significance, the firm’s owners earn a private benefit from operating the project in periods one to three.47

Either of two lending agreements could be optimal in this story. The first contract, denoted

45A number of authors observe that if the firm is insolvent but has a possible good new project, the firm’s incentive to pursue the project would increase if the firm is permitted to share in the returns. For analyses of this suggestion and its effect on ex ante incentives see Rasmussen (1994) and Adler (1992). A contract theory approach that also reaches this conclusion is in Schwartz (1994). The model here considers only a firm’s original projects.

46The analysis below follows Povel (1999).

47A private benefit could be the utility of running the firm or the consumption of perks.
Recalling that $v_s > F$, refinancing permits the firm to earn an additional expected return of $(q - p)(v_s - F) > 0$ if the project is refinanced. Any payment to the firm in the bad state reduces the wedge between the firm’s good and bad state returns, and thus worsens its incentives. Formally, denote by $s$ either payment the firm receives under the disclosure contract. Then the firm will choose its effort level to maximize

$$R = p(e; \theta)(v_s - F) + (1 - p(e; \theta))s - e.$$ 

The solution to this problem is $p'(e; \theta)(v_s - F - s) = 1$. The left hand side of this expression is less than the left hand side of Equation (5) set out in Part 2, so the firm exerts less effort when it
receives a payment in the bad state than when it receives nothing in the bad state. Therefore, which contract is optimal turns on which incentive it is more important for parties to encourage: optimal investment, at the cost of foregoing the opportunity of an efficient early intervention, or optimal disclosure, at the cost of a reduced incentive to invest.

The incentive contract $k_e$ often would be best if type (iii) projects are rare; for then, early rescue would not be a serious concern. When the choice is between success or failure, avoiding failure -- encouraging high effort -- often is best. The disclosure contract $k_d$ is more likely best if the firm’s project will with positive probability need more funds to avoid failure; for then a prompt rescue or early loss cutting may be needed. The optimal contract thus is parameter specific: parties would not always use one of these contracts in preference to the other because the nature of projects and the ability to carry projects out differ across firms.

The disclosure contract $k_d$ is analogous to a “soft” bankruptcy procedure, in which absolute priority is violated (the firm gets a share of the insolvency return), and the firm’s managers sometimes retain their jobs. Firms functioning under such a procedure may enter bankruptcy in time to be rescued. The incentive contract $k_e$ is roughly analogous to a “tough” bankruptcy procedure that liquidates the firm, follows absolute priority in distribution and dismisses the old managers. Firms functioning under this system may unduly delay entering bankruptcy. Chapter 11 reorganizations resemble soft procedures and Chapter 7 liquidations resemble tough procedures. The analysis here thus implies that the firm’s cost of capital would be reduced if it could contract with lenders to use either Chapter 11 or Chapter 7, depending on which procedure would best solve the parties’
particular bankruptcy initiation problem. A deeper look into the state dependency of the returns that a bankruptcy system can generate reenforces the claim that it is desirable to permit parties to contract for bankruptcy procedures.

4.2 Contracting for a procedure.

A. State dependency

The optimality of a bankruptcy system is state dependent because a firm’s assets may have a high industry specific component, and because bidding coalitions sometimes can form. These points are demonstrated below by comparing a procedure that requires the insolvent firm to be auctioned to the market with a procedure that permits reorganization - a sale of the firm to its current claimants. Auctions have been attractive to bankruptcy scholars because an auction permits the market rather than a public decisionmaker to make the continuation versus liquidation decision. A firm that wins the auction has better incentives and more expertise than a public official at choosing correctly between continuing the firm or shutting it down. If the insolvent firm is large, investment banker and legal fees associated with auctions, some practitioners claim, may eliminate much of the cost difference between liquidation and reorganization.

Auctions may be offset when a firm’s tangible assets have a substantial industry specific component. As an example, firms in many industries use computer systems but only firms in the steel industry use annealing machines. These machines thus are worth only their scrap value to buyers outside the industry. When asset specificity is high, industry firms will be the more likely

50See Baird and Morrison (2001).

51If the insolvent firm is large, investment banker and legal fees associated with auctions, some practitioners claim, may eliminate much of the cost difference between liquidation and reorganization.

52This was originally noted in Schleifer and Vishney (1992).
buyers of an insolvent firm’s assets and will pay the most. Economic and financial distress may be correlated across firms in an industry. When this correlation is high, (barely) solvent industry firms may lack the liquidity to buy insolvent firms. Hence, in cases when asset specificity and the correlation of returns across firms are high, a Chapter 11 reorganization likely will maximize the insolvency return relative to an auction.

The relation among these economic factors may be made more precise by letting \( L \) be the liquidation (or auction) value that a firm’s assets will bring, \( z \) the probability that a firm outside the industry will win the auction and \( \gamma \) the degree of industry specificity the firm’s assets possess, where \( 0 \leq \gamma \leq 1 \) and \( \gamma = 1 \) denotes complete asset specificity. The firm is assumed to bring \( v \) if sold to another firm in the same industry. Thus, the sale value of the firm’s assets is

\[
L = (1 - z)v + z(1 - \gamma)v
\]

The first term on the right hand side is the expected value of a within industry bid and the second term is the expected value of an outsider bid. The expression simplifies to

\[
L = (1 - z\gamma)v
\]

When the likelihood that a within industry bidder will appear is low (\( z \) is high), and when the industry specific character of the firm’s assets increases (\( \gamma \) is high), the auction value \( L \) falls.

Bankruptcy auctions are mandatory in Sweden. As expected, these resolve insolvencies more quickly than Chapter 11 does. The model sketched here regarding auction results also has been tested on Swedish data\(^{53}\), with three results. First, auctions dissipate between 23% and 39% of asset value, depending on the economic parameters.\(^{54}\) Second, creditors will finance sales to themselves and the

\(^{53}\)See Stromberg (2000).

\(^{54}\)This is consistent with Pulvino (1999), which finds that bankrupt airlines sell planes at discounts that range from 14%-46% relative to sales by nondistressed airlines, and with
firm’s old owners when market sales would have produced an even larger value loss. Third, sales to the old owners occur more than 60% of the time. A bankruptcy system that always requires auctions, or never permits them, thus is less efficient than a system that permits the method of maximizing value to turn on the economic parameters that obtain when insolvency occurs. This conclusion is strengthened when the potential for an inefficient auction is considered.

An auction is efficient when assets are sold to the bidder with the highest valuation. This goal may be frustrated when one of the bidders has an initial stake in the auctioned object and the object’s value is not transparent. To see why, consider a coalition between an impaired creditor (its claim is out of the money) and management bidding against an outsider. The creditor may join with the firm if the firm has some private information and the firm may prefer dealing with a party it knows rather than a stranger. The coalition has a stake in the sense that, holding debt and equity, it will receive some of the auction proceeds. The outside bidder can acquire information about firm value at a cost that exceeds the coalition’s cost (because coalition members are informed in virtue of their status).

Inefficiency may result because the coalition has an incentive to bid more than the value of the firm to it. This incentive has two sources. First, overbidding forces the price up; this increases the coalition’s gain if it loses the auction because the coalition will then sell its stake to the winner. Second, the coalition is subsidized to overbid because, having a stake, it actually pays part of the bid price to itself if it wins. Overbidding can yield inefficiency when the outside bidder has a higher

Hotchkiss and Mooradian (1998), which finds that bankrupt targets (entire firms) are purchased at a 45% discount on average, relative to prices paid for solvent firms in the same industry.

This claim presupposes asymmetric information between at least some creditors and the firm regarding the mean auction value for the insolvent firm. This assumption is consistent with the view that bankruptcy proceedings reveal information about the value of insolvent firms.

The analysis here follows Hotchkiss and Mooradian (2003).
valuation for the firm’s assets than the coalition has. If a coalition overbid exceeds such an outsider’s valuation, the outsider will drop out even though it would have won had the coalition bid truthfully. As a result, the party with the lower valuation rather than the higher will win. More seriously, outsiders who must pay a cost to enter – to become informed – know that they are bidding against insiders with an incentive to push prices up. This knowledge may cause an outsider with the highest valuation for the firm’s assets not to enter.

The extent of inefficiency is a function of who the members of the coalition are. To see why, realize that a creditor whose claim is not impaired would not bid above the value of that claim; for any excess would go to junior creditors. Senior creditors are less likely than juniors to hold impaired, or seriously impaired, claims. Therefore, a coalition between a senior creditor and juniors or equity will probably run an efficient auction. In contrast, junior creditors whose claims are far out of the money will try harder artificially to inflate auction revenues. As a consequence, whether an auction would maximize ex post value partly depends on the firm’s capital structure when it becomes insolvent. Auctions are more likely best if much of the debt is held by a few seniors, and less likely to be good if there is considerable junior debt. Once more, requiring auctions in every case seems unwise.57

An analysis of state dependency appears to imply that the choice of procedure – liquidation or reorganization – is best made ex post, when the circumstances the parties actually face are apparent. Part 4.B, however, next extends the model of Part 2 to show that lending agreements that induce the insolvent firm to make the optimal procedural choice will sometimes maximize creditor returns

57Baird and Rasmussen (2003b) report an increasing number of asset sales in Chapter 11, and claim that creditors played a major role in causing these sales to be made. Regrettably, their data set does not indicate who the initiating creditors were and the number of bidders in each case. Thus, it is difficult to evaluate the efficiency of these auctions.
relative to current law, which delegates the choice to the firm after insolvency has occurred.58

B. Inducing optimal choice

In this version of the model,59 two bankruptcy procedures exist, denoted L and R. The L system auctions firms to the market while the R system reorganizes them60. When a firm borrows to finance its project, which of these systems will be optimal should the firm become insolvent is unknown; as Part 4.A showed, the optimality of a bankruptcy system depends on the later state of the world. The firm’s owners and managers receive a private benefit from operating the firm during a bankruptcy procedure. This benefit is larger in the R procedure because a reorganization takes longer to realize and thus permits the owners to be in charge for a longer period (and to have a greater probability of remaining in charge permanently). Only private benefits matter to the firm because, being insolvent, it has no claim to the monetary return a procedure could generate. Therefore, the firm will always choose the R procedure unless constrained.

The firm submits lending agreements to potential creditors, who function in competitive credit
markets. Two contract types are considered. The first contract, denoted an R contract, is silent about bankruptcy, thereby implicitly delegating the choice of procedure to the firm ex post. If the L system turns out to be optimal, parties to the R contract can renegotiate to use the L procedure. The marginal gain from using the optimal procedure can sustain the payment of a reorganization bribe to the firm to forego the greater private benefits of a reorganization. Just how the surplus from avoiding an inefficient reorganization is divided in particular cases is a function of the parties’ bargaining power.

The firm also can offer potential creditors a different agreement, denoted the L contract, that would pay the insolvent firm a share of the monetary return that an insolvency procedure will generate, regardless of the procedure the firm chooses. The firm’s share is set to compensate the firm for foregoing the greater private benefits of the R procedure when the L procedure would be optimal. In the model, both contract types yield ex post efficiency: that is, the insolvent firm will always make the efficient procedural choice. Hence, the optimal contract will maximize the creditors’ expected monetary return given the correct choice of procedure. An example is set out next to show that the L contract sometimes is optimal in this sense. This is significant because, as said, parties today can only write R contracts: ex ante contractual constraints on the power of insolvent firms to choose the bankruptcy procedure are unenforceable.

In the example, the L procedure returns 300 for distribution to creditors when it is optimal; the R procedure returns 200 when it is optimal; and the R procedure would return 100 when the L procedure is optimal but the firm uses the R procedure instead. The L procedure is optimal with a

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61This essay does not take a position on whether bankruptcy auctions should permit noncash bids, as argued by Aghion, Hart and Moore (1992). Rhodes-Kropf and Viswanathan (2000) have shown that participants in noncash auctions are likely to bid with debt, so that firms may emerge from bankruptcy substantially leveraged, a prediction that is consistent with the evidence. See Gilson (1997).
50% probability. The firm is assumed to have 75% of the bargaining power in a renegotiation, which is plausible if much of the debt is unsecured because creditor coordination costs are high then.\textsuperscript{62} The firm’s owners receive a private benefit of 30 in the L procedure and a private benefit of 80 in the R procedure.

The creditors’ return under the R contract is calculated as follows: The creditors receive the full monetary return of 200 when the R procedure is optimal because the firm will choose the R procedure without having to be bribed. The creditors receive 25% of the marginal gain from using the L procedure when it is optimal; this gain here is 200 (300 under L rather than 100 under the suboptimal R); the rest of the gain goes to the firm as an ex post bribe. Hence, the creditors’ expected return under the R contract is

\[ R_k = .5(200) + .5[100 + .25(200)] = 175 \]

The L contract requires the firm to receive a portion of the monetary return from the procedure it chooses. This share must compensate the firm for foregoing the larger private benefit it would realize under the R procedure.\textsuperscript{63} Letting \( t \) be the requisite bribe (0 < \( t < 1 \)), \( t \) solves

\[ t(300) + 30 \geq t(100) + 80 \]

The first term on the left hand side of this inequality is the firm’s share of the L procedure monetary return when L is optimal; and the second term is the firm’s private benefit from using the L procedure

\textsuperscript{62}If the debt is widely held and the firm can credibly threaten to use the suboptimal procedure, it can make a take it or leave it offer to the creditors that will deprive them of much of the surplus from using the correct procedure. See Schwartz (1993). Such a threat may be possible to make here because the firm always prefers the R procedure. In addition, if a creditor has market power and thus would earn positive profits by continuing to deal with the firm, the firm can exploit this dependency in a renegotiation. See Wilner (2000).

\textsuperscript{63}The firm has all of the ex ante bargaining power because creditors function in competitive markets. Consequently, the contractual bribe to the firm is determined only by the value of the private benefits the firm may have to give up.
procedure. The first term on the right hand side is the firm’s share of the suboptimal R procedure monetary return; the second term is the firm’s private benefit from using the R procedure. On these values, $t \geq .25$. Thus, the creditors’ maximum expected return under the L contract is

$$L_k = .75[.5(300) + .5(200)] = 187.50$$

The firm will choose the optimal procedure under this contract so the term in brackets is the expected value of an efficient procedural choice. The firm must be paid at least 25% of this return. On these parameters, the firm thus would like to offer creditors the L contract when it borrows.64

The L contract is not always optimal, however. The R contract may be best if creditors have considerable bargaining power ex post (much of the debt is secured, for example); if the R procedure is likely to be optimal (for the R contract permits creditors to capture the entire R monetary return without having to pay a bribe); or if the R procedure would generate relatively high returns when it is optimal. The L contract is best when the converse parameters obtain.

To generalize, then, parties to lending agreements face a multi-faceted contracting problem: to induce the debtor to invest optimally, to enter bankruptcy at the optimal time, and to choose the optimal bankruptcy procedure. The L contract described here and the soft $k_d$ contract described in Part 4.1 thus would be combined in an efficient contracting strategy. Permitting parties the freedom to pursue this strategy would reduce credit costs relative to the current prohibition of ex ante bankruptcy contracting.

**C. Impediments to bankruptcy contracting.**

There is a question whether parties would write bankruptcy contracts were they free to do so.

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64 The L contract sometimes would have the additional advantage of creating a soft bankruptcy procedure because the firm receives a share of the insolvency return.
An initial impediment to bankruptcy contracting is creditor conflict. Conflict could arise from two sources: creditors have different maximands and the juniors and seniors may disagree over the investment strategies the firm could pursue. Regarding the former source, financial creditors want to maximize the return on the outstanding debt; for they have ceased to lend. In contrast, a creditor who is a customer or supplier of an insolvent firm may prefer the R procedure, whether it is optimal or not, if the insolvent firm would be difficult for such a creditor to replace. The profit the creditor would earn during the more lengthy R procedure may outweigh the loss the creditor could suffer from collecting less of its pre-bankruptcy debt. Creditors that anticipate sharing the firm’s preference always to use the R procedure would reject a bankruptcy contract that sometimes would induce the firm to choose the L procedure.

Creditor conflict of this kind is dealt with inside bankruptcy by a combination of majority and supermajority voting rules. A similar solution should be implemented in the contracting field. A bankruptcy contract should bind all creditors if a majority in amount of creditors have signed it. Thus, conflict among financial and trade creditors would not preclude bankruptcy contracting under an efficient bankruptcy law.

Conflict also could exist among senior and junior creditors. The firm does not choose a business strategy under the L procedure because it is sold at auction. The firm does choose a business strategy under the R procedure, and so can affect the degree of risk it will assume. The juniors thus may prefer the firm to choose the R procedure if their claims are out of the money; under it, they perhaps could induce the firm to choose a strategy with an especially high upside. The R procedure thus could increase the juniors’ expected payoff. In contrast, seniors commonly prefer the

65This is a variant of the concern that insolvent firms will overinvest.
The juniors are residual claimants, and thus actually have conflicting incentives. On the one hand, they prefer the firm to choose the efficient investment strategy; this will maximize the expected size of the pie and so maximize the chance of a return for juniors after the seniors have been paid. On the other hand, because the juniors have a call option on the firm, they sometimes will prefer the firm to pursue a strategy that has a lower mean return but a higher variance. As it happens, when the juniors’ choice is analyzed formally, it appears that the juniors would prefer the risky strategy only when the variance it generates would be very high. Consequently, the conflict discussed in text is uncommon. For a demonstration of this point see Schwartz (1999).

Juniors may be reluctant to sign a bankruptcy contract that could prevent them from increasing risk ex post.

This conflict should not prevent bankruptcy contracting because the firm could bribe a dissenting junior to sign the optimal contract. To see how, assume that the L procedure would be optimal ex post. Denote the marginal gain from using this procedure as \( b = v_L - v_R \). Let \( y \) be the incremental value to the juniors from using the R procedure when the L procedure is optimal. The seniors hold the fraction \( \zeta > 0 \) of the firm’s debt and the juniors hold the fraction \( 1 - \zeta \). Total value in the L procedure is the sum of the parties’ gains less the junior creditors’ loss: \( V_L = \zeta b + (1 - \zeta)(b - y) = b - y(1 - \zeta) > 0 \). To say that the L procedure is optimal implies that \( b > y \). Therefore, the firm could make the junior creditors better off if they signed the optimal L contract by sharing with the juniors a fraction of the marginal surplus that this contract will generate.\(^{66}\)

A perhaps more serious contracting problem stems from the state dependency of bankruptcy procedures. As an example of the concern, let the R contract be optimal when the firm first borrows but the L contract become optimal before earlier debt is repaid. The firm’s lending agreements would then be time inconsistent. This problem also has an apparent solution, which is to include in every agreement a term that would convert the agreement into the form, as regards the choice of a bankruptcy procedure, that is optimal in light of current circumstances. In the posited example, the

\(^{66}\)The juniors are residual claimants, and thus actually have conflicting incentives. On the one hand, they prefer the firm to choose the efficient investment strategy; this will maximize the expected size of the pie and so maximize the chance of a return for juniors after the seniors have been paid. On the other hand, because the juniors have a call option on the firm, they sometimes will prefer the firm to pursue a strategy that has a lower mean return but a higher variance. As it happens, when the juniors’ choice is analyzed formally, it appears that the juniors would prefer the risky strategy only when the variance it generates would be very high. Consequently, the conflict discussed in text is uncommon. For a demonstration of this point see Schwartz (1999).
It has been argued that bankruptcy contracts are not strategy proof: the firm could request a suboptimal bribe in early borrowing, to obtain an artificially low interest rate, and then raise the bribe to the correct level in later contracts, thereby exploiting initial creditors. Anticipating exploitation, an early creditor would refuse to sign the contract, thereby unraveling the contractual scheme. See LoPucki (1999). There are three problems with this claim: (i) The firm would be committing fraud, which is rare for solvent borrowers to do; (ii) The firm would be reluctant to behave in this fashion if it expected to borrow again because the behavior would cause the firm to lose considerable goodwill; (iii) The firm could credibly commit not to raise the bribe on the eve of bankruptcy, when it may be desperate, by offering what is described above as a “tough” contract, that would result in an immediate transfer of control to creditors if the firm proposed a nontrivial increase in the bribe percentage.

An analysis of the parties’ contracting problem – to create efficient incentives for firms to invest, not to delay filing for bankruptcy when insolvent, and to choose the optimal bankruptcy procedure – implies that one size does not fit all: any single system would be suboptimal for some sets of parties some of the time. As a result, theoretical reasons exist for believing that bankruptcy contracting would be efficient. The state therefore should create a menu of bankruptcy procedures from which firms and creditors could choose. If contracting difficulties are surmountable, firms’ capital costs would be materially reduced; if few bankruptcy contracts would be written, nothing
This proposed reform is consistent with Rasmussen (1992), who argues that the state should supply potential borrowers with a menu of bankruptcy procedures that firms can put in their corporate charters. Parties would be required to use the system the firm’s charter selected. This proposal has the disadvantage that the applicable procedure would not turn on the current economic parameters (because corporate charters are difficult to amend), but it has the advantage of avoiding contracting difficulties.

These contracts are discussed in Baird and Rasmussen (2003b).

The model here thus is similar to the bankruptcy initiation model used in Part 4.1 above.

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70The model here thus is similar to the bankruptcy initiation model used in Part 4.1 above.

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that may be salvageable, whether the L or the R procedure would be optimal in the event of failure. For example, signs of general industry distress would suggest that the R procedure would generate greater monetary returns than the L procedure. Creditors would not contract regarding bankruptcy if the R procedure would be optimal because the firm chooses this procedure when unconstrained. In contrast, creditors may condition the further provision of funds to a distressed firm on the firm’s choice of a procedure if some form of liquidation would be optimal.

5.1 Auction contracts

Parties would write an auction contract only when that would make creditors and the firm better off: creditors because the auction will increase their expected payoffs; the firm because it gets a share of the expected marginal increase in surplus. An auction contract thus is analogous to the renegotiation bargain modeled above, pursuant to which parties agree ex post to use the L procedure when it turns out to be optimal. Part 4.2 showed that renegotiation bargains yield ex post efficiency – the firm chooses the optimal procedure -- but sometimes would not maximize the creditors’ expected bad state return. As a consequence, interest rates are higher when parties are restricted to renegotiation ex post than rates would be if parties could put procedural terms in the credit agreement.

It follows that not to enforce auction contracts would make a bad situation worse. Ex post contracts nevertheless are controversial. They often are obtained by secured lenders, and these lenders are thought to have poor incentives, requiring liquidation just when and because an immediate sale would pay them close to in full rather than when liquidation would maximize total firm value. This objection is inapplicable to the auction contract, under which the firm is offered to

the analysis here assumes that an auction contract requires the firm to conduct the auction. If such a contract permits a coalition of creditors and the firm to bid, an auction could be inefficient for the reasons Part 4.2.A set out. This possibility is not pursued here because ex post contracts appear mainly to be exacted by senior lenders. As said above, coalitions including seniors are likely to run efficient auctions.

5.2 Foreclosure contracts

A foreclosure contract, or stay waiver, may be inefficient. To see how, let the borrower be insolvent and consider the three possible states of the world: (a) The secured claim exceeds the value of the liened assets; (b) The secured claim is less than the value of the liened assets, but the firm’s total assets are worth less than its total debt; (c) The firm’s total assets are worth more than its total debt. A foreclosure contract would be efficient in case (a). The secured lender’s claim is out of the money. Thus, this creditor has an incentive to maximize the value of the collateral to minimize the size of its loss. A foreclosure contract would not be written in case (c), if the credit market were efficient, because the firm would then refinance and pay off the senior lender. A foreclosure contract also would not be written in case (b) if junior creditors could coordinate their activities. In this case, the juniors would bribe the senior to foreclose efficiently or to permit the juniors to foreclose. The bribe would be paid from the increase in expected surplus that would be realized from a maximizing sale. A foreclosure contract thus would be inefficient – the firm’s assets would be sold by the wrong party – when case (c) obtains but the market will not finance a viable firm, or when case (b) obtains but creditors cannot coordinate collection efforts.

A bankruptcy court will see efficient foreclosure contracts when case (a) obtains, and will see inefficient foreclosure contracts when cases (b) or (c) obtain. The secured creditor’s claim is in the market. A successful bidder must then buy the firm. If the winning bid exceeds the secured debt, the juniors are entitled to the residual.72

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72The analysis here assumes that an auction contract requires the firm to conduct the auction. If such a contract permits a coalition of creditors and the firm to bid, an auction could be inefficient for the reasons Part 4.2.A set out. This possibility is not pursued here because ex post contracts appear mainly to be exacted by senior lenders. As said above, coalitions including seniors are likely to run efficient auctions.
money in the latter two cases, so the court’s best response when asked to enforce a foreclosure contract is to conduct a valuation hearing. The secured party should be permitted to foreclose on a showing that its claim is out of the money, but not otherwise. Ex ante contracting would be superior to this second best procedure. Under a procedural contract, Part 4.2 showed, no hearing would be necessary: the bribe to the insolvent firm would be set such that the firm would choose liquidation, and the form of liquidation, that would maximize creditor returns.

6. Conclusion.

This essay makes three claims. First, a business bankruptcy law should reduce the costs of debt capital for firms. These costs fall as payoffs to creditors increase. When firms’ capital costs fall, the set of positive value projects that credit markets can fund increases, as do the incentives of firms to invest effort in funded projects. Second, bankruptcy law should largely be a set of defaults, as business law is generally. These two claims imply, among things, that a bankruptcy law should have no avoiding powers, that parties to lending agreements should be permitted to contract ex ante for the bankruptcy system they prefer and that parties should be free to contract out of bankruptcy altogether. Bankruptcy law should be voluntary rather than mandatory because the diversity of parties and of circumstances in advanced economies is so great that no single bankruptcy system could create optimal incentives for every borrower and its creditors.

This essay is incomplete in three respects regarding these two claims. Initially, the essay fails to relate the firm’s choice of capital structure to the efficiency of particular bankruptcy systems. To illustrate this link, a firm may choose the number of creditors to have, or the ratio of secured to unsecured debt, in order to maximize its liquidation value in the event of failure. A firm also may

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73See Repullo and Suarez (1998); Bolton and Sharfstein (1996).
choose a sufficiently low debt level such that, if that level cannot be sustained, the firm will be economically distressed with certainty.\textsuperscript{74} Such a capital structure can yield roughly the same outcomes as the L contract described above; for a necessary implication of the insolvency of a firm with the posited capital structure is the efficiency of liquidation. Capital structure issues have been neglected here because they are relatively neglected in the literature. Further, the essay fails to analyze a recent practice under which creditors induce the firm to write compensation contracts that condition managerial payoffs on value increases. For example, a manager may receive a bonus if the firm emerges promptly from Chapter 11 with a viable business plan. Good contracts seldom can entirely eliminate the effect of bad laws, however, so this essay focuses on how to improve the system.

Finally, this essay discusses few Code sections in detail. This partly is a consequence of space constraints. Perhaps more importantly, it is a current practice to analyze a small set of rules while holding constant the rest of the current structure.\textsuperscript{75} A goal of this essay, in contrast, is to call a constitutive feature of the structure itself into question. This feature, of course, is the law’s mandatory nature. This essay is relevant to the analysis of particular rules, however, because the essay attempts to state what the goal of a business bankruptcy law should be. Keeping the object in mind should help analysis on the ground.

This essay’s third claim is that bankruptcy law should not respond to two related sets of social issues: the effect of firm failure on employees and on local communities.\textsuperscript{76} Regarding jobs, an

\textsuperscript{74}See Adler (1997); Alderson and Betker(1995).

\textsuperscript{75}For excellent work in this vien, see, e.g, Adler and Ayres (2001); Aghion, et al. (1994); same authors (1992); Bebchuk (1988).

\textsuperscript{76}For claims to the contrary, see, e.g., Blum (2000); Warren (1987).
employee has two types of human capital, broadly speaking: firm specific human capital, which is useful in the current firm; and general human capital, which is useful to the labor market. Understanding how best to make a particular production line work is firm specific human capital; knowing how to program a computer is general human capital.

Firm specific human capital is partly protected by a bankruptcy system that preserves financially distressed firms because these are continued as entities. A piecemeal liquidation, in turn, will not affect workers whose human capital is primarily general because they can work anywhere. Thus, the social goal of protecting jobs and the economic goal of eliminating inefficient firms conflict only when it is proposed to liquidate an economically distressed firm but its employees possess firm specific human capital. Liquidation makes this capital redundant, but nevertheless is preferable to continuing the firm for two reasons. First, when a firm has negative economic value, the firm specific human capital of its employees also has negative economic value. Such human capital is best redeployed. Second, unemployment is a general social problem, not a special bankruptcy problem. Social programs that respond to unemployment thus help the workers of all closed firms.

Bankruptcy law also should not respond to local communities whose welfare may be reduced by firm failure. Healthy firms in decentralized economies commonly close, reduce the scale of, or move plants. These economic choices in the aggregate help society but can hurt particular localities. Perhaps social programs should be created to help communities suffering from the consequences of economic change. Such community assistance programs also would respond to plant closings resulting from the liquidation of economically unviable firms. Also, communities can, and sometimes do, use tax breaks, industrial zones and the like to buy the presence of firms that would generate positive externalities. These “local community markets” can allocate otherwise failing firms.
to places that value their continuance.

The importance of facing firms with hard budget constraints has been clearly demonstrated by the contrasting performances of firms in market and mercantilist economies. Firms that are not allowed to fail, in order to protect workers and localities, employ too many people, fail to innovate, produce poor products and lose large sums of money. A good bankruptcy law must have a high degree of toughness because it is being hard on failure that causes capital costs to fall.

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