

Maximizing the value of distressed assets:

Bankruptcy law and the efficient reorganization of firms

by

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First Draft: October 2003

This Draft: March 2004

Abstract

We argue that the main role of corporate bankruptcy is to mitigate bargaining frictions in financial distress. Bankruptcy law can improve ex post bargaining efficiency by (1) verifying assets and liabilities; (2) improving coordination among claimholders; (3) protecting third-party claimants; (4) maintaining asset value during bargaining; and (5) alleviating the impact of liquidity constraints among claimants and potential acquirers of the distressed firm's assets. In improving ex post efficiency, however, bankruptcy law will also affect the bargaining power of the claimants, which may have unintended consequences on ex ante efficiency. We apply this framework to analyze bankruptcy systems in six representative countries. With the exception of the third-party protection, the U.S. Chapter 11 system goes the farthest in addressing ex post bargaining frictions. Other reorganization codes lack important key features, which seems to have discouraged the use of these codes, often in favor of reorganizing firms in the traditional liquidation-oriented chapter. We then turn to ex ante efficiency and argue that this issue can be best understood by looking at a context where private contracting works well and bankruptcy law is not needed. We propose that venture capital contracting is such an environment. Preliminary evidence suggests that venture capital reorganizations share many key features with the U.S. Chapter 11, with the exception that less power is given to equity-holders and other junior claimants. Since recent evidence suggests that the real impact of the equity-holder bias in Chapter 11 is small, however, we argue that it is unlikely that the U.S. system has significant ex ante inefficiencies. We conclude by discussing some lessons and limitations of our results for designing bankruptcy law in developing countries.

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1. INTRODUCTION

Many observers have noted the historical differences between U.S. corporate bankruptcy procedures and those in other countries. The U.S. law has been described as “debtor-friendly,” oriented towards reorganizing the existing company (i.e., giving the debtor a second chance), and accustomed to deviating from contractual payoff priorities. The traditional bankruptcy procedures in many other developed countries including the United Kingdom, Germany, Japan, and Sweden are described, in contrast, as “creditor-friendly,” favoring the liquidation of the debtor’s assets to pay off creditors in the order of their priority. A relatively large literature has arisen debating the relative merits of each system.¹

Perhaps with an eye to the perceived success of the U.S. system, many countries have recently begun to institute more debtor-friendly, U.S.-styled reorganization codes into their bankruptcy laws.² Indeed, the World Bank, International Monetary Fund (IMF), and the European Union (EU) now encourage member countries to adopt bankruptcy laws that have a reorganization code as one of their cornerstones.³ Thus, from a public policy standpoint, U.S.-styled bankruptcy procedures appear to be quickly gaining the upper ground as the preferred mechanism for dealing with distressed companies.

Yet anecdotal evidence suggests that very few of these recent reorganization codes adopted by countries have been successful. For example, of all firms going

¹ Early contributions include Roe (1983), Baird (1986), Jackson (1986), Jensen (1989), and Aghion, Hart, and Moore (1992). More recently, see Strömberg (2000), Armour, Cheffins, and Skeel (2002), and Baird and Rasmussen (2002).

² In fact, each of the four European countries cited above have refurbished or added new reorganization codes within the last seven years (see Table 1).

³ For example, see World Bank Working Group on Rehabilitation (1999), and European Commission (2003).

bankrupt in Sweden over the 2000 to 2002 period, only 0.7 percent of the firms emerged under their new company reorganization code (*Företags-rekonstruktion*). Likewise, only 0.4 percent of bankrupt German firms filed for protection under the reorganization section of the new German Insolvency Act (*Insolvenzordnung*).

The goal of this paper is to shed some light on these issues by suggesting a conceptual framework for thinking about bankruptcy law. As a starting point, we argue that the main role of corporate bankruptcy is to mitigate bargaining frictions in financial distress. We identify five roles for bankruptcy law in improving ex post bargaining efficiency: (1) verify assets and liabilities, (2) improve coordination among claimholders, (3) protect third-party claimants, (4) maintain asset value during bargaining, and (5) alleviate the impact of liquidity constraints among claimants and potential acquirers. In improving ex post efficiency, however, bankruptcy law will also affect the bargaining power of the claimants, which may have unintended consequences on ex ante efficiency.

We apply this framework to a comparison of the bankruptcy systems in six different countries: France, Germany, Japan, Sweden, the United Kingdom, and the United States. Virtually every bankruptcy system around the world can be described as a variant of one of these six systems, thus our results are likely to be applicable generally. We find that, with the exception of the protection of third-party claimants, the U.S. Chapter 11 system seems to go the farthest in addressing ex post bargaining frictions. While all the other countries have reorganization chapters of their own, which are similar to -- and often modeled after -- Chapter 11, the non-U.S. chapters lack important key features.

These weaknesses, in turn, appear to have discouraged the use of reorganization codes in these countries. We argue that when firms do reorganize in these countries, they do so under traditional “liquidation” (or cash auction) chapters. At the same time, the U.S. Chapter 11 bankruptcy procedures of today are geared towards the auctioning off of assets when it pays to do so. Hence, debtor-oriented reorganizations, sales of the assets as a going-concern, or piecemeal liquidations can be obtained under either type of code. In fact, going-concern survival rates in countries dominated by a reorganization code can look very similar to the survival rates in countries that mostly use a liquidation code. The disadvantage from reorganizing under the liquidation code, however, is that these codes typically lack provisions for maintaining asset value and alleviating liquidity constraints during bankruptcy, potentially leading to a forced bankruptcy resolution and inefficient allocation of assets.

We then address the complicated issue of ex ante efficiency. Theoretically, an ex post inefficient bankruptcy code need not necessarily be inefficient ex ante. For example, a costly bankruptcy code may provide efficient incentives for firms to avoid financial distress in the first place. We argue that ex ante efficiency can be best understood by looking at the resolution of financial distress in a setting where private bargaining works well, such as venture capital (VC) financings. VC financings involve a small number of informed, sophisticated, and value-maximizing investors, and are therefore able to avoid many of the bargaining frictions that bankruptcy law are aimed at mitigating. Venture capitalist (VC) financial contracts share many of the characteristics of a typical debt contract. Yet VC contracts typically manage to opt out of bankruptcy law, relying instead on provisions in the ex ante contract to resolve financial distress. Although there

are limitations to the VC financing analogy, the VC contract provisions offer guidance on the features that an optimal bankruptcy mechanism should incorporate.

We report preliminary evidence suggesting that venture capital reorganizations share many key features with reorganizations in U.S. Chapter 11, such as deviations from absolute priority and debtor-in-possession financing. One notable difference is that less power is given to equity-holders and other junior claimants in VC financings. Since recent evidence suggests that the real impact of the equity-holder bias in Chapter 11 is small, however, we argue that it is unlikely that the U.S. system has significant ex ante inefficiencies. Moreover, the similarities between Chapter 11 and private contracting outcomes are hardly a coincidence, given that Chapter 11 evolved from the “equity receiverships” that were created during the 19th century as a market response to U.S. railroad failures.

The rest of the paper proceeds as follows. Section 2 discusses the role of bankruptcy in a world of incomplete contracts. Section 3 applies this framework to an international comparison of bankruptcy laws. Section 4 addresses ex ante efficiency and argues that VC contracting can provide useful lessons about the construction of bankruptcy procedures. Section 5 contains some concluding remarks.

2. THE ROLE OF BANKRUPTCY IN A WORLD OF INCOMPLETE CONTRACTING

2.1. Financial distress and incomplete contracts

Financial distress occurs when a firm is not able to meet its debt obligations, or foresees that it will not be able to do so in the near future. If financial distress persists

and leads to the firm defaulting on its obligations, a debt contract gives the lender certain control rights, such as seizing collateral, suing for repayment, or forcing the firm into bankruptcy. These rights need not necessarily be exercised, however, but serve as a starting point for a renegotiation between creditors and the owners of the firm (and possibly also including other stakeholders such as employees). Financial distress can be resolved outside of bankruptcy, through a private renegotiation between stakeholders. Only if one or more of the stakeholders exercise the right to put the firm in bankruptcy will distress be resolved under the rules dictated by bankruptcy law.

Thanks to modern financial contracting theory, economists now have a good understanding of the economic role of financial distress.⁴ A key to understanding financial distress and bankruptcy law is the insight that any financial contracts are by nature incomplete. In a world of complete, frictionless contracting, there is no need for financial distress and bankruptcy. Instead, when an entrepreneur or owner-manager seeks financing from investors, a complete contract will be written. This contract will specify, for all possible future states of the world, how the cash flows of the project will be split, in which instances the firm should be sold or liquidated, and more generally, what actions need to be taken in controlling the firm. Because the state-contingent contract specifies when the firm should be liquidated or sold, and how much investors will be paid back and in what order, the contract already encompasses a perfect mechanism to deal with “financial distress.” Ex ante contracting will ensure that an economically optimal outcome will be achieved, and the only role for the legal system is to enforce the written contracts.

⁴ See Hart (2001).

Obviously, such complete contracts are impossible to write and enforce in reality. Many relevant states of the world are impossible to foresee in advance. The possible state-space is too rich to be formulated in a written contract of finite length. Over the last fifteen years, theorists have thought extensively about what optimal financial contracts might look like when contracts are incomplete.⁵

A key feature of the optimal incomplete contract is to allocate control rights between managers and investors in an efficient manner. Control rights are important because they determine which party has the right to decide on the actions of the firm, such as whether operations should be continued or shut down, or whether management should be replaced. One of the robust findings from the incomplete contracting literature is that the optimal contract often will call for control staying with the manager in the good states of the world, while in the bad state control rights will be transferred to investors.⁶ In other words, this literature can explain why the optimal contract looks like a debt contract, where control of the firm's assets is transferred to creditors if the firm fails to meet its contracted payments. Such control transfer mechanisms are not only seen in debt contracts, however, but also in the preferred equity contracts used in venture capital financings.⁷

A second feature of these types of models is that the outcome of financial distress cannot be specified in contracts *ex ante*, but will be a result of renegotiation between the manager of the firm and its claimholders. The possible outcomes that can be attained are thus limited to the ones that are consistent with renegotiation. The incomplete contracting literature thus provides a meaningful framework to think about financial

⁵ Hart (1995, 2001) provide overviews.

⁶ See, for example, Aghion and Bolton (1992), Dewatripont and Tirole (1994), and Hart and Moore (1998).

⁷ See Kaplan and Strömberg (2003).

distress, namely, as the renegotiation between claimholders and managers (or the firm's original owners) that occurs once control has been transferred to the claimholders.

2.2. The role of bankruptcy in improving on free contracting

The goal for an optimal financial distress resolution mechanism, and an optimal contract design more generally, is to get as close as possible to a socially efficient outcome. There are two separate, but related, notions of efficiency. *Ex post efficiency* refers to ensuring that the assets of a distressed firm are optimally allocated to their highest-valued use. An ex post efficient resolution of financial distress is one that ensures a value-maximizing decision with respect to whether a company should be reorganized, sold, or liquidated. *Ex ante efficiency*, on the other hand, goes back to the point when the firm was first started or financed. An ex ante efficient contract or mechanism is one that ensures that as many socially valuable projects as possible (and as few wasteful ones) get funded.

From an optimal contracting framework, it is not obvious why bankruptcy law is needed in the first place. For example, in the simple incomplete contracting settings of Aghion and Bolton (1992) and Hart and Moore (1994), there is no obvious place for bankruptcy law. In order to play an economic role, bankruptcy law has to improve on the outcome that would obtain by simply letting investors and entrepreneurs contract freely. As these papers show, even in an incomplete contracting world, a carefully designed contract, in combination with efficient renegotiation in the case of subsequent contracting disputes, will go a long way towards achieving an ex ante optimal outcome. When evaluating bankruptcy law, we therefore need to identify the ways in which it makes

contracting and renegotiation more efficient. Moreover, we need to identify the effects bankruptcy law will have both on ex post and on ex ante efficiency.

The policy discussion around bankruptcy law is typically preoccupied with ex post efficiency, and sees the aim of bankruptcy law to make sure that viable firms are not inefficiently liquidated. Theoretically, the Coase theorem has shown us that as long as property rights are well defined and there are no frictions to bargaining, private negotiations between the parties will ensure an ex-post efficient outcome. For example, take a situation where control has been transferred to creditors following a default, and the creditors have an incentive to liquidate the assets even though the firm is worth more as a going concern. In this case, the shareholders should be able to persuade the creditors to refrain from liquidation by offering them a side payment (or a fraction of the reorganized firm) equal to whatever the creditors would get in the liquidation, plus part of the going-concern surplus. Similarly, in the case when the debtor is still in control of the firm, and has an incentive to inefficiently continue a firm that should really be liquidated, the creditors should be able to make the managers shut down the operations by offering a large enough monetary incentive.⁸

In a less ideal world, however, bargaining may not be frictionless. Bankruptcy law can therefore improve on ex post efficiency by facilitating bargaining in a world with frictions. Below we will identify a number of bankruptcy mechanisms that could potentially achieve this purpose.

Bankruptcy law could also have important implications for ex ante efficiency. Although often ignored in the policy debate, such implications are very important

⁸ In a similar fashion, Haugen and Senbet (1978) argue that bankruptcy costs cannot be important for capital structure choice if parties can negotiate out of court.

economically since they affect the ability to set up and finance firms in the first place. Too much emphasis on improving ex post efficiency may even be harmful, since ex ante and ex post efficiency sometimes can conflict with each other. While ex post efficiency is about maximizing the value of assets in financial distress, it is not affected by the way this value is split between claimants. This split of value between claimants, however, is central for the incentives of these claimants from the time the contracts are written, and can have important effects on ex ante efficiency. For example, one could argue that by writing down creditors' claims in favor of shareholders, bankruptcy increases ex post efficiency to the extent it allows viable firms to be reorganized.⁹ But debt write-downs could make credit more expensive ex ante when the firm tries to obtain financing, leading to credit constraints and positive net present value projects not getting financed.¹⁰

It even may be optimal to sacrifice some of the ex post value in order to improve ex ante incentives. A general result in contract theory is that the ability to pre-commit to an ex post inefficient outcome will be at least weakly better for ex ante contracts. For example, in order to incentivize entrepreneurs to avoid financial distress, it may be beneficial to make financial distress costly for entrepreneurs by liquidating some viable firms in bankruptcy.

To summarize, in order to understand the effect of bankruptcy law on efficiency, we need to identify what the frictions are that prevent efficient bargaining from taking place, and to what extent the bargaining outcome can be distorted in order to improve ex ante incentives.

⁹Although, as we will emphasize later, we believe this view of reorganizations is rather too simplistic.

¹⁰ Alternatively, Berkovitch, Israel, and Zender (1998) have argued that deviating from absolute priority in favor of managers (who are the sole equityholders in their model) is good for ex ante efficiency, since it encourages investment in firm-specific human capital.

2.2.1. The verification role of bankruptcy

One important impediment to bargaining is asymmetric and incomplete information.¹¹ If one of the parties is uninformed about the true value of the assets and the informed party cannot credibly convey this information, the bargaining outcome may be inefficient. Even worse, it may not be clear to the parties exactly what claims are outstanding on the firm.

Bankruptcy laws can play an important *verification role* by examining what assets belong to the bankruptcy estate and what claims are outstanding, thus reducing some of the informational asymmetries between the bargaining parties. In the costly state-verification models of Townsend (1979), Gale and Hellwig (1984), and others, bankruptcy is basically a policy for auditing the firm to figure out the value of its assets. Since auditing is costly, the optimal mechanism will try to economize on auditing as much as possible. As a result, such auditing happens when the firm fails to make its contracted payments, i.e. bankruptcy only occurs in connection with a default. As we will show, most bankruptcy codes involve some aspects of auditing and verification of assets and liabilities.

2.2.2. The role of bankruptcy in reducing coordination problems

Bargaining will also become more complex when there are more than two parties involved in negotiations, and *coordination problems* between claimants can impede an efficient outcome. Legal scholars, such as Jackson (1986), have argued that the main rationale for bankruptcy is to mitigate creditor coordination problems. A typical firm will

¹¹ See Ausubel, Cramton, and Deneckere (2002).

have claims outstanding to several creditors, each of whom may have their claim secured by specific collateral. In the absence of bankruptcy law, such a situation may lead to a creditor “run” on the distressed firm to be the first to seize available collateral, analogous to the bank-run behavior in Diamond and Dybvig (1980). It may be rational for any one creditor to try to seize available collateral early, thereby forcing a piecemeal liquidation, even though collectively creditors would have received a higher payoff had the company been preserved as a going concern.¹² Bankruptcy law can play a role in preventing such runs, for example, by imposing an automatic stay on the firm’s assets once it has entered bankruptcy.

Another coordination problem that has been identified in the academic literature is the hold out problem. Take a situation where the firm needs to write down the amount of debt in order to be reorganized but the debt is owed to a large number of individually small, dispersed, creditors. A typical example could be a firm with public debt outstanding to numerous different bondholders, or trade credit owed to a large number of small suppliers. Rather than forgiving some of its claim, each small creditor has an incentive to hold out in the hope that the other creditors write down their claim instead. This can lead to a Nash equilibrium in which no one forgives its debt. As Gertner and Scharfstein (1991) show, bankruptcy law can reduce hold-out problems in several ways, for example, through voting rules which do not require unanimity in order to approve a reorganization plan, or by giving the bankruptcy judge the ability to “cram down” a reorganization proposal on unwilling creditors.

¹² See Von Thadden, Berglöf, and Roland (2003) for a theoretical model of creditor runs as a rationale for bankruptcy law. Their model also shows why the firm will choose to borrow from several creditors, despite the possibility for runs and coordination inefficiencies.

2.2.3. The role of bankruptcy for protecting third party stakeholders

Related to coordination failures is the problem of third-party, “involuntary” claimholders. A firm will typically have many stakeholders that do not hold explicit financial claims on the firm, such as current employees who depend on the firm for their salary, previous employees who may depend on the firm for their pensions, tax authorities who may have unpaid taxes owed to them, and society at large who may be affected by the firm’s actions through effects on the environment. A negative externality can be created by the fact that these non-financial stakeholders are not present at the bargaining table with the debtor and creditors. Bankruptcy policymakers, particularly in Europe, have identified protection of third party stakeholders as an important task of bankruptcy law.¹³ Bankruptcy law can include provisions to mitigate these externalities in different ways, e.g. by assigning a court-appointed official to participate in the bargaining, by representing the rights of third parties, or through government guarantees of employee and pension claims.

2.2.4 The role of bankruptcy for maintaining asset value during bargaining

Another set of important bargaining frictions are the transaction costs associated with negotiations. Negotiations can take considerable time, and many of the cost linked to negotiation increase with time, such as lawyers’ fees, administrative expenses, and the opportunity costs of time and organizational resources that the parties could have put to

¹³ This is evident from the recent European Union report on bankruptcy reform, *Bankruptcy and a Fresh Start: Stigma on Failure and Legal Consequences of Bankruptcy* (http://europa.eu.int/comm/enterprise/entrepreneurship/support_measures/failure_bankruptcy/index.htm)

an alternative use. Such costs are often referred to in the literature as *direct bankruptcy costs*.

More important than these direct costs are *indirect bankruptcy costs*, defined to be the losses that occur from running the operations while the firm is financially distressed. One reason that preserving asset value in financial distress is difficult is the unwillingness of investors to provide new financing to a firm with a large debt overhang, as first demonstrated by Myers (1977). The resulting liquidity constraints will lead to under-investment in new projects and assets (Myers (1977)); difficulties in preserving relationships with employees, suppliers, and customers (Titman (1984)); and an inability to respond strategically to the actions of competitors (Bolton and Scharfstein (1996)). Also, to the extent that control of important firm decisions are transferred from managers to creditors who do not have the same expertise in running the firm (or whose interference diverts management's attention), operations will be run inefficiently and value will be lost. On the other hand, leaving too much control to incumbent management in financial distress may lead to the firm to "gamble for resurrection" by taking sub-optimally risky actions or by continuing operations too long (Jensen and Meckling (1976)).

Bankruptcy rules can potentially affect the size of both direct and indirect costs of financial distress. Direct costs can be lowered by forcing the parties to come to an agreement within a limited period of time. Bankruptcy law can reduce indirect costs from liquidity constraints by facilitating the ability of firms to raise new financing. Also, bankruptcy law can give the managers more or less discretion to run the firm without interference from creditors or courts.

2.2.5. The effects of liquidity constraints on bargaining

One reason why frictionless bargaining will result in ex post efficiency is that the parties can use side payments to bribe the party in control to take the efficient action. For this reason, bargaining will not necessarily work efficiently if shareholders, creditors, or other interested parties face liquidity constraints.¹⁴ To the extent that bankruptcy law can alleviate the negative effects of these constraints, ex post efficiency can be enhanced.

Shleifer and Vishny (1992) use a liquidity argument to propose that reorganizations can be superior to auctions for reorganizing distressed firms. In their model, financial distress is correlated between firms, because the distress is the result of an industry downturn or a macro shock. As a result, when a firm is in financial distress, the potential bidders for the firm's assets are likely to face financial difficulties themselves. As a result, auctioning off the assets in distress is not likely to realize a very high value, and assets may not end up going to the highest value user.

The bankruptcy code can alleviate liquidity problems in a couple of ways. First, a firm operating under bankruptcy protection for some time could be allowed to postpone asset sales until liquidity in the market has improved. Second, by permitting bidders for the firm's assets to offer financial claims rather than cash, and by making it easier for a bankrupt firm to issue public securities (e.g. with less stringent registration requirements), liquidity constraints can possibly be relaxed.¹⁵

¹⁴ For example, the driving force behind Aghion and Bolton's (1992) result of state-contingent control being optimal relies on the fact the entrepreneur is more liquidity constrained than the investor. To get ex post efficiency, you want to leave as much control as possible to the entrepreneur, since the investor can bribe the entrepreneur into taking the efficient action, but not the other way around.

¹⁵ The bankruptcy reform proposal of Aghion, Hart, and Moore (1992) emphasizes the need to allow non-cash bids in bankruptcy auctions. Also, see Hart (1995) for an overview of these arguments.

3. A COMPARISON OF INTERNATIONAL BANKRUPTCY LAWS

Now that we have described the different roles that bankruptcy law can play in affecting the ex post efficiency of financial distress resolution, we turn to examining how these roles differ across the bankruptcy systems of the United States, the United Kingdom, Japan, Germany, France, and Sweden. We are not the first to perform a comparative analysis of bankruptcy mechanisms. Apart from an extensive literature on Chapter 11, previous comparative analyses of bankruptcy law include White (1994), Rajan and Zingales (1995), Ravid and Sundgren (1995), Biais and Malecot (1996), Franks and Nyborg (1996), Franks, Nyborg and Torous (1996), Kaiser (1996), Berkovich and Israel (1997), Armour, Cheffins, and Skeel (2002), and Claessens and Klapper (2003). Our goal is not to provide an exhaustive review of each country's bankruptcy system. Rather, we aim to highlight those features, described above, that influence the cost of bargaining in financial distress.

3.1. Reorganization vs. Liquidation codes

In previous literature, cross-country comparisons of bankruptcy law have typically focused on the difference between reorganization-oriented and liquidation-oriented bankruptcy codes. Reorganization codes are built around the idea of giving the distressed firm a second chance. That is, the procedure is oriented towards restructuring creditor claims to provide some relief to the debtor, formalized in a reorganization plan, and allowing the existing company to continue to operations. Since the reorganization may take some time, the court may stay creditor attempts to collect on their debts and

approve additional financing for the operations. Liquidation codes are geared towards auctioning off the assets of the distressed firm -- either together as a going concern or piecemeal -- to a new set of owners and dispersing the proceeds from the sale to creditors in accordance their payoff priority. Chapters 11 and 7 of the U.S. Bankruptcy Code are examples of reorganization and liquidation procedures, respectively.

3.2. A taxonomy of bankruptcy laws

We now turn to the cross-country comparison, summarized in Table 1. The bankruptcy laws in our six countries are broadly representative of bankruptcy codes in virtually all countries around the world. Indeed, bankruptcy codes in most countries are copied from French, German, Scandinavian, UK, or US bankruptcy law, or from some combination of these laws.¹⁶

Table 1 creates a taxonomy of the different bankruptcy laws based on the roles of bankruptcy outlined in Section 2. As seen from the table, all six of the countries have codes that include both liquidation and reorganization chapters. Three of the six countries have undergone major bankruptcy reform in recent years, and France is currently (in 2003) in the middle of discussions of further reform.

3.2.1. Verification mechanisms

All bankruptcy laws have some rules regarding information disclosure and collection. Most codes require the debtor to submit information to the court at the time of filing, including lists of estate assets and claims, and sometimes financial statements. Some codes, such as Sweden's liquidation chapter, also require the trustee to collect data

¹⁶ We thank Simeon Djankov for pointing this out.

on the bankruptcy estate, including a preliminary valuation of its assets. Beyond the initial disclosure of financial information, U.S. law also subjects the debtor to examination by the committee of creditors, including the appointment of a special examiner, if warranted, to examine the financial status of the debtor. Moreover, all court filings, including financial information of the debtor and specific detail on the identity of claimholders., are part of the public record and therefore open to inspection by anybody wishing to obtain information on the debtor, creditors, or the progress of bankruptcy case.

3.2.2. Mechanisms for reducing coordination problems.

Bankruptcy law can address coordination problems in different ways. First, as many scholars have emphasized, the imposition of an automatic stay, in which a debtor is protected from creditor collection actions, is considered to play an important role in preventing collateral runs. Despite this, the degree of automatic stay differs significantly across countries. For example, Japan has particularly weak rules on stays, with little protection against secured creditors seizing their collateral. Without an automatic stay, secured creditors can effectively kill off any attempt to reorganize or sell the firm as a going concern by seizing collateral.

Second, voting rules are crucial to implementing reorganization plans when a minority of creditors might strategically oppose a plan. The U.S. Chapter 11 code has a particularly clever system to prevent hold-outs. First, only “impaired” classes – defined to be those claimants that would receive some payoff less than their face value but greater than zero in liquidation – get to vote. Those classes that would receive nothing or be fully paid back in the plan, are precluded from voting, and thus strategically holding out.

But creditors have to be offered a plan that at least covers their estimated payoff in case of liquidation. This is important, since it prevents the backers of the plan from simply overruling some classes of creditors by offering them a zero payout and locking them out from the voting. Second, only a majority of creditors in each class ($2/3$ in terms of value) have to approve the plan, rather than all of them. Third, the law gives some freedom in defining classes, so that creditors that are particularly important (or have particularly high bargaining power) can be offered a better deal. Finally, the bankruptcy judge has the power to cram down a reorganization plan on a dissenting class, at least as long as this class is deemed to do better under the plan than in a liquidation.

None of the other five systems offers the same ability to prevent hold-out problems in reorganizations to the extent of the U.S. system. Under the French code, debt write-downs require unanimous approval among creditors, although the judge can unilaterally impose a rescheduling of debt payments and extend maturity without creditor approval. In Sweden and Japan, secured debt cannot be written down without unanimous approval from secured creditors. Moreover, in Sweden, all unanimous consent is required from unsecured creditors if their recovery ratio is expected to be below 25%. Britain and Germany have rules that come very close to the U.S. ones, but with some notable exceptions. In Britain, the judge does not have the ability to cram down a plan. The new German reorganization code appears superficially to have more or less identical rules as the U.S. However, before even beginning the reorganization procedure creditors have to agree to continue operating the firm. If they do not agree, the firm immediately enters liquidation. Also, the German system has a strong bias against keeping existing

management in charge of the firm, which limits the possible reorganization plans that can be proposed.

To summarize, none of the systems surveyed seem to have as strong protection against coordination failures in their reorganization plans as U.S. Chapter 11.

3.2.3. Protection of 3rd party claimants, such as employees

All bankruptcy systems take some extra care in protecting employees, although the U.S. and Japan provide relatively weak protection by only offering some limited seniority. In the European countries, the government actually guarantees wage claims to the extent bankruptcy proceeds are not high enough to fully cover them (up to some maximum amount). Moreover, in Germany, France, and Sweden, the law explicitly states that the courts should take particular care to protect employment. France is the extreme case, where firm survival is stated as the primary goal of bankruptcy law.

3.2.4. Maintaining asset value during bargaining

The U.S. Chapter 11 stands out regarding its provisions aiming to ease the management of the firm's operations during negotiations. First, it gives the most autonomy to debtor management to continue running the firm without interference by a court official. Second, it provides the most access to senior financing in bankruptcy. Germany and Japan lack debtor-in-possession financing provisions altogether, and only the U.S. code allows for the possibility of super-priority financing over secured creditors. Some countries, like Sweden and France, also limit the time the company can operate in bankruptcy.

3.2.5. Rules affecting liquidity in the disposal of assets

An important role of reorganization procedures is to avoid inefficient asset sales when buyers are liquidity constrained. One way reorganization procedures do this is by postponing the sale of the firm until liquid buyers have emerged. For this reason, being able to run the firm's operations during reorganization without a major loss in asset value is important. As mentioned in the previous subsection, the U.S. Chapter 11 procedure seems to have the most flexibility in keeping the firm's operations alive in bankruptcy.

U.S. bankruptcy code facilitates the competitive sale of assets, even for firms that are protected under Chapter 11. Section 363 of the code allows the debtor in Chapter 11 to seek competitive bids for all or part of its assets as long as the sale does not impair the interests of the creditors. Oftentimes, the creditors themselves encourage the "363 sales." More recently, this provision of the U.S. bankruptcy code has created a vibrant and often competitive market in asset sales out of bankruptcy.

Another way in which reorganization can alleviate liquidity constraints is by allowing potential buyers of the firm's assets to offer securities rather than cash. In a reorganization, it is not only important to be able to write down debt claims, but also to be able to exchange these claims with new securities such as equity or warrants. U.S. Chapter 11 helps to facilitate non-cash bids, by for example, including rules that allow stakeholders to bypass some of the normal SEC registration requirements when issuing new securities in Chapter 11. This aspect have been largely ignored in many of the new reorganization procedures outside of the U.S.

The sales mechanism used in the bankruptcy procedures are also important in order to create a liquid market for distressed assets. A market-based sales procedure, which allocates the firm's assets to the highest bidder (to the extent that there is one), has the advantage of encouraging investors to participate in an auction in the first place. On the other hand, a procedure that allocates assets through judicial discretion or via a trustee may discourage external investors from bidding for the assets, since a bidder's ability to be rewarded for being the highest value user of the assets may be limited.

With the exception of France, the reorganization codes all involve a voting procedure, where claimholders can decide on whether to accept a "bid" (i.e. a reorganization plan). In France, however, implementing a reorganization plan is up to the discretion of the judge, and creditors cannot in principle affect the asset allocation decision.

The liquidation procedures, or "cash auction" procedures, in the different chapters generally delegate the sales decision to a trustee or judge. As a consequence, claimholders have no direct say in the asset allocation decision (although they may have a say indirectly, as we will return to below). The exception is the U.K. receivership and administrative receivership codes, where a receiver, appointed by senior creditors, is responsible for disposing of the assets. The administrative receivership code also allows for reorganizations rather than just cash bids. In the other codes, where a trustee or judge is responsible for selling the assets, trustees typically have a lot of discretion in disposing of the assets. Codes generally do not specify that a certain sales method (such as an auction) should be used, which may be troublesome if the trustee does not have clear, value-maximizing incentives. To make this matter worse, some liquidation codes, such

as the Swedish code, has no element of incentive pay for the trustee, but will simply pay an hourly wage, independent of proceeds realized.

3.3. Evidence on the use of bankruptcy laws.

The previous analysis suggests that compared to Chapter 11, the non-U.S. reorganization codes generally has less power to coordinate creditors, has less ability to manage assets in negotiations, include fewer provisions aimed at enhancing liquidity, and give higher employee protection and more power to senior creditors. Have these differences affected the actual use of reorganization codes relative to liquidation codes?

One place to look to address this question is bankruptcy filing rates. The top row of Table 2 compares for the five countries the proportion of bankruptcy filings that start under the country's reorganization code relative the total number of firms filing for reorganization or liquidation. One caveat with these numbers is that they do not account for differences in overall bankruptcy filing rates between countries.¹⁷

The table shows that with the exception of France, reorganization filings are much more rare outside the U.S. than in the U.S. But the high French figures are misleading because under French law, *all* firms filing for bankruptcy have to file under the “Redressement Judiciaire” procedure; a debtor or creditor cannot directly file for liquidation. The only firms counted as filing for liquidation are those that are immediately liquidated by the judge at the beginning of the procedure, when the judge decides that there is no hope of reorganization. Excluding the French data, filing rates suggest that reorganization codes have been used much less frequently outside of the U.S.

¹⁷ See Claessens and Klapper (2002) for an analysis of cross-country variation in aggregate bankruptcy rates.

Under the row of filing rates in Table 2, we report successful reorganization completion rates, defined to be the proportion of total firms exiting bankruptcy (including firms that cease to exist after liquidation) that exit reorganization under current management. In general, these rates are difficult to calculate because good data are spotty or lacking for most countries. Therefore, most of the completion rates that we report are estimates, and should be interpreted with care.

For the U.S. completion rate, we provide a range from 4 percent to 20 percent of total exits. The estimate of 4 percent is based on the study of U.S. Chapter 11 cases by Flynn (1986). Using data from the Administrative Office of the U.S. Courts over the period 1979 to 1986, Flynn finds that only 17 percent of firms filing for Chapter 11 emerge as a going-concern under the same management. But the Flynn averages may be comparatively low for two reasons. First, Flynn documents an upward trend in confirmation rates over his period. To the extent that this trend continued, confirmation rates could be expected to be higher today. Second, the Flynn sample, comprising all Chapter 11 filings, is dominated by small firms, which are probably less likely to be successfully reorganized than large firms.

The estimate for the upper end, 20 percent, is based on Lynn Lopucki's sample of large (assets of at least \$100 million), publicly trade firms filing over the period 1990 to 2002.¹⁸ Lopucki's sample implies that 77 percent of firms entering Chapter 11 during this period were confirmed as a going-concern. But estimates based on the Lopucki sample are biased upwards because the sample is so heavily weighted toward the largest firms in the U.S economy. Moreover, even for large firms, the Lopucki estimates

¹⁸ The Lopucki sample represents one of the most complete and detailed samples of Chapter 11 filings and has been used extensively, especially in the legal bankruptcy literature. See, for example, Lopucki and Whitford (1990) and Lopucki and Eisenberg (1999).

probably overstate the rate at which firms emerge as a going-concern with current management. Baird and Rasmussen (2002, 2003) argue that many of the Chapter 11 cases coded as “confirmed” in the Lopucki sample were actually sold in Chapter 11, either as a going concern or in pieces.

France appears to have a relatively high completion rate. However, this statistic suffers from two empirical problems. First, this statistic likely excludes small firms, which, as mentioned above, have much lower completion rates. Second, given that French bankruptcy law has the explicit goal of maintaining a firm’s survival for the benefit of third party claimants, it is not clear whether the survival rate in France is indicative of the rate at which companies are successfully reorganized.

It may be that the statistics simply are too heterogenous and speculative to really allow meaningful analysis. Still, we think there are a few conclusions that can be drawn from the filing data. For instance, even though many non-U.S. reorganization codes are modeled after Chapter 11, all of them have important differences. These differences seem to be important deterrents to the use of the codes. Ignoring the French statistics, which are hard to interpret, the U.K. system comes closest to the U.S.

3.4. Reorganization, liquidation and firm survival.

Despite data problems, the previous section suggests that firms are not frequently successfully reorganized in many non-U.S. reorganization codes. Is this finding economically important? Does this mean that firms are less likely to survive financial distress in Germany, Sweden, or the U.K., resulting in excess liquidations and ex post inefficiencies? The answer is no. So far we have only considered firms that survive in the

form of corporate reorganizations. But this does not mean that the rest of the firms are liquidated, despite the fact that many of them end up filing for “liquidation bankruptcy.”

Studies of liquidation codes outside of the U.S. show that going concern sales are common. Available estimates of the fraction of liquidations ending up as going concern include 76% for Sweden (Strömberg and Thorburn (1996)), 47% for the U.K. (Kaiser (1996); receivership and administrative receivership only), and 30% for Finland (Sundgren (1995)), using somewhat different methodologies and sampling criteria. Informal discussions with German bankruptcy practitioners suggest that this is a common outcome in Germany as well.¹⁹

Moreover, successful Chapter 11-type outcomes can be implemented within a liquidation code. Strömberg (2000) studies bankruptcy resolution in the Swedish liquidation code using a sample of 205 bankruptcies of closely held corporations.²⁰ In his sample, about two thirds of the going-concern sales were actually made back to the previous owner-manager, with the asset purchase typically financed by an existing senior creditor, the firm’s old bank. In other words, a large number of liquidation bankruptcies really end up looking like reorganizations, where current management is allowed to continue running the firm, and the senior creditor rolls over its debt into the new reorganized firm. The results also indicate that such sale-backs are more likely when the market for the firm’s assets is less liquid. Hence, a formal reorganization code is not necessary to avoid inefficient liquidations when markets are illiquid. Again, such sale-backs to current managers are not unique for Sweden. Kaiser (1996) reports that 54% of

¹⁹ Personal communication with Arne Wittig.

²⁰ Also, see Thorburn (2000) for a related study.

administrative receiverships end up in whole or partial going concern sales back to current management.²¹

Why do firms end up being reorganized under the liquidation chapter, despite the fact that these countries have formal reorganization codes? There are a few possible reasons for this. In a liquidation code, reorganizations can be arranged in a private negotiation between senior creditors and the debtor, without major interference from courts and other claimants. Although outside of the U.K., the asset sale is undertaken by a court-appointed trustee rather than a creditor-appointed receiver, the trustees are typically not involved except in expediting the formalities of the sale. Unsecured creditors, such as trade creditors and tax authorities, can be left out of negotiations, and their debt being written down effectively. The resolution is also fast, with sale-backs on average occurring less than two months after filing (median is about one month).

So, what is the advantage of having formal reorganization codes such as Chapter 11, if firms can equally well be reorganized in a liquidation procedure? One important drawback to liquidation codes is the lack of transparency in the system, in combination with a lack of mechanisms that facilitate running the firm as a going concern in bankruptcy. Strömberg (2000) shows that secured creditors implement sale-backs too often, at the expense of junior creditors. This problem results from the risk of a loss of

²¹ One potential caveat in interpreting these numbers is that they ignore the reorganizations that take place “in the shadow of bankruptcy,” i.e. private workouts. Unfortunately, systematic data on private workouts is hard to come by, especially for private companies, and only a few studies are available. In the studies of 169 distressed U.S. publicly traded firms in Gilson, John and Lang (1990), half of the companies restructure successfully outside of Chapter 11, and Asquith, Gertner, and Scharfstein (1994) get a similar estimate in their sample of 76 distressed U.S. junk bond issuers. In Franks and Sussman’s (2003) study of small and medium-sized bank-financed U.K. companies in distress, private workout rates are around 65% (see Table 1 of their paper, excluding ongoing cases), and Brunner and Krahn (2001) estimate workout rates just below 70% for their sample of medium-sized German firms in distress (again, excluding ongoing cases). Still, these estimates are hard to evaluate, given the fact that there is no unambiguous definition of financial distress, and different studies use different criteria. Given this, and the lack of data from the other economies in our sample, it is hard to draw any cross-country conclusions from this.

going-concern value if the sale was postponed in order to find alternative bidders. Since this risk is asymmetrically born by senior creditors, they will be biased towards a fast sale to existing management rather than searching for outside bidders. A related reason why banks may prefer rolling over their debt in a sale-back is to be able to avoid booking a credit loss on the loan. By financing a sale-back at a price at least equal to the existing bank-loan, the bank is able to “evergreen” the loan and avoid a write-down.²²

This discussion suggests two important differences between a formal reorganization code and manager sale-backs under liquidation codes. First, a formal reorganization code contains provisions such as debtor-in-possession financing, allowing the firm to keep operating longer in bankruptcy. This might decrease the costs of delaying the bankruptcy resolution, which will facilitate the ability of gathering alternative bidders to participate in the auction. Hence, liquidity is enhanced, increasing ex post efficiency. Second, in a cash auction, the negotiations between the claimants take place outside of the realms of the bankruptcy law, which leaves some parties, such as the junior creditors, without much power to affect the bankruptcy outcome. In a formal reorganization code, the bargaining of junior claimants can be increased through formal voting power, which may have impact on ex ante efficiency, as we discuss below. One may also argue that the increased transparency from keeping negotiations in court will decrease the likelihood of inefficient self-dealing and exploitation of unsecured creditors.

In the same way as firms can reorganize under a liquidation code, formal reorganization procedures can also act as effective liquidation (i.e. auction) mechanisms. As mentioned above, assets can sold off in Chapter 11 by invoking section 363 of the U.S. bankruptcy code. Under current practices in U.S. Chapter 11 filings, debtors often

²² See Smith (2003) for evidence on the evergreening behavior of Japanese banks.

first seek a “stalking-horse” bidder to commit to purchase firm assets as part of a reorganization plan. Often, the stalking-horse bidder is an existing claimant, or an investor who has recently purchased claims on the distressed firm. The stalking horse bid, which can be arranged in advance of filing, sets a floor on bids that can be entertained under an auction eventually run by the bankruptcy judge. Often, these sales are prepared for in advance of the Chapter 11 filing through prepackaged arrangements (commonly referred to as “prepacks”) between the debtor and creditors, or as part of debtor-in-possession (DIP) financing agreements (Lease, McConnell, and Tashjian (1996); Skeel (2003)). For these cases, Chapter 11 becomes an explicit mechanism for facilitating the transfer of control of assets to a high-valued bidder. According to Baird and Rasmussen (2003), more than half of large, publicly-traded firms currently entering Chapter 11 involve 363 assets sales that result in a transfer of control of the company.²³

Auctions in Chapter 11 can provide another advantage not typically available in sales through a liquidation code by allowing bidders to bid with securities. That is, bidders can offer existing stakeholders claims in the reorganized firm or in their own firm, as well as cash. Offering securities provides at least two benefits. First, it allows bidders who are liquidity constrained to compete without seeking other sources of financing. Thus, it increases the flexibility of the bidding process. Second, providing certain classes of existing stakeholders (e.g., managers or other informed shareholders) with a claim in the future value of the ongoing concern could provide incentives for these stakeholders to contribute to improving the value of the reorganized firm.

²³ Chapter 11 appears to be the home for even the more traditional “piecemeal” liquidations of companies with little or no going-concern value. For instance, the recent liquidations of Enron, Worldcom, and Global Crossing all occurred through Chapter 11, rather than Chapter 7 of the U.S. bankruptcy code.

4. BANKRUPTCY LAW AND EX ANTE EFFICIENCY

4.1. Bargaining power and ex ante efficiency

In the previous section we analyzed the way different bankruptcy systems affect the ex post efficiency of financial distress resolution. The specific bankruptcy rules primarily aimed at affecting the ex post asset allocation decision will also have ex ante effects, however. In particular, these rules will change the bargaining power among claimants. For example, voting rules requiring unanimity or a weak automatic stay will tilt bargaining power in the direction of creditors. Leaving the debtor in possession of the assets will likely tilt bargaining power in the other direction. Hence, given the previous discussion, many codes, such as the U.K., Sweden, and Japan end up giving more bargaining power to secured creditors, compared to the U.S. code. In addition, U.S. Chapter 11 is the only code giving managers an exclusivity period to propose a reorganization plan. France is a special case, as is recognized in earlier literature (see Biais and Malecot (1996)). The French system gives considerable bargaining power to courts, presumably tilting power towards third parties such as the government and employees. Everything else equal, changing bargaining power leads to a higher payoff to the party with increased bargaining power at the expense of the party with decreased bargaining power.

Whether tilting bargaining power to debtors, creditors, or third parties is good from an ex ante perspective is a difficult question to answer, however. Increasing the bargaining power of equity at the expense of creditors can lead to an increased cost of capital due to higher interest rates ex ante. Increasing the expected payouts to equity and management may also have adverse ex ante incentive effects, in that the disciplining role

of debt is weakened. On the other hand, tilting the bargaining power towards the managers or original owners decrease their incentives to go for broke, and may be beneficial for management's incentive to invest in firm-specific human capital.²⁴

More generally, allowing renegotiation may lead to deviations from absolute priority, which makes it harder to write enforceable contracts, which can lead to increased financing and agency costs ex ante. On the other hand, allowing for renegotiation and deviations from absolute priority may be necessary to ensure ex post efficient bargaining and avoid inefficient asset allocation. Since both arguments are theoretically valid, it is difficult to evaluate this trade-off without turning to data.

We argue that ex ante efficiency can be best understood by looking at the resolution of financial distress in a setting where private bargaining works well. Presumably, if there are no impediments to efficient ex post bargaining, parties will be able to resolve financial distress without relying on bankruptcy law. The parties can do equally well, and possibly better, by designing and including a distress resolution mechanism in their ex ante contracts. If such a setting exists, then it is likely to be as close as we can hope to get to ex ante efficiency.²⁵ Hence, to maximize ex ante efficiency, a bankruptcy system should try to achieve outcomes that are as close as possible to the way financial distress would have been resolved in this private setting. The problem is to find such a setting empirically.

4.2. Bankruptcy law and private workouts

²⁴ See White (1989), Berkovich et al (1997), and, more recently, Bebchuk (2003).

²⁵ The one caveat to this argument is the extent to which bankruptcy law serves as a precommitment device for the contracting parties not to renegotiate contracts. Given the extent to which renegotiation occurs even in very "creditor-friendly" codes, we do not think that bankruptcy law is very effective in preventing renegotiations from occurring.

One possibility is to investigate the features of credit contracts that facilitate private workouts. There is nothing that prevents a borrower and its creditors from resolving financial distress privately and private workouts are common in many countries. However, examining the distress-related features of debt contracts is problematic because these contracts are constructed in the “shadow” of bankruptcy law. That is, even though debtors and creditors can try to restructure out-of-court rather than file for bankruptcy, the outcome will be heavily influenced by the ability to file for bankruptcy if the private negotiations break down. For instance, if a certain claimant expects to get a large payoff in court, and she has the ability to file and put the firm in bankruptcy, she would not accept a lower payoff out-of-court. In the United States out-of-court restructurings tend not to look all that different from Chapter 11 reorganizations (Franks and Torous (1994)). Moreover, it is increasingly common to combine out-of-court and in-court restructuring, through so pre-packs in which the parties have already negotiated a reorganization plan by the time the firm enters Chapter 11. Hence, the efficiency of bankruptcy law also depends on the effect it has on out-of-court bargaining. This makes any empirical evaluation of the efficiency of bankruptcy law extremely difficult, since systematic data on out-of-court renegotiations are very hard to come by.²⁶

To find a setting where private contracting and bargaining works well without bankruptcy law, we will have to look further than private workouts in the shadow of bankruptcy. We believe venture capital financings is one such setting.

4.3. Distressed renegotiations in Venture Capital

²⁶ There are a few exceptions, such as Franks and Sussman (2003), Franks and Torous (1994), Brunner and Krahn (2001), and Brown, Ciochetti, and Riddiough (2003).

As Baird and Rasmussen (2001, 2002) point out, looking at venture capitalist (VC) financing of start-up firms can teach us something about what optimal bankruptcy law should look like. Venture capital is a setting where contracting parties have largely managed to opt out of bankruptcy law. Instead, the financial distress procedures used in default are a result of the ex ante contracts written when the firm was first financed. Despite the recent tech crash, the VC industry has been very successful over the last decades. VCs have strong incentives to maximize value, but, at the same time, receive few or no private benefits of control. Hence, we would expect them to write contracts and formulate procedures in order to maximize ex ante efficiency.²⁷

VCs hold preferred equity securities rather than debt securities, and as a result, a default or insolvency does not give the firm (or any of its claimants) the right to file for bankruptcy. Still, as Kaplan and Strömberg (2003) show, these contracts share many important features of debt contracts.²⁸ Through their preferred claim, VCs are senior in liquidation to common equity-holders (which typically consist of founders and managers). Although entrepreneurs keep control of the venture as long as performance is satisfactory, control switches to VCs upon bad performance. An important difference from debt is the trigger of a change in control is typically not the default on a contracted payment. Rather, contracts often state that control is transferred to VCs when there is failure to meet some performance milestone, be it a financial measure such as a profit threshold, or a non-financial measure, such as obtaining a patent or winning approval of a product from a regulatory agency. Moreover,, staged financing, in which the VC initially

²⁷ See Kaplan and Strömberg (2001) for a more detailed argument.

²⁸ Also, see Sahlman (1990) and Gompers (1998) for empirical analyses of venture capital contracts. Kaplan, Martel, and Strömberg (2003a) present evidence suggesting that the U.S.-styled VC contracts are optimal across different legal regimes.

only provides limited financing so that a subsequent refinancing will be needed, gives the ability for VCs to effectively take control in the bad state of the world by threatening to deny further capital to the firm, or by demanding a majority of both cash flow and control rights after the new financing round.²⁹ Such financings are frequently referred to as “down rounds”.

So what are the characteristics of the VC financial distress mechanism? Although aggregate statistics are difficult to come by, down rounds, as well as VC liquidations and reorganizations have been increasingly common in the last few years, following the “tech crash” of the early 2000s. The discussion below relies on new evidence gathered from these events by Kaplan and Strömberg (2003, 2004), Kaplan, Martel, and Strömberg (2003), as well as work-in-progress by Kaplan, Lerner, and Strömberg (2004).

First, not surprisingly, we observe some ventures being shut down and liquidated, others being acquired or merged, and many being restructured and recapitalized, sometimes replacing management in the process.

Second, VCs (i.e. “creditors”) are in control of the process. The VCs typically have effective board and voting control, and have most of the bargaining power in negotiations. As mentioned above, managers cannot file for bankruptcy “protection”, they derive bargaining power only insofar as they have unique skills needed to run the business. Hence, if the creditors/VCs decide that it is in their best interest to sell or liquidate the firm rather than have it reorganized, it will be sold or liquidated.

Third, renegotiations of existing contracts are common in connection with new rounds. Often, existing VC investors waive some of their contractual rights, such as

²⁹ See Gompers (1996).

liquidation preference, anti-dilution rights, and performance ratchets, in order to persuade new VCs to invest in the venture.³⁰

Fourth, reorganizations always involve deviations from absolute priority. APR is violated in two ways. One is that management typically receive a fraction of the equity of the reorganized company, although all of the value should have gone to the senior claimants (i.e. the VCs) had the assets been sold or liquidated. The reason for this is simply that if the firm is to continue operating, managers need to be incentivized to put in effort.³¹ The other is that VCs who do not participate in the new financing get diluted in favor of VCs who choose to put in new money in the firm. This happens despite the fact that VC contracts have anti-dilution clauses, which in good states of the world insure existing VCs by providing them with free shares in the event of new capital injections. When a firm is financially distressed, existing VCs often waive their anti-dilution rights in order to persuade new VCs to invest. Moreover, it is not uncommon to see so-called “pay to play” provisions in VC contracts, which explicitly state that the investor loses her anti-dilution rights if she fails to participate with a pro rata share in a subsequent financing round. In the last few years, so called “wash-out” rounds have become increasingly common, where the dilution of existing investors and shareholders is extreme, and the company ends up being more or less wholly owned by those VCs putting in new funds, and existing management (Gove, 1999).

Fifth, although VCs have substantial control during the procedure, they typically do not personally manage the day-to-day business during distress (Kaplan and Strömberg (2004)). The management team, which can be the original founder, but often is new

³⁰ See Kaplan and Strömberg (2003), and Henig (2002).

³¹ This incentive reason for deviating from absolute priority has been pointed out by Baird and Rasmussen (2001) and Ayotte (2002).

management that the VC has put in place, is given considerable autonomy over the daily operations.

Sixth, it is common that ventures obtain some limited financing during negotiations, in order to keep it in operations until the financial distress is resolved. This is typically done through so called “bridge loans,” that are provided by one or more of the existing VC investors. These loans are structured in such a way that if the venture subsequently obtains new financing, the loan converts into preferred equity securities at the same terms as this new financing round. If instead the venture is unsuccessful in getting a new round of financing, the bridge loan has seniority over all other existing securities, effectively giving the bridge financiers “super-priority” on the venture’s assets.

The analysis of VC contracts suggests that features such as management control of assets during bargaining, deviations from absolute priority, and super-priority financings are consistent with ex ante efficiency. To understand the limits of the VC analogy, however, we need to understand why it is that VCs are able to “privatize” bankruptcy. In the earlier section, we went through a number of reasons why private contracting may not be enough and bankruptcy law may be needed to enhance efficiency. It turns out that in the VC context, several of these reasons are not valid:

- (1) VCs are unusually well informed investors, with considerable industry knowledge; they put major effort into screening and monitoring their investments. VCs are likely to have as good information as the entrepreneur about whether a particular business is economically viable or not. Hence, problems of asymmetric information are likely to be much lower than in a typical debtor-creditor relationship, and there will be less need for the verification role of bankruptcy.

- (2) Although VC investments are often syndicated, the claims structure is not very dispersed (at least in early-stage financings). Moreover, VCs within a syndicate hold very similar claims that do not differ significantly in their rights or seniority. VCs also tend to syndicate with the same investors, and syndication networks are stable. Finally, VC securities are never secured with specific collateral. All of these factors decrease coordination and hold-out problems significantly. Moreover, contractual features such as “pay-to-play” provisions are frequently included in VC contracts in order to increase coordination.
- (3) Start-up firms are typically smaller, and most key employees are also shareholders in the firm, which decreases the need for 3rd party protection.
- (4) Since VCs also share in the upside if the venture is successful, they have a large incentive to make sure that asset value is preserved during negotiations. Also, VCs have particular skills in overseeing and replacing management of start-up firms.³²
- (5) Liquidity constraints may be less important in the VC setting, although this may be more questionable given the booms and busts that the VC market has experienced.
- (6) Finally, as mentioned earlier, given the visible success of VC start-up financing in the U.S., it is likely that private contracting in this market has evolved to become largely efficient. Hence, it seems unlikely that imposing rules that would restrict the contracting environment, or change the bargaining power between claimants, could increase ex ante efficiency.

Still, the VC resolution of financial distress shares surprisingly many important features with a formal bankruptcy code such as the U.S. Chapter 11. Firms end up being both sold, liquidated, and restructured. Existing management often runs the firm during

³² See Hellman and Puri (2002).

bargaining and will often receive a stake in the ongoing firm. Restructuring typically involves deviations from absolute priority. Firms receive senior DIP financing in order to keep operating during negotiations. The major difference, however, is that the bargaining power is firmly in the hand of the creditors, and the debtor is given no extra protection, rights, or first-mover advantages beyond that accorded to him by his creditors.

4.4 19th Century U.S. Equity Receiverships

The similarity between Chapter 11 and the private VC distress resolution may not be a coincidence, but may reflect instead Chapter 11's origins in private contracting. In particular, U.S. bankruptcy law has its roots in the Equity Receiverships of the late 19th century.

Prior to 1898, the United States had no formal corporate bankruptcy law.³³ Defaulting borrowers were subject to debt collection laws, which allowed creditors to call for foreclosure on a mortgaged property or seek appointment of a receiver to manage a debtor's assets. But beyond the existing debt collection laws, debtors and creditors had to rely on out-of-court solutions for resolving corporate distress.

Private restructurings required a new level of ingenuity with the creation of the large railroad corporations of the 19th century. These corporations were financed through public bond issuances underwritten by investment banks and secured with the assets of the railroad. Oftentimes a security interest consisted of segments of the track being laid.

³³ Although bankruptcy laws were passed in 1800, 1841, and 1867, each of these laws were quickly repealed. See Skeel (2001), p. 27. Much of the analysis from this section comes from the excellent history of U.S. bankruptcy provided in Skeel (2001).

Beginning in the mid 1850s, competition between railroad companies and overcapacity within the industry lead to a series of railroad failures. At the outset of these failures, it became apparent that individual foreclosures on secured property would result in small recoveries; owners of one segment of track would be hard pressed to find a valuable use for their piece of track beyond its worth as scrap metal. At the same time, coordinated settlements required getting agreement from dispersed bondholders across potentially different classes of bonds.³⁴

From this dilemma grew the idea of an “equity receivership.” The equity receivership worked as follows. Upon a default, creditors would call on a court, acting in the common-law tradition of an “equitable authority,” to appoint a receiver to oversee the continuation of the property. The receiver had the legal right to stay payments and prevent foreclosures, thus keeping any single creditor from interfering by trying to collect on his debt. Meanwhile, the investment banks that underwrote the bonds would form bondholders’ committees for each class of bond outstanding. Shareholders could similarly form a shareholder committee. Investors turned their bonds (or shares) over to the committee members, giving the committee the authority to bargain on behalf of all claimants within a given class. During these proceedings, the railroad company would continue operations. To finance the company’s operations, suppliers were given “receivership certificates” that guaranteed repayment priority over all other claimants. Once a restructuring plan had been agreed upon, the assets of the company would be transferred to a shell corporation, at which time, new securities or cash would be dispensed to the claimants. Junior claimants agreeing to

³⁴Bondholders were also dispersed across a wide set of countries, as much of the railroad lending came from foreign capital.

provide the new company with fresh cash were guaranteed priority over claimants that kicked in nothing.

The 19th century equity receiverships share features in common with the VC restructurings seen today. Like a VC workout, the capital structure of a firm exiting receivership favored those investors willing to invest new cash into the firm. And like a VC workout, receiverships provided a mechanism for providing super-senior priority to those that financed the firm in the process of bargaining.

But receiverships were set up to deal with large corporations that had complex and dispersed capital structures. As a result -- and in contrast to the VC restructurings -- bondholders chose to delegate the decision-making by giving their votes to investment banks. This mitigated information asymmetries because control of the process was delegated to those investors with the best information about the distressed firm. Coordination problems were also reduced because bargaining was left to a smaller group of investors. Coordination was further improved by the establishment of bondholder committees, in which representatives from each bank could address specific issues related to bargaining. Moreover, receiverships developed a tool for preventing lone creditors from holding out for more money. Courts set “upset prices” at which creditors would be compensated if they did not participate in a negotiated settlement. These prices were set low enough to discourage creditors from bowing out of the bargaining process.

Again, the fact that many of the central features of Chapter 11 were introduced as a result of private contracting between investors and firms speaks in favor of this system not being too far from ex ante optimality. Similar to VC renegotiations,

however, one important difference between the equity receiverships and Chapter 11 is the absence of rules biasing bargaining power in favor of equityholders and management (for example, the exclusivity period accorded to debtor management for proposing a reorganization plan). As documented in Skeel (2001), such rules were subsequently introduced by bankruptcy lawmakers, often in response to lobbying from different interest groups.

4.5 Inefficiencies in Chapter 11.

The previous analysis suggests that if market participants were to design their own bankruptcy law, it would probably look very similar to the U.S. Chapter 11 code. The important exception is the deference U.S. Chapter 11 gives to debtor managers. Indeed, it is the feature of Chapter 11 most widely criticized by academics. A number of theoretical papers have shown that this bias can lead to inefficiencies, such as excessive deviations from absolute priority in favor of equity, excessive risk-taking and too many firms being continued under current management.³⁵ Although theoretically compelling, it is unclear how important they are in practice. Most empirical evidence on inefficiencies of this sort in Chapter 11 refers to individual cases, most infamously the bankruptcy of Eastern Airlines.³⁶ Other evidence pointing towards inefficiencies is harder to interpret. For example, although Hotchkiss' (1995) finds that firms emerging from Chapter 11 underperform relative to their industry benchmark, it is still not clear that creditors would have been better off if the firm had been liquidated. In contrast, in a detailed analysis of highly levered firms entering

³⁵ See, for example, Bergman and Callen (1991), White (1989, 1996), and Gertner and Scharfstein (1991).

³⁶ See Weiss and Wruck (1998).

financial distress, Andrade and Kaplan (1998) find no systematic evidence of overinvestment or related costs. Rather, they conclude that the highly leveraged transactions that preceded financial distress were overall value increasing even for firms that eventually ended up in bankruptcy. Moreover, the recent studies by Baird and Rasmussen (2003) and Skeel (2003) suggest that Chapter 11 today exhibit very little equity or management bias, and that creditors have learned to undo such biases through private contracting, for example, within the initial debtor-in-possession credit agreements. Hence, our opinion is that the theoretical arguments of a harmful management bias in Chapter 11 are not very important in practice.

Another important criticism of reorganization codes such as Chapter 11 has to do with its possible negative impact on industry competition. If a financially distressed firm is given the ability to continue to operate under bankruptcy protection with the aid of super-priority financing, this may give the distressed firm an unfair advantage over its industry competitors. For example, it has been claimed that airlines and telecom companies operating under Chapter 11 have used predatory pricing strategies to hurt competitors. The little empirical evidence that exists, such as Borenstein and Rose (1995), does not find much evidence of such behavior, however. Although more empirical work may be needed in this area, we believe that this is not a major source of concern.

5. CONCLUDING DISCUSSION

We view bankruptcy as a mechanism for facilitating the efficient renegotiation of contracts that are incomplete. The bargaining that takes place when a default occurs on a

debt contract involves deciding who should manage the assets of the defaulted firm and how claims on future cash flows from these assets should be distributed. This bargaining should work to maximize the ex-post value of the assets without greatly distorting their ex-ante value. Our analysis suggests that the features of a well-functioning bankruptcy can be categorized into two groups, (1) those that ensure the going-concern value of the firm during the procedure, and (2) those that maximize the potential for bidders to compete for the reorganization of the firm.

A well-functioning bankruptcy procedure should first ensure that the going-concern value of a distressed firm's assets be maintained during the bargaining process. Simply put, mechanisms should be in place to minimize the direct and indirect costs of bankruptcy. Tradition holds that bankruptcy costs are best reduced by encouraging a speedy resolution to the process, since these costs can increase with time.³⁷ However, speed can actually work against a well-functioning procedure if claimants require time to assess the value of the assets and claims, allow for negotiations, search for potential bidders, and generally increase the liquidity of the bidding process.

Actions can be taken to minimize bankruptcy costs while allowing for sufficient time in the process. For example, as noted by Jackson (1986), an automatic stay on creditor collection efforts prevents creditors from taking piece-meal actions, such as instituting foreclosure procedures on individual assets that could endanger the going-concern value of the firm. Moreover, super-senior financing allows the bankrupt firm to continue operations during the bargaining process. Such financing is facilitated by legal mechanisms that allow for new creditors to obtain priority liens over and above existing claimants. Finally, creditors can be allowed to appoint a management team to run the

³⁷ For example, see Jensen (1991) and Thorburn (2000).

firm during the bargaining process. This team would neither exclude, nor necessarily include, existing management, but would choose managers based on their ability to maintain going-concern value.

A well-functioning bankruptcy procedure should also seek to maximize the potential for bidders to compete for reorganizing the firm. This can be accomplished by creating an environment that attracts investors and provides maximum financial flexibility to potential bidders, including among the existing set of claimants. Efforts to maximize bidder participation include promoting verification and disclosure procedures that allow potential bidders to scrutinize the value of the bankrupt firm, permitting securities to be used as a medium-of-exchange in asset auctions, allowing for claimholders to “jump” when they place competitive bids for the firm, providing additional incentives for current claimants to enter the bidding process, encouraging the trading of distressed debt claims in secondary markets, and maximizing the ability for existing claimholders, including junior claimants to make bids.

5.2 Application to Developing and Distressed Economies

Although we draw on the bankruptcy systems of developed countries to conduct our analysis, there is good reason to believe that the lessons learned could apply to developing countries as well. For instance, the characteristics discussed above do not require large or especially sophisticated legal procedures, nor do they require a large administrative unit, organization of trustees, or set of insolvency professionals. Many of the features need not even be adopted as law or formally worked out in a court. Instead, they can be used as guidelines or “norms” in private restructurings. For example, nearly

all of the points related to maximizing the potential for bidders to compete involve removing restrictions or regulations, rather than adding them.

Undoubtedly, our suggestions would work best when backed by a strong legal system. For instance, instituting an automatic stay or granting new first-priority liens on assets might require codified exceptions to general creditor collection laws that normally forbid such behavior. The exceptions would have to be enforceable during the bankruptcy period to prevent creditor runs or to head-off costly and long legal disagreements. Yet it is also important that creditor-collection laws be duly enforced outside of bankruptcy in order to ensure, for example, that new liens be honored and that ex-ante incentives are properly aligned in the first place.³⁸ Because developing countries often lack good legal systems, these suggestions may seem impractical.

But substitutes to a strong legal system do exist and could be utilized in countries with weaker legal systems. Stays on collecting payments and agreements for super-priority financing can come privately from the creditors involved in the proceeding. Indeed, the “London Approach” to private workouts advocates both a voluntary stay and the creation of super-priority for interim financiers. The London Approach has been applied in developing countries, with some success.³⁹ Indeed, all that might be required is an “equitable authority” that referees the bargaining process much like the judges of 19th

³⁸ Enforcement of creditor-collection laws can be problematic even in countries with developed legal systems. For instance, banks in Japan are often reluctant to seize assets backing loans that have gone bad. The existence of multiple lien-holders, laws protecting debtors, and threats from organized crime syndicates all work to make seizure unlikely. For example, see Kunii and Oba (1996).

³⁹ The “London Approach” to private debt restructurings is a set of principles created in the 1970s by the Bank of England to encourage private workouts in the U.K. More recently, the London Approach has been applied to workouts in East Asian countries following the financial crisis of 1997. Like our work, the London approach recommends a stay of creditor collections and the institution of super-priority financing. In addition, it provides guidance on creditor voting (suggesting agreements should be unanimous) and payoff priorities (suggesting pro-rata loss-sharing). The London Approach is geared to reorganizing a firm under existing management and therefore makes no recommendations on attracting bidders to the firm. For further insight into the London Approach and its success, see Kent (1997), Meyerman (2000), and Armour and Deakin (2001).

America. Moreover, corporations headquartered in countries with weak legal systems but with operations in countries with stronger legal systems, can opt to file for bankruptcy under the strong systems' laws. For instance, Avianca, Colombia's national airline, filed for bankruptcy protection in the U.S. under Chapter 11 in March 2003. According to Avianca's bankruptcy counsel, the company filed in the U.S. because "there was a serious question whether Avianca would be able to get protection from their creditors by filing in Colombia."⁴⁰ Thus, companies can use the shadow of a strong legal nation's bankruptcy system to propel negotiations forward.

Holding the quality of the legal system constant, our suggested features are well-suited for countries facing systemic financial distress. Experts argue that countries facing systemic financial problems are exposed to risks of capital flight, lack of liquidity, debt overhang, and sharp declines in asset prices or asset "fire sales."⁴¹ These risks often stem from a perceived nervousness on the part of investors (often foreign) that they need to "get out" or "call their loan" before circumstances worsen. Our proposals are meant to work against these tendencies by inducing creditors to step back from moving to quickly against the firm, by making available interim financing to the firm to prevent disruptions during bargaining, and by maximizing the flexibility with which creditors can choose management, and ultimately by helping to create liquidity at a time when liquidity is at its tightest.⁴²

⁴⁰ See Hobday (2003), p. 1.

⁴¹ See, for example, Kindelberger (1978) and, more recently, Stiglitz (2001).

⁴² Miller and Stiglitz (1999) argue for a different framework than ours for dealing with bankrupt firms in markets facing systemic financial problems. They propose what they term a "Super Chapter 11," whereby government authorities force creditors to write down debt claims on distressed firms en masse, conditional on some macroeconomic event occurring, such as a large devaluation. Beyond the fact that their proposal bears no relation to actual Chapter 11 proceedings, their suggestions suffer from several problems. First, such a proposal invites gaming by debtors that can – possibly through coordinated action – influence the macroeconomic "tripwires" in a way that transfers wealth from creditors to debtors. Even if no gaming

occurs, debtors' incentives could be distorted by the knowledge of an upcoming writedown. Thus, the ex ante costs imposed by such a system could be large. Third, it is unclear how such a system would be implemented in open economies since, to our knowledge, no precedent exists for the forced repricing of private contracts by government decree.

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