

2009

## The Economics of Bankruptcy: An Introduction to the Literature

Edward R. Morrison  
*Columbia Law School*, [emorri@law.columbia.edu](mailto:emorri@law.columbia.edu)

Follow this and additional works at: [https://scholarship.law.columbia.edu/faculty\\_scholarship](https://scholarship.law.columbia.edu/faculty_scholarship)



Part of the [Banking and Finance Law Commons](#), [Bankruptcy Law Commons](#), [Business Organizations Law Commons](#), and the [Law and Economics Commons](#)

---

### Recommended Citation

Edward R. Morrison, *The Economics of Bankruptcy: An Introduction to the Literature*, ECONOMICS OF BANKRUPTCY, VOL. 1, EDWARD R. MORRISON, ED., EDWARD ELGAR PUBLISHING, 2013; COLUMBIA LAW & ECONOMICS WORKING PAPER NO. 366 (2009).

Available at: [https://scholarship.law.columbia.edu/faculty\\_scholarship/2419](https://scholarship.law.columbia.edu/faculty_scholarship/2419)

This Working Paper is brought to you for free and open access by the Faculty Publications at Scholarship Archive. It has been accepted for inclusion in Faculty Scholarship by an authorized administrator of Scholarship Archive. For more information, please contact [cls2184@columbia.edu](mailto:cls2184@columbia.edu).

# Economics of Bankruptcy Volume I

*Edited by*

**Edward R. Morrison**

*Professor of Law, University of Chicago Law School, USA*

ECONOMIC APPROACHES TO LAW

**An Elgar Research Collection**

Cheltenham, UK • Northampton, MA, USA

# Introduction

Edward R. Morrison<sup>1</sup>

---

This book samples bankruptcy-related articles from two fields: corporate finance and bankruptcy law. These fields tackle similar questions, often without acknowledging the overlap. This book attempts to integrate the two and present a coherent picture of the law and economics of bankruptcy.

I begin with five articles that articulate comprehensive economic theories of business and consumer bankruptcy law. These articles, by Douglas Baird, Thomas Jackson and Samuel Rea, were not the first to apply economic analysis to bankruptcy law. They are important instead because they set forth analytic frameworks that have exerted lasting influence on scholarship in this area. As I give a brief tour of these articles, I highlight their key assumptions and conclusions. The rest of the chapter (and the book) identifies important articles that extend or challenge these assumptions and conclusions.

Please note that this book focuses exclusively on *bankruptcy law*. A vast literature addresses financial distress generally; an equally vast literature analyses creditor remedies generally. These scholarly inquiries are beyond the scope of this book, which focuses on a particular legal response to financial distress, namely, laws regulating reorganization and liquidation for firms and the ‘fresh start’ for individuals.

Additionally, this book focuses primarily on bankruptcy law as applied to *non-financial* entities. The specialized laws regulating the insolvency of commercial banks, insurance companies, and similar institutions are not considered.

## Vol. I Part I: Comprehensive Theories of Bankruptcy Law

The book begins with a seminal article by Jackson (Chapter 1), which identifies conditions under which bankruptcy law functions as a remedy for market failure. When a debtor defaults, each creditor will take steps to reduce its claim to judgment, force a sale of the debtor’s assets, and recover payment. These collection efforts are costly to the creditor as well as the debtor. If the debtor is insolvent, unsecured creditors will rush to liquidate the debtor’s assets; each will rush because the debtor’s assets are limited and non-bankruptcy laws (for example, US state laws) typically distribute them on a first-come–first-served basis. This rush generates duplicative collection costs by each creditor. More importantly, efforts to liquidate assets – by both secured and unsecured creditors – can reduce the value of those assets. Creditors will liquidate assets on a piecemeal basis, but the assets might generate greater value if kept together. Assuming the debtor is a business, this excess value – beyond the piecemeal liquidation value of the assets – is going-concern surplus.

There is, then, a potential collective action problem when a debtor becomes insolvent and is pursued by its creditors: though the average payment to creditors might be larger if they

offered the debtor forbearance, no creditor has an incentive to do this. The creditor that forbears is the creditor that risks being last in line when the debtor's assets are liquidated.

Creditors could, of course, preserve value by entering a joint bargain with the debtor – when the loans are made or when financial distress occurs – that commits the parties to use a collective process to resolve the debtor's distress. If the process reduces creditor collection costs and preserves going-concern surplus, when it exists, all parties are made better off by this bargain. Equityholders are better off because going-concern surplus is preserved, which may be sufficient to yield them a recovery. Unsecured creditors are better off because the process reduces their collection costs and increases their recoveries. Even though secured creditors are less concerned about these issues because their recoveries are tied to particular assets, they too may be better off. They can threaten to disrupt the collective process unless they receive a share of the gains to unsecured creditors and equityholders. Secured creditors, for example, could demand a relatively high interest rate in return for their willingness to sign a contract that commits them to a collective process in the event of the debtor's distress.

Such a collective bargain makes all parties better off, but is unlikely to be struck, either *ex ante* (when loans are made) or *ex post* (when financial distress occurs). Bargaining is costly when the number of creditors is large and when different creditors lend at different times. And any bargaining effort will be vulnerable to free-riding: it will be individually rational for each creditor to wait for others to enter an agreement with the debtor and then to pursue its own collection efforts. Because the remaining creditors have committed themselves to forbearance, the renegade creditor will be first to collect in the event of default, and will likely receive full recovery at the other creditors' expense.

What we observe, then, is a market failure: although all creditors (and the debtor) would be better off if they agreed to a collective proceeding for resolving distress, transaction costs and hold-out problems prevent them doing this. Optimal bankruptcy law, Jackson argues, remedies this market failure by providing what the creditors would have bargained for if they had been able to reach agreement, namely a mandatory, collective proceeding for resolving financial distress.

Jackson's article sketches a theory – the 'creditors' bargain' – for evaluating bankruptcy law. That theory was articulated and applied by Jackson and Douglas Baird in a series of highly influential articles published in the 1980s. A flavor of this application is given by the latter half of Jackson's 1982 article. He shows, among other things, that the Code's treatment of secured creditors is, in theory, consistent with the creditors' bargain theory but, in practice, a significant deviation from it. In theory, the Code seeks to make secured creditors indifferent – via 'adequate protection' payments – between forcing immediate sale of collateral and participating in the bankruptcy process. In practice, 'adequate protection' payments are highly undercompensatory due in part to the fact that judges do not apply market standards in deciding what compensation is 'adequate'.

This argument is developed by Baird and Jackson (Chapter 2) in the second article of this book. The authors begin with the core assumption of the creditors' bargain theory: bankruptcy law exists to 'reduc[e] the costs associated with diverse ownership interests and encourag[e] those with interests in a firm's assets to put those assets to the use the group as a whole would favor'. These goals are undermined by any bankruptcy rule that fails to compensate secured creditors fully for costs incurred during the bankruptcy process. The compensation should be paid by the beneficiaries of this process, which are generally the unsecured creditors. If these creditors benefit, but do not pay adequate compensation to secured creditors (for costs such as

delay in payment or depreciation in collateral), they will have a perverse incentive to prolong the bankruptcy process and, potentially, to preserve non-viable businesses. This would be a misuse of scarce resources.<sup>2</sup>

As they develop this argument, Baird and Jackson make the fundamental observation that bankruptcy law resolves two questions simultaneously: how to deploy the debtor's assets and how to distribute payoffs to creditors. Optimal bankruptcy law, in their view, should divorce these questions as much as possible. The optimal deployment of a firm's assets – whether they should be kept in-house or sold to a competitor – should not be affected by jockeying among secured and unsecured creditors for larger payoffs from the bankruptcy process. But questions about asset deployment are affected by this jockeying when unsecured creditors can prolong a bankruptcy case without compensating secured creditors for delay.

This insight – that optimal bankruptcy law should divorce asset deployment decisions from creditor payoff disputes – motivated the next article in this book. Baird (Chapter 3) uses the creditors' bargain model to question the rationale for bankruptcy laws permitting the reorganization of distressed corporations. Reorganization is effectively a 'hypothetical sale' of a firm to its creditors. Instead of selling it to third parties for cash or securities, the reorganization process sells the firm to existing creditors, who exchange old claims for new interests (debt or equity) in the reorganized firm. In practice, reorganizations come with many costs, most notably the misuse of assets when creditors jockey for greater payoffs. Actual sales, by contrast, divorce asset deployment decisions from creditor payoff disputes: a firm can be sold off first; creditors can fight over the proceeds later.

Suppose creditors could bargain collectively. Would they prefer a hypothetical sale to an actual one? Baird says no, showing that the hypothetical sale is largely inconsistent with the creditors' bargain theory.<sup>3</sup>

The creditors' bargain is primarily a theory of business bankruptcy law. In the next two articles, Rea (Chapter 4) and Jackson (Chapter 5) propose theories of consumer bankruptcy that share much in common with the creditors' bargain. Rea begins with the observation that, when consumers borrow, they put themselves at risk of default because their future incomes may decline unexpectedly. Default is costly to borrowers, because creditors can harass borrowers and take steps to seize assets. If consumers are risk averse, which seems uncontroversial, they are willing to purchase 'default insurance' to protect themselves against income fluctuations. This insurance is most likely to be provided by creditors, who monitor the borrower and so are in the best position to underwrite the insurance. In the absence of bankruptcy law, this insurance contract may be inefficient. Low-risk consumers – those who are unlikely to suffer major declines in income – may have excessive incentive to forgo this insurance in order to obtain a lower interest rate on loans. This observation provides a theoretical justification for a bankruptcy law that offers consumers a non-waivable right to discharge debts in the event of financial distress. This mandatory 'fresh start' policy remedies a market failure by facilitating a pooling equilibrium – with low-risk consumers subsidizing high-risk consumers – that makes all consumers better off.

Jackson offers a different theory for a mandatory 'fresh start' policy. He views it as a response to cognitive failure on the part of consumers, who overestimate their ability to repay debt, underestimate the externalities that default imposes on family and society, and fail to appreciate the effect of debt burdens on the incentive to work. If consumers were aware of some or all of these problems, Jackson argues, they would take steps to disable themselves

from taking on excessive credit and, because they would foresee that these steps may be unsuccessful, purchase from creditors a non-waivable right to obtain a 'fresh start' in the event of financial distress. Even if consumers were aware of the risks of default, however, they might not fully internalize the externalities to society. This possibility, Jackson argues, also justifies a mandatory fresh start policy, which helps mitigate the externalities.

Together, these five articles identify key questions that have dominated economic analysis of bankruptcy law during the past 25 years. The remaining articles in this book extend, question, or empirically test the work of Baird, Jackson, and Rea. These articles can be organized into the following categories:

1. *Collective decision-making before business bankruptcy*: Is it difficult for creditors to act collectively when distress occurs? If creditors could bargain in advance of a debtor's distress, would they consent to a collective bankruptcy process?
2. *Asset deployment decisions in business bankruptcy*: Do creditors want to divorce asset deployment decisions from creditor payoff decisions? Are mandatory auctions inefficient under some conditions?
3. *Business bankruptcy in practice*: Does the law play an important role in preserving going-concern surplus? Or does it generate excessive costs because it poorly filters viable from non-viable firms? Does the existence of bankruptcy law distort a debtor's pre- and in-bankruptcy investment and capital structure decisions? Does bankruptcy law affect business start-up decisions and the cost of credit?
4. *Consumer bankruptcy in theory and practice*: Should consumers have a non-waivable right to file for bankruptcy? To what extent does the existence of a 'fresh start' dull the incentives of consumers to be cautious in taking on debt and avoiding financial distress?

### **Vol. I Part II: Collective Decision-Making Before Bankruptcy**

The creditors' bargain theory is a two-step argument: (i) a borrower's financial distress is costly because creditors are unable to coordinate their collection efforts and (ii) if the creditors had been able to agree upon a mechanism for resolving the borrower's distress, they would have bargained for a mandatory, collective proceeding, i.e., a formal 'bankruptcy law'. Each step of this argument has been challenged, theoretically and empirically.

#### *A Theory*

Picker (Chapter 6) explores the endogeneity of capital structure, modeling it as a response to the possibility of misbehavior by debtors (managers may take on overly risky projects) and creditors (one creditor may try to withdraw assets before others discover the debtor's insolvency). Though Picker is not directly concerned with bankruptcy law, he shows that the sine qua non of the creditors' bargain theory – the existence of collective action problems – depends critically on capital structure decisions. In his view, collective action problems are a manifestation of misbehavior by unsecured creditors: a creditor will monitor a firm and, upon signs of distress, rush to withdraw assets ahead of competing creditors. The risk of misbehavior is large when the risk of financial distress is high. Thus, Picker predicts that high-risk firms



will tend to take on secured debt. The existence of secured debt will discourage monitoring by unsecured creditors and, because they are not monitoring, render them less likely to act strategically to withdraw assets from the firm. This, in turn, will mitigate both collective action problems and the necessity of bankruptcy law.

The next two articles, by Bolton and Scharfstein (Chapter 7) and Bris and Welch (Chapter 8), develop this idea and show how capital structure responds to (a) debtor misbehavior and (b) the costs of resolving financial distress. Bolton and Scharfstein identify a tension between these two factors. A firm with widely dispersed creditors (for example, unsecured bondholders) has relatively high costs of resolving distress, due to the creditor coordination problems emphasized by Jackson, Baird, and others. But these costs deter 'strategic defaults' by solvent firms hoping to extract concessions from creditors with incomplete information about the firm's financial status. It is much easier to extract concessions when the number of creditors is small, because their unanimous consent is typically needed. The more dispersed the creditors, the harder it is for managers to reach a compromise with creditors. This is the 'upside' of financial distress costs: they deter strategic defaults. Of course, these costs also prevent renegotiation when a truly distressed firm fails (a firm suffering a 'liquidity default', in the words of Bolton and Scharfstein). They can also prevent a sale of the firm to potential buyers. Dispersed creditors can hold up a sale by demanding a higher price. The higher the expected price, the smaller the buyer's gain from the purchase and the less it is willing to investigate the quality of the firm's assets. Bolton and Scharfstein conclude that low-risk firms will tend to have capital structures with dispersed creditors while high-risk firms will take on concentrated debt. For the former firms, strategic default is more likely than liquidity default; the opposite is true for the latter firms.

Bolton and Scharfstein ignore the possibility of reorganization in bankruptcy. Their model permits either debt forgiveness by creditors (a 'workout') or sale of the firm ('liquidation'). Bolton and Scharfstein also ignore conflicts of interest within the firm: they assume that the interests of managers are aligned with those of equityholders. Bris and Welch relax both assumptions: they introduce the possibility of reorganization and show that firms and managers may have different preferences over capital structures and financial distress costs. In particular, they show that managers will prefer capital structures with widely dispersed creditors, even when the firm is suffering a liquidity default. Their story hinges on bargaining power. When debt is concentrated in the hands of a single lender, that lender has significant bargaining power. As a result, it is very costly for the manager to influence the reorganization process in ways that improve his or her private payoff. In contrast, when debt is dispersed, creditors do not monitor managers closely. To protect their rights, they must actively participate in the bankruptcy process, which is costly. Given the small size of their claims, the costs may outweigh any benefits. Additionally, the dispersed creditors face a free-rider problem: monitoring by one creditor benefits all other creditors. Together, these factors deter dispersed creditors from playing an active role in bankruptcy proceedings. As a result, managers can influence the reorganization process in ways favorable to themselves when debt is dispersed among many creditors.

Bris and Welch argue that this dynamic gives managers a strong incentive to take on widely dispersed debt. But the gain from dispersed debt – an ex post gain, realized only in states of default or bankruptcy – must be offset against several costs. One is the high interest rate that dispersed creditors will charge ex ante, because they anticipate their inability to monitor the

manager in bankruptcy. Another is the agency costs of widely dispersed debt. The more dispersed the debt, the lower the cost of financial distress to the manager, who therefore has weaker incentives to avoid distress in the first place.

These articles highlight the important idea that a firm's capital structure responds to both the possibility of bankruptcy and the kinds of bargaining that take place when bankruptcy occurs. Adler (Chapter 9) takes this idea a step further, observing that every corporation could design a capital structure that completely eliminates the need for bankruptcy law. Instead of issuing traditional debt, the firm could issue tranches of a special kind of preferred stock ('Chameleon Equity'). Each tranche would give the investors a right to fixed, periodic payments unless the firm becomes insolvent. In the event of insolvency (defined as inability to make good on fixed payments to investors), the lowest-priority tranche would automatically convert to ordinary common stock. The interests of old common stockholders would be canceled. Chameleon Equity avoids bankruptcy because no investor would have the right to accelerate its claims – or pursue collection efforts against the debtor firm – in the event of insolvency. The capital structure would instead readjust automatically.

In practice, we do not see Chameleon Equity. Adler attributes this to frictions created by tax, commercial, corporate, and tort laws. Though these laws could be changed, any efforts to reform the laws would face stiff resistance from groups (lawyers, current corporate managers) who benefit from the existing bankruptcy regime. Adler, in other words, agrees with Jackson that bankruptcy law is a response to a collective action problem. Unlike Jackson, he does not think this collective action problem arises from a market failure. Rather, it arises from a type of legal failure: uncoordinated tax, commercial, corporate, and tort laws make it difficult, if not impossible, to design capital structures that obviate the need for bankruptcy law.

Rasmussen (Chapter 10) and Schwartz (Chapter 11) take this logic to its natural conclusion, arguing that firms can – and should be allowed to – write corporate charters or debt contracts that select *ex ante* their preferred mechanisms for resolving financial distress *ex post*. Currently, US law prohibits such *ex ante* restrictions on the right of an individual or firm to file for bankruptcy.

Rasmussen argues that a corporation should be free to write a charter that commits the firm to use a particular mechanism in the event of financial distress. A firm, for example, might commit itself never to file for bankruptcy (effectively permitting piecemeal liquidation) or to use a bankruptcy procedure that automatically auctions off the firm's assets (in whole or in parts). Alternatively, the corporation's charter might require the firm to reorganize using Chapter 11 or a customized version of it. Or the charter might simply halt collection efforts by all creditors except the dominant lender, who is free to foreclose on collateral unless it is convinced that the firm is worth more alive than dead (a 'selective stay' option). Rasmussen advocates some standardization of bankruptcy options in order to reduce creditors' monitoring costs and to guard against strategic behavior by firms that might alter their charters over time in order to favor particular creditors. Rasmussen therefore argues that state governments should establish a menu of standard bankruptcy options for chartering corporations. Each firm would select the best option in light of the likely response of creditors, who will vary interest rates and collateralization ratios based on the option chosen. Of course, not all creditors can respond in this way. Tort victims, in particular, cannot adjust their behavior in light of a potential tortfeasor's capital structure. Rasmussen argues that these creditors should be given special priorities that are invariant to firms' choices from the bankruptcy menu.



Time is an important problem for Rasmussen. His proposal commits a firm to a particular bankruptcy option, but as time passes – and a firm’s fortunes and capital structure evolve – the optimal bankruptcy regime may change. For example, the automatic auction option might be optimal when a firm is publicly traded, but a version of Chapter 11 might be preferable if it goes private via a leveraged buyout or similar transaction. Rasmussen’s proposal would require creditor consent to any charter amendment, unless it is highly unlikely either to benefit equityholders or to provide a way for the firm to favor some creditors at the expense of others.

Schwartz takes a different approach, arguing that a firm’s bankruptcy options could be set by contract instead of corporate charter, which he believes is cumbersome to modify. Debt contracts can be written in ways that induce the firm to choose the bankruptcy option that maximizes the return to creditors in the event of distress. If US law permitted firms to enter these kinds of debt contracts, they would have strong incentives to do so, particularly because creditors would be more willing to extend credit to firms that commit themselves *ex ante* to use optimal bankruptcy procedures *ex post*. Put differently, current law generates an underinvestment problem by limiting the kinds of contracts that firms can write. Schwartz’s proposal is complicated by the possibility of creditor conflict. For example, when a firm enters distress, senior creditors may prefer liquidation, while junior interests favor reorganization, because the downside risks of reorganization are borne largely by senior creditors. Depending on its influence, one group of creditors could induce the firm to select an inefficient bankruptcy procedure. To address this conflict, Schwartz advocates two kinds of mandatory rules. One would prohibit any bankruptcy procedure that does not pay claims in order of priority. Another would allow majority rule to bind a dissenting minority.

In the next selection in this book, Adler (Chapter 12) argues that most of the foregoing proposals, including his own Chameleon Equity idea, share a common flaw: they create a bias in favor of preserving non-viable firms. If a firm is sufficiently distressed, he argues, it is unlikely that the firm is viable and should be reorganized. The firm should instead be liquidated. But every bankruptcy regime, even mandatory cash auctions, creates a bias against the quick liquidation of non-viable firms. A cash auction regime, for example, deters a creditor from monitoring a distressed firm before it enters bankruptcy. The creditor bears the monitoring costs in full but receives only a fraction of the benefit because it shares *pro rata* with similarly situated creditors after the firm enters bankruptcy. Other regimes not only deter creditor monitoring but also create room for managers to strike deals with coalitions of creditors, squeeze out dissident minorities, and thereby keep non-viable firms in operation. Adler concludes, somewhat provocatively, that the optimal bankruptcy procedure for many firms may be no bankruptcy procedure at all. Firms might be willing to enter debt contracts that prohibit a bankruptcy filing, and permit creditors to liquidate assets piecemeal, in the event of serious financial distress. These contracts would prevent inefficient continuation of non-viable firms *ex post* and, as a consequence, reduce the cost of capital *ex ante*.

### *B Evidence*

In practice, many distressed businesses do find ways to coordinate creditor collection efforts and obviate the need for a bankruptcy filing. Studying distressed small businesses in the US, Morrison (Chapter 13) shows that the vast majority (around 80 percent) liquidate or reorganize without filing for bankruptcy. The businesses instead reach agreement with creditors using

contract law, property law, trust law, or other non-bankruptcy procedures (such as an 'assignment for the benefit of creditors'). Morrison finds that a small business can avoid bankruptcy law only if it reaches agreement with its senior (usually secured) lenders; junior lenders typically can be ignored. An agreement with senior lenders is possible if the number of lenders is small (fewer than three) and if the business has avoided actions (such as defaulting) that undermine its relationship with these lenders. If they suspect that the business owner is concealing information, senior lenders will force the business into bankruptcy. Although a bankruptcy filing is costly, it will force the business to reveal financial and other information. A bankruptcy filing, in other words, functions as a rigorous 'audit', reducing information asymmetries between insiders and creditors.

Similar patterns have been observed in other countries. Franks and Sussman (Chapter 14: 2) study the UK system, which they describe as a 'contractualist' regime in which 'bankruptcy law is little more than the strict enforcement of the default clauses in the debt contract, as negotiated ex ante by the lender and borrower'. Put differently, there is no automatic stay or other mechanism for halting the destructive collective action problem emphasized by Jackson, Baird, and others. Yet Franks and Sussman find no evidence of a collective action problem among the small- and medium-sized businesses in their study. Instead, they find that these businesses have adopted capital structures – especially secured indebtedness that gives a single bank dominant control in the event of distress – that deter asset-grabbing by junior creditors. And the dominant bank does not automatically liquidate every distressed firm; most businesses appear to exit distress intact.

Along the same lines, Davydenko and Franks (Chapter 15) show that out-of-court restructuring is more common in the UK than in Germany and France among distressed small- and medium-sized firms. They hypothesize that this difference may be due to the fact that UK firms typically borrow from a single bank, while firms in Germany and France often have multiple bank lenders. Additionally, they find that the probability of a workout is higher among older firms in all countries in their sample. This is consistent with the theory that information asymmetries are a driver of bankruptcy filings. Because older firms often have longer-lasting relationships with their lenders, the lending banks have more reliable information about the firms' assets and are less vulnerable to information asymmetries. This explains their willingness to pursue an out-of-court workout.

Large businesses avoid bankruptcy as well. Gilson (Chapter 16) constructs a sample of about 100 large US corporations, split equally between businesses that reorganized by filing for bankruptcy and those that reorganized via a consensual 'workout' agreement with creditors. Although the bankruptcy process is more costly, the average reorganization results in a greater reduction in indebtedness than the typical workout. Gilson attributes the difference in debt reduction to several features of the bankruptcy process, such as the debtor's power to impose a reorganization plan without unanimous creditor consent, creditors' power to compel insiders to reveal information, and the tax advantages to debt reduction in bankruptcy.

Together, these articles show that capital structures respond to the costs of financial distress and that businesses might take greater steps to mitigate these costs if current law did not create important obstacles. Several questions remain for future scholarship. For example, why do some firms select capital structures that exacerbate collection action problems and make a bankruptcy filing necessary? Why do firms with similar capital structures have different propensities to use bankruptcy law? To what extent do recent financial and contractual

innovations – such as asset-backed securitization and collective action clauses in syndication agreements – provide mechanisms that facilitate restructuring without a bankruptcy filing.

### **Vol. I Part III: Asset Deployment Decisions in Bankruptcy**

Baird (Chapter 3) advocated a bankruptcy regime with mandatory auctions as an efficient mechanism for redeploying the bankrupt firm's assets and distributing payoffs to creditors in order of priority. A robust literature questions the efficiency of mandatory auctions. One strand identifies conditions under which auctions will not lead to efficient redeployment of assets. Another shows that Baird's proposal ignores an important issue – auction design – that can generate inefficiencies.

The first strand is exemplified by Shleifer and Vishny (Chapter 17), who show that mandatory auctions can allocate assets inefficiently, and yield fire sale prices to boot, if the bankrupt firm's financial condition is correlated with the condition of potential bidders. Shleifer and Vishny begin with two observations. First, a firm's assets are often specialized and worth more to members of the same industry than to other businesses. Second, firms within the same industry often suffer distress simultaneously due to industry-wide shocks, such as a sudden decline in demand or rise in input costs. With these assumptions in hand, suppose that an industry-wide shock causes some firms to file for bankruptcy in a regime with mandatory auctions. Although the debtors' assets will be most productive if they are purchased by other firms within the same industry, these firms are credit-constrained due to their own weak financial condition. The market for the debtor's assets will therefore be highly illiquid. Few bidders will appear at the auction and the winning bidder is likely to be a non-distressed business that operates in a different industry. And because the winning bidder faces relatively high costs in valuing the assets and learning how to deploy them, its bid will fall below the fundamental value of the assets (that is, the actual value they would generate in the hands of members of the same industry). The bankrupt firm's assets will, in other words, fetch 'fire sale' prices at the auction.

Because of these inefficiencies, Shleifer and Vishny argue, a system of mandatory auctions is not 'theoretically sound'. Their critique has found support in several empirical studies. Pulvino (Chapter 18), for example, examines commercial aircraft auctions and shows that the financial condition of the airline industry has a significant effect on both the winning bid at a bankruptcy auction and whether the winning bidder is a member of the same industry. In particular, Pulvino finds that highly leveraged, cash-poor firms tend to sell aircraft at prices significantly below those received for comparable aircraft by less distressed firms; that the price discount is larger when the buyer is not a member of the airline industry, especially when the sale occurs during a recession; and that industry members tend to be winning bidders only when they are not financially constrained, especially when the sale occurs during a recession. Pulvino, however, analyses voluntary sales by aircraft owners, in and outside of bankruptcy. This points to an alternative interpretation for his findings: Highly leveraged firms tend to own low-quality aircraft and to sell these vehicles during recessions. Pulvino is aware of this interpretation and presents several tests that cast doubt on it.

Strömberg (Chapter 19) considers an environment – Sweden – in which bankruptcy sales are mandatory. He shows that the firm's creditors can avoid fire sale prices by selling the

business back to its original manager. The creditors finance the manager's bid at the bankruptcy auction. Strömberg shows that these 'sale-backs' are most common when the market for the firm's assets is illiquid, such as during a recessionary period. Thus, while Strömberg's work supports the Shleifer–Vishny critique, it also illustrates mechanisms that reduce the inefficiencies of mandatory auctions.

On the other hand, Maksimovic and Phillips (Chapter 6 Vol. II, discussed in detail below) find evidence inconsistent with the Shleifer–Vishny critique. A bankruptcy auction can yield inefficiency, according to this critique, because industry-specific assets may be sold to a bidder from a different industry. The bidder cannot use the assets as productively as firms operating in the same industry as the bankrupt firm. Maksimovic and Phillips test this story using data from manufacturing businesses that sold assets through the bankruptcy process. They find that assets are as productive in the bidder's hands as in the seller's, regardless of whether the distressed seller operates in a distressed or healthy industry.

A second strand of the literature focuses on auction design, an issue largely ignored by Baird (Chapter 3). As Bhattacharyya and Singh (Chapter 20) show, an efficient bankruptcy process must do more than redeploy assets efficiently and distribute payoffs in order of creditor priority. It must also generate the highest possible payoff to existing creditors. If mandatory auctions generate low payoffs *ex post* (that is, after the firm defaults), creditors will raise the price or restrict the supply of credit *ex ante* (that is, when the firm applies for a loan). If credit is restricted *ex ante*, firms will underinvest in socially beneficial projects, which is inefficient.

Bhattacharyya and Singh show that creditors and equityholders have conflicting preferences regarding auction design. Creditors prefer designs with low bid variance, equityholders prefer the opposite. To see this, note that the winning bid is allocated entirely to creditors until it is sufficient to repay them in full. Once the bid exceeds this threshold, the excess is allocated to equityholders. Suppose two auction procedures yield the same winning bid on average, but one is more variable than the other. Creditors will prefer the procedure with low variability because it minimizes the possibility of a very low bid, which would yield a low payoff. Although a high-variability procedure will increase the possibility of a very high bid, creditors are unconcerned about this outcome (relative to the possibility of a very low bid) because a very high bid will be shared with equityholders. Creditors therefore prefer low-variance procedures. For precisely the same reasons, equityholders prefer high-variance procedures. An efficient bankruptcy procedure must give some party the right to choose the auction procedure. But to whom should the right be given? The answer, Bhattacharyya and Singh show, is complicated and depends on the firm's capital structure and the ability of managers to waste value during the pendency of the auction process.

The difficulties associated with mandatory auctions have prompted interest in alternative bankruptcy policies that could also divorce asset deployment decisions from creditor payoff decisions. Mandatory auctions do this by placing assets in the hands of a single owner – the high bidder at the auction – who has strong incentives to maximize their value. Bebchuk (Chapter 21) and Aghion, Hart and Moore (Chapter 22) have devised alternative mechanisms that, in effect, conduct auctions in which the bidders are the existing creditors and shareholders of the firm.

In Bebchuk's mechanism, creditors and shareholders are given options to purchase the reorganized firm's equity immediately after its bankruptcy filing. The strike price depends on



the holder's priority. The more junior the creditor, the higher the strike price, with the highest price charged to shareholders. The strike prices are set so that junior creditors and shareholders can purchase equity in the reorganized firm only at prices sufficient to repay the debts of more senior creditors, thereby upholding absolute priority.

To illustrate, assume that a firm has two classes of debt (secured and unsecured) and one class of equity. Secured creditors are given options with a strike price of zero: unless the debtor redeems the options by paying their claims in full, secured creditors are entitled to 100 percent of the firm's equity. Unsecured creditors receive options with a strike price sufficient to repay secured creditors' claims in full. Put differently, each unsecured creditor receives an option to purchase a pro rata share of the firm's equity. The strike price equals the unsecured creditor's pro rata share of the secured debt. The debtor can, however, redeem the options distributed to unsecured creditors by repaying their claims in full. Finally, shareholders are given options with a strike price sufficient to pay secured and unsecured claims in full.

Shareholders exercise their options first. If they do, they capture 100 percent of the equity in the firm and creditors are repaid. If they do not, unsecured creditors go next. If they exercise their options, they capture the equity and secured creditors are repaid. If unsecured creditors do not exercise their options, secured creditors receive 100 percent of the equity.

Bebchuk's mechanism shares many virtues of mandatory auctions but avoids the Shleifer-Vishny critique because the firm is not exposed to an actual market sale. An important problem<sup>4</sup> remains, however: the Bebchuk mechanism assumes that managers will maximize firm value, regardless of the mechanism's outcome. In reality, managers face conflicts of interest and maximize their own private benefits of control, at the expense of shareholders, if they have freedom to do so. The Bebchuk mechanism potentially gives them this freedom because it converts the firm's debt to equity when the firm suffers financial distress. This effectively removes an important mechanism for disciplining managers. Instead of risking bankruptcy and job loss when their firms become distressed, managers can simply invoke the Bebchuk procedure, cancel old debts, and continue on as before.

Aghion, Hart and Moore address this problem. They propose a three-step procedure. In Step One, the firm's debt is canceled and replaced with equity. In Step Two, the bankruptcy court solicits bids – from managers, current creditors, or any other party – for the firm's assets. Importantly, cash and non-cash bids are permitted, thereby reducing the likelihood of fire sales (liquidity constraints matter less when bidders can submit non-cash bids). In Step Three, bids are announced and then Bebchuk's mechanism is carried out. Each class of creditors and equityholders is given options to buy the reorganized firm's equity. Creditors and equityholders decide whether to exercise these options based on information contained in the bids solicited in Step Two. Once this process is complete, one group of creditors or equityholders will hold 100 percent of the equity in the firm. These new equityholders will then decide, by vote, whether to accept one of the bids submitted in Step Two. This vote ensures that incumbent managers enjoy no advantages during the bankruptcy process. They will be retained only if the new shareholders vote for a bid that contemplates their retention.

Academic debates over auctions and alternative regimes have largely subsided in the US. In part this is because the debates have been eclipsed by changes in bankruptcy dynamics. Studying bankruptcies of large corporations, Baird and Rasmussen (Chapters 23 and 24) show that auctions have become the dominant outcome in Chapter 11 cases. During the 1980s, only about 20 percent of Chapter 11 cases culminated in an auction of the firm. By 2001, auctions



occurred in about 70 percent of the cases. Baird and Rasmussen show that the rise of auctions is correlated with two other important developments: the decline in asset-specificity among distressed firms and the rise of pervasive creditor control in US Chapter 11 cases. The decline of asset-specificity, in particular, implies that there is a liquid market for assets of distressed businesses and that fire sales will be rare.

## **Vol. II Part I: Business Bankruptcy in Practice**

A vast literature evaluates existing law, especially the US Bankruptcy Code. One line of scholarship has an ex post focus, evaluating the effects of laws, judges, and legal institutions on asset allocation, investment decisions, and other outcomes after a firm enters bankruptcy. For example, some scholars have estimated the administrative costs of the bankruptcy process (see Section A below). Others have evaluated the ability of this process to distinguish viable firms worth saving from non-viable firms that should be liquidated (Section B).

Another strand of the literature assesses the ex ante effects of bankruptcy law on investment decisions before a firm enters bankruptcy. Section C discusses general theoretical and empirical work in this area. Section D tours some of the scholarship evaluating ex ante effects of particular bankruptcy laws, such as the Absolute Priority Rule (APR) and rules governing executory contracts, preferential transfers, and lending to firms in bankruptcy.

When scholars study the ex ante and ex post effects of bankruptcy rules, they are generally concerned with the effects on decision-making at a particular firm. An underexplored topic – mentioned in Section E – is the effect of bankruptcy laws on competitive conditions within an industry generally.

### *A Bankruptcy Costs*

Existing literature generally distinguishes two kinds of costs, direct and indirect. Direct costs include the fees of lawyers, accountants, and other professionals. Indirect costs arise from inefficiencies produced or fostered by the bankruptcy process. For example, a bankruptcy filing may distract managers and thereby prevent them from shepherding the firm's assets properly. A filing might also harm the firm's reputation as employees leave a 'sinking ship' and consumers reevaluate the quality of its products. Or a bankruptcy filing might affect the incentives of managers: they might favor overly risky, bet-the-firm projects because they fear losing their jobs.

Bris, Welch and Zhu (Chapter 1) offer a relatively recent, comprehensive survey of direct and indirect costs. They analyse bankruptcy filings in two bankruptcy courts – the Southern District of New York and the District of Arizona – between 1995 and 2001. The former court is a favorite among large corporations;<sup>5</sup> the latter is primarily a venue for small businesses. Bris, Welch and Zhu find that the direct costs of bankruptcy depend heavily on the procedure used (reorganization versus liquidation), the size of the firm, and whether costs are measured relative to assets as measured at the beginning of the case ('pre-bankruptcy') or at the end ('post-bankruptcy'). Among reorganization cases commenced under Chapter 11 of the US Bankruptcy Code, direct costs for the median firm are equal to about 2 percent of pre-bankruptcy assets and 3.5 percent of post-bankruptcy assets. Among liquidations under

Chapter 7 of the Code, fees are higher, equal to 2.5 percent of pre-bankruptcy assets and potentially as high as 100 percent of post-bankruptcy assets (it is difficult to estimate the post-bankruptcy value of assets when a firm is undergoing Chapter 7 liquidation). These estimates are likely biased downward because Bris, Welch and Zhu account only for reimbursed expenses. If direct costs exceed assets available for reimbursement, the authors do not include the excess, unreimbursed costs in their calculations.

Scale effects matter too. Bris, Welch and Zhu find that direct costs are huge for small firms, equal to 23.2 percent of pre-bankruptcy assets of the median firm with assets less than \$100,000. Costs fall to 0.8 percent among firms with pre-bankruptcy assets exceeding \$10 million.

Bris, Welch and Zhu also examine two proxies for indirect costs: case duration and changes in asset value during the bankruptcy case. Case duration is a useful proxy because indirect costs most likely increase with the length of the case. If so, changes in asset value may indicate whether the process is 'burning' firm value. The authors find that the median Chapter 11 cases lasts about 2.4 years; the median Chapter 7 about 1.8 years. The complexity of the firm's capital structure – as measured by the number of secured creditors – is an important determinant of case length. When they look at asset values, Bris, Welch and Zhu find evidence of asset dissipation in Chapter 7, but not in Chapter 11.

A weakness in studies like Bris, Welch and Zhu is that they lack an appropriate baseline. We do not know whether the reported costs are high or low. Several articles suggest that they are in fact low. Easterbrook (1990) argues that the direct costs are comparable to the costs of other change-of-control transactions, such as taking a firm public. Maksimovic and Phillips (Chapter 6 below) present evidence that indirect costs are low. They find little evidence that firms suffer productivity declines in Chapter 11 or that the process is biased toward or against asset sales.

In an article consistent with both Easterbrook (1990) and Maksimovic and Phillips (Chapter 6), Andrade and Kaplan (Chapter 2) find that total costs of financial distress are low, especially during the Chapter 11 process. The authors study 31 firms that underwent a management buyout or leveraged recapitalization during the late 1980s and subsequently suffered financial distress (21 filed for Chapter 11). These firms provide a nice setting in which to analyse the costs of pure financial distress because all firms had operating profits even when they were distressed. Their distress was largely a product of excess leverage ('financial distress'), not operational or management problems ('economic distress'). Andrade and Kaplan measure the costs of financial distress as the change in operating margins, cash flow margins, or capital value between the onset of distress and its resolution. They find distress costs ranging between 10 and 20 percent. The costs are even lower – indeed they become negligible – when the authors limit the sample to firms that did not suffer economic shocks prior to becoming distressed (economic shocks can produce both financial and economic distress). Finally, nearly all of the costs are incurred before firms filed for Chapter 11. The bankruptcy process did not contribute meaningfully to the costs of financial distress.

The foregoing articles focus on the US experience. Bankruptcy laws vary significantly across countries and their costs may vary too. In a study of French, German and UK bankruptcies, Davydenko and Franks (Chapter 15 Vol. I) show that bankruptcy costs can be significant and that creditors respond to these costs through the terms of their lending agreements. Among these countries, France offers the least protection to secured lenders. A firm can be reorganized and collateral can be sold without their approval. If collateral is sold,

the court is not required to choose the highest bidder, but can instead favor the bidder with the best employment prospects. Additionally, proceeds from the sale of collateral are used first to pay claims of the government and employees; secured creditors are paid from the remaining proceeds. By contrast, secured creditors control the UK bankruptcy process. There is no automatic stay and unsecured creditors receive nothing until secured creditors are paid in full. Germany's bankruptcy process offers less protection than the UK, but more than France. Using data on small- and medium-sized firms, Davydenko and Franks show that secured creditors write different debt contracts in countries with different degrees of creditor protection. In France, for example, creditors require relatively broad security interests to support any loan, due to the risk that their claims will be put behind those of the government and employees. Secured creditors in France also favor collateral (such as accounts receivable) that is less vulnerable to the re-ranking of creditors' claims.

### *B Filtering Viable from Non-Viable Firms*

The US Bankruptcy Code allows distressed firms to choose between liquidation (usually under Chapter 7) or reorganization (under Chapter 11). There are no explicit eligibility criteria for either chapter. A solvent firm can file for bankruptcy and a non-viable firm can file a Chapter 11 petition. Instead of using eligibility criteria to identify firms that should be 'filtered out' of the bankruptcy process, the Code gives bankruptcy judges discretion to make the filtering decision based on information submitted by the parties after the case commences. For example, a judge can dismiss a case if 'the interests of creditors and the debtor would be better served by such dismissal',<sup>6</sup> if the firm has 'no reasonable likelihood of rehabilitation',<sup>7</sup> or if the debtor's managers fail to submit forms or attend meetings.<sup>8</sup>

The Code, then, depends heavily on bankruptcy judges to filter viable firms that merit reorganization from non-viable firms that should be liquidated. Distinguishing the two types of firms can be difficult. A firm is non-viable if the present value of its assets is greater in alternate uses, net of conversion costs. But the present value of alternate uses is difficult to estimate.

Much value can be wasted if managers of non-viable firms behave strategically – by filing for Chapter 11 as a gambit to keep non-viable firms alive – and judges are unable to perform the filtering function promptly and properly. Productive assets will lose value in the hands of the non-viable firm. Weiss and Wruck (Chapter 3) show that 'filtering failure' – the failure of judges to boot non-viable firms from the reorganization process – can generate massive waste. They present a case study of the Eastern Airlines bankruptcy. When the airline entered Chapter 11, nearly every creditor agreed that the business should be liquidated. The judge, however, was biased in favor of keeping the airline intact in order to avoid the job loss from liquidation. Over the course of two years, the value of the airline fell over 50 percent, from about \$4 billion to \$2 billion, as the firm sold assets in order to fund operating losses.

Other studies have offered additional evidence consistent with filtering failure. Some show that a large percentage of reorganized firms continue to operate poorly after exiting bankruptcy. Many re-enter bankruptcy within three to five years after the reorganization.<sup>9</sup>

White (Chapter 4) explores the reasons why 'filtering failure' occurs. When a firm enters distress, its managers have an information advantage relative to creditors and bankruptcy judges. They can strategically disclose or withhold information that would help outsiders

estimate the firm's value. Both viable and non-viable firms, White shows, have strategic disclosure incentives. A non-viable firm wants creditors and judges to believe that it is more valuable than it actually is. If creditors and judges are convinced, they may permit the firm to remain in operation, thereby allowing managers to divert additional value to themselves. A viable firm, on the other hand, wants creditors and judges to believe that it is less valuable than it actually is. If creditors believe this, they will agree to greater debt forgiveness than they would otherwise permit, again allowing managers to divert additional value to themselves.

Because both viable and non-viable firms have incentives to distort information, judges can make systematic mistakes in distinguishing the two types. This is likely to occur when viable firms constitute a small fraction of all distressed firms and the expected gain from reorganizing (across viable and non-viable firms) is not too low. White concludes that the risk of filtering failure is large and points to an important inefficiency in the design of Chapter 11. She suggests a modest reform, under which a firm would be forced to sell itself off as a going concern if it fails to accomplish reorganization within four to six months. This would avoid premature liquidation of viable firms, which would have a short period to accomplish reorganization, and would promote a market for failing firms.

Kahl (Chapter 5) takes a very different view of the data, especially the finding that many reorganized firms fail again soon after exiting bankruptcy. He presents a model in which firms can file multiple bankruptcy petitions – entering and re-entering Chapter 11 – even when the bankruptcy process is operating efficiently. When a firm first enters bankruptcy, creditors are uncertain about its viability. In the face of this uncertainty, creditors have more options than the previous literature acknowledges. Prior scholarship, including White (Chapter 4), frequently assumes (explicitly or implicitly) that creditors make a one-shot decision in bankruptcy: liquidate or reorganize. Once that decision is made, creditors receive payoffs and are no longer involved in the life of the firm. In reality, and in Kahl's model, creditors respond to uncertainty by delaying the liquidation decision. They do this by reorganizing the firm in a way that leaves it saddled with a high debt burden, which will be sustainable only if the firm subsequently proves to be viable. In this way, creditors are able to conduct a 'controlled liquidation': they can pull the plug on the firm if, in the future, information reveals that the firm is non-viable. This explains why it is common to see firms re-enter bankruptcy after completing a reorganization. Chapter 11 is not inefficiently saving non-viable firms. Rather, creditors have designed capital structures that help filter viable from non-viable firms. When we see firms re-enter bankruptcy, we are seeing successful filtering.

An empirical perspective on filtering failure is offered by Maksimovic and Phillips (Chapter 6) and Morrison (Chapter 7). Maksimovic and Phillips show that filtering failure depends heavily on industry conditions. They study rich, plant-level data on manufacturing firms that filed for Chapter 11 between 1979 and 1989. This is a period during which the bankruptcy process was thought to be biased toward reorganizing firms that should be liquidated (a 'continuation bias'). Maksimovic and Phillips find no such bias among firms in declining industries (defined as industries in which the growth rate in total shipment value is ranked in the bottom quartile across all industries). Asset sales, plant closures, and plant productivity do not differ between Chapter 11 firms and other firms in the same industry. These statistics suggest that Chapter 11 does not offer a 'safe haven' for failing firms. Maksimovic and Phillips also find that plant productivity does not decline during the Chapter 11 process, which is inconsistent with the view that failing firms linger in bankruptcy. Similarly, among firms with



cases that were converted to Chapter 7, plant productivity is much lower than productivity among firms whose cases were not converted. This suggests that judges are properly filtering efficient from inefficient firms. The authors also find that a Chapter 11 filing does not reduce the probability that a plant will be sold off or shut down. If anything, the filing increases that probability. Bankruptcy, in other words, facilitates the redeployment of assets in declining industries.<sup>10</sup>

In a similar vein, Morrison studies small business bankruptcies during the late 1990s and finds little evidence of a bias in favor of preserving non-viable firms. About 60 percent of Chapter 11 cases conclude in liquidation. The bankruptcy judge makes the liquidation decision quickly: over 50 percent of liquidations occur within the first four months of the case, which is speedy decision-making relative to most benchmarks. Morrison finds no evidence that this decision-making is biased in favor of managers or creditors. Judges instead seem to delay liquidation until they have received sufficient information to distinguish viable from non-viable firms.

### *C Ex Ante Investment Incentives Generally: Theory and Evidence*

Distress generates conflicting investment incentives. It discourages investments with positive Net Present Value (NPV) because the expected return will be shared with existing creditors. This phenomenon is called 'debt overhang'.<sup>11</sup> On the other hand, if an investment fails, losses are borne in substantial part by the creditors. This encourages the distressed firm to invest in overly risky projects: if the project succeeds, some of the gain will be enjoyed by equityholders; if it fails, all or most of the loss will be borne by creditors.<sup>12</sup> This phenomenon is sometimes called 'asset substitution' or 'gambling on resurrection'. Financial distress can therefore lead to too little investment in worthwhile projects (underinvestment) and too much investment in excessively risky projects (overinvestment).

In a pioneering article, Gertner and Scharfstein (Chapter 8) show that these investment inefficiencies will exist regardless of whether creditors can coordinate via an exchange offer or other mechanism. Coordination might be feasible, for example, if the firm makes an exchange offer to its creditors. The offer will convert old debt into new claims with lower face value (a 'write down') but comparable or higher priority. Hold-out and hold-in problems, however, will lead to exchanges that write down too much or too little of the existing debt. This in turn will lead to over- or underinvestment.

Bankruptcy law can mitigate or exacerbate these inefficiencies. The automatic stay, for example, effectively extends the maturity of public debt, increasing investment incentives. Investment incentives are enhanced as well by rules permitting debtor in possession financing, which can give new lenders seniority over pre-existing creditors. Though the law creates these incentives, Gertner and Scharfstein note that it is unclear whether enhanced investment will be efficient. The authors are more confident about the efficiency-enhancing properties of voting rules. In the US, a vote is taken after a firm proposes a plan of reorganization. Creditors are first grouped into classes (based on their priority and other considerations) and then asked to vote yea or nay. If yea votes are submitted by creditors holding a majority of the claims and two-thirds of the value of debt in the class, the entire class is deemed to accept the plan. A dissident minority is ignored. On the other hand, the dissident minority enjoys a protection: it



must receive the same treatment as the approving majority. Supplemented by this equality-of-treatment rule, majority-voting procedures overcome the potential for hold-out and hold-in problems, thereby improving investment efficiency.

Gertner and Scharfstein seem to be concerned primarily about investments in physical capital. But bankruptcy law has equally important effects on human capital investments because it functions as an insurance policy for owner-managers of small businesses. One form of insurance arises from personal bankruptcy laws, which allow an individual to shield certain 'exempt' assets from creditor collection. This is important for owners of proprietorships and partnerships because the entrepreneur remains liable for the business's debts. It is also important for owners of corporations because most small business loans require the owner to personally guarantee the corporation's debt. In either case, the entrepreneur can use personal bankruptcy law to shield his or her personal assets from business creditors. Another form of insurance arises from the structure of Chapter 11 of the US Bankruptcy Code. It gives entrepreneurs an opportunity to delay collection efforts with respect to non-exempt assets. The delay can last months or years. Such a delay is important to serial entrepreneurs, who can continue operating the business as they consider alternate ventures. Insurance is costly, of course. The existence of bankruptcy 'insurance' means that creditor recoveries are limited when a business fails. Anticipating this, creditors charge higher interest rates or limit the supply of credit to nascent entrepreneurships.

Fan and White (Chapter 9), Berkowitz and White (Chapter 10), and Baird and Morrison (Chapter 11) investigate these aspects of bankruptcy insurance. Fan and White show that the insurance serves as an important subsidy to entrepreneurship. The more generous the bankruptcy insurance – in terms of the range of assets deemed 'exempt' from creditor collection efforts – the greater the rate of entrepreneurship. Comparing states with limited and unlimited exemption levels, Fan and White find that entrepreneurship rates are 35 percent higher in states with unlimited exemptions.

Berkowitz and White document the costs of bankruptcy's insurance function. Comparing states with limited and unlimited exemptions, small businesses face a 30 percent higher probability of having their loan applications denied if they operate in states with unlimited exemptions. These businesses also face significantly higher interest rates and lower loan-to-value ratios.

Finally, Baird and Morrison provide evidence of bankruptcy's insurance function among small business corporations. They show that few, if any, of these businesses file for bankruptcy in order to prevent dismemberment of assets that have significant synergies in their current configuration ('going-concern surplus'). Most appear to file in order to 'buy time' for the entrepreneur who, in over 80 percent of the cases, is a serial entrepreneur who has established other businesses in the past or will start new ones in the future. The reorganization provisions of the US Bankruptcy Law, Baird and Morrison argue, function much like rent control in the market for apartments: the provisions prolong an inefficient match between assets and suboptimal uses of those assets.

#### *D Ex Ante Effects of Particular Bankruptcy Rules*

A deep literature assesses the efficiency effects of particular rules of the US Bankruptcy Code. Here I give a flavor of this scholarly work.

## ABSOLUTE PRIORITY RULE

The APR guarantees that bankruptcy payoffs are generally distributed according to the priorities set out in the firm's original loan contracts. Thus, the claims of senior creditors should be paid in full before juniors receive a distribution, and all creditors should be paid in full before equityholders receive anything. APR is a central feature of the US Bankruptcy Code, yet many studies have found frequent deviations from the rule. During the 1980s, deviations in favor of equityholders were common.<sup>13</sup> One study of bankruptcy filings by publicly traded corporations observed equity-favoring APR deviations in nearly 80 percent of the cases.<sup>14</sup> Since the mid-1990s, however, equity-favoring deviations have largely disappeared as a result of greater creditor control in bankruptcy. For example, one study found APR deviations in only 8 percent of cases filed during the latter half of 2001.<sup>15</sup> But APR deviations in favor of junior creditors have become increasingly common: they occurred in only 8 percent of cases filed during the 1980s but 16 percent of cases filed in the late 1990s and early 2000s.<sup>16</sup>

These patterns have prompted a rich theoretical literature on the costs and benefits of APR deviations, especially its effects on *ex ante* (prebankruptcy) investment decisions and the cost of credit. Much of this literature shows that APR deviations can alleviate over- and under-investment inefficiencies among distressed firms. To see this, consider first a bankruptcy regime that permits reorganization but prevents APR deviations in all cases. When a distressed firm is heavily indebted, managers face the prospect of job loss and equityholders the prospect of zero recoveries if the firm enters bankruptcy. These prospects create strong incentives among managers to undertake risky, inefficient investments that delay a bankruptcy filing and hopefully lead to its resurrection. If they do not make the investments, managers lose their jobs and equity is canceled. If they make the investments and the investments are successful, managers keep their jobs and equityholders enjoy a nonzero payoff. If the investments are unsuccessful, the value of the firm declines, managers lose their jobs, and equity is canceled. But this is no worse than the outcome if managers do not make the investment. Hence, in a world without APR deviations, managers and equityholders strongly favor risky, inefficient investments. They capture the upside of risky investments; creditors bear the downside.

APR deviations can moderate the incentive to make inefficient investments. Deviations increase the payoff to equityholders, reducing the incentive to 'gamble on resurrection'. If the firm undertakes an inefficient, risky investment and that investment fails, the value of the firm will decline and so will the value of the deviation in favor of equityholders. APR deviations, in other words, force equityholders to share in both the upside and downside of *ex ante* investment decisions.

APR deviations can also mitigate underinvestment problems. In the absence of deviations, managers may have too little incentive to invest in firm-specific human capital. If the firm fails and enters bankruptcy, the specialized investments will be worthless if the managers are fired. Anticipating this, managers will underinvest. APR deviations – especially deviations that allow managers to retain equity interests in the firm – can induce managers to invest more heavily.

Many articles make these points and trace their implications for a range of pre-bankruptcy behavior by managers and equityholders. Bebchuk (Chapter 12) summarizes and extends this literature, showing that it ignores an important cost of APR deviations: among firms that are not yet distressed, the prospect of deviations can encourage inefficient investment in risky projects. Deviations improve manager/equityholder payoffs in the event that a risky project

fails and the firm enters bankruptcy. Suppose, for example, that a manager is comparing a safe project to a risky project with a lower expected return. Both projects require debt financing. If the firm invests in the safe project, it will never file for bankruptcy. If it invests in the risky project, there is a non-zero probability of bankruptcy. If the APR rule were enforced strictly in bankruptcy, the manager might prefer the risky project because the manager captures all of the upside but shares some of the downside with creditors. The manager's preference for the risky project will be even stronger if she anticipates APR deviations in bankruptcy. These deviations force creditors to bear a larger share of the risky investment's downside, making the investment more attractive to managers.

Bebchuk, in other words, finds that APR deviations affect investment decisions differently in solvent and insolvent firms. When a firm is solvent and can choose between investments that increase (risky) or decrease (safe) the likelihood of bankruptcy, APR can generate inefficient behavior. But when a firm is insolvent, it can generate efficient behavior by mitigating over- and underinvestment problems, for the reasons given earlier. Bebhuk leaves for future researchers the question whether the net effect of APR deviations is socially desirable.

Bebchuk and prior scholars ignored the effect of APR deviations on ex post investment decisions. Ayotte (Chapter 13) studies this effect in the context of entrepreneurial businesses that depend heavily on the owner's human capital and its relationship with a lending bank. When these businesses enter Chapter 11, their viability depends critically on the amount of effort expended by the owner. Ayotte shows that APR plays an important role in shaping the owner's incentives to work hard. If APR is enforced strictly, the lending bank will receive a large share of cash flow generated by the reorganized business because the reorganization plan will give the bank most of the firm's equity or a large debt claim against it. With most of the firm's cash flow going to the bank, the owner has weak incentives to invest effort into the business: her effort will increase the firm's profit, but most of that will go to the bank. A rational bank will anticipate this and voluntarily reduce its share of firm cash flows in order to motivate the owner, but Ayotte shows that the bank will not reduce its share sufficiently to give the owner optimal effort incentives. This is why APR deviations can improve efficiency. They force the bank to offer greater debt forgiveness and thereby give the owner stronger incentive to invest in effort. There is a downside, of course. APR deviations reduce the price of failure: an owner can expect a payoff regardless of whether the firm succeeds or fails. This will dull her incentives to work hard when the firm is healthy. Banks will respond to this moral hazard by restricting the supply of credit to non-distressed firms.

APR deviations therefore have two effects: they increase effort ex post (in bankruptcy) but reduce effort ex ante (before bankruptcy). Ayotte shows that, overall, the ex post effect dominates. Deviations from APR, in other words, improve efficiency among entrepreneurial firms by increasing total surplus to the bank and owner. Ayotte stresses that these efficiency-enhancing deviations will not arise from private contracting. They must be imposed by the court. This conclusion is in tension with the work of Schwartz and Adler, reproduced earlier in this book, who argue that mandatory bankruptcy laws are generally inefficient.

The foregoing articles pay little attention to the reasons why APR deviations occur. Indeed, much of existing scholarship assumes, at least implicitly, that deviations occur when insiders, equityholders, or junior creditors hold-up senior creditors. Insiders have hold-up power because they possess inside information or firm-specific human capital. Equityholders and

junior creditors possess hold-up power because they can cause costly delay during the reorganization process (by, for example, demanding a time-consuming valuation of the firm). Senior creditors respond to this hold-up power by agreeing to deviations from APR.

This hold-up story is an incomplete description of current dynamics in the US, according to Baird and Bernstein (Chapter 14). The primary driver of APR deviations, in their view, is uncertainty about the value of the reorganized firm. Because many assumptions about the future must be made before a firm can be valued, slight changes in assumptions can have dramatic effects on expected value. It is the bankruptcy judge's job to select the best estimate, but he or she will be faced with conflicting, self-serving estimates from senior creditors (favoring low estimates) and junior creditors (favoring high estimates). Bankruptcy judges may err – indeed, any appraiser might err in this environment – and the error will tend to favor junior creditors. To see this most easily, suppose that junior creditors would receive nothing if the judge valued the firm accurately. If the judge mistakenly selects an estimate that is too low, junior creditors are unharmed: they expected nothing and receive nothing. If instead the judge mistakenly selects an estimate that is too high, junior creditors benefit by receiving more than they expected. Baird and Bernstein call this 'appraisal variance', and show that it induces senior creditors to delay valuation as long as possible. Senior creditors accomplish this by issuing warrants or other kinds of options to junior creditors. These financial instruments are valuable only if the value of the firm rises sufficiently in the future. Senior creditors thus avoid error-prone judicial valuation by sharing future appreciation with junior creditors. This sharing is a key driver of APR deviations.<sup>17</sup>

#### EXECUTORY CONTRACTS

A contract is executory if neither party has substantially performed its contractual duties. If one party has substantially performed, the contract is not executory; it is instead an asset to one party (who has performed) and a liability to the other (who has remaining duties). The latter party must either perform its end of the bargain or pay money damages. If a distressed firm enters bankruptcy with executory contracts, US law gives the firm the option to continue or terminate the contracts. The firm can, in more technical terms, 'assume' or 'reject' executory contracts. If a contract is assumed, the bankrupt firm must cure past defaults and immediately perform remaining duties. If the firm rejects an executory contract, the counterparty is given an unsecured claim for damages, which is typically paid a few pennies on the dollar at the end of the bankruptcy case.

A bankrupt firm can make this assume-or-reject decision even if the contract itself says otherwise. Many contracts, for example, contain 'ipso facto' clauses that automatically terminate the contract if one party files for bankruptcy. If enforced in bankruptcy, these clauses would prevent the bankrupt firm from making the assume-or-reject decision. The bankruptcy filing would cause the contract to evaporate. But ipso facto clauses are not enforced under US bankruptcy law; they are instead nullified, allowing the firm to assume or reject the contract as it sees fit.

Che and Schwartz (Chapter 15) show that this rule – nullifying ipso facto clauses – may be inefficient. It allows a bankrupt firm to assume a contract even if the cost to the counterparty exceeds the firm's gain. The counterparty can refuse to perform and pay damages instead, of course, but the bankruptcy judge may err in computing money damages. If the prospect of judicial error is sufficiently large, the counterparty will perform. This is an inefficient outcome:



costs (to the counterparty) will outweigh the benefits (to the bankrupt firm). This ex post inefficiency will generate ex ante inefficiencies as well. Anticipating ex post inefficiency, counterparties will increase their contract prices to healthy firms. This, in turn, will reduce the incentives of managers to work hard when a firm is healthy, because their share of profits declines as counterparties raise prices. Anticipating this moral hazard among managers, counterparties will raise prices further and investors will increase the cost of credit generally, thereby deterring projects with positive net present value. Thus, a seemingly simple rule – nullifying ipso facto clauses – can generate a cascade of inefficiencies, as Che and Schwartz show.

#### PREFERENTIAL TRANSFERS

A preferential transfer occurs when a creditor receives an eve-of-bankruptcy payment that exceeds its expected recovery in bankruptcy. The creditor's recovery comes at the expense of similarly-situated creditors who received no preferential treatment and therefore must wait for a pro rata share of distributions from the bankruptcy process. The preferential transfer effectively allows the favored creditor to opt out of the bankruptcy process. US bankruptcy law forbids this kind of favoritism during the ninety days preceding the bankruptcy filing (the 'eve' of bankruptcy). A favored creditor can be forced to return the payments to the bankrupt firm.

Preferential transfer rules are commonly thought to prevent creditors from 'opting out' of the bankruptcy process. Creditors incur costs collecting debts and these costs are wasted if collections are later viewed as preferential transfers that must later be returned to the debtor. Adler (Chapter 16) casts doubt on this rationale for preferential transfer rules. He shows that creditors have strong incentives to seek repayment regardless of the debtor's financial condition. These incentives arise from a collective action problem. To see this, consider a distressed firm. Despite its obvious distress, no creditor can predict with certainty whether the firm will file a bankruptcy petition within ninety days after the creditor recovers payment. Suppose creditors ignore this risk and pursue collection efforts. The firm will file for bankruptcy immediately, force creditors to return their collections, and then pay the creditors their pro rata shares of the firm's assets. Suppose instead that the creditors do not ignore the bankruptcy risk. They wait for the firm to enter bankruptcy and then receive the same pro rata shares. This outcome is superior to the former because creditors conserve collection costs. Waiting is in their collective interest. Now suppose all creditors are waiting for the firm to file. Consider the incentives of a single creditor. Knowing that all other creditors are waiting passively, it has incentive to pursue collection efforts immediately. It will receive payment in full and the firm will probably not file for bankruptcy soon after because it can afford to pay one (but not all) creditors. This creditor does better by collecting than waiting. But the same is true for all creditors: although they are better off as a group by waiting, they are individually better off by collecting their debts. They will therefore pursue collection efforts, generating the familiar collective action problem. Adler concludes that preferential transfer rules probably do little to deter creditors from pursuing collection efforts.

Having cast doubt on the traditional rationale for preferential transfer rules, Adler proposes a different rationale. Distressed firms, he notes, have well-known investment problems: debt overhang can generate overinvestment in high-risk projects and underinvestment in low-risk projects with positive NPV. Adler shows that preferential transfer rules tend to discourage all



investments by making it harder for distressed firms to obtain credit. A distressed firm might, for example, try to obtain credit from a pre-existing lender by offering a security interest that supports new and old debts ('cross-collateralization'). However, this kind of security interest would violate preferential transfer rules because it implicitly repays an old debt. Because preferential transfer rules limit the financing available to a distressed firm, they discourage all types of investments. This is beneficial, Adler argues, because overinvestment problems likely loom larger than underinvestment problems. In his view, financial distress is often a signal that the firm is economically not viable and has few if any opportunities to invest in projects with positive NPV. Thus, instead of ignoring low-risk, positive-NPV projects, distressed firms are more likely to favor high-risk, bet-the-firm investments. Preference law discourages that kind of risk-taking.

#### LENDING TO FIRMS IN BANKRUPTCY: DEBTOR-IN-POSSESSION FINANCING

A firm in bankruptcy is typically cash poor. Bankruptcy rules allow the firm to increase liquidity through debtor-in-possession (DIP) financing. The rules often give the lender priority over existing debts. For example, the US Bankruptcy Code gives the DIP lender priority over all unsecured debts ('administrative expense' priority). Under certain conditions, which are regularly met in practice, the lender may also be given security interests in the firm's assets. It may even be given a security interest that comes ahead of existing security interests (a 'priming lien'). These rules are often seen as enabling the firm to take on debt that would be unavailable outside bankruptcy. Outside bankruptcy, for example, it could not offer a priming lien to a new lender.

Triantis (Chapter 17) argues that these rules actually constrain – not enable – lending to firms in bankruptcy. DIP financing will typically violate many covenants – such as limits on leverage ratios – imposed by creditors prior to the bankruptcy. The role of the judge, Triantis argues, is to provide the kind of constraints that private contracts normally impose outside bankruptcy. The most important constraints, in his view, are those that police underinvestment and overinvestment problems. Underinvestment problems loom largest in firms with relatively high levels of insolvency, because the massive debt overhang discourages worthwhile investments. Overinvestment problems are more likely when the degree of insolvency is lower, because equityholders have a greater chance of recovering from high-risk projects. Triantis argues that the judge should be sensitive to these patterns. He also shows that typical features of DIP financing – administrative expense priority, security interests, and borrowing from prepetition lenders – tend to mitigate the underinvestment problem but increase the probability of overinvestment.

#### *E Other Topics: Industry Conditions and Forum Shopping*

Few studies have considered the effects of bankruptcy filings on competitive conditions. In a concentrated industry, a firm's bankruptcy could affect output and prices, as Borenstein and Rose (Chapter 18) discuss in their study of airline bankruptcies. They examine the effects of a Chapter 11 filing on the pricing behavior of the bankrupt firm and its competitors. Though their sample is small (four major bankruptcies), they find little evidence that a firm's bankruptcy filing affects its own pricing or that of competitors. Bankrupt firms usually lower prices before filing for Chapter 11 and continue lowering them in bankruptcy. Despite this,

competitors do not respond by slashing their own prices; if anything, their prices rise. In a separate study, not included here, Borenstein and Rose (2003) consider the effects of bankruptcy filings on service levels in the airline industry. Here they find a meaningful effect? During the quarter that an airline enters Chapter 11, they observe a 20 percent decline in the number of flights offered by the airline. The effect is concentrated in midsized airports (serving 100 to 400 flights per day). These studies suggest that financial distress and bankruptcy can affect industry output and, perhaps, competitive conditions.<sup>18</sup>

Another set of articles, not included in this book, explores the choices facing large corporations with assets in multiple jurisdictions, domestic or international. In the US, a corporation can file a bankruptcy petition in any jurisdiction in which it is headquartered, it has its principal assets or place of business, or an affiliate has filed for bankruptcy.<sup>19</sup> This typically creates a wide range of jurisdictional choices for large, publicly traded corporations. Firms' choices – dubbed 'forum shopping' – could be motivated by the perceived efficiency of particular jurisdictions or judges, as Ayotte and Skeel (2006), Rasmussen and Thomas (2000), and others have argued. Or they could reflect inefficient efforts by judges to cater to the desires of managers or attorneys, as LoPucki (2005) and others have argued. If the former view is correct, forum shopping could promote efficiency in bankruptcy outcomes as jurisdictions compete to attract filings.

Additional complexities arise when a corporation operates in multiple international jurisdictions. In the US, a filing in one jurisdiction precludes filings in others. That is not true internationally: a corporation or its creditors can commence multiple, parallel cases in different countries. In several articles not included in this book, Rasmussen (1997, 2000) reviews the literature and argues for a contractual approach similar to what he advocated for domestic US law (Chapter 10 Vol. I): corporations should be free to choose, through their charters, the appropriate bankruptcy forum in the event of insolvency.

## **Vol. II Part II: Consumer Bankruptcy in Theory and Practice**

Rea (Chapter 4 Vol. I) modeled consumer bankruptcy as a form of insurance. Subsequent literature has addressed two aspects of this insurance: its effects on (i) consumer behavior and (ii) credit markets.

### *A Effects on Consumer Behavior*

Any insurance policy can generate moral hazard in the form of dulled incentives to avoid the insured-against event. In the bankruptcy literature, a number of articles identify the potential sources of moral hazard and its empirical importance. Adler, Polak and Schwartz (Chapter 19) use formal tools of insurance economics to identify the sources. They obtain familiar results: first, the availability of a bankruptcy discharge dulls the incentives of borrowers to avoid insolvency. The discharge offers a 'soft landing' for borrowers who suffer distress. This moral hazard is exacerbated by exemption laws, which permit borrowers to retain certain assets ('exempt assets') even if they file for bankruptcy. Lenders will, of course, respond by raising the price of or restricting the supply of credit. If exemption laws are too broad (allowing consumers to keep a wide range of assets), some consumers may be unable to

borrow. This is especially true for poor consumers with weak credit scores and uncertain income prospects. These moral hazard problems can, potentially, be mitigated by allowing consumers to contract around bankruptcy rules. One form of contract is ex post renegotiation, in which a consumer selectively reaffirms some debts that might otherwise be discharged. Adler, Polak and Schwartz discuss the conditions under which it is efficient to permit ex post renegotiation.

Adler, Polak and Schwartz make strong assumptions about consumer rationality and sensitivity to variation in bankruptcy laws. In their model, consumers select their own probabilities of default and bankruptcy by taking (or not taking) steps to minimize insolvency. This perspective is often dubbed the ‘strategic filer’ model of bankruptcy, in which consumers decide whether to file for bankruptcy based on cost–benefit analysis. The benefit of bankruptcy is the discharge of debt and the retention of certain exempt assets. The cost is the loss of nonexempt assets, damage to the consumer’s credit score, and (possibly) stigma. An alternative perspective – the ‘adverse events’ model – minimizes the importance of moral hazard and views bankruptcy filings as largely the product of exogenous forces. Consumers file for bankruptcy, under this model, when they suffer uninsured health trauma or other unexpected, adverse events. Domowitz and Sartain (1999), for example, find that significant medical debt (equal to more than 2 percent of income) is one of the most important determinants of whether a family files for bankruptcy. Of course, the two perspectives – strategic filer and adverse events – are not mutually exclusive, as Keys (2008) demonstrates. Consumers may file for bankruptcy when the benefits (especially debt discharge) outweigh the costs, and the benefits may be high after adverse events (which may generate high levels of debt).

Much of the current literature assesses the relative importance of strategic filer and adverse events models. Fay, Hurst and White (Chapter 20) argue that the strategic filer model is a better description of consumer behavior based on evidence from the 1984–1995 waves of the Panel Study of Income Dynamics (PSID), a survey that tracks the financial condition of individuals over time. They show that the expected financial benefit from a bankruptcy filing – the amount of debt discharged minus non-exempt assets that must be turned over to creditors – is a strong determinant of whether an individual files for bankruptcy. This supports the hypothesis that consumers’ bankruptcy decisions are based on cost–benefit analysis. On the other hand, Fay, Hurst and White find that various indicators of adverse events – health problems, spells of unemployment, and whether the head of household experienced a recent divorce – are not consistently important predictors of bankruptcy filings. Only the divorce variable was close to being statistically significant (its magnitude, however, was enormous, raising the probability of a bankruptcy filing by about 87 percent).

This is, of course, not the end of the debate. Recent scholarship shows that adverse events may be far more important than Fay, Hurst and White believe. Keys (2008), for example, finds that a consumer’s bankruptcy probability rises over 300 percent after a job loss. Gan and Sabarwal (2005) present additional evidence supporting the adverse events model. Additional research is needed.

### *B Effects on Credit Markets*

Because bankruptcy law discharges debts and allows consumers to shelter assets from creditors, it affects demand for and supply of consumer credit. The demand effect arises from

two sources: bankruptcy reduces repayment obligations and provides a form of wealth insurance, which is valuable to risk-averse consumers. These features of bankruptcy law make debt more attractive to consumers. The supply effect arises from the same sources. The discharge cuts off creditors' ability to sue indebted consumers; exemption laws reduce the assets available for distribution to creditors. Together, these effects reduce creditors' expected recovery from lending to consumers. Consumer-friendly bankruptcy laws, therefore, make loans more attractive to consumers but less attractive to lenders – effects emphasized in an early article by Meckling (1977). For example, if a legal change allows consumers to shelter a larger share of their assets from creditors, consumers will respond by demanding more credit at existing prices. But lenders will respond by increasing the price of credit. The net effect is unclear: total lending could rise or fall.

Gropp, Scholz and White (Chapter 21) isolate the demand and supply effects using data on consumers living in states with different property exemption laws. Some states offer significantly more generous exemptions than others. In Texas, for example, a consumer can shelter her home equity, no matter how valuable. Until recently in Delaware, by contrast, a consumer's home equity was not exempt; it was available for distribution to unsecured creditors. The authors arrayed states based on the generosity of their exemption laws. They found that consumers in the most generous states – especially low-wealth consumers – faced a much higher probability of being denied credit than those living in the least generous states. This is consistent with an adverse effect of bankruptcy laws on the supply of credit. On the other hand, average debt levels were significantly higher among consumers living in states with more generous exemption laws than among those living in less generous states. This effect, however, was concentrated among consumers with relatively high asset holdings. Low-wealth consumers, by contrast, exhibited lower average debt levels in states with relatively generous exemption laws than in states with less generous laws. Finally, Gropp, Scholz and White found that interest rates were higher in states with the most generous exemption laws, but the rates were higher primarily for consumers with relatively low asset holdings.

Together, these results indicate that generous bankruptcy laws are harmful to the poor but beneficial to the wealthy. If we compare the most and least generous states, we see that low-wealth individuals face higher interest rates, are more likely to be denied credit, and have lower debt levels in the most generous states. The opposite is largely true for high-wealth consumers, who face roughly the same interest rates but are less likely to be denied credit and tend to take on more debt in the most generous states.

Subsequent work has analysed the effects of particular features of US law on credit markets. Berkowitz and Hynes (1999) and Lin and White (2001), for example, study effects on home mortgage markets. Neither article is included in this book, but the interested reader should consult them because they illustrate important debates now animating US bankruptcy policy. Berkowitz and Hynes show that generous property exemptions have no effect – or, at most, a small positive effect – on the supply of home mortgage credit. Whether exemptions are generous or chintzy, the mortgage lender has the same power to foreclose on a borrower's home. To be sure, a bankruptcy filing will delay the foreclosure process, which is costly to the lender, as Pence (2006) has shown. But the bankruptcy filing also offers an opportunity for the borrower to divert income from unsecured creditors to the mortgage lender and thereby prevent foreclosure. The more generous the property exemptions, the more the borrower can shelter assets from unsecured creditors and redirect them to the mortgage lender. Thus,



mortgage lenders can expect smaller losses – and will therefore extend greater credit – in states with more generous property exemptions. Berkowitz and White obtain empirical results consistent with this hypothesis.

Lin and White find just the opposite result using the same data: Generous property exemptions reduce the supply of home mortgage credit. They emphasize the large costs borne by mortgage lenders when a foreclosure is delayed by a bankruptcy filing. Because bankruptcy filings are more likely in states with more generous exemptions, the costs to mortgage lenders are higher in these states. Lenders therefore reduce the supply of credit. More work is clearly needed before policy makers can assess the effects of bankruptcy laws on mortgage markets.

## Conclusion

The law and economics of bankruptcy remains a fertile field for academic inquiry. Business bankruptcy has received the lion's share of scholarly attention, much of it theoretical, but many interesting questions remain unexplored. For example, little has been done empirically to evaluate the effects of different bankruptcy rules on *ex ante* investment decisions or on *ex post* outcomes such as bankruptcy costs and whether a firm reorganizes or liquidates. The challenge here is to find a natural experiment, that is, a sudden change in legal or economic conditions that impacts some firms ('treatment group') but not others ('control group'). The two groups must be comparable, and a firm's membership in one group cannot depend on factors related to the legal or economic conditions under study. In other words, if a firm is part of the 'treatment group', it should be a member of that group for reasons unrelated to the legal or economic conditions under study. Ideally, it should be randomly assigned to the treatment or control group.

It is, of course, difficult to find a real-world setting that satisfies these conditions, but it can be done. Schoar and Chang (2007), for example, take advantage of the fact that bankruptcy cases are typically randomly assigned to bankruptcy judges. Similar cases are therefore handled by different judges. This allows the authors to estimate whether some judges are pro-debtor or pro-creditor and assess how *ex post* outcomes vary with this judicial bias. It would be interesting to use a similar methodology to assess how different bankruptcy rules affect recoveries to unsecured creditors. Because they are the most junior creditors, their payoffs may be a useful measure of the efficiency of different bankruptcy rules.

Consumer bankruptcy has received comparatively little attention, as is clear from the small number of pages I have devoted to it. There are, however, many questions that need study, and it may be easier to use the treatment-control group methodology to study consumer bankruptcy questions. Consumers frequently encounter unexpected legal and economic changes – policy reforms, personal or property disasters, sudden changes in commodity prices, mass layoffs – that affect their finances and propensity to file for bankruptcy. These changes have a somewhat random geographic distribution: natural disasters, for example, will cause great harm to some communities but not others that are nearby. These legal and economic changes provide 'natural experiments' that can help scholars assess the relative importance of strategic-filer and adverse-events models of bankruptcy filings. They may also be useful in answering other longstanding questions. Why, for example, do we see great variation in bankruptcy filing rates and in the use of particular bankruptcy procedures (Chapter 7 versus Chapter 13) across



different geographic areas (states and counties) of the US?<sup>20</sup> Why do the vast majority of Chapter 13 bankruptcy cases fail before the debtor obtains a discharge?<sup>21</sup> Did bankruptcy reforms in the US contribute to the recent foreclosure crisis?<sup>22</sup>

Finally, this book has ignored important questions at the intersection of bankruptcy law and the regulation of financial institutions. In the US and other countries, the bankruptcy laws applicable to corporations and individuals (discussed above) are not applicable to commercial banks and insurance companies. Separate laws, administered by regulators (not courts) in the US, address the insolvency of those financial institutions. However, the 1990s and 2000s saw rapid growth in certain kinds of financial entities – investment banks and hedge funds – which are economically similar to commercial banks and insurance companies but whose insolvency is subject to the ordinary bankruptcy laws applicable to corporations and individuals. Lehman Brothers, for example, was a massive investment bank that filed for bankruptcy under Chapter 11 of the US Bankruptcy Code in 2008. Indeed, the Great Recession of the late 2000s has highlighted diverse problems arising from the application of ordinary bankruptcy laws to large financial institutions.

One problem arises from the widespread use of derivatives and similar contracts by financial institutions that are eligible to commence ordinary bankruptcy proceedings. These contracts differ in important ways from the typical executory contracts subject to Section 365 of the US Bankruptcy Code, discussed in subsection D above. First, their value is generally substantially more volatile than that of typical executory contracts. Additionally, financial institutions are generally on both sides of a financial contract. If one institution ('Bank A') suffers distress and consequently defaults on a contract, the institution on the other side of the transaction ('Bank B') will suffer losses. If those losses are sufficiently large, Bank B could itself suffer distress. Through the interconnectedness created by financial contracts, Bank A's distress can infect Bank B.

Citing these and other differences between financial and ordinary contracts, policymakers have amended their bankruptcy laws (in the US and elsewhere) to offer special treatment to financial contracts. In the US, for example, the automatic stay of Section 362 does not prevent counterparties to financial contracts from terminating those contracts and seizing collateral from a debtor in bankruptcy (as long as the collateral can be collected without assistance from the debtor).<sup>23</sup> Recently, scholars have questioned<sup>24</sup> and called for the scaling back<sup>25</sup> of these special rules for financial contracts. More generally, scholars have debated whether ordinary bankruptcy laws (administered by courts) or a separate regulatory system (administered by agencies) should apply to investment banks, hedge funds, and other financial institutions.<sup>26</sup>

The Great Recession has also prompted interest in the extent to which regulation of the banking sector has indirect effects on dynamics in corporate bankruptcy cases. Woo (2010, 2011) made important progress on this topic.

The foregoing are only some of the areas in which the law and economics of bankruptcy is developing at a rapid pace, often in response to changes in the economic environment (such as the Great Recession) and technology (permitting more sophisticated statistical analysis). I hope this book gives readers a good sense of the intellectual roots and future possibilities of current scholarship.

## Notes

1. Professor of Law at the University of Chicago Law School. This book was drafted while I was the Harvey R. Miller Professor of Law and Economics at Columbia Law School and Co-Director of the Richard Paul Richman Center for Business, Law, and Public Policy at Columbia University. I am grateful to Douglas Baird, Henry Manne, and Robert Rasmussen for helpful comments, to Matthew Cormack, Arpit Gupta, Soren Larson, and Haiwei Jake Wang for excellent research assistance, and to the Milton and Miriam Handler Foundation for generous financial support.
2. Baird and Jackson emphasize misuse, but it is also clear that undercompensation of secured creditors will also raise bankruptcy costs for secured creditors and induce them to increase the cost of capital ex ante as compensation for the expected inefficiencies in bankruptcy. To be sure, unsecured creditors may reduce their cost of capital ex ante, because they benefit from an ability to undercompensate secured creditors. If the two effects do not offset each other – and there are reasons to think that they will not – undercompensation of secured creditors can raise the overall cost of capital to some firms and thereby deter efficient investments. See, for example, Schwartz (1997).
3. In another early contribution to the economics of bankruptcy law William Meckling (1977) also floated the idea of mandatory auctions in lieu of traditional reorganization.
4. There are other complications as well. One is that Bebchuk's process assumes well-established creditor priorities. If the size and ranking of claims is disputed, that issue must be resolved before options are distributed to the parties. For example, collateral must be valued in order to determine whether secured creditors are over- or undersecured. This is time-consuming and vulnerable to creditor hold-up. Second, a reorganization plan is still needed to deal with important issues such as assumption or rejection of executory contracts. That too can delay the process. Finally, junior creditors and shareholders must have access to sufficient liquidity in order to exercise their options. If these groups are cash-constrained, senior creditors might obtain equity that is worth more than their claims. This problem, Bebchuk argues, may not be important in practice because junior creditors and equityholders can always sell their options to third parties with sufficient liquidity to exercise them. And even if it is a problem, it can be avoided through a modified procedure, as some scholars have shown (see Aghion, Hart and Moore (Chapter 22), discussed next).
5. See, for example, Ayotte and Skeel (2006).
6. US Bankruptcy Code, 11 U.S.C. § 305(a)(1).
7. § 1112(b)(4)(A).
8. § 1112(b)(4)(F).
9. See, for example, Hotchkiss (1995).
10. Maksimovic and Phillips (Chapter 6) find somewhat different patterns among firms in high-growth industries. Although asset sales, plant productivity, and shutdowns are comparable for firms in and outside of bankruptcy, there are productivity declines among firms that remain in Chapter 11 for a very long time (four or more years). This is suggestive evidence that, for firms in high-growth industries, bankruptcy may allow inefficient firms to continue in operation.
11. The pioneering work on this phenomenon was done by Myers (1977).
12. Jensen and Meckling (1976).
13. The phenomenon was also common before the US bankruptcy law was revised in 1978. See Meckling (1977).
14. Weiss (1990).
15. Ayotte and Morrison (2009).
16. Capkun and Weiss (2007).
17. Casey (2011) shows that the APR generates other inefficiencies by canceling junior creditors' (and shareholders') call option on the firm's assets. Outside bankruptcy, junior creditors have a claim to the value of firm to the extent that it exceeds the face value of senior creditor claims. This is a call option. After a firm files for bankruptcy, however, the APR forces an immediate valuation of the firm and distributes firm value based on that valuation. Potential variance in firm value in the future is ignored and, as a result, captured by senior creditors. As a result, a bankruptcy filing allows senior creditors to capture the call option that is possessed by junior creditors outside of

- bankruptcy. This redistribution from juniors to seniors, Casey shows, can have efficiency consequences. He proposes reforms that would prevent the redistribution.
18. Other studies, such as Benmelech and Bergman (2011), find that a bankruptcy can increase the cost of capital for non-bankrupt firms in the same industry. This can occur because a bankruptcy filing increases the likelihood that the troubled firm will sell assets, thereby depressing the value of similar assets serving as collateral for non-bankrupt firms.
  19. 28 U.S.C. § 1408.
  20. For progress on this question, see Lefgren and McIntyre (2009).
  21. Li (2007) documents this phenomenon.
  22. For work on this question, see Li, White and Zhu (2012) and Morgan, Iverson and Botsch (2009).
  23. See, for example, Morrison and Riegel (2005).
  24. Edwards and Morrison (2005).
  25. See, for example, Skeel and Jackson (2011); Roe (2011); Lubben (2010a, 2010b); Skeel (2009).
  26. See, for example, Skeel (2011); Ayotte and Skeel (2010); Morrison (2009).

## References

- Ayotte, Kenneth M. and Edward R. Morrison (2009), 'Creditor Control and Conflict in Chapter 11', *Journal of Legal Analysis*, **1**, 511–51.
- Ayotte, Kenneth M. and David A. Skeel, Jr. (2006), 'An Efficiency-Based Explanation for Current Corporate Reorganization Practice', *University of Chicago Law Review*, **73**, 425–68.
- Ayotte, Kenneth M. and David A. Skeel, Jr. (2010), 'Bankruptcy or Bailouts?', *Journal of Corporation Law*, **35**, 469–98.
- Benmelech, Efraim and Nittai K. Bergman (2011), 'Bankruptcy and the Collateral Channel', *Journal of Finance*, **66**, 337–78.
- Berkowitz, Jeremy and Richard Hynes (1999), 'Bankruptcy Exemptions and the Market for Mortgage Loans', *Journal of Law and Economics*, **42**, 809–30.
- Borenstein, Severin and Nancy L. Rose (2003), 'The Impact of Bankruptcy on Airline Service Levels', *American Economic Review Papers and Proceedings*, **93**, 415–19.
- Capkun, Vedran and Lawrence A. Weiss (2007), 'Bankruptcy Resolution and the Restoration of Priority of Claims', working paper (available at <http://law.bepress.com/cgi/viewcontent.cgi?article=1929&context=alea>).
- Casey, Anthony J. (2011), 'The Creditors' Bargain and Option-Preservation Priority in Chapter 11', *University of Chicago Law Review*, **78**, 759–807.
- Domowitz, Ian and Robert L. Sartin (1999), 'Determinants of the Consumer Bankruptcy Decision', *Journal of Finance*, **54**, 403–20.
- Easterbrook, Frank H. (1990), 'Is Corporate Bankruptcy Efficient?', *Journal of Financial Economics*, **27**, 411–17.
- Edwards, Franklin R. and Edward R. Morrison (2005), 'Derivatives and the Bankruptcy Code: Why the Special Treatment?', *Yale Journal on Regulation*, **22**, 91–122.
- Gan, Li and Tarun Sabarwal (2005), 'A Simple Test of Adverse Events and Strategic Timing Theories of Consumer Bankruptcy', NBER Working Papers 11763, National Bureau of Economic Research, Inc. (available at <http://www.nber.org/papers/w11763.pdf>).
- Hotchkiss, Edith Schwalb (1995), 'Postbankruptcy Performance and Management Turnover', *Journal of Finance*, **50**, 3–21.
- Jensen, Michael C. and William H. Meckling (1976), 'Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure', *Journal of Financial Economics*, **3**, 305–60.
- Keys, Benjamin J. (2008), 'The Credit Market Consequences of Job Displacement', working paper (available at [http://www-personal.umich.edu/~benkeys/jobmarket/benkeys\\_chapter1.pdf](http://www-personal.umich.edu/~benkeys/jobmarket/benkeys_chapter1.pdf)).
- Lefgren, Lars and Frank McIntyre (2009), 'Explaining the Puzzle of Cross-State Differences in Bankruptcy Rates', *Journal of Law and Economics*, **52**, 367–94.
- Li, Wenli (2007), 'What Do We Know about Chapter 13 Personal Bankruptcy Filings?', *Federal Reserve*

- Bank of Philadelphia Business Review*, Fourth Quarter, 19–26.
- Li, Wenli, Michelle J. White and Ning Zhu (2012), 'Did Bankruptcy Reform Cause Mortgage Defaults to Rise?', *American Economic Journal: Economic Policy* (forthcoming).
- Lin, Emily Y. and Michelle J. White (2001), 'Bankruptcy and the Market for Mortgage and Home Improvement Loans', *Journal of Urban Economics*, **50**, 138–62.
- LoPucki, Lynn M. (2005), *Courting Failure*, Ann Arbor, MI: University of Michigan Press.
- Lubben, Stephen J. (2010a), 'The Bankruptcy Code without Safe Harbors', *American Bankruptcy Law Journal*, **84**, 123–44.
- Lubben, Stephen J. (2010b), 'Repeal the Safe Harbors', *American Bankruptcy Institute Law Review*, **18**, 319–35.
- Meckling, William H. (1977), 'Financial Markets, Default, and Bankruptcy: The Role of the State', *Law & Contemporary Problems*, **41**, 13–38.
- Morgan, Donald P., Benjamin Charles Iverson and Matthew Botsch ([2008] revised 2009), 'Seismic Effects of the Bankruptcy Reform', *Federal Reserve Bank of New York Economic Policy Review*.
- Morrison, Edward R. (2009), 'Is the Bankruptcy Code an Adequate Mechanism for Resolving the Distress of Systemically Important Institutions?', *Temple Law Review*, **82**, 449–63.
- Morrison, Edward R. and Joerg Riegel (2005), 'Financial Contracts and the New Bankruptcy Code: Insulating Markets from Bankrupt Debtors and Bankruptcy Judges', *American Bankruptcy Institute Law Review*, **13**, 641–64.
- Myers, Stewart C. (1977), 'Determinants of Corporate Borrowing', *Journal of Financial Economics*, **5**, 147–75.
- Pence, Karen M. (2006), 'Foreclosing on Opportunity: State Laws and Mortgage Credit', *Review of Economics and Statistics*, **88**, 177–82.
- Rasmussen, Robert K. (1997), 'A New Approach to Transnational Insolvencies', *Michigan Journal of International Law*, **19**, 1–36.
- Rasmussen, Robert K. (2000), 'Resolving Transnational Insolvencies Through Private Ordering', *Michigan Law Review*, **98**, 2252–75.
- Rasmussen, Robert K. and Randall Thomas (2000), 'Timing Matters: Promoting Forum Shopping by Insolvent Corporations', *Northwestern University Law Review*, **94**, 1357–408.
- Roe, Mark J. (2011), 'The Derivatives Players' Payment Priorities as Financial Crisis Accelerator', *Stanford Law Review*, **63**, 539–90.
- Schoar, Antoinette and Tom Chang (2007), 'Judge Specific Differences in Chapter 11 and Firm Outcomes', working paper (available at [http://www.mit.edu/~aschoar/ChangSchoar\\_Judges52007.pdf](http://www.mit.edu/~aschoar/ChangSchoar_Judges52007.pdf)).
- Schwartz, Alan (1997), 'Priority Contracts and Priority in Bankruptcy', *Cornell Law Review*, **82**, 1396.
- Skeel, David A. Jr. (2009), 'Bankruptcy Boundary Games', *Brooklyn Journal of Corporate, Financial & Commercial Law*, **4**, 1–21.
- Skeel, David A. Jr. (2011), *The New Financial Deal: Understanding the Dodd-Frank Act and its (Unintended) Consequences*, Hoboken, NJ: John Wiley & Sons.
- Skeel, David A. Jr. and Thomas H. Jackson (2011), 'Transaction Consistency and the New Finance in Bankruptcy', *Columbia Law Review*, **112**, 152–202.
- Weiss, Lawrence A. (1990), 'Bankruptcy Resolution: Direct Costs and Violation of Priority of Claims', *Journal of Financial Economics*, **27**, 285–314.
- Woo, Sarah Pei (2010), 'Simultaneous Distress of Residential Developers and their Secured Lenders: An Analysis of Bankruptcy and Bank Regulation', *Fordham Journal of Corporate and Financial Law*, **15**, 617–684.
- Woo, Sarah Pei (2011), 'Regulatory Bankruptcy: How Bank Regulation Causes Fire Sales', *Georgetown Law Review*, **99**, 1615–1667.

