Corporate Financial Distress and Bankruptcy: A Survey

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Abstract

This paper provides a synthetic and evaluative survey of issues in corporate financial distress and bankruptcy. This area has moved into a public domain as a result of the recent global financial crisis that witnessed failures of many venerable institutions that got rescued by the government. Hence, this survey highlights the resolution mechanisms not only in the private domain but also in the public domain, and it uses corporate finance paradigms to interpret some of the far-reaching developments in financial distress of systemic nature. This survey's theoretical anchor is a framework for the delineation of economic distress and financial distress. The difficulty in disentangling the dichotomy has been a central challenge in the empirics relating to financial distress, corporate bankruptcy, and the use of apparently cost-effective private mechanisms for resolving financial distress. This review devotes ample space on the discussion of conditions under which privatization of bankruptcy succeeds and fails, and the recent empirics on the subject. The review also grapples with the efficiency of bankruptcy codes and regimes, given the frequent usage of court-supervised mechanisms. The fundamental efficiency question about the bankruptcy law is whether the law effectively rehabilitates economically efficient but financially distressed firms and liquidates economically inefficient firms. This survey provides an ongoing debate in law and in economic theories about the efficiency of the US bankruptcy code. Moreover, it examines a linkage between financial distress and corporate governance, which has received growing attention. The review goes beyond the US to take a look at comparative bankruptcy codes around the world with a focus on bankruptcy reform issues in emerging economies. Finally, this survey takes us into a public domain and systemic financial distress. This is inspired by the recent global financial crisis. Is the standard bankruptcy procedure (e.g., those embedded in Chapters 11 and 7) sufficient for resolving systemic financial distress? The review attempts to answer this question in the context of the recently adopted landmark legislation, particularly the Dodd-Frank Act's Title II (Receivership), which governs the resolution of systemically critical institutions.
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I. Introduction

There have been important developments in the area of corporate financial distress and bankruptcy since the comprehensive survey by Senbet and Seward (1995). This current survey builds upon the previous survey and repositions the debate in the context of the new developments.\(^1\) The review provides a synthesis starting with the theoretical foundation and moving onto the empirical results. Surprisingly, many issues surrounding corporate financial distress and bankruptcy are still unresolved, and ample opportunities still exist for further research. We hope that the review will stimulate such research beyond setting the state of the art in the area.

This area has moved into a public domain as a result of the recent global financial crisis that witnessed failures of many venerable institutions that got rescued by the government. The determination on the part of the government to prevent a repeat of such bailouts has led to the landmark legislation in the form of the Dodd-Frank Wall Street Reform and Consumer Protection Act (hereafter Dodd-Frank Act). In particular, the Act provides for a resolution authority akin to private workouts but under government authority. The panic surrounding the global crisis and government intervention led to a departure of a normal workout and restructuring in which creditors were made whole while equity was wiped out. The Dodd-Frank Act purports to overcome the tax-payer bailouts and facilitate orderly distress resolution. Thus, this survey will highlight the resolution mechanisms not only in the private domain but also in the public domain, and we will use corporate finance paradigms to interpret some of these far-reaching developments in financial distress of systemic nature.

The outline of the survey is as follows. Section II provides the institutional features of financial distress and bankruptcy, focusing on the workings of the US bankruptcy system as

\(^1\) There is another recent survey that focuses on the empirics of distress resolution mechanisms (Hotchkiss, John, Mooradian, and Thorburn, 2008). That survey mainly reviews the empirical research on the use of private and court-supervised mechanisms for resolving financial distress. Our survey has a comprehensive coverage of both theory and empirics in this area. The timing of our survey also allows us to discuss the issue of systemic financial distress triggered by the global financial crisis and economic recession in recent years, and discuss the resolution mechanisms not only in the private domain but also in the public domain. In the empirical part, the two surveys have some overlap, yet have different emphasis on the topics covered.
characterized by the features of Chapter 11 (reorganization) and Chapter 7 (liquidation). Section III provides a review of the major theoretical developments in corporate financial distress and bankruptcy, beginning with the Modigliani-Miller analog of bankruptcy irrelevancy to firm valuation and then moving onto the imperfect world with a focus on the efficiency characteristics of the private/market-based mechanisms and court-supervised mechanisms of resolving financial distress.

Section IV reviews the available empirical work on financial distress and bankruptcy in a synthetic fashion. The synthesis for the overall interpretations of the many empirical studies is guided by our discussion of the theoretical predictions in Section III. The review here begins with the fundamental question about the extent to which financial distress and bankruptcy costs are significant, and the extent to which these costs are internalized and externalized. The section highlights important changes that have taken place over the last two decades in both private workouts and court-supervised resolution mechanisms. It also includes discussions about the empirical evidence for post-bankruptcy firm performance and governance issues associated with financial distress.

Section V looks at comparative bankruptcy codes around the world, which tend to vary along creditor rights and financial distress resolution mechanisms. In particular, we highlight bankruptcy features in several European countries differentiated by legal origin - UK, France, Germany, and Sweden - and recent bankruptcy reforms in two BRIC countries - Brazil and India.

Section VI examines the systemic nature of financial distress and bankruptcy. This is inspired by the recent events in the global financial crisis and the introduction of the landmark legislation—the Dodd-Frank Act. In particular, the review deals with the extent to which resolution mechanisms in the private domain can be applied to systemic crisis resolution, and the similarities and contrasts between the Dodd-Frank resolution regime and the existing corporate bankruptcy regime.

Since this survey is fairly long, we provide a summary of all the discussions in Section VII so that readers can get a concise overview of the essential topics covered in this survey. We also point out fruitful areas for future research on corporate financial distress and bankruptcy.
II. Institutional Features of Financial Distress and Bankruptcy

In the United States, the legal process of dealing with corporate financial distress and bankruptcy is governed by the Bankruptcy Reform Act of 1978 (hereinafter, the ‘Code’).\(^2\) The role of a formal bankruptcy proceeding is to provide a collective procedure for the resolution of impaired contractual claims held against the firm. A bankruptcy filing may be voluntary or involuntary, depending on whether the procedure is initiated by the incumbent management or by the firm’s creditors. In reality, the majority of bankruptcy filings by U.S. corporations are voluntary. The Code alters the powers, duties, and responsibilities of the firm’s contractual claimants relative to the normal operation of a solvent, ongoing entity under current commercial and tax codes. Since bankruptcy law supersedes the commercial code, it seems likely that the incentives and behavior of the claimants may be affected by the opportunity to enter formal bankruptcy. Consequently, an understanding of the main provisions of the Code is necessary in order to determine the economic implications of financial distress and formal bankruptcy procedures.

For the majority of the corporations that enter formal bankruptcy proceedings, the 1978 Code provides a liquidation process (Chapter 7) and a reorganization process (Chapter 11). Chapter 7 liquidation is a relatively straightforward procedure. The court appoints a trustee who shuts down the firm. The trustee liquidates the firm’s assets, and the proceeds are then turned over to the court for distribution to the firm’s claimants. The seniority of payment distribution is well-defined according to the absolute priority rule. According to this rule, once the court establishes the hierarchy of claimants, a junior claim can receive no payment until all senior claims are fully paid. Thus, payoffs to the firm’s claimants depend directly on the value that the trustee obtains by liquidating the firm’s assets, as well as the assigned seniority of the claim.

The primary purpose of Chapter 11 is rehabilitation of a financially distressed but economically viable firm. Once the firm enters Chapter 11, the incumbent management prepares a reorganization plan that proposes an allocation of firm value among the existing claimants. Although formal reorganization procedures are somewhat complicated, we can describe the

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\(^2\) Since the key institutional features of the US bankruptcy code have not changed much during the past two decades, the discussions in this section closely follow those in Section 2 of the old survey by Senbet and Seward (1995).
economic implications of the major provisions of Chapter 11 (see a summary of these features in Table 1).

First, an automatic stay provision stops all principal and interest payments due to creditors. In addition, interest ceases to accrue on all outstanding unsecured debt. This effectively extends the maturity of the firm’s debt obligations and reduces the market value of the debt holders’ claim on the firm’s assets. The provision also prevents secured creditors from seizing their collateral. Finally, the automatic stay precludes creditors from cancelling contracts and halts lawsuits against the firm. Also, the court may void certain transfers and contracts that occurred prior to the bankruptcy filing. For example, Chapter 11 may allow the firm to eliminate costly labor contracts such as pension obligations or expensive lease contracts. The automatic stay provision effectively gives the distressed debtor some much needed breathing room and time to work out a solution.

The 1978 Act also mandated that the incumbent management team remain in control of the firm’s assets, except in extreme cases such as fraud. Interestingly, mere incompetence is not a sufficient motive to remove incumbent management under Chapter 11. Beyond simple entrenchment, Chapter 11 also conveys important additional advantage to management. First, for the initial 120-day period after filing, incumbent management retains the exclusive right to file a reorganization plan. Since this plan often forms the basis for subsequent bargaining among the diverse claimant groups, this exclusivity represents a valuable power. Extensions of the exclusivity period beyond the initial 120-day period are quite common, especially in the case of large, complex bankruptcies. Prior to the Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, the exclusivity period could be extended at the judge’s discretion indefinitely, but now it is limited to 18 months.

In addition, once the firm has filed for bankruptcy, the debtor-in-possession (DIP) provision allows new debt financing to come into the firm at a higher priority than the firm could offer a lender outside of bankruptcy. This provision is intended to encourage new lending and protect the integrity of any new loans as the firm reorganizes. As we shall discuss in detail later, in the absence of such a provision, new funds may not be forthcoming, thereby diminishing the likelihood that the firm can emerge from bankruptcy as a viable entity.
Finally, the voting process for the approval of a reorganization plan may be advantageous to the incumbent management and the shareholders. Restructuring of public debt outside of the bankruptcy process (i.e., informal or private workouts) is governed by the Trust Indenture Act of 1939, which mandates that any changes to an outstanding public bond’s interest, principal, or maturity can be made only if approved by 100% of the issue’s holders. In practice, this virtually precludes any change in these terms directly. Consequently, informal restructuring of public debt generally takes the form of an exchange offer. In bankruptcy, the voting process for approval of a debt restructuring plan is different. Approval of a reorganization plan requires an affirmative vote by two-thirds in face value and one-half of the number of holders in each class.

Chapter 11 would be especially advantageous to firms with complex capital structures or a small group of obstinate holdouts. Moreover, the bankruptcy court has the power to bind dissenting parties to a reorganization plan through the cram-down procedure. This procedure allows the court to confirm a reorganization plan that has been vetoed by one of the claimant classes. Although the voting process for the approval of a reorganization plan favors a Chapter 11 filing, one important disadvantage of the bankruptcy process is that it is a collective procedure. This effectively accelerates the due date for all of the firm’s liabilities. Thus, relative to the case of a private restructuring with a single class of creditors, formal bankruptcy substantially increases the number of diverse claimant classes involved in the reorganization.

Related to the voting process is the provision in the Code that encourages the parties to bargain during the reorganization process. This, in conjunction with the other powers bestowed upon management, allows equity claimants to retain some fractional ownership in many reorganized firms, despite the fact that senior claimants do not receive their full entitlement (i.e., absolute priority is violated). Because the incumbent management remains in control of the firm, the ability to extract economic concessions from senior claimants can be viewed as compensation for extinguishing the option to delay the process and to invest funds in excessively risky projects. In Section V we review empirical evidence about the frequency of APR violations in the US over time and the economic implications.

Thus, the Code impacts the balance of power among managers, equity holders, and the firm’s remaining stakeholders in economically important and identifiable ways. Since the Code
specifies the set of rules under which claimants bargain for their entitlements, it also influences
the behavior of the various stakeholders outside of the formal bankruptcy process. This point is
important because it suggests that any reform of the Code must also consider its impact on the
behavior of corporate stakeholders outside of the formal bankruptcy process.

[Insert Table 1 here.]

III. Basic Theory of Corporate Bankruptcy and Distress

In this section we review the major theoretical developments on financial distress and
bankruptcy in the past three decades. We start with the conceptual discussion about the impact of
bankruptcy on the firm’s financial policies in the perfect Modigliani-Miller world, and then
move into the imperfect world (Section III.A.). Then we review theory work on the efficiency
caracteristics of the private/market-based mechanisms (Section III.B.) and the court-supervised
mechanisms of resolving financial distress (Section III.C.).

A. Conceptual Framework for Understanding Corporate Bankruptcy

A.1 Bankruptcy in the Modigliani-Miller World

The origin of the early literature on the relationship between bankruptcy and corporate
capital structure decisions can be found in the seminal work of Modigliani and Miller (1958,
1963). Their initial analysis establishes that, in perfect and frictionless capital markets, firm
value is unaffected by financial policy. The original proof of the celebrated Modigliani-Miller
(MM) theorem is predicated on the assumption of riskless debt. The theorem was later
generalized by Stiglitz (1974) and others who argue that, in perfect and frictionless markets, the
irrelevance of corporate financial policy extends beyond the issuance of riskless debt and equity
securities to other forms of securities, including risky debt, preferred stock, and all kinds of
hybrid securities. The theorem holds in both a single-period framework and a multi-period
framework so that firm value is also independent of debt maturity structure decisions.

The corollary of the MM theorem is that corporate bankruptcy is inconsequential to firm
value, since the investment decisions are completely separable from the financing decisions. In
the perfect and frictionless MM world, the amount of corporate indebtedness has no effect on the value of the firm’s assets or on the risk of the total cash flow stream generated by the firm’s assets. The capital structure of the firm simply determines how the total cash flow is partitioned between equity holders and debt holders and thus the risk borne by each class of capital providers. Bankruptcy is essentially a transfer of ownership from equity holders to debt holders when the value of assets drops below the value of debt.

The complete separation between financing decisions and investment decisions implies that there is no necessary linkage between bankruptcy and the firm’s operating performance. Bankruptcy does not cause economic distress or poor economic performance. This important insight is often missed in discussions related to the economic consequences of corporate bankruptcy. There is confusion about a pair of related but distinct concepts: financial distress and economic distress (Haugen and Senbet 1978, Gertner and Scharfstein 1991).

Financial distress means that the firm’s promises to creditors are broken or honored with difficulty. It is directly related to the firm’s leverage decision. Economic distress, however, means difficulties arising from the firm’s operational inefficiencies. It has no direct linkage to the firm’s leverage. On the one hand, a financially distressed firm may have a viable operation of real assets and thus not economically distressed. On the other hand, an all-equity firm can be economically distressed, but can never be financially distressed because there are no creditors involved. Such a firm may even go out of business and be liquidated although it is not bankrupt. Thus, it is the cost associated with financial distress, not economic distress, which is central to the debate about how costly corporate bankruptcies are. It is often tempting to point to news stories of economically distressed firms as evidence of a causal impact of an impending bankruptcy on the deterioration in profitability or a decrease in product demand. The crucial consideration is whether an identical but otherwise not financially distressed firm (due to low financial leverage) would face similar deterioration in its operating performance.

It is also worthwhile to note that financial distress is distinct from financial constraint. Confusion about the two may arise because financially distressed firms are usually also financially constrained. Financial constraint refers to a case when it is costly or even impossible for the firm to access external financing due to reasons such as asymmetric information,
intangibility of assets, and risk. In fact, the firm can be financially constrained even without any debt on its balance sheet. Thus, a financially constrained firm is not necessarily financially distressed.

Moreover, liquidation and bankruptcy are often discussed in the literature as though they are related. Liquidation is the process of dismantling the firm’s assets and selling them (either piecemeal or in their entirety) to new management teams. Liquidation is optimal when the value of the firm’s existing resources is higher in alternative uses. Hence liquidation should be viewed as a capital budgeting decision that is independent of the way in which the firm is financed. Liquidation and bankruptcy are separate, independent events (see Haugen and Senbet (1978) for further discussion on this issue). A profitable firm with high leverage may remain viable as a going concern, irrespective of bankruptcy, while an unprofitable firm may be liquidated even if it has no debt in its capital structure. It is important to resist the temptation of confounding bankruptcy and liquidation, because liquidation costs may be mistakenly characterized as bankruptcy costs. The latter, if significant, are determinants of the firm’s capital structure, but liquidation costs are inconsequential to corporate financial policies or leverage decisions.

A.2 Bankruptcy Costs and Capital Structure: The Tradeoff Theory

If corporate bankruptcy is costly, then it fills an important void between the corner result of the Modigliani-Miller tax-adjusted model and the observed limitations on the amount of debt financing employed in practice. Although corporate capital structure decision is not the primary subject of this paper, it is appropriate to highlight what has come to be known as the ‘trade-off theory’ of capital structure.

Modigliani and Miller (1963) argue that the tax code favors debt over equity financing by allowing the firm’s interest expense to be deducted from gross income for corporate tax purposes, but disallowing deductibility of payments to equity holders (e.g., dividends are not tax deductible on the personal account). Since an additional dollar of debt generates the marginal benefit of a tax deduction without any offsetting cost in this framework, the firm value is maximized by utilizing as much debt as possible to finance corporate investment decisions. Other financial economists, such as Kraus and Litzenberger (1973), Scott (1976), and Kim
(1978), suggest that the costs of bankruptcy might provide reconciliation between the observed limits on the usage of debt and the predictions of the tax-adjusted Modigliani-Miller analysis of financial policy. The intuition provided for the existence of finite, optimal capital structure is straightforward. Debt capacity is limited because corporations trade-off the tax savings generated by the deductibility of interest payments against the expected value of the costs incurred in the event of bankruptcy.

In his influential paper, Leland (1994) develops a unified analytical framework with closed-form solutions to understand the value of corporate debt and optimal capital structure. Leland’s model is rich enough to permit a detailed analysis of the behavior of corporate bond prices and optimal leverage ratios as corporate tax rates, bankruptcy costs, firm asset value, firm risk, and risk-free interest rate change. In Leland’s framework bankruptcy can either be determined endogenously as the result of an optimal decision by equity holders or be triggered by the violation of a positive net-worth covenant. The author shows that the tradeoff between the tax benefit of debt and the bankruptcy costs determines the value of corporate bond, the bond yield, the optimal leverage ratio, and the optimal timing of bankruptcy.

Leland’s model also provides important insights about the tradeoff between the tax benefit of debt and the agency cost of debt. When the firm is in the vicinity of financial distress and bankruptcy, equity holders have incentives to increase the firm’s risk through “asset substitution”, which transfers wealth from bondholders to equity holders. Corporate bonds with positive net-worth covenants (or short-term rollover debt financing) tend to mitigate this agency problem, because stockholders cannot gain by increasing firm risk when debt is protected by the covenant. Thus, protected debt may be the preferred form of financing for firms that are more exposed to the agency cost of debt, despite having lower potential tax benefits.

A.3 Bankruptcy Costs in an Imperfect World

The tradeoff theory assumes significant costs of financial distress and bankruptcy and fails to provide any rigorous economic justification for the existence of these costs. Thus, at the heart of the contemporary literature on the relationship between corporate financing decisions and financial distress is the issue of whether bankruptcy is, indeed, costly in an imperfect world.
Bankruptcy costs may potentially emerge *directly* in the form of court fees involving third party advisors to the firm, such as lawyers, tax accountants, trustees, etc., or *indirectly* in the form of inefficient investments induced by the reorganization process and costly disruptions in the relationship of the firm with stakeholders, such as capital providers, customers, suppliers, and employees. If there are market mechanisms that allow firms to escape the deadweight costs of bankruptcy, then bankruptcy has no impact on corporate capital structure decisions, even in an imperfect world. If, however, bankruptcy costs are not always avoidable, then virtually all dimensions of the firm’s financial contracting decision are impacted. This latter result follows, because the characteristics of the firm’s financial contracts influence the likelihood of bankruptcy as well as the magnitude of the costs incurred. Consequently, financial contract characteristics, such as maturity, seniority, complexity, collateral, covenants, and public versus private are likely to influence the firm’s bankruptcy decision.

As originally advanced by Haugen and Senbet (1978), the costs of financial distress or bankruptcy should be bounded by the transactions costs of resolving distress through financial markets. The basic argument is based on the fact that a financially distressed firm faces an option of resolving distress through (1) a formal reorganization involving the court system, or (2) an informal reorganization through the financial markets. Hence, the costs associated with financial distress and bankruptcy must be the lower of these two mechanisms. We will elaborate on these insights in the next two sections when reviewing theories on the strengths and weaknesses of informal (private) and formal (court-supervised) resolutions of financial distress.

**B. Private/Market-Based Methods of Resolving Financial Distress**

In this section we review theories on private resolution of financial distress outside the bankruptcy court system. We first discuss the three options that are commonly available to corporate managers for dealing with financial distress: (1) debt restructuring; (2) asset sale; and (3) infusion of new capital from outside sources. In theory, these private reorganization mechanisms provide a more cost-efficient forum for the resolution of financial distress (e.g., Haugen and Senbet 1978). However, there exist potential impediments to these private workouts of financial distress, which may lead distressed firms to incur significant costs of financial
distress by entering the formal bankruptcy process. We thus discuss the impact of these impediments and potential solutions in detail.

**B.1 Private Methods of Resolving Financial Distress**

There has been an abundance of attention in both the academic literature and the popular press about private workouts of corporate financial distress through debt restructurings, asset sales, and infusions of new capital from outside sources.

A debt restructuring is a process that allows a financially distressed debtor firm to renegotiate with its creditors to modify any term(s) of an outstanding debt contract in order to reduce the firm’s debt obligations and improve its overall financial conditions. Publicly-held debt contracts and privately-held ones are usually subject to different disclosure and regulatory constraints. As a result, the set of feasible debt restructuring techniques outside of formal bankruptcy proceedings crucially depend on whether the debt obligation is public or private.

The restructuring of public debt is governed primarily by the Trust Indenture Act of 1939. This Act requires *unanimous* consent by the holders of a particular class of debt securities in order to change the debt obligation’s maturity, principal, or coupon rate. These stringent voting rules effectively preclude a private restructuring of public corporate debt. As a result, virtually all informal public debt restructurings are accomplished through a tender offer in which debt is repurchased with cash, or by an exchange offer in which existing debt is exchanged for new securities including debt, equity, or a combination of both. The restructuring also often includes covenant modifications. Later we will discuss in detail the major challenges a distressed firm may face in an out-of-court debt restructuring.

As an alternative to a debt restructuring, the firm may sell assets in an attempt to relieve its financial distress. A partial sell-off of the firm’s existing assets generates cash that can be used to reduce outstanding debt or to undertake new investment opportunities. The price received by the seller in an asset sale is ultimately determined by the outcome of a bargaining process between the buyer and the seller. The poor financial condition and the urgent liquidity need of the distressed seller can severely weaken the firm’s bargaining position, and therefore reduce the price it receives for the assets. Furthermore, if the sale is conducted under duress from the firm’s
creditors, the outcome may be that the price received is less than the value of the asset under current management by the distressed firm. Creditors may favor the asset sale, however, because it effectively accelerates receipt of the future cash flow stream from the assets. Therefore, the net result of the transaction could entail a wealth transfer from equity holders to debt holders as well as a reduction in the aggregate firm value.

There are also some unique risks for the buyer when assets are acquired outside of the formal bankruptcy process. First, if the selling firm subsequently files for bankruptcy, the court may void the sale as a fraudulent transfer or a voidable preference. Typically, this would occur if the price received by the seller is deemed insufficient for the value of the assets sold. In such a case, the acquirer risks the chance of subsequently having to return the assets to the seller. Second, the transaction must be structured to ensure that the acquirer does not subsequently become unintentionally liable for the debt and obligations of the seller. Lastly, the sale of assets can limit, or even eliminate, the use of net operating losses to shield future income from taxation. To the extent that these loss carry forwards represent a valuable firm asset, financially distressed firms must ensure that the sale of assets is structured to preserve their tax benefits. Distressed asset sales can happen both outside and inside the bankruptcy court. Section 363 of the U.S. bankruptcy law governs asset sales of bankrupt firms. A major benefit of Section 363 is that it allows the buyer to acquire the distressed assets free and clean of liens and most prior claims.

A financially distressed firm often suffers from lack of liquidity and needs timely bridge financing in the process of resolving financial distress. The distressed firm needs sufficient cash to pay employees, suppliers, and other stakeholders. The distressed firm may also have positive net present value projects available that need to be financed. Thus, the firm’s ability to attract new capital is crucial for the firm’s survival and investment efficiency. In the event of financial distress, however, additional funding may be difficult to obtain due to the high risk involved in lending to the distressed firm and the “debt overhang” problem as described in Myers (1977). The debt-overhang problem arises because a disproportionate amount of the economic gain from the incremental investment accrues to the existing senior financial claimants, making it difficult for the distressed firm to attract any new junior source of funding. This is why new equity infusions are rarely observed in the resolution of financial distress.
A straightforward approach to this problem is that the firm should try to make the new claim as senior as possible. In a private workout this can be done if there is no seniority covenant in the existing public debt. If there is a seniority covenant, then one alternative is to utilize asset-based and secured debt financing (see, e.g., Stulz and Johnson 1985). Of course, the feasibility of this approach depends upon the availability of collateral to pledge, as well as an understanding of the additional restrictions imposed by the new creditors.

The abovementioned issues make the debtor-in-possession financing (DIP financing) attractive. DIP financing is a special form of financing provided for companies under Chapter 11 bankruptcy protection. Usually, DIP financing is more senior than debt, equity, and any other securities issued by the distressed firm. It gives the troubled company a new start, albeit under strict conditions. We will discuss this type of financing in detail in Section IV.C.

B.2 Private Workouts and the Bankruptcy Costs

Haugen and Senbet (1978) provide an early theoretical analysis of the linkage between private workouts and bankruptcy costs, and the firm’s financial policy decisions. They use the spirit of the Modigliani and Miller’s no-arbitrage approach to argue that the costs of financial distress are insignificant to the theory of capital structure. This is because the present value of the transactions costs associated with informal reorganization are likely to be small, or even insignificant, at the time of the firm’s initial capital structure decisions. Hence, all rational claimholders will agree to restructure in this manner and avoid the more costly formal bankruptcy procedure. Since capital market participants recognize that it is in the interests of all claimholders to support the most cost-efficient method of restructuring, bankruptcy costs should not be sufficiently large to offset the tax benefit of debt financing. Therefore, they argue that bankruptcy costs cannot explain the observed limited use of debt financing by corporations. The essence in their argument is that if informal restructuring represents a cost-efficient alternative to formal bankruptcy proceedings, then it pays claimants to ‘privatize’ bankruptcy away from the formal court system. Roe (1983) and Jensen (1989) provide similar arguments in support of the privatization of bankruptcy.
Haugen and Senbet (1978) further show that the privatization of the bankruptcy process can also be initiated by outside arbitrageurs. Suppose that the market values of a distressed firm’s publicly-traded securities reflect the expectation that significant bankruptcy costs would be incurred as a result of the claimants’ failure to successfully implement an informal reorganization. Outside arbitrageurs can buy up the outstanding securities at prevailing market values to prevent the costly formal reorganization. The potential arbitrage profit would be the difference between the costs of the two alternative distress resolution mechanisms.

The central implication of Haugen and Senbet’s analysis is that the capital markets provide a more efficient forum for the resolution of financial distress. Thus, one would not expect to observe a substantial amount of court-supervised reorganization. However, a large and growing number of corporations choose to forgo the alternative of a private workout. As Haugen and Senbet (1978) recognize, failure to utilize cost-efficient private mechanisms for resolving financial distress must be predicated upon (1) outright irrationality by the firm’s financial claimants or market participants, or (2) impediments to the arbitrage or private workout processes. Much of the subsequent literature focuses on identifying the potential impediments to informal reorganizations. We now turn to these potential impediments.

**B.3 Potential Impediments to Private Reorganization**

The literature has extensively examined the impact of three impediments to private resolution of financial distress: (1) holdout problem, (2) information asymmetry, and (3) conflicts of interest. In this subsection we discuss theory work that has contributed to our understanding about the consequences of these impediments in the resolution of corporate financial distress and the possible market-based or court-based mechanisms that can mitigate their impact.

*3.1 Holdout Problem*

In a restructuring of public bonds, a successful workout generally enhances the firm’s financial condition, and therefore enhances the value of the remaining bonds that are not tendered. Since tender offers and exchange offers grant claim holders the right (but not the obligation) to participate, some bondholders may choose to ‘holdout’ in the expectation that the
post-offer value of their existing claim will exceed the value of participating in the exchange. Since all bondholders may have similar incentives, the workout may fail. This problem could be solved if the issuer induces the required level of participation by sufficiently increasing the value of the claims offered in the exchange. However, resolving the holdout problem in this way could be sufficiently costly so as to eliminate all the economic benefit created by a successful debt restructuring.

In practice, corporations have relied upon coercive techniques to mitigate the potential holdout problems and increase the chance of a successful exchange offer. Coercive techniques threaten to make bondholders worse off if they reject the offer. Of course, one credible threat is that all stakeholders have to go through a potentially lengthy and costly formal bankruptcy procedure if the informal workout fails. The coercive techniques also include offering new securities that have higher priority or shorter maturity than the existing debt. Existing bondholders may be willing to participate in such an exchange offer because they fear that holding out will make their claims junior to the new securities. However, the firm’s ability to issue new securities with higher priority or shorter maturity in a private workout may be limited by the covenants in existing debt contracts.

Thus, another commonly used coercive technique is to solicit exit consent to eliminate restrictive bond covenants. Under the Trust Indenture Act, covenants can be changed or waived by a simple majority or super-majority vote. A distressed firm announces an exchange offer, but conditions the offer on a bondholder vote to change or eliminate the issue’s covenant(s). The issuer also conditions its acceptance of the exchanged debt on approval of the consent solicitation by the requisite majority. The loss in value for those bondholders, who choose to retain their original stripped debt claim, generally outweighs the benefit of choosing not to participate. As a result, financially distressed firms can design financial restructuring programs that simultaneously strip the protection of existing bond indentures and coerce participation in tender or exchange offers.

Finally, another potential solution for the holdout problem is to endogenize the impediment at the time of the firm’s initial capital structure decision. Haugen and Senbet (1988) suggest that the holdout problem can be eliminated through simple, innovative bond indenture
provisions, such as (a) granting the bond trustee the right to accept or reject tender and exchange offers on behalf of all bondholders, (b) making tender offers binding on all holders within the class, once a majority of bondholders have tendered their holdings, and (c) including a ‘continuous’ call provision, which allows the firm to call the bonds at the price registered in the most recent trade. These suggestions highlight the fact that the potential impediments to a successful debt restructuring often assume that the form of the firm’s debt finance is exogenously specified. However, security design and corporate capital structure decisions can be endogenized to address the problems that may arise in the bankruptcy process.

B.3.2 Information Asymmetry

Asymmetric information exists in any transaction where one party knows more about the true value of the asset than does another party. In corporate finance, corporate managers are typically assumed to possess private information about the true economic value of the firm. In the case of financially distressed firms, corporate insiders and outside investors may simply disagree about the true value of the firm because they have different information. Insiders may also have an incentive to intentionally misrepresent the firm value in order to convince bondholders to agree to exchange their existing claims for lower valued securities.

The asymmetric information problem suggests that a greater proportion of the securities offered in a distressed exchange offer should contain contingent payment features. The reason is that the future values of contingent payment securities will adjust more readily to the revelation of information about the true value of the firm. There are, of course, different types and classes of financial securities with different degrees and forms of payment contingencies—common equity, warrants, contingent value rights, and call provisions, to name just a few. Thus, the resolution of this issue involves a security design problem.

There are, however, various legal, regulatory, and institutional restrictions that limit the types of securities that debt holders may be able or willing to accept in exchange for their claims. These restrictions may impede the completion of an exchange offer if the optimal security does not conform to these requirements. This suggests one of two outcomes: (1) holding the restrictions constant, the firm will be able to complete the debt restructuring only if the existing
claimants accept a new security that is suboptimal, or (2) in order to distribute the appropriate security, the applicable restrictions must somehow be relaxed. Unfortunately, while the latter outcome would seem more desirable, the former is more likely to happen.

Giammarino (1989) shows that in the presence of asymmetric information distressed firms may forgo an informal debt restructuring and incur significant bankruptcy costs by entering the formal reorganization process to resolve financial distress. This is because successful formal reorganization in Chapter 11 involves a substantial amount of judicial discretion. The presence of asymmetric information may cause debt holders to prefer the uncertain allocation outcome of a formal bankruptcy procedure rather than to trust the claims of equity holders/management in an informal reorganization. In other words, the judicial discretion in a formal bankruptcy process may help mitigate the impact of information asymmetry in the resolution of financial distress. Hence, Giammarino’s analysis suggests that there are conditions under which a formal reorganization may be preferred even when the process involves deadweight costs.

Brown, James, and Mooradian (1993) examine how information problems can be resolved through the choice of securities offered in a debt restructuring. Their theory predicts that in the presence of information asymmetry between public debt holders and firm insiders, firms with adverse private information will offer highly contingent claims such as equity to bondholders, while firms with favorable private information will offer the least contingent claim possible, such as senior or secured debt. The intuition is that in the presence of information asymmetry, the market overvalues the equity of a firm with negative information (type-B firm) and undervalues the equity of a firm with positive information (type-G firm). Thus, a type-B firm has an incentive to reveal the negative information to induce bondholders to accept a lower payoff by making an equity offer. A type-G firm will not mimic the offer because of the undervaluation of its equity, leading to a separating equilibrium. In contrast, offering equity to a private secured lender (e.g., a bank) conveys favorable private information to public bondholders. This is because the private lender will only agree to take a junior claim if the firm’s prospects are sufficiently favorable. In summary, the theory shows that security choices in exchange offers can, to some extent, mitigate the information asymmetry problem and lead to more efficient debt restructuring.
The existence of asymmetric information also creates a role for signaling by informed parties. Berlin, John, and Saunders (1996) analyze the role of equity holding of an informed bank lender in the distressed firm as a signal about the firm’s financial situation for outside non-equity stakeholders, such as suppliers and customers, whose concessions may be necessary for the distressed firm to continue production profitably. The authors show that the optimal bank equity holding in the borrowing firm is either near zero or near one, and the bank should routinely hold equity in the borrower during normal times. Such equity holding signals to outside stakeholders that the bank does not collude with the insiders to expropriate uninformed outsiders.

B.3.3 Conflicts of Interest

Different reorganization plans, whether formal or informal, allocate wealth across management, different classes of creditors, and shareholders differently. Therefore, how a reorganization plan affects the distribution of wealth across the different claimants is as important as how the plan affects the aggregate value of the firm’s assets.

During the process of distress resolution, the estimate of the firm’s going concern value is used to set the payoffs to each class of claimants. Therefore, the debate over the firm value estimate often reflects not only differing information but also conflicting interests of different classes of claimants. Each class of claimants has an incentive to present a biased estimate of firm value depending on the priority of its claims. Junior claimants favor upwardly biased estimates of the firm value because this increases the proportion of the firm value they receive. In contrast, senior claimants tend to push for downwardly biased estimates, because this allows them to retain a greater portion of the firm if the firm subsequently performs well.

Finally, the management has its own bias. The managers have an incentive to value the firm above its liquidation value to save their jobs, but below the true value (if it is higher than the liquidation value) so that they can deliver ‘abnormally’ good equity performance post the distress resolution. The 1989 bankruptcy of Eastern Airlines is a well-known example of how the conflicting interests between creditors and equity holders can severely distort the distress resolution process (Weiss and Wruck 1998).
The wealth allocation across different claimants under the final reorganization plan is largely an outcome of a bargaining process. Several studies examine the linkage between conflicts of interest, coalition formation, and the resolution of financial distress. Not surprisingly, conflicts of interest can reduce overall economic efficiency because coalitions of claimants can be formed to extract concessions (i.e., wealth transfers) from other nonaligned claimants.

Brown (1989) examines the way in which conflicts of interest among claimholders can inhibit the resolution of financial distress through an informal reorganization. These conflicts may either be inter- or intra-claimant class. Inter-group conflicts arise, because allocation to one claimant class under any given reorganization plan can always be increased at the expense of another claimant class. Intra-group conflicts can emerge when a reorganization plan allows claimants to decide whether to participate or not. This creates the incentive to holdout, or to free ride, if successful reorganization would enhance the value of the existing claims. The conflicting incentives of various claimholder classes make the reorganization difficult. In particular, the private unstructured bargaining game generally leads to a large set of potential equilibria and extensive dissipation of the firm’s assets.

Bernardo and Talley (1996) theorize that inefficient investment decisions can arise in a debt exchange offer because of the conflict of interests between shareholders and bondholders. Managers, acting strategically on behalf of shareholders, may select inefficient investment projects in order to enhance their bargaining position vis-à-vis creditors. Holding the upside potential of an investment project fixed, managers prefer projects with lower payoffs in states of bankruptcy, because it induces individual bondholders to accept poorer terms in the debt exchange offer, thus generating a greater residual for shareholders in states of solvency. A crucial assumption in their model is that bondholders are numerous, so that it is prohibitively costly for them to coordinate their bargaining strategy amongst themselves.

Although we discuss these three impediments of private reorganization in detail, it is important to note that their existence does not necessarily render bankruptcy costs significant to the theory of optimal capital structure. This is because there are ways through which these impediments may be mitigated and even eliminated. We also expect to observe innovations in
the design of corporate financial contracts and capital structures that endogenize these potential impediments in the contracting process.

C. Court-Supervised Methods of Resolving Financial Distress

Court-supervised methods of bankruptcy resolution serve as an alternative when private workouts fail. The previously discussed impediments to private workouts can imply certain efficiency gains of using the formal reorganization process to resolve financial distress. For example, the non-unanimity voting rules and the automatic stay provision of Chapter 11 reorganization serve as a threat against the holdout problem discussed earlier. Giammarino (1989) shows that the substantial amount of judicial discretion in the Chapter 11 bankruptcy may help mitigate the asymmetric information problem between bondholders and stockholders about the firm value. Brown (1989) assumes perfect information instead, and focuses on conflicts of interest among claimholders. The structure provided by the Bankruptcy Code can pare down the feasible set of outcomes otherwise available in an informal unstructured workout and mitigate the holdout problem. Brown also shows that the formal reorganization process involves less dissipation of the firm’s assets and less deviation of the absolute priority rule relative to the private workout.

In this section we review the efficiency characteristics of court-supervised methods of resolving bankruptcy disputes. Our discussion centers on the fundamental efficiency questions. Does the bankruptcy law save economically efficient but financially distressed firms and liquidate economically inefficient firms? Does the bankruptcy law promote investment efficiency of financially distressed firms?

C.1 Debtor Friendliness versus Creditor Control

In principle, the design of an equitable and efficient bankruptcy law is relatively straightforward. Ideally, the law should be structured so that efficient firms (i.e., asset values are highest in their current use, and going concern value exceeds liquidation value) would be reorganized and continue to survive, while inefficient firms would be liquidated.

White (1989), however, argues that it may not be possible to construct a bankruptcy law that provides this outcome. The difficulty is that conflicts of interest between claimant classes
lead to diverse preferences for the resolution of financial distress. In general, senior claimants favor premature shutdown and the loss of going concern value in order to preserve the value of their claims. The residual nature of junior claims, such as common equity, implies that its value is increased by maintaining the firm as an ongoing entity. Consequentially, the bankruptcy law can lead to one of two undesirable outcomes. On the one hand, a debtor-friendly bankruptcy law empowers debtors and tends to encourage economically unviable firms to seek bankruptcy protection and survive. On the other hand, strong creditor control permitted by the law likely leads to suboptimal liquidation of economically viable firms. Given the conflicting preferences of senior claimants (creditors) and junior claimants (debtors, equity holders) in the bankruptcy process, the efficiency of the bankruptcy law hinges on it striking the right balance between debtor friendliness and creditor control.

The traditional view of the U.S. bankruptcy code is that it is designed to favor the debtors who are currently in control of the firm through incumbent management or equity holders or both (see, e.g., Bradley and Rosenzweig 1992, Bebchuk and Chang 1992, Adler 1993, Schwartz 1997). In particular, Bradley and Rosenzweig (1992) argue that, in the adoption of the Bankruptcy Reform Act of 1978, Congress was determined to push financially distressed firms towards reorganization rather than liquidation because “it preserves jobs and assets”. The Code and judges are biased in favor of keeping an existing business intact. As we have reviewed in Section II, the main features of the Chapter 11 reorganization, such as the automatic stay provision, the debtor-in-possession provision, and the voting rules for the approval of reorganization plans all tend to empower the incumbent management and the shareholders.

As a result, some legal scholars have argued that many inefficient firms that should be liquidated are allowed to reorganize and continue operation under the Chapter 11 bankruptcy protection. The debtor friendliness of the bankruptcy law entrenches inefficient management, transfers wealth from creditors to equity holders, and impedes the flow of corporate assets to higher-valued uses. Further, as argued by Bradley and Rosenzweig (1992), the bankruptcy code can lead to endogenous corporate bankruptcies—the bankruptcy status is chosen by, rather than imposed upon, corporate managers. Of course, creditors anticipate this behavior by the management and equity holders in bankruptcy and price the debt accordingly. Thus, the debtor
friendliness of the bankruptcy law can increase the firm’s cost of capital and decrease its capital structure below the optimal level.

However, a recent wave of literature argues that the traditional view may be outdated (Baird and Ramussen 2002, Skeel 2003, Miller and Waisman 2004). Creditors, especially senior and secured creditors, have come to dominate the formal corporate bankruptcy process in the United States. Much of this creditor control is exercised through secured lines of credit (DIP financing), which generally impose strict requirements on business activities. Baird and Rasmussen (2002) and LoPucki (2003) argue that this strong creditor control is likely the cause for the dramatic increase in the going-concern sale among Chapter 11 bankruptcy cases in the past decade. We will review the related empirical evidence in Section IV.C. Broadie, Chernov, and Sundaresan (2007) argue that strong ex post creditor control (after the debtor files for bankruptcy) is efficient, because debt-value maximization is very close to the first-best outcome of firm value maximization when the firm is in bankruptcy. However, the authors assume nearly perfect market. It would be interesting to see whether the conclusion would hold if we allow for imperfections, such as information asymmetry between equity holders and debt holders.

One important thing to keep in mind here is the distinction between ex ante creditor control and ex post creditor control. Despite the foregoing argument for the strengthening of ex post creditor control over the past two decades, the essential features in the U.S. bankruptcy code, such as the automatic stay provision and the debtor-in-possession provision, still implies strong ex ante debtor friendliness, and these debtor-friendly provisions can have significant impact on the debtor’s incentives before the bankruptcy filing (e.g., the endogenously chosen bankruptcy threshold).

This is closely related to the distinction between the ex ante efficiency and the ex post efficiency of the bankruptcy law. Ex post efficiency implies that, once the firm ends up in bankruptcy, the bankruptcy law should facilitate maximization of total firm value, and consequently, the payoffs to the claim holders (see, e.g., Bebchuk 1988, Aghion, Hart, and Moore 1992). This kind of efficiency is important for the debtor firm, because it increases the expected recovery for creditors in the case of bankruptcy and thus reduces the firm’s cost of capital. From an ex ante efficiency perspective, the bankruptcy law should induce desirable
managerial incentives and decision making before the firm goes bankrupt (e.g., managerial investment in firm-specific human capital in Berkovitch, Israel, and Zender (1997), project investment decisions reviewed in Section III.C.3). This kind of efficiency also benefits creditors, because a lower probability of financial distress and bankruptcy makes debt claims less risky. Overall, both \textit{ex ante} and \textit{ex post} efficiencies of the bankruptcy law are crucial to the development of an active credit market.

\textbf{C.2 Bankruptcy Code as a Screening Device}

Although the transition from debtor friendliness to creditor control might have occurred in the U.S. corporate bankruptcy, as some have argued, it is difficult to assess the efficiency gain/loss, because outsiders generally do not observe the actual economic efficiency of the distressed firms. In the presence of conflicting interests and asymmetric information, an inefficient firm tends to pool with an efficient firm. How accurately can the bankruptcy process screen efficient firms from inefficient ones? Under the current US bankruptcy law, when the firm is insolvent, either the incumbent management or creditors can initiate the bankruptcy process and choose between filing for reorganization and filing for liquidation. Thus, the bankruptcy code should be designed to generate the right self-selection incentives. Given the structure of the code, efficient firms should find it optimal to reorganize, while inefficient firms should find it optimal to liquidate.

The current Code contains provisions that encourage the parties to bargain during the reorganization process. This, in conjunction with the other powers bestowed upon management, often allows equity claimants to retain some fractional ownership in the reorganized firms. This feature of the Code can lead to violation of the absolute priority rule, because equity holders may receive value even when some debt claims are not paid in full (see more discussion in Section IV.C.1). Mooradian (1994) argues that this feature makes Chapter 11 attractive to shareholders of inefficient firms, and makes it costly for inefficient firms to mimic the debt restructuring of efficient firms. Thus, Chapter 11 leads to the separation of the two types of firms: efficient firms restructure outside of Chapter 11, and inefficient firms file for Chapter 11 protection. Chapter 11 increases efficiency to the extent that it allows efficient firms to renegotiate and continue outside
the formal reorganization process, but decreases efficiency to the extent that inefficient firms file for bankruptcy protection rather than liquidation.

White (1994) also investigates the role of the bankruptcy code as a screening mechanism to separate efficient firms from inefficient firms. The author shows that, under imperfect information, both an efficient separating equilibrium and an inefficient pooling equilibrium can emerge. In the separating equilibrium, efficient firms choose Chapter 11 and inefficient firms choose Chapter 7. In the pooling equilibrium, some or all inefficient firms choose Chapter 11. White shows that an active market for the sale of bankrupt firms can raise the liquidation value of the failed firms (either efficient or inefficient), which can increase the probability of having the separating equilibrium. Higher transaction costs of Chapter 11 reorganization can also increase such probability. So the filtering problem implies that a costly bankruptcy process could actually be associated with increased rather than decreased efficiency. However, in contrary to the conclusions in Mooradian (1994), White shows that the existence of out-of-court restructuring may make the screening problem worse. The lower transactions costs of out-of-court restructuring can make the inefficient pooling equilibrium more likely, but just that the pooling occurs in the restructuring stage rather than in Chapter 11. Inefficient firms may choose to restructure when they would otherwise liquidate.

Bernhardt and Nosal (2004) have a different view about the screening function of the bankruptcy code. They argue that it can be optimal for the bankruptcy court to err sometimes on the decision to liquidate or reorganize a distressed firm. The key intuition is that the probability that the court misclassifies the quality of a bankrupt firm affects the ex-ante behavior of management and thus the probability that the firm becomes bankrupt. On the one hand, the threat of being mistakenly liquidated may be sufficient to mitigate agency incentives in a high-quality firm and thus reduce the firm’s probability of becoming bankrupt. On the other hand, the probability of being mistakenly classified as a high-quality firm may discourage the low-quality firm from taking actions that delay the socially optimal liquidation. Finally, the probability of court error may encourage the debtor and the creditor to privately resolve financial distress and avoid the more costly error-driven court. Of course, an implicit assumption in Bernhardt and Nosal’s model is that the court errors are random.
Gennaioli and Rossi (2011) show that judicial biases may not be random, because career concerns of bankruptcy judges induce a pro-debtor bias. Judges would over-reorganize bankrupt firms to establish a pro-debtor reputation so as to attract future bankruptcy filings (by debtors). The authors show that strong creditor protection in reorganization is crucial to improve judicial incentives to resolve financial distress efficiently.

C.3 Bankruptcy Code and Investment Efficiency

Another fundamental debate about the efficiency of the bankruptcy code is whether it promotes efficient investment by financially distressed firms. The firm’s investment incentive is dictated by the two standard incentive problems arising from the bondholder-stockholder conflict, namely the underinvestment problem associated with valuable growth opportunities and the risk-shifting problem. The optimal bankruptcy resolution should minimize the loss in value due to the investment distortions resulting from these incentive problems.

The underinvestment problem arises when the distressed firm has valuable growth opportunities that require investment by junior claimholders. For example, the investment may require infusion of new capital. But it will be difficult for the firm to raise new funds from junior sources such as junior debt and common equity. This is because in a distressed firm existing senior claimholders will get the bulk part of the investment gains, while new junior financers bear the entire cost of the investment.

One possible solution to the above problem is to make the new funds as senior and/or secured as possible. This is exactly what Section 364 of the bankruptcy code does. The Code offers superior seniority and enhanced security to the DIP creditors as an incentive for them to lend to a distressed firm that otherwise would not be able to attract financing. Stulz and Johnson (1985) provide a theoretical framework to show that certain positive NPV projects will be undertaken only if the firm is able to finance them by secured credit.

Another way to mitigate the underinvestment problem is to allow junior claimants to benefit from new investments even when the firm is in financial distress and bankruptcy. Gertner and Scharfstein (1991) show that three particular features of the current bankruptcy code, namely the automatic stay, voting rules for the reorganization plan, and the retention of equity value, can
increase the level of investment by financially distressed firms both inside and outside Chapter 11 protection. This is because these debtor-friendly features of the Code allow junior claimholders, such as common equity holders, to get part of the gains from new investments. Gertner and Scharfstein conclude that Chapter 11 can provide substantial economic benefit when underinvestment is the key problem. By a similar logic, quite a few other studies argue that violations of the absolute priority rule in the bankruptcy process, which is related to the retention of equity value in bankruptcy, can potentially mitigate the underinvestment problem (e.g., Berkovitch, Israel, and Zender 1997, White 1989), because such violations allow equity holders to benefit from an increase in the value of the bankrupt firm.

However, the provisions in the Code that help mitigate the underinvestment problem may, on the other hand, amplify the risk-shifting problem. The risk-shifting problem arises, because equity holders, whose payoff resembles the payoff from a call option, benefit from taking excessive risk, particularly when the firm is in financial distress and the investment is funded by internal cash. Several papers in the finance literature and the law and economics literature have argued that senior and secured financing, such as DIP financing, may encourage the debtors to take risky and negative NPV projects at the cost of the creditors (see, e.g., Triantis 1993, Kanda and Levmore 1994, Bebchuk and Fried 1996). Berkovitch and Israel (1998) show that the automatic stay provision of Chapter 11 may exacerbate the problem of overinvesting in risk. Since the risk-shifting incentive decreases debt value, creditors would seek to block such investments by pushing the resolution towards Chapter 7 liquidation. However, the automatic stay provision extinguishes the blocking power of creditors and leads to reorganization. Bebchuck (2002) shows that APR violations can increase the bias of equity holders’ decisions in favor of riskier investments, because such violations increase what the equity holders would receive in bad times, and hence, the fraction of the downside risk borne by the debt holders.

Thus, as concluded in Gertner and Sharfstein (1991), while Chapter 11 tends to increase investment incentives in distressed firms, economic efficiency may not necessarily be enhanced. The net benefit of the increased investment depends on the incentives generated by various characteristics of the firm’s financial contracts, such as maturity structure, covenants, and the priority of private versus public debt.
IV. Empirical Research

In this section, we review the empirical literature on corporate financial distress and bankruptcy. We start with the important question of how significant the costs of financial distress and bankruptcy are. We review empirical estimates of the magnitudes of both direct and indirect costs of corporate bankruptcy, and we discuss the challenges in the empirical work in this area and the limitations in our interpretation of the empirical results. We then review empirical work on private debt restructuring and formal Chapter 11 bankruptcy. For the latter, we highlight the important changes that have incurred in the past two decades in Chapter 11 reorganizations and the implications of these changes for the efficiency questions that we have discussed in Section III.C. We then review empirical evidence on post-bankruptcy firm performance and the implications for the efficiency of US bankruptcy system. Lastly, we review empirical work on managerial incentives and corporate governance issues in financially distressed firms. Our review mainly focuses on the development in the empirical literature in the past two decades.

A. How Significant are the Costs of Financial Distress and Bankruptcy?

As we have discussed in Section III.A, in theory financial distress and bankruptcy matter if they impose dead-weight costs on the firm that are borne by the shareholders through an \textit{ex ante} compensation to the creditors for the possibility of incurring these costs \textit{ex post}. In addition, financial distress and bankruptcy may impose costs on stakeholders other than the firm’s capital contributors. To the extent that financial distress and bankruptcy are costly, and if these costs are inevitable, then virtually all corporate financial decisions will be affected by such costs. Thus, the magnitude of the financial distress and bankruptcy costs is an important empirical question. In this section, we review the available evidence on this question.

A.1 Direct Costs

Direct bankruptcy costs are the legal, administrative and advisory fees that the firm bears as a result of entering the formal bankruptcy process. Warner (1977) estimates the direct cost to
be around 4% of the firm’s pre-bankruptcy value, using a sample of railroad bankruptcies during 1933 and 1955. Weiss (1990) uses a sample of 37 bankrupt firms in the period 1980-1986, and estimates the direct costs to be around 3% of the pre-bankruptcy firm value. Lubben (2000) uses a sample of 22 firms from 1994 and calculates that the cost of legal counsel in Chapter 11 bankruptcy is on average about 1.8% of the distressed firm’s total assets, and can be as high as 5%. Altman and Hotchkiss (2006) provide a nice summary of the estimates of the direct bankruptcy costs in the literature. The findings in all these studies suggest that direct bankruptcy costs are unlikely to represent a significant determinant of the firm’s capital structure decision. The robustness of this conclusion, though, to “mega” bankruptcies is an open question.

In more recent years we have witnessed several mega bankruptcy filings by companies, such as Lehman Brothers, Enron, and Worldcom. The total direct bankruptcy costs for Enron were estimated to top one billion dollars. Even though this only represents about 1.6% of the firm’s pre-bankruptcy value, this staggering number still implies that a lot of resources were used up in the bankruptcy process of the former energy giant. With the pre-bankruptcy assets value of $639 billion, Lehman Brothers’ bankruptcy is by far the largest corporate bankruptcy in the US history. It is also likely to be the most expensive corporate failure. As of November 2011, the legal costs associated with Lehman Brothers’ bankruptcy have totaled about $1.5 billion. However, to what extent are these costs attributable to financial distress as opposed to economic distress?

In theory, direct bankruptcy costs should not be confounded with liquidation costs. The former is the cost associated with using the legal mechanism to resolve financial distress, and the magnitude of this cost is important to assess the impact of bankruptcy on corporate financial policies. The latter is the cost incurred in selling off a firm’s assets and closing up the firm’s operations. See Haugen and Senbet (1978, 1988) for details. Even an all-equity firm would incur liquidation costs when it gets liquidated. Thus, liquidation costs should be inconsequential to corporate leverage decisions. However, in practice, liquidation costs are often mistakenly characterized as bankruptcy costs. For example, all the abovementioned mega cases involve economic distress and partial liquidation of assets, and there is a need to disentangle direct bankruptcy costs from liquidation costs.
A.2 Indirect Costs

Potentially more significant and substantial are the indirect costs of financial distress and bankruptcy. These costs can be viewed as opportunity costs, in that they collectively represent the outcome of suboptimal actions by corporate stakeholders when the firm becomes financially distressed. Thus, costs that arise because of inter- or intra-group conflicts of interest, asymmetric information, holdout problems, lost sales and competitive positions, higher operating costs, and ineffective use of management’s time all potentially represent the indirect costs of bankruptcy. Given that the estimated magnitudes of direct bankruptcy costs are small, the empirical magnitude of the indirect costs is central to the consequence corporate bankruptcy. A common sentiment is that the indirect costs are substantially larger than the direct costs. However, these costs are difficult to observe and measure. Another major challenge is how to empirically distinguish the costs of financial distress from the costs that would have arisen with pure business dislocation and economic distress. As a result, the interpretation and comparison of the estimated magnitudes of indirect bankruptcy costs are often not straightforward.

Several studies claim the indirect costs of financial distress to be significant and positive. For example, Altman (1984) measures the indirect costs of bankruptcy as the decline in the sales of bankrupt firms relative to others in the same industry and as the difference between the realized earnings and the forecasted earnings. On that basis, the author argues that indirect bankruptcy costs on average range from 11% to 17% of firm value up to three years prior to bankruptcy. However, this study does not clearly distinguish costs attributable to financial distress from those attributable to economic distress.

Opler and Titman (1994) find that highly leveraged firms lose substantial market share to their less leveraged competitors in industry downturns. Specifically, during industry downturns, firms in the top leverage decile see their sales decline by 26% more than do firms in the bottom leverage decile. A similar decline also takes place in the market value of equity. But an implicit assumption in this study is that firms’ leverage ratios are exogenous. Thus, this study cannot fully rule out the possibility that factors leading to the firm’s adoption of high leverage in the first place may also generate poor performance in economic downturns.
Andrade and Kaplan (1998) examine how costly financial (not economic) distress is using a sample of thirty-one highly leveraged transactions (HLTs) in the second half of the 1980s that later became financially distressed. The authors show that high leverage is the primary cause of distress for this sample. More importantly, all sample firms have positive operating margins in the years they are distressed, implying that these firms are not economically distressed. Then the authors find that the operating and net cash flow margins of the distressed firms decline by 10 to 15 percent from the onset of financial distress to post resolution. The estimated loss of market value during the financial distress is also 10 to 20 percent, with an upper bound of 23 percent. However, after isolating the effects of negative economic shocks that occur during the financial distress, the authors estimate the costs of financial distress to be negligible.

For the no-economic-shock subsample, the median industry-adjusted estimate of financial distress cost is 6.9% of pre-distress firm value and is statistically insignificant. Overall, Andrade and Kaplan’s findings suggest that the indirect costs of financial distress and bankruptcy are not significant once the confounding effect of negative economic shocks is controlled for, supporting the theory in Haugen and Senbet (1978). The data used in this study allows for a cleaner distinction between financial distress costs and economic distress costs than that in earlier papers. But the specificity of the data also, to some extent, limits generalization of results in the overall population of firms.

An important aspect of the indirect bankruptcy costs is that asset sales of bankrupt firms can be inefficient. A major problem faced by financially distressed firms in an asset sale is the adverse liquidity problem. Shleifer and Vishny (1992) argue that there are several factors that determine market liquidity in the market for inter-firm asset sales, such as fungibility (i.e., the number of uses and users for a particular asset), participation restrictions (e.g., regulations on foreign acquisitions or antitrust considerations), and credit constraints. If the adverse liquidity problem occurs, then the distressed sellers may be forced to accept large discounts in their asset sales. Hence, the main consequence of an illiquid secondary market for inter-firm asset sales is that it increases the costs of dealing with financial distress.

Several studies have examined price discounts associated with distressed asset sales. Pulvino (1998) uses a large sample of commercial aircraft transactions to estimate the magnitude
of the discount at which distressed airlines liquidate assets. The study finds that airlines with low spare debt capacities sell aircraft at a 14% discount to the average market price. However, such big discounts only exist during the airline industry downturns, suggesting that the discount is at least partially driven by the thinness in the market for used aircraft during industry recessions. The discount widens to 30% when the distressed airlines have to sell aircrafts to financial institutions, which are lower-value users of the assets. Pulvino (1999) shows that even bankruptcy court protection does not help reduce the discounts in distressed aircraft sales. Eckbo and Thorburn (2008) also find that industry distress exacerbates fire-sale discounts associated with distressed piecemeal liquidations using the Swedish automatic bankruptcy auction data. However, they find that such discount does not apply to going-concern sales. Ramey and Shapiro (2001) show that asset specificity affects the degree of fire sale discount. The authors find the existence of discount in equipment sales following three California plant closures in the aerospace industry. The discount is larger for equipment that is more specialized to the aerospace industry and when the buyer is an industry outsider.

Another major issue related to distressed asset sales is that these sales may directly affect the productivity of the distressed firm, making it harder for the firm to recover from the distress. Maksimovic and Phillips (1998) assess the efficiency of asset sales in bankrupt firms by examining the productivity of plants in Chapter 11. They find that bankrupt firms tend to sell their most productive plants, but comparable solvent firms tend to sell their least productive plants. The productivity of retained plants of bankrupt firms does not decline relative to that of industry peers, except in high R&D growth industries. Overall, these findings suggest that asset sale and retention decisions are efficient in the bankruptcy process and, for the most part, indirect costs of bankruptcy are low.

Even if the ex post financial distress costs are nontrivial (e.g., 10%-20% of firm value based on Andrade and Kaplan (1998)), many researchers believe that the costs are small from an ex ante perspective, because the probability of financial distress is very small for most public companies. However, Almeida and Philippon (2007) point out that the financial distress is more likely to happen in bad times. Therefore, the risk-adjusted default probability can be much higher than the historical default probability. Using information in corporate bond spreads, the authors
show that for a BBB-rated firm, the risk-adjusted 10-year cumulative default probability is about three times higher than the historical probability. This implies that the risk-adjusted present value of distress costs is much higher than that calculated under risk-neutral valuations. Based on their calculation, the marginal risk-adjusted distress costs can be as large as the marginal tax benefits of debt derived by Graham (2000). Thus, distress risk premia can help explain why firms appear to use debt conservatively.

We end this section with a caution raised by Bris, Welch, and Zhu (2006). The authors explore a comprehensive sample of approximately 300 bankruptcy cases from Arizona and New York during 1995 and 2001. They show that the estimated bankruptcy costs are heterogeneous across firms, ranging widely from 2% to 20%. The estimates are also sensitive to the procedure (Chapter 11 vs. Chapter 7), to how assets are measured, and to the central statistic used. Their findings suggest that bankruptcy costs should not be thought of as uniformly low or uniformly high. It is important for researchers to recognize the cross-sectional heterogeneity in these costs.

B. Private Debt Restructuring

We have discussed the potential impediments to market-based resolution of financial distress in Section III. They are the holdout problem, asymmetric information, and inter- and intra-group conflicts of interest. Many studies have examined the empirical importance of these impediments and their implications for the firm’s choice of the resolution mechanism and the efficiency of distress resolution.

An early study by Gilson, John and Lang (1990) provides extensive evidence on the incentives of financially distressed firms to choose between private debt restructurings and formal bankruptcy proceedings. Their sample consists of 169 distress reorganizations during 1978–1987. They find that a private workout is more likely when the distressed firm has fewer distinct classes of debt outstanding and the firm relies more heavily on bank debt than public debt, both of which indicate a less severe holdout problem and less information asymmetry. Private reorganization is also more likely when a greater proportion of the firm’s assets are intangible. For such a firm, failure to renegotiate the firm’s impaired credit obligations will result in substantial destruction of going concern firm value. This creates a strong incentive for
different classes of creditors to reach agreement and avoid costly bankruptcy reorganization. Their findings suggest that asset and financial characteristics jointly affect the firm’s choice between these alternative reorganization mechanisms.

Chatterjee, Dhillon, and Ramirez (1995) empirically examine the nature of the holdout problem in private debt restructurings and the role of coercive tactics in alleviating the problem in a sample of private workouts of financial distress between 1989 and 1992. Both exit consents and offering new securities with higher seniority or shorter maturity than existing debt are frequently observed in their sample. Fifty percent of the tender offers and 33% of the exchange offers utilize exit consents. Seventy-six percent of the new debt contracts involve an increase in seniority, and 27% offer shorter maturity than existing debt. Their analysis on the targeted debt contracts for renegotiation suggests that the holdout problem is likely to be more severe for tender offers than for exchange offers. Consistent with this observation, the authors find that compared to the exit consents in exchange offers, those in tender offers not only target a significantly larger proportion of covenants, but also a larger proportion of highly restrictive covenants. The use of exit consent significantly increases the probability of a tender offer being implemented successfully, suggesting that coercion helps to alleviate the holdout problem. The evidence on the outcomes of the debt restructurings and the security price reaction to announcements of workouts suggests that the use of coercive techniques benefits stockholders and is not detrimental to bondholders. In summary, their study suggests that the severity of the holdout problem is an important determinant of the structure of private workout of financial distress.

Brown, James, and Mooradian (1993) theorize that in the presence of information asymmetry, the composition of the exchange offer made by a financially distressed firm can convey private information about the value of the firm’s assets. Their theory is reviewed in Section III.B.3. Using a sample of debt restructurings during the 1980–1990 period, they find positive average abnormal equity returns around restructurings that offer equity to private lenders and senior debt to public bondholders, consistent with their theory prediction that these security choices help convey favorable private information to outside investors. They find negative average abnormal returns when private lenders are offered senior debt and public lenders are
offered equity, supporting their theory prediction that these security choices convey adverse private information.

The theoretical literature suggests that the participation of a senior private creditor, such as a bank in a debt restructuring, can help mitigate information and holdout problems in a public debt exchange offer (e.g., Gertner and Scharfstein 1991, Brown et al. 1993). However, the empirical evidence on the role of banks in private workout of financial distress is mixed. For example, Gilson et al. (1990), Brown et al. (1993), and James (1996) find evidence that banks play a positive role in alleviating the holdout and the information problems in private debt restructurings. But Asquith, Gertner, and Scharfstein (1994) find that banks rarely make unilateral concessions and conclude that banks do not play much of a role in resolving financial distress. Chatterjee et al. (1995) find that firms with more bank debt are more likely to use traditional Chapter 11 bankruptcies rather than private workouts. Helwege (1999) finds that bank debt is associated with slower, rather than faster, debt restructurings. The mixed empirical evidence suggests that the role of senior private lenders, such as banks in private workouts of financial distress, warrants further theoretical and empirical investigation.

Gilson (1997) provides evidence that transactions costs can also be an important impediment to an effective resolution of financial distress through private debt restructurings. This study analyzes 108 financial distress resolutions during 1980–1989, either by debt restructuring out of court or by Chapter 11 reorganization. Gilson finds that distressed firms, that restructure out of court, achieve significantly less debt reduction than those that restructure under Chapter 11. Leverage appears to be ‘sticky’, and proxies for transactions costs have significant explanatory power for debt reductions of sample firms that restructure out of court. These results suggest that transactions costs can be an important determinant of the firm’s choice between formal and informal resolution of financial distress.

The existence of impediments in private debt restructurings and the costs associated with a formal bankruptcy proceeding suggest that ‘prepackaged’ Chapter 11 bankruptcy may be an economically superior form of reorganization to both conventional Chapter 11 bankruptcy and private workouts. Section 1126(b) of the Bankruptcy Code allows a financially distressed firm to simultaneously file a bankruptcy petition and a plan of reorganization (having obtained creditors’
approval for the plan in advance). A pre-negotiated bankruptcy reorganization allows the firm to combine the cost efficiency of an informal private workout with certain benefits provided by a formal bankruptcy proceeding. For example, the less stringent voting requirements in Chapter 11 can be utilized to bind all creditors to a reorganization plan, allowing a prepackaged bankruptcy to effectively circumvent the holdout problem in private debt restructurings. These benefits may explain the increasing popularity of pre-packaged bankruptcy filings in recent years, with the pre-packaged bankruptcy of General Motors in 2009 being the most publicized one. Tashjian, Lease, and McConnell (1996) examine a sample of 49 prepackaged bankruptcy filings between 1980 and 1993. This study finds that by most commonly examined efficiency measures, including the time spent in reorganization, the direct cost as a percentage of pre-distress assets value, the recovery rates by creditors, and the incidence of violations of absolute priority of claimholders, prepackaged bankruptcy lies between out-of-court restructuring and traditional Chapter 11 bankruptcy.

C. Changing Nature of Chapter 11 Bankruptcy

C.1 Deviations from Absolute Priority Rule

Traditionally, financial economists have assumed that the value of a bankrupt firm is allocated among its claimants by strict adherence to the absolute priority rule (APR). APR is an allocation rule based upon the relative seniority of the contractual entitlements held by all of the firm’s claimants. According to the APR, the value of a bankrupt firm is distributed so that senior claimants receive their full contractual entitlement before any class with a more junior claim receives anything. In Chapter 7 liquidation, the trustee sells the assets of the firm, and distributions of the proceeds are made according to the APR.

If the bankruptcy law allows renegotiation and bargaining between equity holders and creditors in the bankruptcy reorganization, there is often room for APR violation. Indeed, studies in the late 1980s and the early 1990s suggest that APR is frequently violated in Chapter 11 reorganizations in the US. Franks and Torous (1989), Eberhart, Moore and Roenfeldt (1990), Weiss (1990) and Betker (1995) examine firms that filed for bankruptcy during the 1970s and 1980s, and find that APR is violated in 75% of their sample firms. Eberhart et al.(1990) show
that equity on average receives 7.6% of the total value awarded to all claimants. Franks and Torous (1994) find that deviations in favor of equity holders is on average 2.3% of firm value under Chapter 11 reorganization, and 9.5% in private workouts. Betker (1995) show that the magnitude of the APR deviation increases with equity holders’ bargaining power. The deviations are larger when the firm is closer to solvency, banks hold fewer claims, the CEO holds more shares, and the firm retains the exclusive right to propose a bankruptcy plan.

Deviations from APR in formal reorganization are primarily attributable to various features and provisions of the bankruptcy code, which effectively provide the debtor with substantial protection and bargaining power against creditors. Franks and Torous (1989) suggest that the institutional features of Chapter 11, which grant the debtor-in-possession valuable rights, effectively provide management with a valuable option. This option provides management the opportunity to adopt investment and financing decisions which can diminish the value of the claims held by the firm’s creditors. For example, Chapter 11 allows management to obtain new senior financing and to exclusively propose a plan of reorganization for the first 120 days. These rights can be used to diminish the value of the pre-existing creditors’ claims by effectively decreasing the exercise price and extending the maturity of the firm’s pre-bankruptcy liabilities. As a result, deviations from the APR can be viewed as compensation by senior claimants to junior claimants in order to extinguish this option.

The documentation of the frequent and economically significant APR violations in the early studies has motivated a literature on the implications of these violations for securities prices and the behavior of managers and investors. First, if market participants rationally anticipate the frequency and magnitude of deviations from the APR, then these violations should be reflected in security prices. Eberhart et al. (1990) examine the relationship between share price reactions and subsequent APR violations, and find that the equity markets generally anticipate and price these deviations. Garlappi, Shu, and Yan (2008) show that shareholder advantage, in violation of the APR, can explain the cross-section of equity returns. For firms with strong shareholder advantage (e.g., those subject to large magnitudes of APR violations), a higher probability of default can be associated with a lower expected equity return. This is because in the presence of shareholder advantage, default probability does not adequately represent the risk of default to
equity holders. Second, as we have discussed in Section III.C.3, quite a few studies theorize that APR violations can affect investment incentives of financially distressed firms.

However, two recent studies show a very different picture about APR deviations in more recent periods. Bharath, Panchapagesan, and Werner (2010) document a secular decline in the frequency of APR violations from 64% before 1990 to 26% in the 1990s, and to about 9% in the 2000–2005 period. The average value received by equity holders in the APR violations also declines from 3.6% before 1990 to 0.6% in the 1990s and to 0.44% in the 2000s. At the same time, management turnover is observed in about 38% of the cases, a 65% increase from the level before 1990. Ayotte and Morrison (2009) examine 153 bankruptcy filings by both private and public companies in the latter half of 2001. The authors also find that APR violations are rare, occurring in only 8% of the cases. In 82% of the confirmed reorganization plans, equity holders receive nothing.

If APR violations mainly result from the debtor-friendly features of the bankruptcy code, then the substantial decrease in the frequency and magnitude of APR violations in the last two decades should reflect growing power of creditors in the US corporate bankruptcies. Indeed, both Bharath et al. (2010) and Ayotte and Morrison (2009) suggest that the increasing importance of DIP financing and the strengthening governance and control by DIP lenders are a key driver of the decline of APR deviations. We now turn to the discussion of the changing nature of DIP financing.

C.2 Debtor-in-Possession Financing and Governance

As we have reviewed in earlier sections, DIP financing is a special kind of financing offered to distressed firms to facilitate their reorganization under Chapter 11. DIP financing is governed by Section 364 of the Code, which offers superior seniority and enhanced security to DIP lenders so that they are motivated to lend to distressed firms.

DIP financing originated from the “receiver’s certificate” in the equity receivership of troubled railroad companies in the 19th century. A receiver’s certificate was a type of short-term financing with priority above all existing claims to help the receiver finance immediate cash needs such as payments to suppliers during the bankruptcy reorganization. Over time, the use of
receiver’s certificates expanded to the reorganizations of non-railroad companies. The scope of the certificates also substantially expanded from covering simply payments to suppliers at the very beginning to essentially any post-petition operational expenses. The receiver’s certificates eventually gave rise to the DIP financing that we know today.

DIP financing grew substantially in size and importance in the second half of 1990s. Dahiya, John, Puri, and Ramirez (2003) provide the first large-sample empirical analysis about the role of DIP financing in bankruptcy reorganization. Using more than 500 non-financial bankruptcy filings between 1988 and 1997, the authors show that on average about 46% of the bankruptcy filers in the second half of 1990s received DIP financing, while less than 8% of the filers received DIP financing in 1988. Bharath et al. (2010) show that in their sample the percentage of bankrupt firms obtaining DIP financing grew from zero before 1990 to 67% in 2005. Ayotte and Morrison (2009) also find that in their sample 50% of the bankrupt firms obtained DIP financing.

With the increasing importance of DIP financing in Chapter 11 reorganizations, control and monitoring by DIP lenders also become the principal governance device in contemporary corporate reorganizations. This central oversight role played by DIP lenders marks a big difference between the modern-day DIP financing and the receiver’s certificates in the equity receivership era because the holders of receiver’s certificates could not influence the governance of the debtor. Dahiya et al. (2003) finds that firms, that obtain DIP financing, are more likely to emerge from bankruptcy than firms that do not. They also take a shorter time to resolve their bankruptcy filling. These findings are even more pronounced if the DIP lenders are well informed about the debtor through prior lending relationship. These results are consistent with both a screening role and a monitoring role played by DIP lenders. Skeel (2004) argue that the control and governance by DIP lenders is achieved mainly through the lenders’ influence over managerial personnel in the distressed debtor, and the active use of affirmative and negative covenants in the loan agreement.

DIP lenders can insist on changing the management of the distressed debtor at the outset of the loan. Several studies find evidence of a sharp increase in CEO turnover in recent bankruptcy reorganizations. Bharath et al. (2010) find that management turnover is observed in
38% of the cases after 2000, a 65% increase from the level before 1990. The turnover rate is significant even among managers with large share holdings. Bernstein (2006) finds that 48% of the bankrupt firms in his sample experience CEO turnover within two years of the filing. Ayotte and Morrissen (2009) find that 70% of CEOs in their sample are replaced within two years of the bankruptcy filing. All these studies suggest that Chapter 11 no longer provides a safe harbor for entrenched managers. DIP lenders do exert control and governance in the distressed firms by pressing for a change in the management.

A DIP loan is generally structured as a revolving credit agreement with short maturity (the median loan maturity is 1.5 years) and strict conditions on each new round of financing. This loan structure gives the lender significant leverage over the debtor’s decision-making throughout the reorganization process. Ayotte and Morrissen (2009) find that all the DIP loans in their sample are secured by liens on all of the debtor’s assets. The vast majority of the DIP loans contain covenants imposing line-item budget limits, investment limits, profitability targets, and deadlines for submitting a plan of reorganization. The DIP lenders are generally free to seize collateral unilaterally—without first seeking court approval— if the corporation violate any of these covenants. These results suggest that DIP lenders actively use the terms of the loan to govern the distressed firms.

Is strong control by DIP lenders desirable from the viewpoint of maximizing the efficiency of the corporate bankruptcy system? Given the institutional features of the current bankruptcy law, does strong DIP lender governance help to effectively screen and rehabilitate financially distressed but economically viable firms and liquidate economically unviable ones? There is a tension here. On the positive side, Skeel (2004) argues that, if the bankruptcy code is overly debtor friendly by keeping the incumbent management in control of the debtor firm’s assets, then strong DIP lender governance can effectively counteract such debtor hegemony and fill the governance void. The evidence on the increased managerial turnovers around corporate bankruptcy filings and the substantial decrease in the violation of the APR as DIP financing becomes more important over time supports the view that strong \textit{ex post} creditor control leads to less entrenchment of inefficient management in distressed debtor firms. Further, DIP lenders have a strong interest in preventing the management from taking on excessive risk that
jeopardizes the value of the firm, and this can mitigate the risk-shifting problem in financially
distressed firms.

*On the negative side,* DIP lenders may have too great an incentive to force the debtor to
liquidate assets, due to the lenders’ priority status. Some legal scholars have argued that this
strong creditor control is likely the cause for the dramatic increase in the going-concern sale
among Chapter 11 bankruptcy cases in the past decade (see, e.g., Baird and Rasmussen 2002 and
LoPucki 2003). Another major concern is that DIP lenders may discourage even appropriate risk-
taking that can increase the value of the debtor firm, because DIP lenders’ claims have a fixed
upside potential. However, these negative biases can be mitigated if the DIP lenders maintain an
important post-bankruptcy relationship with the debtor, which allows them to benefit more from
the debtor’s upside potential.

Overall, we believe that the role of DIP financing in contemporary corporate
reorganizations is a fruitful area for future research. More needs to be known about what
determines DIP lenders’ decision making, how governance by DIP lenders affects the efficiency
of corporate bankruptcy, and how we can encourage the positive effects of DIP financing and
mitigate its negative influences in corporate restructuring.

**D. Post-Bankruptcy Firm Performance**

The fundamental efficiency question about the bankruptcy law is whether the law
effectively rehabilitates economically efficient but financially distressed firms and liquidates
economically inefficient firms. As we have discussed in Section III.C, there has been an ongoing
debate in law and in economics about the efficiency of the US bankruptcy code. A way to shed
important light on this debate is to empirically examine the strength and performance of firms
after they emerge from Chapter 11. If the Code is efficient at screening and rehabilitating
economically viable firms, then we expect these firms to successfully resolve their financial
distress and regain their economic strength. If the Code biases towards continuation of
economically unviable firms or fails to help firms improve their financial situations, then we
expect to see prolonged financial distress and poor performance in bankrupt firms even after they
emerge from Chapter 11.
Hotchkiss (1995) examines the performance of 197 publicly traded companies that filed for Chapter 11 protection during 1979–1988 and later emerged from Chapter 11 as publicly traded companies. The author finds that in the three years following the confirmation of the reorganization plans, over 40% of the sample firms continue to experience operating losses and 32% reenter bankruptcy or privately restructure their debt. In particular, the involvement of original management in the restructuring process is strongly associated with poor post-bankruptcy performance. The author finds that firms are more likely to perform worse than was projected at the time of reorganization when original management is retained during bankruptcy. Hotchkiss’s results are consistent with the view that the current structure of the Code exhibits economically important biases towards continuation of inefficient firms.

Alderson and Betker (1999) also examine the post-bankruptcy operating performance of a sample of firms that emerged from Chapter 11 reorganization between 1983 and 1993, but their methodology differs from that in Hotchkiss (1995). The authors focus on the total cash flows available to equity and debt holders instead of accounting measures of performance, and they evaluate the efficiency of Chapter 11 by comparing the rate of return to investors under Chapter 11 to that under liquidation. They find that in the 5 years after emerging from bankruptcy the reorganized firms on average neither underperform nor outperform relative to the alternative outcome under liquidation. However, firms with high growth options generate superior returns to investors, suggesting that this type of firm particularly benefits from the rehabilitation provided by the Chapter 11 protection.

A more recent study by Kalay, Singhal, and Tashjian (2007) examines 201 firms that reorganize under Chapter 11 during the period 1991–1998. They find significant improvements in their sample firms’ operating performance during the eight quarters after the Chapter 11 filing. Bankrupt firms improve their operating margins by shedding assets and employees. Firms with higher pre-filing debt ratio and less complex debt structure seem to particularly benefit from Chapter 11 protection. The authors conclude that their evidence is consistent with the view that Chapter 11 provides net benefits to bankrupt firms. Similarly, Aivazian and Zhou (2012) use the matching method to control for self-selection and firm heterogeneity among firms entering
Chapter 11, and they find that Chapter 11 firms experience improvement in operating cash flow that is no worse than that of control firms that do not file for bankruptcy protection.\(^3\)

Besides improving operating performance, financially distressed firms generally need substantial reduction of their debt obligations in order to effectively resolve financial distress. This is because the distressed firms are often far away from their optimal capital structures. Gilson (1997) examines debt reduction achieved by financially distressed firms during the formal and the informal reorganization. Gilson finds that leverage remains abnormally high after both Chapter 11 reorganization and informal reorganization, and about 25% of the sample firms have to file for bankruptcy or restructure their debt a second time. However, leverage appears to be less “sticky” and less affected by transactions costs associated with adjusting debt for firms under Chapter 11 reorganization. The author concludes that relative to private workouts, Chapter 11 helps to reduce the financial adjustment costs for distressed firms, which can help the firms better recover their financial strength.

The mixed empirical findings about distressed firms’ post-bankruptcy operating and financial performance suggest that further studies in this area are warranted. However, two points are worth noting. First, bankrupt firms generally go through substantial amount of real and financial restructuring, suggesting that firms, that emerge from bankruptcy, can be very different in composition from the same firms that go into bankruptcy. As mentioned earlier, Maksimovic and Phillips (1998) find that bankrupt firms tend to sell their most productive assets during the restructuring, implying that the overall productivity of these firms can be significantly lower after they emerge from bankruptcy. Therefore, the poor post-bankruptcy firm performance could reflect the outcome of (efficient) asset restructuring rather than the costs of engaging the bankruptcy system. Second, as discussed earlier, it is important to keep in mind that the efficiency of Chapter 11 is essentially a relative efficiency, relative to the efficiencies of two alternative venues: informal out-of-court reorganization and liquidation. This view will help determine the appropriate benchmark for the performance evaluation.

\(^3\) Eberhart, Altman, and Aggarwal (1999) examine the equity performance of 131 firms emerging from Chapter 11 bankruptcy. The authors find evidence of large, positive excess returns in the 200 days following emergence, and believe that the results are driven by the market’s expectational errors. Thus, this study is more about the efficiency of the market for bankrupt firms’ stocks rather than the efficiency of the bankruptcy process.
E. Managerial Incentives and Corporate Governance in Financial Distress

Managerial ability and decision-making are important determinants of the value of the firm. The managerial labor market can be viewed as an arena where corporations compete to acquire and retain the services of top management. Fama (1980) argues that a competitive managerial labor market is an important mechanism to control the behavior of opportunistic professional corporate managers. In effect, a well-functioning managerial labor market disciplines the behavior of corporate executives in two ways. First, shareholders, through the Board of Directors, hire and fire top managers. Second, compensation schemes are structured to reward decisions that enhance shareholder wealth, and penalize outcomes that diminish shareholder wealth.

When the firm gets into financial distress, two important questions emerge. First, are managers responsible and properly penalized for poor firm performance that wipes out shareholder wealth? Second, what is the optimal way to incentivize the incumbent or new management so as to facilitate distress resolution and rehabilitation of the distressed firm?

To answer these questions, it is important to know whether it is mainly the performance and decision-making of top management that is responsible for the onset of financial distress, or it is mainly deterioration due to systematic economic or industry factors. If the main cause of failure is firm-specific, then is it because of the incompetence of the management or the poor design of the firm’s incentive mechanisms and governance structure? These distinctions, while often difficult to make in practice, are crucial for us to understand the optimal way to penalize/incentivize the management in the process of resolving financial distress. If it is managerial incompetence that causes financial distress, then replacing the managers is important for a successful reorganization. If it is poorly designed managerial incentives, then managerial turnover alone is unlikely to resolve the firm’s problem.

Quite a few studies find that overall poor economic conditions and poor industry conditions are important contributors to poor financial performance of individual firms (see, e.g., Lang and Stulz 1992, Denis and Denis 1995, Maksimovic and Phillips 1998, Pulvino 1998). However, it is hard to argue that industry factors are the only determinants of firm-level financial
distress. Many studies find that firm-specific problems also play an important role at the onset of financial distress. For example, Asquith, Gertner, and Scharfstein (1994) and Opler and Titman (1994) find evidence that financially distressed firms underperform their industry.

It is easy to argue that the incumbent management is at least partially responsible for the underperformance and insolvency of the firm. Managers of bankrupt firms generally do get a lot of the blame. However, a study by Khanna and Poulsen (1995) provides evidence that managers of financially distressed firms are likely to be scapegoats rather than villains. The authors examine the reported decisions of managers in the three years before Chapter 11 bankruptcy filings of 128 firms in the 1980s. They compare these decisions to the ones made by managers of a control sample matched by industry and size but without financial distress. The authors find that the reported decisions in distressed firm and non-distressed control firms are similar, and the market reaction to announcements of the decisions is also similar. Further, the market reaction to announcements of managerial turnover is negative in both distressed and control firms. The authors conclude that the evidence suggests that the managers of distressed firms are not perceived by shareholders to be taking value-decreasing decisions before the Chapter 11 filing. One caveat with respect to this interpretation of results is that the equity market reaction cannot rule out the possibility that the managers in distressed firms engage in risk-shifting activities that benefit shareholders at the cost of bondholders or other stakeholders.

However, Hotchkiss (1995) finds that the involvement of original management in the restructuring process is strongly associated with poor post-bankruptcy performance. This result may suggest that the original management is incompetent and unable to turn the distressed firms around. It may also support the theories in the agency literature that managerial incentives worsen when the financial conditions of a firm worsen. The limited liability of equity investment and the threat to managerial job security associated with financial distress can both increase the managers’ incentive to take risk that harm either the entire firm or certain stakeholders. Since bankruptcy often implies an end-game situation for the manager, it is generally challenging to well align the interest of the manager with the interest of the firm in such a situation. Because of these issues, some legal and financial scholars are very critical of the current bankruptcy law for
allowing the incumbent management to retain control of the distressed firm during the bankruptcy reorganization (see, e.g., Bradley and Rosenzweig 1992).

Despite the debate on how much the incumbent management are responsible for the onset of financial distress and whether they are overly favored by the current bankruptcy code, there is evidence that managers do bear significant personal costs when their firms get into financial troubles. Forced management turnovers are frequently observed in financially distressed firms, and such frequency has been increasing over time, along with the increasing senior creditor power in the resolution of financial distress. Gilson (1989) provides early evidence that the onset of financial distress is an important determinant of management turnover. Gilson and Vetsuypens (1993) find that about one-third of CEOs in their sample bankrupt firms in the 1980s are replaced. We have also reviewed evidence on a substantial increase in the management turnover rate in bankrupt firms in the last two decades in Section IV.C.2. Besides management turnover, financial distress also significantly affects managerial compensation and wealth. Gilson and Vetsuypens (1993) examine senior management compensation policy in 77 bankrupt firms in the 1980s. They find that the CEOs who keep their jobs often experience large salary, bonus, and benefit reductions. The wealth of top managers is also directly affected by stock price performance through their equity ownership positions in the firm. These findings suggest that the incumbent management of distressed firms do get penalized for their firms’ poor performance.

Besides penalizing incompetent managers, an even more important issue is how we can properly incentivize the incumbent or new management during the resolution of financial distress so as to facilitate the rehabilitation of the distressed firms? Gilson and Vetsuypens (1993) provide evidence that compensation policy is often an important part of firms’ overall strategy for dealing with financial distress, through provisions that change managers’ incentives or facilitate negotiations with creditors. Eighty-three percent of their sample firms change their top management compensation policy to create a stronger positive association between the wealth of senior managers and shareholders, 49% reduce the level of managers’ cash compensation, 20% tie managers’ compensation to the outcome of the firm’s reorganization, 17% encourage greater management continuity, and 10% increase the association between the wealth of senior managers and creditors. Overall, the net effect of these changes is to increase the sensitivity of CEO wealth
to firms’ stock price performance after financial distress. Of course, given the high level of risk associated with firms in bankruptcy reorganization, increasing the sensitivity of managerial wealth to firm performance can also create high disutility for risk-averse managers.

Beyond managerial compensation policy, other important aspects of the corporate governance structure in distressed firms often go through substantial changes to further align managerial incentives with those of creditors and new equity holders. Gilson (1990) examines changes in the governance structure of 111 firms that defaulted between 1979 and 1985. He finds that turnover among the pre-default board members is high, and their monitoring role is largely replaced by two sources. One is stronger senior creditor control, and the other is increased concentration of equity ownership after the firm becomes financially distressed.

In the last two decades, an active market for trading claims of distressed firms has developed, which gives rise to the increasing involvement of “vulture” investors in financial restructuring. Hotchkiss and Mooradian (1997) investigate the role of vulture investors in the governance and reorganization of a sample of distressed firms between 1980 and 1993. They find that vulture investors often acquire more than one-third of the outstanding debt and gain sufficient power to discipline management in the distressed firms. Vulture investors are frequently active on boards and in management of the target companies. They also find evidence that the active involvement of vulture investors in the management and governance increases the value of the distressed firms.

Jiang, Li, and Wang (2012) examine the role of hedge funds in Chapter 11 bankruptcies. They show that hedge fund presence has an important impact on the outcome of the distress resolution. On the one hand, the presence of hedge funds helps to reduce the debtor-friendly bias in Chapter 11 because it is associated with higher probabilities of the debtors’ loss of exclusive rights to file a reorganization plan, CEO turnover, and adoptions of a key employee retention plan. On the other hand, hedge fund presence increases the likelihood of a successful reorganization and a higher recovery of junior claims (unsecured debt and equity). We believe that future research highlighting the roles of these emerging players such as hedge funds, vulture investors and other institutional investors in the bankruptcy process will be quite fruitful. Finally, as we have discussed in Sections III.C and IV.C, in the recent two decades there has been a
significant increase in senior creditor control in distressed debtor firms through stringent covenants in DIP financing. However, we are not aware of any study that examines how the governance of DIP lenders affects the incentives of incumbent or new management in the process of resolving financial distress.

Overall, the literature shows that no matter what causes a firm’s financial distress, significant changes in the firm’s management, incentive mechanisms, and governance and control structure are a crucial part of the financial distress resolution. This suggests that managerial incompetence is often not the only issue in failed firms. Poorly designed incentives and ineffective monitoring of managers are central issues that need to be well addressed to facilitate the rehabilitation of distressed firms. However, when firm performance is poor, and some change in the management and in the governance and control of the firm is necessary, how do we know which should be changed and what changes are desirable? The current literature lacks a unified framework on these issues. Further study in this area will be fruitful because a thorough understanding of managerial incentives and governance issues in distressed firms is important for us to encourage appropriate public and private forces to improve the distress resolution process.

V. Comparative Codes

Outside the United States, bankruptcy codes vary substantially across countries in the degree of creditor rights and control in the bankruptcy process. Part of the variation is rooted in the differences in countries’ legal origins, which influence the legal rules and law enforcement. In this section, we discuss and compare salient features of the bankruptcy laws in four developed countries from four different legal origins: United Kingdom (English origin), France (French origin), Germany (German origin), and Sweden (Scandinavian origin). We also discuss bankruptcy reforms in two developing countries: India (English origin) and Brazil (French origin). Finally, we discuss a normative theory of optimal bankruptcy system in a given information environment.

A. Bankruptcy Codes and Legal Origins
Modern commercial laws generally originate from two broad legal traditions: common law, which is English in origin, and civil law, which derives from Roman law. Within civil law, there are three relevant legal families: French, German, and Scandinavian. As discussed in detail in La Porta et al. (1998), civil laws give investors weaker legal rights than do common laws. Regarding legal protection of creditor rights, which is essential in corporate bankruptcy, English-origin countries tend to offer the strongest creditor rights, and French-origin countries tend to offer the weakest. German-origin and Scandinavian-origin countries are in the middle and are similar to each other in terms of the strength of creditor rights.

Table 2 lists the legal origin of each country in discussion and the creditor rights score established in La Porta et al. (1998). Among the developed countries, the United Kingdom (hereafter UK) has the highest creditor rights score of 4, and France has the lowest score of 0. When we discuss the salient features of the US bankruptcy law in Section II, we focus on three major provisions of the Code that are relevant to ex ante creditor rights in corporate bankruptcy. They are the automatic stay provision, the debtor-in-possession provision, and the provision about creditors’ role in the reorganization process. In this section we will use these three provisions to organize our discussion and comparison of bankruptcy codes in UK, France, Germany, and Sweden. Table 2 summarizes each country’s bankruptcy code regarding these provisions.

In Chapter 11 of the US bankruptcy code, the automatic stay provision stops creditors from collecting principal and interest payments and from seizing collaterals. The debtor-in-possession provision allows the debtor to retain control of the firm and provides it with the exclusive right to propose a reorganization plan in the first 120 days after the bankruptcy filing. Then the reorganization plan must be approved by all classes of creditors, the equity holders, and the court.

Although both the US and the UK are English-origin countries, they differ substantially in legal protection to creditors in bankruptcy. In the UK, senior creditors secured by the so-called floating charge can have complete control of the bankrupt firm through receivership. Such senior creditors have the right to appoint an administrative receiver, who used to represent solely the interest of the appointer and later under the Enterprise Act of 2002 represents the interests of all
creditors. The receiver’s decisions cannot be challenged in court. There is no automatic stay against creditor claims under such receivership, which can significantly weaken the possibility of reorganization and increases the chance of liquidation.\(^4\)

In Germany, the receiver is appointed by the bankruptcy court rather than by creditors. The receiver does not represent any single group of creditors, but is bound by the resolution of the creditors’ meeting. The receiver overlooks the debtor’s operations and proposes the reorganization plan. In larger bankruptcy cases, the receiver generally develops the reorganization plan in cooperation of a creditors’ committee. Then the plan must be approved by creditors through majority voting. There is up to three months of automatic stay against secured creditor claims.

The Swedish bankruptcy system is very different from the ones we have discussed so far, because all bankrupt firms are auctioned off by the bankruptcy court either as a going concern or piecemeal. There is no effective rehabilitation of the distressed debtor and no restructuring of debt negotiated between the debtor and its creditors. In this system, incumbent management and shareholders immediately lose control of the firm, and are replaced by the court-appointed trustee with a fiduciary duty towards creditors. Automatic stay on assets is imposed to protect the operations of the firm in auction bankruptcy. The auction payments are restricted to cash only, and the cash proceeds from the auction are distributed to creditors strictly according to APR. This auction bankruptcy system can be efficient, because it can effectively avoid or mitigate all the incentives problems among the private parties such as the holdout problem, conflicts of interest, and agency issues in the distress resolution. However, opponents of this system argue that it may induce adverse managerial incentives before the bankruptcy filing, and creditors may suffer from losses due to asset fire sales.\(^5\)

Finally, in France we go to the other end of the creditor control spectrum. The bankruptcy court has full control of the bankrupt firm and the whole bankruptcy process. The

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\(^4\) Davydenko and Franks (2008) provide a nice summary of the key features of the bankruptcy codes in UK, Germany, and France (also see discussions in Franks, Nyborg, and Torous 1996).

\(^5\) Thorburn (2000) provides some first large-sample evidence on the Swedish auction bankruptcy system, and compares the bankruptcy outcomes to those under the US Chapter 11.
objectives of the court are, in the order of priority, to maintain firms in operation, preserve employment, and satisfy creditors’ claims. The emphasis on continuing operations and employment does not necessarily imply that the bankruptcy system favors shareholders. The court may make decisions that maximize employment stability at the cost of both shareholders and creditors. The court appoints a judicial administrator, who assesses the viability of the firm, proposes a reorganization plan, and makes all the important decisions about the firm. Incumbent management is generally retained, but is under the supervision of the administrator. More importantly, the administrator does not represent the interest of creditors. The only way for creditors to convey their concerns is through non-binding recommendations to a court-appointed creditor representative, who may then make non-binding recommendations to the court.

Note that these countries delegate power to different parties in the reorganization process. The US bankruptcy system gives power to incumbent management. The UK system gives power to senior creditors. In Sweden and France, the bankruptcy court has full control of the entire process. In Germany, the court is in charge, but often with close cooperation with creditors. Each system has costs and benefits. In general, incumbent management is the most knowledgeable party regarding the firm’s financial situation and economic viability, which means that it makes sense for the management to control the reorganization. However, incumbent management tends to bias towards reorganization, even when it is inefficient to do so. Because of this bias, the US system has been criticized for overly rehabilitating economically unviable firms. To the contrary, the UK system has been criticized for overly liquidating economically viable firms, because senior and secured creditors tend to bias towards premature liquidation to preserve the value of their claims even at the loss of the going concern value.\(^6\)

Under the French system, the bankruptcy court does not represent the interest of either creditors or debtors. This means that the bankruptcy process can mitigate the two abovementioned biases in the US and in the UK. However, the court has its own biases. The court’s main objectives, such as preserving employment, can often conflict with the value

\(^6\) Interestingly, however, Franks and Sussman (2005) study 542 bankruptcy cases in the UK and do not find any evidence that senior and secured lenders in the UK automatically liquidate firms upon distress. They find that there exists an elaborate rescue process that lasts on average 7.5 months prior to resolution, and about 75% of the distress companies in their sample are turned around.
maximization of the distressed firms. The court-appointed receiver can also be subject to severe information asymmetry problem and lack the necessary expertise to make the right reorganization or liquidation decisions for the distressed firm. The situation is different in Sweden. Although the court is in full charge of the bankruptcy auction process, the court does not really make any important decisions about the outcome of the distressed firms. The bankruptcy system also rules out the possibility of reorganization under the current use. The German system has the potential of providing more balanced incentives in the reorganization.

In summary, bankruptcy codes around the world differ substantially in the degree of legal protection to creditors’ rights in corporate bankruptcy. Part of the differences stems from the differences in the countries’ legal origins. Then a natural follow-up question is how creditors survive in countries with weak legal protection to creditor rights? Can creditors seek protection through other contractual means? The answer is yes, to some extent. For example, the US bankruptcy law provides relatively weak ex ante legal protection to creditors in corporate bankruptcy. However, as we have discussed in detail in Section IV.C, in the past two decades senior creditors in the US have gained substantial ex post control in bankruptcy reorganization through stringent covenants in DIP financing. This ex post creditor control can, to some extent, balance out the ex ante debtor-friendliness of the bankruptcy law.

Davydenko and Franks (2008) find that large differences in creditors’ rights across countries lead banks to adjust their lending and reorganization practices to mitigate costly aspects of the bankruptcy law. In particular, in response to weak legal protection, French banks demand higher levels of collateral per dollar of debt at loan origination. However, the adjustments by creditors do not eliminate the effect of bankruptcy codes on outcomes of default. Davydenko and Franks find that the creditor recovery rate is still the highest in the UK (92%) and the lowest in France (56%). Claessens and Klapper (2005) also find that bankruptcy filings, which indicate the usage of the bankruptcy system, are more frequent in countries with stronger legal protection of creditor rights.

B. Bankruptcy Reforms in Emerging Markets
A well-designed corporate bankruptcy system can lower the firm’s cost of capital, encourage corporate access to external financing, and minimize dead-weight losses in the resolution of financial distress. All of these are important for the development of a healthy and active credit market and for financial development and economic growth in general.

This view has motivated bankruptcy reforms in many emerging economies as part of their overall financial sector reforms. For example, since the 1980s, many Latin American countries have reformed their bankruptcy procedures, with the goal of creating a more attractive environment for business and for capital contributors. Other important emerging economies, such as India and China, have also had significant reforms in their corporate bankruptcy systems. Under the old bankruptcy systems, many emerging markets lacked an effective reorganization procedure for distressed but viable businesses, and the costs of using the bankruptcy procedures to resolve financial distress were very high (both in terms of time and other resources). Thus the majority of the bankruptcy reforms in these markets centered on creating or improving the reorganization procedure and to streamline the bankruptcy process. In this section we briefly discuss the reforms in two important emerging economies which are members of BRICS: India and Brazil.

B.1 India

Before the 1992 amendment to the Companies Act, there was no single comprehensive and integrated corporate bankruptcy law in India. Instead, the corporate bankruptcy process was governed by three legislative Acts and several government agencies, making the process very lengthy and inefficient. The Companies Act of 1956 is effectively a liquidation Act, even though it allows for restructuring. This is because successful restructuring rarely happens under this Act due to the lack of automatic stay on assets and the lack of a court “cram-down” when private parties cannot reach agreement on the restructuring plan.

Later the Sick Industrial Companies Act of 1985 introduces automatic stay on assets during restructuring. A quasi-judicial body appoints an operating agency, usually the largest secured lender, to determine the viability of the company and propose a reorganization plan, while the debtor remains in possession of the assets. Bankruptcy process under this Act is
plagued by two main problems. One is that the definition of a sick company is so inappropriate that when a company is recognized as “sick”, it is often too late to have any meaningful reorganization. Thus, most sick companies are eventually liquidated, after a long and costly procedure. The other issue is that there is inadequate monitoring of the management during the period of automatic stay on assets, leading to rampant frauds during restructuring. Finally, the Banks and Financial Institutions Act of 1993 deals with debt recovery for banks and other financial institutions, mainly via liquidation of debtors’ assets. Under this old system, most distressed firms were liquidated, and the insolvency procedure generally took a long time (average 7 years according to Kang and Nayar 2004).

In 2002, the Parliament passed the Companies (Second Amendment) Act. This Act aims to address the shortcomings of the bankruptcy system by repealing the 1985 Act and amending the 1956 Act. The 2002 Act introduces a new definition of company “sickness” so as to encourage early identification of distressed companies and improve the chance of successful rehabilitation. The Act establishes one single authority, a National Company Law Tribunal, to handle corporate bankruptcy cases, and delegates substantial power to this agency in the bankruptcy process. The restructuring or liquidation process is time-bound to two years, and the Tribunal serves as monitor during the restructuring process to prevent managerial fraud.

We are not aware of any comprehensive study that evaluates the effects of the 2002 Act on the efficiency characteristics of corporate bankruptcy in India. However, the growth in the country’s bank credit to the private sector, a major indicator for credit market development, does provide some encouraging news. During 1985–2001, the country’s bank credit to the private sector as a percentage of GDP stayed flat around 25%. During 2002–2008, this ratio increased from 29% to 49%, with an average annual growth rate of 7.8%. A careful study is desired to show how much the bankruptcy reform can explain such improvement in the credit market.

B.2 Brazil

The old bankruptcy system in Brazil was one of the most inefficient systems in the world. Like India, Brazil’s old bankruptcy system lacked an effective reorganization chapter, even though the law allowed for both liquidation and reorganization. The insolvency proceeding was
very slow. The average time in the process was about 10 years. Employee wages and tax credits were given priority above creditors’ claims. The liquidation asset sales were also slow and inefficient. Tax, labor, and other liabilities were transferred to the buyer of a liquidated property, which substantially reduced the market value of the bankrupt firms’ assets. All these features of the old bankruptcy system led to extremely low recovery rate for creditors in bankruptcy and high cost of capital for corporations. Before the bankruptcy reform, the average creditors’ recovery rate in bankruptcy was about $0.002 on a dollar, and the average interest rate spread was 49%.

Brazil started to reform its insolvency system in 1993. After a long process of revision and negotiation, the new bankruptcy law finally went into effect in June 2005. The new law is a very ambitious attempt to make sweeping changes in the country’s insolvency procedures. Under the new law, creditors’ priority in the case of corporate bankruptcy is substantially enhanced. Tax, labor, and other liabilities are no longer transferred to the buyer of a liquidated property, which should increase the market value of the distressed firms’ assets and thus increase recovery for creditors. The new bankruptcy law also formalizes the reorganization procedure, which has some essential features of the Chapter 11 in the US. There is a 180-day automatic stay on assets. Super-priority financing in the reorganization process is introduced. Management makes a reorganization proposal, which must be approved by creditors. Finally, the new law also introduces an out-of-court reorganization procedure and addresses issues related to managerial frauds in the reorganization process.  

Given that the bankruptcy reform is recent, it is still a bit early to fully evaluate its effects on the efficiency of corporate bankruptcy in Brazil. However, we do see a significant increase in the country’s bank credit to GDP ratio after the new bankruptcy law took effect, from an average of 29% before 2005 to 53% in 2008.

[Insert Table 2 here.]

C. A Normative Theory

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7 Araujo and Funchal (2005) provide a detailed and insightful discussion of the bankruptcy reforms in Brazil.
What should the optimal bankruptcy system look like in different developed economies and in emerging markets? Brazil adopted a US-style bankruptcy system. Will the new system work for Brazil in theory? Many emerging markets developed a reorganization chapter like Chapter 11 in the US as an important part of their bankruptcy reforms. Is such a chapter optimal for those countries?

Berkovitch and Israel (1999) provide a normative theory that can help us think about these questions. The authors argue that the efficiency of the bankruptcy law (both ex post and ex ante) should crucially depend on the information structure of an economy. They consider three broad types of economies. The first one is a developed economy with a bank-based financing system (e.g., Germany). This economy is characterized by creditors having good acquisition technologies for hard information. The second type is a developed economy with a market-based (or arm-length) financing system (e.g., US). In this economy creditors obtain most of their (soft) information from the financial markets and their own independent research of the firm. The last type of economy is an underdeveloped economy with poor information acquisition technologies and a bank-based financing system (e.g., many emerging markets). In such an economy, creditors obtain hard information, but the quality of information is low.

The authors argue that the optimal bankruptcy law should only include a creditor chapter (like Chapter 7 in the US) in the first type of economy, and should include both a creditor chapter and a debtor chapter (like Chapter 11 in the US) in the second type of economy. The inclusion of a debtor chapter in the developed market-based economy is to motivate managers to reveal their private information when the firm is economically unviable. Thus, the debtor chapter can be viewed as “information rent” paid to managers for their information. By the same logic, the authors argue that the optimal bankruptcy system should include both a creditor chapter and a very debtor-friendly debtor chapter in an underdeveloped economy. This is because in such an economy, the information asymmetry between creditors and managers is more severe, and the private information possessed by managers is more valuable. Thus it pays to induce the manager to reveal the information. This argument seems to support the reforms in emerging markets that develop or enhance a reorganization regime that is akin to Chapter 11 in their bankruptcy systems.
VI. Financial Crisis, Systemic Financial Distress, and Resolution Mechanisms

When will financial distress lead to crisis? During 1997-1998, East Asian economies experienced a financial crisis that spread to other emerging countries outside the region, including transitional economies in the ex-Soviet block and Latin America. In fact, the crisis threatened the integrity of the entire global financial system. The Russian contagion actually hit a venerable hedge fund in the US, Long Term Capital Management (LTCM), which was then deemed systemically critical and led to government intervention. The Asian economies experienced sharp declines in equity values, currency valuations, and steep rise in interest rates. Beyond the macroeconomic consequences, the crisis also hit the corporate sector, and many firms faced severe and systemic financial distress (see Allen, Babus, and Carletti (2009) for a survey of the literature on financial crisis in general).

The 2008 financial crisis was, on the other hand, rooted in the US housing bubble that eventually burst, affecting valuations of mortgage backed securities around the globe and hence counter-parties to these securities. There was a dramatic loss of confidence in the credit markets with banks holding illiquid mortgage securities, and investors including banks had difficulty distinguishing healthy institutions from unhealthy ones. Credit markets froze, stock markets collapsed around the globe, and so did consumer confidence. Although this was a financial crisis unseen since the Great Depression, its collateral damage to the real sector was staggering, and we are still living in the after shocks (witness the US unemployment rate reaching as high as 10% in October 2009 and still 8.3% as of January 2012).

What was the root cause of the global crisis? While this is not the focus of this survey, we wish to highlight a number of factors. Among them are the government housing policy, distorted incentives and excessive leverage in financial institutions, drastic failure of rating agencies, lack of transparency embedded in highly complex and tranched instruments based on mortgages (see Faulkender, Kadyrzhanova, Prabhala, and Senbet, 2010). The US had undertaken an aggressive homeownership policy through the passage of the Community Reinvestment Act and implicit guarantees for government-sponsored entities like Freddie Mac and Fannie Mae in the promotion of the housing policy. Of course, as we know now the implicit guarantees to these agencies became explicit at huge costs to the tax payers.
Thus, as discussed above, a number of factors have been popularized to explain the current crisis, but the root cause is still being debated in terms of which of these factors are fundamental. Allen and Carletti (2010) advance that the current crisis is primarily attributable to systemic risk stemming from the real estate price bubble and the subsequent burst. This view departs from the widely held notion of the effects of excessive leverage and other incentive issues in the mortgage industry, although these factors are likely to exacerbate the underlying problem of the real estate bubble. Their view is consistent with the Japanese experience. Obviously, \textit{micro-prudential} policies cannot address such systemic risk, and Allen and Carletti suggest a menu of \textit{macro-prudential} policies to minimize the occurrence of future crises, including reforms in banking regulation and governance of central banks, as well as measures to reduce global imbalances. In a follow-up study, Allen and Carletti (2011) provide a model in which systemic risk from real estate based on rational behavior in the market generates real estate bubble.

In the wake of the crisis, it was also clear that banks, and shadow banks, on Wall Street carried excessive leverage with minimal equity buffer. It has been recognized in finance for years that excessive leverage creates incentives for undertaking excessively high-risk projects or lending policies, which must have contributed to the crisis. The adoption of high-risk portfolios in mortgage backed securities should be a manifestation of the distorted incentives. This is in part fueled by aggressive equity and option-like incentives in executive compensation. The risks that were undertaken must have been beyond what is socially optimal in the pursuit of maximizing implicit guarantees in the case of shadow banks, or explicit guarantees in the case of depository institutions.

The global financial crisis that centered on financial institutions eventually spread to the real sector. The commonality between the crisis in the 1990s and the one in 2008 is the widespread financial distress of private companies. However, the 2008 crisis was rooted in the US housing bubble but spread globally, while the 1998 crisis was rooted in Asia and spread to other emerging economies. In both cases there was massive government intervention to avert the collapse of financial systems. In 2008 there was large-scale government intervention across the globe to prevent total collapse of the financial system. In the U.S., the measures included stabilization of the financial sector through government takeovers of failing institutions, capital
infusion through the TARP, monetary stimulus through aggressive lending against toxic assets, and, more recently, fiscal stimulus.

Relevant to this current survey, governments faced a dilemma of invoking existing bankruptcy laws and hence court-supervised mechanisms of crisis resolution and/or private workouts. In the US case, the bankruptcy code was bypassed in favor of bailing out the creditors and making them whole, while equity was wiped out. The existing bankruptcy mechanisms were deemed inadequate to address a widespread system-wide financial distress, and this is the issue that we wish to address in this section.

A. Resolution Mechanism under Financial Crisis

The 1997-98 Asian crisis and the 2008 global financial crisis both raise questions about the proper role of government in resolving financial distress in corporate and financial sectors. We take a view that, in a market economy, the government should limit its role to the creation of an enabling environment for private workouts and restructurings. What if private restructurings fail? Can the ordinary bankruptcy procedures (e.g., those embedded in Chapter 11 and Chapter 7) work under systemic financial distress? In the following sections we will attempt to answer these questions.

A.1. Private Workouts in Financial Crisis and Possible Impediments

The government can play a vital role in creating an enabling environment for private workouts. It can do so by setting the rules under which creditors and debtors work out their claims privately. In other words, the environment facilitates resolution of financial distress through out-of-court settlements as a substitute to a court-supervised bankruptcy procedure. Among the rules is elimination of barriers to asset ownership transfer through mergers and acquisitions or outright transfer of the distressed firm to the creditors, liberalization of foreign direct investment, introduction of a variety of incentives, including moral persuasion. This is, in fact, in the best interests of the government as well, since it would avoid costly stimuli and/or takeover of corporate liabilities.

Of course, when private workouts fail, the government may intervene. However, that is not a foregone conclusion. There is still an option for court-supervised resolution mechanisms.
The biggest challenge here is that we are dealing with systemic crisis which is characterized by widespread distress and extremely poor capital market (equity and debt) conditions. The Asian financial crisis led to a large number of firms being financially distressed simultaneously; so did the 2008 global financial crisis. The widespread financial distress, that results from lack of confidence in the credit markets, can hit otherwise economically efficient firms. The credit market froze up and the DIP loans virtually disappeared during the 2008 financial crisis. Distressed firms would have to rely more on asset sales to fund inventory and working capital while resolving the distress. Yet it was very difficult for firms to find buyers, since buyers themselves would have difficulty raising funds. It would be difficult to find a potential buyer for every distressed firm. In fact, the firm-level potential buyers are distressed themselves. The 2008 crisis presented some unusual challenges to both the private resolution mechanisms and the court-supervised mechanisms.

B. Failure of Standard Court-Supervised Mechanisms and Government Intervention

When private mechanisms fail, the next options are court-supervised mechanisms. Unfortunately, ordinary bankruptcy codes are designed for isolated bankruptcies and may not be suited for systemic bankruptcies. There are issues of valuation, delays in the resolution of distress, and costly externalities to the society. Determining the value of the debt and equity claims of a financially distressed firm would be difficult in the event of systemic and widespread distress. This is because of counter-party claims among those that are also distressed.

In a systemic crisis, it is crucial that the resolution occur with speed. However, the normal bankruptcy procedures are typically protracted, and the estimate for a typical Chapter 11 reorganization in the US is about 2 years. Moreover, when so many firms fail at the same time, the judicial system will be overwhelmed to handle such cases.

The 2008 global financial crisis saw massive failures in the financial system with quite a few venerable banks and shadow banks on the verge of collapsing. The application of the standard bankruptcy procedure is troublesome when it comes to financial institutions. The reason is that financial institutions possess valuable information capital that can dissipate in long-winded and disorderly resolution of distress or liquidation. In addition, such delays and
disorderly mechanisms are susceptible to bank runs. Moreover, in a systemic crisis, these institutions are interconnected, and the issues discussed above would apply in this case.⁸

C. Systemic Crisis and the Dodd-Frank Act Resolution Mechanism (Title II Receivership)

One would think that the government should not come to the rescue of private firms and financial institutions that have gotten into trouble as a result of their own mistakes. Unfortunately the society bears negative externalities and collateral damage as a result of private blunders. The need for government intervention stems from the compelling desire to stabilize the financial system and to revive the economy. Thus, the regulators in the US and elsewhere decided that the standard bankruptcy regime failed to be a viable means of resolving systemically important financial institutions (SIFIs). The bankruptcy procedure would have taken months, or even years, to complete, but financial institutions could collapse in a matter of days, or even hours, when they face liquidity or solvency crisis. The resolution of financial crisis needs to be rapid so as to avoid asset fire sales and possible runs on other institutions. A rapid approach would be similar to the FDIC resolution mechanism, which was in place for depository institutions but not for shadow banks outside the banking regulation in the wake of the crisis.

C.1. Essentials of Title II Receivership

The Title II (Orderly Liquidation Authority) of the Dodd-Frank Act governs the resolution of systemically critical non-bank financial institutions. It has three principal features: (a) a mechanism for quick restructuring, (b) a requirement for SIFIs to develop and maintain a living will, and (c) a liquidation process for complex financial institutions with global reach. Ideally, it should facilitate private workout and only invoke Title II if there are no viable private sector solutions.

In terms of process, the US Treasury Department determines if a financial institution should go into Title II receivership. Once the institution is placed under Title II receivership, FDIC becomes the receiver/liquidator. The choice of FDIC seems inspired by its long-time

⁸ Issues of resolution delay and bank runs, which are well recognized in the corporate finance literature, are also emphasized in Chapter 8 of the influential Squam Lake Report (2010).
experience in dealing with the resolution of depositary institutions, subject to a deposit insurance scheme. In terms of settlement, FDIC uses Chapter 7 bankruptcy as a threshold in that unsecured creditors receive no less than what they would under this Chapter. Unlike the existing bankruptcy law, though, FDIC has more discretion in the treatment of creditors, and the same class may even be treated differently. What is also significant is that under the Dodd-Frank Act, FDIC can request a one-day automatic stay for qualified financial contracts, such as derivatives and repurchase agreements. Otherwise, the resolution process would have been disorderly and may even lead to inefficient liquidation. Note that, under Chapter 11, while there is an automatic stay provision, it may not apply to financial assets, and hence that is why it is so difficult to apply an orderly resolution of financial institutions under the standard bankruptcy code.

There is another important difference relative to the standard FDIC resolution of bank failures. There is no insurance fund, and hence no ex ante fees (insurance premium) imposed on the failing financial firms. Title II receivership is set up so that ultimately there will be no costs borne by the tax payer, and ex post fees on financial companies may be imposed to recoup the expenses associated with the receivership process. This is consistent with one of the objectives of the Dodd-Frank Act that there will no longer be public funds or bailouts of failing financial institutions, unlike what happened in the wake of the 2008 crisis where there were massive bailouts. Title II also allows FDIC to claw back in the event of excessive settlements to the claimants. Thus, the power vested on FDIC is considerable, and it even allows for changing management and board members to the extent that they are responsible for the failure of the company. Because of this, the prevailing sentiment is that Title II be viewed as an exceptional power accorded to the regulators in the event of systemic crisis.

C.2. Title II Receivership versus Chapter 11 and Challenges

There is an ongoing analysis of Title II in the context of the overall bankruptcy system in the United States in both legal and academic circles (e.g., Baird and Morrison, 2011). Although Title II refers to orderly liquidation, on the surface, there is a stark similarity of Title II to the existing Chapter 11 reorganization in that efforts are made to reorganize an economically efficient entity without piecemeal liquidation through a variety of ways, including a sale of the company to another entity or merging it with another company within the boundaries of antitrust
laws. Also, Title II seems activated only when private workouts and other judicial process are exhausted. The differences are also stark. We have a single receiver/liquidator, namely the FDIC, and no other third parties, such as courts and trustees are involved in the orderly resolution/liquidation of the failing financial company. Moreover, FDIC can create a bridge financial company for transfer of assets and operate it for five years for possible merger.  

Finally, it would be appropriate to mention a couple of challenges under the Dodd-Frank resolution regime. As mentioned earlier, in terms of settlement, FDIC uses Chapter 7 bankruptcy as a threshold in that unsecured creditors receive no less than what they would under this Chapter. Determining the minimum recovery should pose quite a challenge during a systemic collapse of the financial system.

The other issue has to do with the lack of global coordination and cooperation to come up with a cross-border resolution mechanism. While Title II seeks maximum cooperation with global entities and even calls for a study regarding global coordination, in its current form, it falls short of promoting such coordination in the event of financial meltdown. The main reason is that there are currently no treaties or other cross-border agreements regarding crisis resolution of a systemic nature. This is particularly troublesome, given that we live in a world where many large financial institutions are organized as holding companies with subsidiaries and affiliates around the globe, and these subsidiaries are often chartered separately in their host countries. There is a compelling need for the globalization of the Dodd-Frank Act, a challenge yet to be addressed.

**D. Proposals for Further Reforms of Systemic Bankruptcy**

We close this section by mentioning two promising avenues for reforms in the resolution of systemic distress, namely super bankruptcy code and contingent capital (CoCo).

**D.1. Super Bankruptcy Code**

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9 The FDIC came up with final rule in July 2011 for the implementation of certain provisions of its authority to resolve financial companies covered under Title II of the Dodd-Frank Act. The final rule provides details of the workings of the provisions and provides further insights for distress resolution, relative to existing bankruptcy procedures (Chapter 7 and 11).
The concept of super bankruptcy code was originally introduced by Miller and Stiglitz (1999). In our view this is tantamount to mandating private workouts through debt-to-equity conversion. This mechanism is designed to preserve the value of a distressed firm consistent with economic efficiency, to prevent inefficient liquidation that often occurs in a system crisis, and to provide protection against large macroeconomic shocks. The basic presumptions of super bankruptcy are that (a) debt-to-equity conversation will be forced, and (b) current management remains in place. Managers will not be held responsible or penalized to the extent that the crisis stems from macroeconomic shocks. Of course, the incumbent management and board are entrenched. However, the super bankruptcy scheme does offers an opportunity to replace management by the new equity holders (former creditors).

There is, of course, a challenge pertaining to the super bankruptcy mechanism. It is not going to be easy to isolate the causes of crisis stemming from those associated with macroeconomic shocks and those attributable to managerial decisions, and hence there is a moral hazard issue of protecting managers and owners who may have caused the problems in the first place. The mechanism is also likely to create incentives for creditors to charge higher interest rate in normal times because the loan would now be viewed as more risky. However, this would not be a big deal in a well functioning credit markets where debt securities are priced correctly to reflect the appropriate level of risk. The idea of super bankruptcy is worth looking into, since the positive features are impressive, in that there is the potential to preserve the going-concern value, prevent excessive liquidations, and maintain existing management with valuable institution-specific capital.

D.2. Contingent Capital (CoCo)

There is growing attention in academic and regulatory circles for possible adoption of a new regulatory instrument issued by financial institutions in normal times. These instruments are convertible to equity when the issuing firm and the financial system are in crisis. This is unlike a traditional convertible bond that gives a bondholder an option to convert into equity on the upside in the boom times. To the contrary, conversion is automatic and mandatory, and it occurs during stress times, if one or more triggers are met. An example of a trigger is a predetermined threshold of the required bank capital at or below which CoCo would automatically convert.
Thus, CoCo provides more of an insurance function, and is sometimes referred to as capital insurance bonds. CoCo is also referred to as “hybrid regulatory security” in Chapter 7 of the Squam Lake Report, where the regulatory incentive effects of the hybrid security are detailed.

The desirable regulatory function of CoCo is that it bolsters the bank’s capital position in a stress environment when capital is most needed. CoCo is actually similar to the super bankruptcy mechanism, but the debt-to-equity conversion is not mandated by the bankruptcy code. The role of the regulator is to promote such a hybrid security to be issued by financial institutions, and it could do so through incentives in the form of reducing regulatory burden, such as capital requirements. In fact, through automatic conversion into equity, an under-capitalized and/or insolvent bank becomes better capitalized without imposing cost to society. The cost is borne by the investors, and there would be no need for costly bailouts.

Integrating the idea of CoCo into systemic risk, and invoking it, would mean that the regulator has to declare that the financial system is suffering from systemic crisis. The conversion could also occur upon violation of the covenants specified in the issuance of CoCo. The covenants may, for instance, require maintenance of a specified amount of equity capital. The attractive feature of CoCo is its counter cyclicality, and hence allowing firms to be less vulnerable to shocks. Thus, a well designed CoCo should foster the stability of the financial system under systemic crisis and minimize taxpayer exposure due to government bailouts.\textsuperscript{10}

\textbf{VII. Summary and Discussion}

In accordance with the MM theorem, corporate bankruptcy is inconsequential to firm valuation, since the operating or investment decisions are completely separable from the

\textsuperscript{10} Calomiris and Herring (2011) outline several design features, including the need for a market value trigger for conversion and conversion of all CoCos in their entirety, rather than piecemeal, and issuance of a large quantity of the hybrid instrument relative to common equity, etc. They define a market value trigger as “a moving average of a quasi market value of equity ratio (QMVER)”. George von Furstenberg (2011) examines whether it is privately efficient to add contingently convertible debt to the liability structure of a financial firm. The presumption is that it would be an efficient financial instrument if it lowers the cost of capital by reducing the expected frequency and costs of bankruptcy or banks’ regulatory insolvency and resolution. His analysis supports the efficiency view.
financing decisions. The separation theorem implies that there is no necessary linkage between
bankruptcy and the firm’s operating performance: bankruptcy does not cause economic distress
or poor economic performance. This important insight is often missed in discussions related to
the economic consequences of corporate bankruptcy. In particular, there is confusion about a pair
of related but distinct concepts: financial distress and economic distress.

This survey’s theoretical anchor has been an attempt to provide a clear delineation of
economic distress and financial distress. The difficulty in disentangling the dichotomy has been a
central challenge on the empirics relating to financial distress and bankruptcy. By implication, it
is the cost associated with financial distress, not economic distress, that is central to the debate
about how costly financial distress and bankruptcy are. It is often tempting to point to news
stories of economically distressed firms as evidence of a causal relationship between impending
bankruptcy and deterioration in profitability or a decrease in product demand. The crucial
consideration is whether an identical but otherwise not financially distressed firm (due to low
financial leverage) would face similar deterioration in its operating performance. Moreover,
liquidation and bankruptcy are often discussed in the literature as though they are related.
Liquidation is the process of dismantling the firm’s assets and selling them (either piecemeal or
in their entirety) to new management teams. Liquidation is optimal when the value of the firm’s
existing resources is higher in alternative uses. Hence liquidation should be viewed as a capital
budgeting decision that is independent of the way in which the firm is financed.

Bankruptcy costs may potentially emerge directly in the form of court fees involving
third party advisors to the firm, such as lawyers, tax accountants, trustees, etc., or indirectly in
the forms of inefficient investments induced by the reorganization process and costly disruptions
in the relationship of the firm with stakeholders such as capital providers, customers, suppliers,
and employees. If there are market mechanisms that allow firms to escape the deadweight costs
of bankruptcy, then bankruptcy has no impact on corporate capital structure decisions, even in an
imperfect world. If, however, bankruptcy costs are not always avoidable, then virtually all
dimensions of the firm’s financial contracting decision are impacted. Consequently, financial
contract characteristics such as maturity, seniority, complexity, collateral, covenants, and public
versus private are likely to influence the firm’s bankruptcy decision. But why do certain
companies fail to utilize the apparently cost-effective private mechanisms for resolving financial
distress? This review devotes ample space on the discussion of conditions under which
privatization of bankruptcy succeeds and fails.

The available empirics are near-consensus on the observed magnitudes of *direct*
bankruptcy costs that are associated with legal, administrative and advisory fees. They are not
that significant, and this survey provides data from key sources to support this. However,
potentially more significant and substantial are the *indirect* costs, but this is where no consensus
has been obtained. The prevailing sentiment is that the indirect costs are substantially larger than
the direct costs. However, these costs are difficult to observe and measure. Moreover, there is an
existing challenge that makes it difficult to empirically distinguish the costs of financial distress
from the costs that would have arisen with pure business dislocation and economic distress.
Perhaps Andrade and Kaplan (1998) is the most successful study in this respect, and their finding is
startling. After isolating the effects of negative economic shocks that occur during the
financial distress, the authors estimate the costs of financial distress to be negligible. Of course,
the debate is unsettled, and this survey discusses studies that support Andrade and Kaplan and
those that are inconsistent. It is disheartening that, despite a voluminous literature on the
empirics, this issue remains unsettled. However, there have been successful attempts to uncover
the variations in the characteristics of financially distressed firms in their utilization of private
workouts versus court-supervised mechanisms. An expanded inquiry along these lines is more
likely to bear fruit and get us closer to consensus.

Another strand of the literature grapples with the efficiency of bankruptcy codes and
regimes, given frequent usage of court-supervised mechanisms. The fundamental efficiency
question about the bankruptcy law is whether the law effectively rehabilitates economically
efficient but financially distressed firms and liquidates economically inefficient firms. This
survey provides an ongoing debate in law and in economic theories about the efficiency of the
US bankruptcy code. The empirical literature has also documented significant and interesting
changes in Chapter 11 bankruptcies in the past two decades that have potentially important
implications about the efficiency of the US bankruptcy code. We think that this line of inquiry is
worthwhile and has implications for bankruptcy reforms and introduction of new codes, particularly in emerging economies.

The other fruitful area is the linkage between financial distress and corporate governance, which has received growing attention. The central question here is whether it is mainly the performance and decision-making of top management that is responsible for the onset of financial distress, or it is mainly deterioration due to systematic economic or industry factors. If it is managerial incompetence that causes financial distress, then replacing the managers is important for a successful reorganization. If it is poorly designed managerial incentives, then managerial turnover alone is unlikely to resolve the firm’s problem. Overall, the literature suggests that no matter what causes a firm’s financial distress, significant changes in the firm’s management, incentive mechanisms, and governance and control structure are a crucial part of the financial distress resolution.

The review goes beyond the US to take a look at comparative bankruptcy codes around the world. These codes vary in the degree of legal protection of creditor rights. These differences are partly attributable to the differences in legal origins. Beyond highlighting the variations in codes, this survey discusses reforms in bankruptcy codes, particularly in emerging economies. A well-designed corporate bankruptcy system can lower the firm’s cost of capital, encourage corporate access to external financing, and minimize dead-weight losses in the resolution of financial distress. All of these are important for the development of a healthy and active credit market and for financial development and economic growth in general. This view has motivated bankruptcy reforms in many emerging economies as part of their overall financial sector reforms. We briefly discuss the reforms in two large emerging economies: India and Brazil.

The survey then takes us into a public domain and systemic financial distress. This is inspired by the global financial crisis and emerging market crises, such as those in Asia and Latin America. These crises raise questions about the proper role of government in resolving financial distress in corporate and financial sectors. We take a view that, in a market economy, the government should limit its role to the creation of an enabling environment for private workouts and restructurings. However, when private restructurings fail, can the ordinary
bankruptcy procedures (e.g., those embedded in Chapter 11 and Chapter 7) work under systemic financial distress? The review attempts to answer these questions.

When private mechanisms fail, the next options are court-supervised mechanisms. Unfortunately, ordinary bankruptcy codes are designed for isolated bankruptcies and may not be suited for systemic bankruptcies. There are issues of valuation, delays in the resolution of distress, and costly externalities to the society. In a systemic crisis, it is crucial that the resolution occur with speed. However, the normal bankruptcy procedures are typically protracted. The application of the standard bankruptcy procedure is particularly troublesome when it comes to failing financial institutions. The reason is that financial institutions possess valuable information capital that can dissipate in long-winded and disorderly resolution of distress or liquidation. In addition, such delays and disorderly mechanisms are susceptible to bank runs. The Dodd-Frank Act’s Title II (Receivership), which governs the resolution of systemically critical institutions, is intended to address these challenges. In fact, there is a stark similarity of Title II to the existing Chapter 11 reorganization in that efforts are made to reorganize an economically efficient entity without piecemeal liquidation through a variety of ways. However, as discussed in the review, there are important remaining challenges that are not addressed by the Dodd-Frank Act resolution regime. These are really challenging and exciting times for researchers in financial distress and bankruptcy.
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# Table 1: Basic Chapter 11 Reorganization Features

1. *The Automatic Stay*
   - Stops principal and interest payments to unsecured creditors;
   - Secured creditors lose the right to take possession of collateral, but may receive ‘adequate protection’ payments;
   - Executory contracts can be assumed or rejected. If rejected, these claims then become unsecured creditors.

2. *The Debtor-in-Possession*
   - Typically the current management and board of directors retain control;
   - Management initially maintains exclusive right to file a plan of reorganization and solicit acceptances by the committees. Exclusivity period extends for 120 days to file the plan and an additional 60 days to seek approval. Extensions are common;
   - Debtor-in-possession financing effectively allows the court to strip seniority covenants and collateral from existing debt. Allows incremental senior borrowing.

3. *Reorganization*
   - Plan must be approved by all classes of creditors and the court. Exception is the cramdown procedure;
   - Threat of delay of reorganization plan by management. Transfers wealth from some creditor classes to equity;
   - Bargaining powers favor debtors, but creditors can
     (i) Propose an alternative cramdown;
     (ii) Ask for a lift of the automatic stay;
     (iii) Request conversion to Chapter 7 liquidation;
     (iv) Refuse to lend new funds;
     (v) Block asset sales.