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I. Introduction

In academic circles, there are now a myriad of proposals for reform of Chapter 11 of the U.S. bankruptcy law.[1] Many of these proposals call for the replacement of Chapter 11 with market-oriented alternatives, including in some cases, auctions of insolvent, publicly held companies. Auctions in bankruptcy initially drew strong support from leading bankruptcy scholars.[2] Recently though, other scholars have been critical of the case for auctions in bankruptcy.[3] Our main purpose in this paper is to argue that these criticisms are both unwarranted and somewhat off the point. They are unwarranted for two reasons: First, auctions have proved themselves through centuries of active use as an efficient means of transferring control of assets—and transferring control of assets is surely one of the major sources of value creation/preservation through bankruptcy.

Second, as we demonstrate below, a careful weighing of the theory and evidence indicates that auctions will not be more costly, on average, than Chapter 11 proceedings. These two points suggest a possible role for auctions in bankruptcy. But we argue

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[1]See, e.g., Adler (1993a, 1993b); Aghion et al. (1992); Baird (1986, 1993b); Bradley and Rosenzweig (1992); Bebchuk (1988); Easterbrook (1990); Jackson (1986, 1993); Johnston (1991); LoPucki (1993); LoPucki and Whitford (1993); Rasmussen (1992); Roe (1983); and Skeel (1993).

[2]See Baird (1986, 1993).

[3]See, e.g., Adams (1991); Easterbrook (1990); Gertner and Scharfstein (1991); LoPucki and Whitford (1993); Skeel (1993); and White (1989).

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that a focus on average benefits and costs of auctions versus average benefits and costs of Chapter 11 misses the point, for auctions will be the efficient choice in some cases and Chapter 11 reorganizations will be the efficient choice in others. This inherent heterogeneity in bankruptcy necessitates an overall bankruptcy process that is flexible, allowing for choice in resolution mechanisms that depends on the specific circumstances, i.e., the costs and benefits of the different mechanisms. Bankruptcy can serve several purposes, with two of the main ones being a change of management control and a revaluation of financial claims to the firm's value. It should not be surprising that to achieve these dual purposes, some flexibility is needed. We argue that existing Chapter 11 rules can effect this efficient flexibility by simply enforcing a procedure that is already part of the law.

The potential attraction of auctions in bankruptcy can be illustrated by examining three recent auctions of bankrupt companies. The first company, Financial News Network (FNN), filed Chapter 11 proceedings in 1991. Its managers promptly signed an agreement to sell the company for $90 million, an agreement that would usually be upheld in bankruptcy. Instead, the bankruptcy court ordered that the company be auctioned, and it was subsequently sold for $146 million—a $56 million gain to its creditors.

The second company, the Baltimore Orioles baseball team, was scheduled to be sold for $145 million when its owner filed for bankruptcy in April, 1993. Once again, most bankruptcy attorneys believed that this agreement would be undisturbed by the bankruptcy filing. Once again, the bankruptcy court ordered an auction. A little more than 3 months and 17 rounds of bidding later, the Orioles were sold for $173 million, the highest price ever paid for a sports franchise.

The third company, Eastern Airlines, illustrates the flip side of the coin, that is, the potential danger of not auctioning a bankrupt company. In Eastern's Chapter 11 proceeding, the company lost a billion dollars as its managers and trustee attempted to reorganize it. As a result, many of its creditors received nothing. If the company had been promptly auctioned, its creditors would have received millions more.[4]

Given the potential benefits of auctioning bankrupt companies in many cases, why are its critics so vocal? The most outspoken opponent of auctions[5] questions the efficiency of auctions in bankruptcy for two reasons. First, he argues that if auctions were more efficient than the existing bankruptcy law, then creditors would have demanded that they be adopted by contract. Second, Easterbrook (1990) claims that the direct costs of auctions exceed those of Chapter 11.[6] Other scholars have pointed to several thorny issues that would have to be resolved if auctions were implemented, including: How would auctions affect management's decision to file for Chapter 11; what mechanism would trigger the commencement of an auction; what rules should be used if an auction is held; should the auction be oral or sealed bid; what should the reserve price policy be; and, if the most efficient party to initiate an auction is the residual claimant, who are the real residual claimants at any point in time?[7] Finally,

[4]See Table 4 in Weiss (1993); and Baird (1993), p. 633. For several other examples where auctions benefited creditors, see Markell (1991), p. 110, note 244.

[5]See Easterbrook (1990).

[6]Baird (1993), pp. 10–11. Apparently accepting the latter argument, Baird states that ". . . it is hard to support the case for mandatory auctions on the basis of the direct costs of bankruptcy . . ."

[7]See, e.g., LoPucki and Whitford (1993) who maintain that an auction regime will decrease bankruptcy filings because managers believe that they will be replaced after a sale occurs; and Easterbrook (1990) who declares that

some of the recent research concerning the most important group of auctions of insolvent companies, the Resolution Trust Company's (RTC) auctions of failed savings and loan associations, suggests that the prices received in these auctions may not have reached their expected levels.[8] We will deal with all of these issues below. For now, though, we note that although the issues are important, they reinforce our basic point. Auctions are costly, indeed sometimes very costly, but this is precisely why it would be inefficient to force them in all cases (and why it would be inefficient for creditors to write auction procedures into debt contracts when the circumstances of a possible bankruptcy in the future are unknown).

What about the efficiency of the current Chapter 11 reorganization process? Many authors have documented the costs and problems associated with Chapter 11.[9] These include: (1) the direct costs of bankruptcy, including legal and administrative expenditures involved in filing and litigating a Chapter 11 petition; and (2) the indirect costs of bankruptcy, such as the diverse opportunity costs associated with lost sales and declines in the value of inventory, inefficient decision making before the firm's actual filing for bankruptcy, increased costs of credit, and violations of creditors' priorities in payouts. On the other hand, Easterbrook (1990), Baird (1993b), and Adler (1993b) point out that a Chapter 11 reorganization solves questions on claims valuation as well as asset valuation, illustrating how the negotiations involved with a Chapter 11 reorganization may be reflective of a fairly efficient process.

Other important benefits are created by the current reorganization system. Chapter 11 gives the various parties to the bankruptcy negotiating power so that disputes over fundamental issues such as valuation can be settled. Indeed, some commentators have stated that "the whole structure of Chapter 11 is designed to ensure that parties bargain with one another and that there is not a full-blown valuation."[10] Furthermore, some of the perceived "problems" of Chapter 11 have, upon further research, turned out to be overstated. For instance, research is now appearing that explains why the "absolute priority rule" is often violated, with the common theme being the ability of equityholders to threaten creditors with further losses unless concessions are made.[11]

In short, there are good and bad aspects to both auctions and the traditional Chapter 11 bankruptcy process. Taking this line of reasoning one further step, auctions will be the efficient procedure for certain circumstances, and traditional Chapter 11 will be the efficient choice in other circumstances. An overall efficient bankruptcy process would reflect this conclusion by combining aspects of a negotiated procedure with those of an auction.

In this paper we argue for a bankruptcy process that does exactly that. Our proposal is for bankruptcy courts to adhere rigidly to a Chapter 11 process that is already permitted by existing bankruptcy law: On the filing of a Chapter 11, the debtor-in-possession gets 120 days to file a proposed plan of reorganization and another 60 days

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because residual claimants are the most efficient parties to trigger an auction, it is difficult to determine who the residual claimants are.

[8]Two recent studies of the RTC's sales of failed savings and loan associations reach opposite conclusions on this point. Compare James and Wier (1987) who find positive wealth transfers to acquirors of these banks, with Gilibierto and Varaiya (1989) who find that bidders overpay for these companies. James and Wier's results may stem from the auction procedure used by the RTC in conducting its auctions. They found that these procedures stifled competition [James and Wier (1987), p. 142–144].

[9]We review the evidence on the costs of Chapter 11 bankruptcy proceedings below. See pp. 7–10, 17–18 infra.

[10]See Baird and Jackson (1985).

[11]See, e.g., Rasmussen (1992).

to get that plan accepted by all parties in interest. If acceptance (under existing voting rules) is not received at the end of this period, the bankruptcy court will initiate a liquidation auction, proceeds from which will be distributed to the company's claimants according to rules of seniority.[12]

We believe that our proposal has significant merit. First, it can be initiated with minimal changes in bankruptcy law, for existing law permits a court to force a Chapter 11 reorganization into a Chapter 7 liquidation if acceptance of a plan is not achieved within a reasonable time frame.[13] Second, our plan retains the possibility of a negotiated settlement, while also permitting an auction if settlement cannot be reached. We argue that the sequential nature of our proposal is likely to be efficient, because an auction should be avoided if it would be easy to negotiate a settlement or if an auction would be very costly. Discovery of the facts pertinent to these matters will take some time. Our proposal gives the parties a reasonable period of time to "discover" if they can easily reach agreement, while shifting the balance of power in the negotiations away from the debtor-in-possession (management). Although some companies will incur costs from a limited Chapter 11 process and an auction, we argue that such duplication will be small in magnitude and that it will be outweighed by the benefits. We really want to avoid: (a) forcing auctions when reorganization would be less expensive; and (b) letting an extended reorganization process take place. Third, our proposal retains the possibility of a "soft landing" for management and, therefore, reduces the risk of management not filing for Chapter 11 out of fear for their jobs. At the same time, our proposal should reduce the incentives of managers to use bankruptcy opportunistically, because they will be unable to remain indefinitely in Chapter 11. Fourth, our proposal solves the substantial problems associated with who should have the right to force an auction. Most commentators believe this right should lie with the company's residual claimants, but the problem remains as to who is the residual claimant in a financially distressed company. Under our proposal, any class of creditors that would be impaired by the proposed reorganization plan would vote on the plan, knowing that if they reject it, the company will be auctioned. Our proposal, therefore, uses the plan proposed by the debtor-in-possession to define the company's residual claimants.

Before going into more analysis of auctions and Chapter 11, we would like to anticipate two immediate criticisms of our proposal: first, that recent changes to the Federal Bankruptcy code have already forced a shortening of Chapter 11; and second, that our focus on auctions versus Chapter 11 is misguided in that we exclude alternatives to both.

Concerning the first criticism, the 1994 amendments to the Federal Bankruptcy Code added new provisions to permit small businesses to opt in to new fast-track procedures[14]

[12]In a recent article, Triantis (1996) reviews Canadian bankruptcy procedures and notes that the Canadian system is much more likely than the U.S. system to force an early liquidation rather than allow an extended reorganization period. Triantis argues that the Canadian system offers advantages; we would generally agree. There are, however, certain aspects of the Canadian system that seem to contradict our analysis below. Foremost would be that uncertainty over a firm's value is likely to cause the Canadian system to force a liquidation—see Triantis' (p. 109) discussion of the Bargain Harold's Discount Ltd. case. We argue that in cases of high uncertainty, auction costs are relatively large, so negotiated reorganization is likely to be more efficient. Thus, whereas we agree that the Canadian system has some merit, it could be improved by considering the analysis we present below.

[13]For a discussion of the Chapter 11 changes necessary to permit the implementation of a mandatory auction regime, see Baird (1993), pp. 639–641.

[14]11 U.S.C. section 1121(e) (1994).

and to allow for the appeals of orders that extend the exclusivity period.[15] The first of these provisions states that if a debtor elects to be treated as a small business, then the exclusivity period is reduced from 180 days to 100 days.[16] In return, the debtor benefits by having its disclosure statement approved at the same time as its reorganization plan, thereby saving the cost of a second hearing.

In practice, small business debtors are reluctant to make this election because under the current system they routinely gain extensions of the exclusivity period[17] and gain little from having their plan approved simultaneously with their disclosure statement. Similarly, large publicly held companies in Chapter 11 are unlikely to opt in to any set of rules that cuts down on their control over the timing of the process. The provisions allowing the appeal of extensions of the exclusivity period are also of limited value because frequently it takes too long to get an appeal resolved for it to be practicable.[18]

In our view, the new bankruptcy code amendments do not go far enough. They are unavailable to large publicly held debtors, and, as noted above, they are opt-in provisions, which few debtors will elect to use. Furthermore, they do not address the problem of forum shopping under the current rules, where debtors that wish to delay the Chapter 11 process can seek a friendly judge.[19]

Next, we turn to the criticism that our proposal ignores alternatives to both auctions and Chapter 11. One particularly interesting class of such alternatives involves firms structuring themselves *ex ante* so as to obviate the need for any restructuring process upon default.[20] Our rationale for focusing on auctions and Chapter 11 is a pragmatic one: We believe that tremendous gains could be wrought with easily implementable changes to existing laws. All of the *ex ante* proposals would require significant changes to both bankruptcy and nonbankruptcy law. We quote Adler: "Because of these previously unrecognized but significant *non*bankruptcy impediments to an efficient insolvency process, prior scholarship on the insolvency process is misdirected in its assumption that amendment or repeal of bankruptcy law alone can solve the problem of expensive insolvency."[21] Adler goes on to list numerous aspects of the legal environment that make his "chameleon equity" proposal—and other such *ex ante* proposal—difficult, if not impossible, to implement.

Nothing about our proposal, however, necessarily precludes some firms from adopt-

[15]11 U.S.C. section 158(a) (1994).

[16]11 U.S.C. section 1121(e). This period may only be extended on a showing of circumstances beyond the debtor's control.

[17]Layden (1995) ("Critics have argued that the extensions of exclusivity that have become common under section 1121 have placed an undue burden on creditors.")

[18]Layden (1995): "It is unlikely that a creditor's ability to appeal an extension of exclusivity. . .will be of much use . . ." because appeal will be moot.

[19]Lopucki and Whitford (1991) have argued that Chapter 11 petitioners avoid filing their cases in venues that seemed hostile to extensions of exclusivity by forum shopping. They claim that under existing liberal venue rules, debtors can file a Chapter 11 proceeding in the jurisdiction of their choice. Petitioners choose jurisdictions where judges want to adjudicate high-profile bankruptcy cases and therefore to grant debtors liberal time extensions, among other things, to attract these filings. *Id.* Rasmussen and Thomas (1998) argue that firms should be required to precommit to which venue they would choose in the event of bankruptcy.

[20]See, e.g., Adler (1993b). We would note that with Adler's chameleon equity proposal, there could still be opportunity costs of not going through a change of control for a bankrupt firm. That is, although the Chameleon Equity proposal automatically eliminates a class of creditors on default and therefore (in most cases) creates a solvent entity, there is no similar automatic provision for a change of control, and hence in business strategy. The new residual claimant class might want to initiate a change of control; but to do so will require costs very similar to that of an auction.

[21]Adler (1993b), p. 333.

ing *ex ante* structures such as chameleon equity if the inhospitable legal environment could be overcome. Indeed, an extension of our argument would call for precisely that: some firms finding an *ex ante* structuring to be efficient, and others sticking with a traditional structure but with our flexible bankruptcy process.

We develop the case for our proposal of limited-time negotiation, with an auction as the fail-safe, below. In Section II, we re-visit the general case for auctions in bankruptcy. Our purpose in this section is to rebut Easterbrook's (1990) analysis that suggests auctions may be prohibitively costly and to argue that auctions should not generally be, on a direct-cost basis, more costly than Chapter 11. Section III compares the *ex post* indirect costs of auctions and of the current Chapter 11 reorganization process, whereas Section IV does the same for the *ex ante* costs of the two regimes.

Section V fills out the details of the practical implementation of our proposal, whereas Section VI concludes the paper with a brief summary and a discussion of unresolved issues.

II. The General Case for Auctions in Bankruptcy: The Costs and Benefits of Auctions Versus Chapter 11

The Benefits of Auctions Versus Chapter 11

Auctions have a well-deserved reputation as efficient mechanisms for simultaneously transferring ownership of an asset and determining the price at which the transfer will occur. In a bankruptcy proceeding, auctions of the insolvent company could be an efficient method for accomplishing the valuation of assets and the reallocation of control of assets that are at the heart of the current bankruptcy procedures. Rather than the "hypothetical sale" of assets in a Chapter 11 proceeding, an auction would value assets by a real sale.[22]

Why might auctions lead to greater value for all creditors? One reason is that auctions lead to a change in ownership of the company. This is likely to result in changes in corporate strategy and management, both of which could add significantly to asset value. In hostile takeovers, similar changes in ownership, strategy, and management occur, and the average premium paid to target-firm shareholders is on the order of 30%.[23]

This is a reasonable ballpark estimate for the increase in target shareholder value from a bankruptcy auction.[24] Although the firms "selected" for hostile takeover targets are obviously firms where the potential value increase is greatest, the same can be said for many firms "selected" to be bankrupt—they are (often) simply "good" firms with either a bad capital structure, bad management, or an incorrect corporate structure. If firms that are the subject of hostile takeovers are relatively poor performers, bankrupt firms are just one step further down that path. Such firms will benefit tremendously from a change in ownership, management, capital structure, and strategy.

Some bankrupt firms are hopelessly inefficient and should have their resources deployed elsewhere. Even here, an auction can be expected to yield a premium over current market value, because by hypothesis the firm's resources are worth more elsewhere. More important, by eliminating relatively quickly the inefficient firms that should not continue operating in the long run, auctions in bankruptcy reduce what

[22]See Baird (1986).

[23]See Jarrell et al. (1988).

[24]The premiums paid for FNN and the Baltimore Orioles support the reasonableness of this estimate.

White has called type-I error—the risk that economically inefficient firms will be kept open when they should be closed down.[25]

Are there corresponding benefits of Chapter 11? It has been claimed that Chapter 11 minimizes type-II error—the risk that economically efficient firms that are suffering financial distress will be liquidated piecemeal with the resulting loss of their going concern value.[26] Strong firms with weak capital structures are given ample opportunity, and strong leverage, to renegotiate their obligations with their creditors. Furthermore, Chapter 11 protects the positions of these firm's managements during the reorganization period, thereby encouraging an early filing decision and further reducing type-II error. Although Chapter 11 might avoid inefficient piecemeal liquidations, it is not at all clear that auctions necessarily promote piecemeal liquidations. If the auction is structured properly (see Section V below), it would be possible generally for the auctioneers to entertain bids for either the whole company or for portions of it. The market then would decide whether the company is worth more together or apart.

On the cost side of the equation, three types of costs must be examined to determine how auctions compare to Chapter 11: *ex post* direct costs; *ex post* indirect costs; and *ex ante* costs. By *ex ante* costs, we refer to behavior by management that takes place *before* a bankruptcy filing; *ex post* costs refer to costs incurred after the filing. The next section looks at the *ex post* direct costs of the two regimes.

Ex Post Direct Costs: Auctions Versus Chapter 11

As Jackson has noted, scholars have yet to examine carefully the costs of auctions in bankruptcy.[27] To estimate the *ex post* direct costs of the proposed system of auctioning bankrupt companies, we must first determine whether there is an existing analogous mechanism from which we can borrow suitable cost data. We believe that the best such estimates can be generated from the costs of auctions of solvent companies. Viable companies are auctioned frequently—from 1982 to 1991, there were over 20,000 sales of private companies or divisions of public companies. In these auctions, a standardized auction process is typically used, making it relatively easy to find the relevant cost data.

Investment banking fees for auctioning a company are generally set according to the so-called Lehman formula: 5% of the first million dollars of sales price; 4% of the second million; 3% of the third; 2% of the fourth; and 1% of the remaining.[28] For large companies, then, investment banking fees should be around 1% of sales price, and discounting for large deals is not uncommon.[29] For this fee, a selling company can have an investment banker conduct a complete auction, with the services provided including: valuations of the overall company and core assets; advice on selling the company piecemeal or in its entirety; review of relevant financial data and forecasts made to support a cash-flow valuation; initial selection of potential buyers; preparation of data to be sent to potential buyers; orchestration of due diligence visits by buyers; and final solicitation and evaluation of bids. These

[25]See White (1996).

[26]*Id.*

[27]Jackson (1993). Thorburn (1997) is the one exception. Her study uses Swedish data to show that mandatory cash auctions adhering to the absolute priority rule have similar (size-adjusted) direct costs as Chapter 11 reorganizations and are quicker. She concludes that cash auction bankruptcy is a speedy, low-cost procedure relative to Chapter 11.

[28]See Thomas and Hansen (1992).

[29]This procedure is not unlike that already employed for compensating outside officials in Chapter 7 liquidations. In Chapter 7, officials are paid a percentage of the value of the assets that they locate and sell.

are precisely the steps that would be needed in a bankruptcy auction, so the cost figure should be applicable to auctions in bankruptcy.[30]

Legal services are routinely required in auctions of solvent companies, especially if the auction is one of a public company prompted by a hostile takeover bid. Legal services would also obviously be required in a bankruptcy auction. A high estimate for legal fees even in contested takeovers would be 1% of corporate value (it is a stylized fact that lawyers are jealous of investment bankers' fees). Thus, a conservatively high estimate of total direct auction costs would be 2% of assets. This estimate is considerably below other scholars' estimates of direct bankruptcy costs as between 2.8% and 7.5% of total assets measured 1 year before filing.[31] We recognize that there are other costs associated with our proposed auction regime—for instance, any additional cost of operating the company during the 180-day reorganization period that we suggest. Nevertheless, this estimate strongly suggests that the direct costs of an auction regime are not significantly different from those of Chapter 11.

Easterbrook argues that these direct auction costs are much higher.[32] He estimates the costs of auctions in bankruptcy using data from initial public offerings (IPOs). He argues that these data are directly comparable in that both auctions and IPOs are mechanisms by which companies are valued. Easterbrook cites IPO costs averaging 14% of proceeds, and he cites Weiss's estimate of direct bankruptcy costs (Chapter 11 direct costs include only legal, administrative, and advisory costs) of 3% of assets. These values lead him to conclude that a judicial valuation of assets in Chapter 11 is, in fact, cheaper than an auction process and, therefore, preferable.

We disagree with Easterbrook on two grounds. First, as a matter of principle, cost is only half of the issue. Even if an auction were to cost 14% of asset value, if an auction by reallocating the assets created, say, a 30% increase in their value, then the auction clearly would be worthwhile. To extend Easterbrook's analogy, one might well ask why shareholders are willing to sacrifice 14% of gross proceeds of the sale of a significant portion of their companies' equity in an IPO? The answer must be that the IPO process yields benefits to the existing shareholders greater than the 14% cost, so that there is a net gain. The question that must be answered with respect to auctions is the same: On net, will auctions generate more value for the company's existing claimants than Chapter 11?

Our second criticism concerns Easterbrook's use of the IPO cost figures. If IPO data are going to be used to estimate auction costs for publicly traded companies (although, as we noted above, we think better estimates can be derived from auctions of solvent companies), certain adjustments must be made for these costs to be even remotely comparable to Weiss's bankruptcy cost estimates. As we shall see, the effect of making these adjustments is to reduce IPO costs to roughly the same level as bankruptcy costs.

We turn first to Ritter's IPO cost data that Easterbrook uses for his estimates.[33] Ritter (1987) reports the following costs for all the firm-commitment offers in his sample: underwriting discount, 8.7%; other expenses (legal, printing, auditing, etc.), 5.4%; and underpricing, 14.8%. Easterbrook adds the first two to arrive at his 14% figure. East-

[30]LoPucki and Whitford (1993), p. 765, note 308. Furthermore, as LoPucki and Whitford point out, ". . . much of the work that an investment banker would have to do in an auction is already done in Chapter 11, and it may be done by several sets of investment bankers rather than just one."

[31]See Weiss (1990); Warner, (1977); James Ang et al. (1982). See also, Lawless et al. (1994).

[32]See Easterbrook (1990).

[33]See Ritter (1987).

erbrook excludes the underpricing of 14.8% as a direct cost of IPOs (we return to this issue below).

Several adjustments need to be made to Easterbrook's calculations. First, the underwriting discount consists of two parts: the majority, about 60% on average, represents the "dealers' concession," which is the payment to securities dealers for actually distributing the new shares. The remainder goes to the (several) underwriters for their activities related to actually valuing the selling company (including the assumption of risk in a firm-commitment offering). The payment to underwriters, inasmuch as it covers the essential investigation/valuation tasks that also would be needed in a bankruptcy auction, is a cost that should be retained (although it is probably an overestimate, because the payment for risk bearing is specific to IPOs). The dealer's concession, though, is not relevant to an auction. The dealers' concession represents payment for finding many (possibly thousands) new potential investors and for providing these potential investors with information necessary in making an investment decision. Although such activity is a necessary part of any IPO, it will often not be a part of an auction, where only one final purchaser is required. It would be relevant to include the dealers' concession in a cost comparison only if we thought that every Chapter 11 auction would include the selling of shares in the bankrupt company to the broad public. If we eliminate the dealers' concession from the IPO data, the relevant number becomes 8.9% $[(0.4 \times 8.7) + 5.4]$.[34]

Furthermore, Ritter's IPO cost data are presented as percentages of gross proceeds from the IPO, whereas Easterbrook uses Weiss' bankruptcy cost data calculated as a percentage of the company's total assets. These percentages are not calculated on the same basis: In a typical IPO, only a small percentage of the total shares outstanding are offered for sale and the typical firm is not all equity financed. A direct comparison makes sense only if IPO costs increase *pari passu* as the dollar amount of the IPO approaches the total value of the firm.

This is clearly not the case. In valuing shares in an IPO, investors must implicitly value all of its outstanding shares and any debt it has outstanding. There should be little, if any, additional "valuation cost" if the IPO went from representing, say, 20% of total corporate value to 100%.[35] Other costs are also clearly fixed in regard to the size of the offer: legal and audit costs would be prime examples.[36]

Although we do not currently have precise data, Ritter has informed us that the average firm in his sample [Ritter (1987)] sold 30% of its shares in an IPO. He could not give any figures for debt, but stated that, as long as "reverse leveraged buyouts" are omitted from the sample, the typical firm undergoing an IPO has relatively little debt.

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[34]Another way to justify the exclusion of the dealers' concession is as follows. In a Chapter 11 negotiation, creditors will often be given new securities in exchange for their old claims. To the extent that the old creditors do not want to own these new securities (and this will often be the case), they will sell them, thereby incurring transaction costs. These transaction costs are not counted by Weiss (1990) in his study of direct bankruptcy costs. They are as much a cost of bankruptcy as is the dealers' concession in the IPO, which are the transaction costs of distributing new securities. Either both should be counted or both excluded; we opt for excluding both.

[35]Of course, a rational investor is likely to spend more resources evaluating a 100% investment in a company than a 20% stake in the same company. We doubt though that the 100% investment calls for five times as much investigation as the 20% share. Furthermore, in an IPO, the potential legal liability of investment bankers and accountants will push them to expend proportionately more resources on the sale of a 20% investment to the public than a rational investor might want them to.

[36]Legal costs may actually be lower under an auction system than in the IPO market if the judicial auctioneers have no liability in conducting the auction. Compare Alexander (1993), who discusses liability rules for IPOs, with Thomas and Hansen (1993), who discuss the liability of judicial auctioneers.

Using the 30% estimate, and conservatively assuming debt to be zero, the 8.9% cost as a percentage of gross proceeds is equivalent to 2.7% of total asset value. If one assumes that the valuation work done by an investment banker in the typical IPO is roughly what is done in a Chapter 11 proceeding, then 2.7% can be compared directly to other scholars' estimates (2.8–7.5% of assets) of Chapter 11 costs.

Thus, we believe that the IPO cost data show that the direct *ex post* costs of auctions in bankruptcy are roughly equivalent to the direct costs of Chapter 11. However, these figures are only roughly comparable, because an IPO involves activities that a Chapter 11 proceeding will not (Securities and Exchange Commission filing costs, for example), and a Chapter 11 proceeding involves activities that an IPO will not (valuing individual claims, for example). Nonetheless, these estimates support the general argument that an auction regime could be more efficient than Chapter 11 in some circumstances, as do our cost estimates taken from auctions of solvent companies.

III. The *Ex Post* Indirect Costs of Auctions and Chapter 11 Reorganizations

Having shown that the *ex post* direct costs of auctions in bankruptcy are comparable to those in Chapter 11, we turn next to the *ex post* indirect costs of the two regimes. Our analysis of indirect costs is necessarily more qualitative than with the direct costs because very little empirical work has been done yet. Instead, our focus is on identifying the indirect costs of the two regimes, quantifying those that we can, but striving to develop conclusions about the conditions under which each regime is likely to be more efficient.

Ex Post Indirect Costs of Auctions

The *ex post* indirect costs of an auction regime break out into two primary components: the effect of uncertainty on auction proceeds; and the problem of valuing the existing claims. Using auction theory, we look first at the impact of uncertainty on the price that bidders will pay at the auction. Next, we turn to the likelihood of costs arising out of the allocation of auction proceeds.

First ex-post indirect costs of auctions: The effect of uncertainty on auction proceeds. A fundamental result of auction theory is that any auction with a finite number of bidders does not yield a price equal to (in expected terms) either the highest of the bidders' valuations or the "true" value of the item being sold. This fundamental result has been ignored by some bankruptcy scholars,[37] yet it is critical in an analysis of the relative efficiency of auctions.

To understand the result and its implications, we begin by noting that there are two polar classes of models in auction theory, the "independent private values" model and the "common-value model." In independent private values models, bidders all know the value of the item being sold to them, but they do not know one another's values (and these values will generally be different). In common-value models, the item being sold will be worth the same to all bidders, but nobody knows what that common value is (and bidders will have different estimates). Auctions of bankrupt companies likely will combine aspects of *both models*, but we will focus on the effects flowing from common-value characteristics. The important point for our purposes is that in either model,

[37] See Baird (1993b), p. 648, who states that, "A firm in financial distress faces an uncertain future, but this fact alone does not mean the winning bidder will pay less than the firm's true value."

bidders' profits in the auction increase with the uncertainty over values, and there is a generally negative relation between bidders' profits and proceeds for the seller. Thus, the more uncertainty, the lower the seller's proceeds. We will now explore this in more detail for a common-value setting.[38]

In a common-value auction, bidders understand that all they have is an estimate of the true value of the company being sold. The estimate will surely be off by some amount, a great amount if the uncertainty surrounding the company is itself great. This uncertainty in the valuation process leads to two effects, both of which lead to lower bids. The first effect falls under what is called the "winner's curse." In common-value auctions, the winner will tend to be the one who most overestimated the value of the company—this by the very nature of an auction selecting as winner the person who bids the most. Rational bidders will, however, anticipate this winner's curse and adjust their valuations and bids downward so that, conditional upon winning, the expected value of the company is greater than the bid. The greater the uncertainty over the value of the company, the greater must be the downward adjustment, for it is likely that the winning bidder's valuation is far above true value.

The second effect of uncertainty is actually the more important one, because it implies that bidders will have positive profits from the auction, and that these profits have to come at the expense of the seller. (The winner's curse effect by itself implies that bids will be adjusted downward to eliminate losses, but not necessarily to create profits.) With each bidder having an imperfect estimate of value, any one bidder will know that, if he holds the highest value estimate, the second-highest estimate will be something less than his own—and again, significantly less if uncertainty is great.[39] Rational bidders will respond to this situation by submitting bids less than their (conditional upon winning) value estimate.[40] The extent to which optimal bids are "shaded" beneath value estimates depends again upon the degree of uncertainty: With great uncertainty, value estimates are likely to be far apart, and the degree of shading will be high.

With optimal bids being less than the conditional expected values of the bidders, the expected price in the auction will be less than the true expected value of the company being sold. This is the important implication of uncertainty in a common-value context: Bidders behave strategically, trading off a lower probability of winning for a higher profit conditional upon winning, thereby reducing proceeds to the seller.

So far, we have held the number of bidders fixed. Competition generally tends to erode profits, and it is natural to ask what the effect of increased competition (through the entry of more bidders) would do in this common-value auction context. Positive profits should be expected to attract more bidders and to eliminate the profits. As we

[38]The focus on common-value auctions does not contradict the idea of value enhancement from a change of control over the company's assets. Common-value auctions implicitly assume that the true value of the asset is greater for all of the bidders than for the seller, hence a sale of the asset is appropriate (common-value models are often used for oil lease sales, where the presumption is that private companies can extract the oil more efficiently than the government).

As stated above, we do not believe that the common-value assumption is entirely appropriate, for there are certainly some differences in values across bidders. However, the common-value assumption allows us to focus on what we believe to be critical, which is the general uncertainty over the state of the company.

[39]Recognizing the winner's-curse effect, the value estimates being referred to are expected values conditional upon winning.

[40]This assumes sealed bids. With oral bidding, the analogous effect is that the winning bidder only has to pay the second highest value estimate.

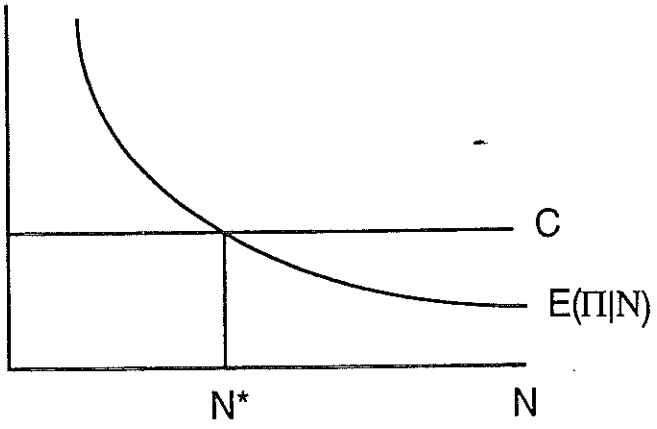

FIG. 1. Endogenous entry of bidders.

will see, however, this does not mean that the seller receives the true expected value of the company being sold.

To analyze this further, we will apply the model developed by French and McCormick.[41] In this model, bidders have to incur an information cost to enter the auction. This is a very realistic assumption in the context of bankruptcy auctions: To bid, potential buyers will review the bankrupt company, performing "due diligence" to ascertain as best they can the company's value.

Figure 1 illustrates the auction equilibrium with an endogenous entry of bidders. The straight line C represents information and costs, which we assume to be the same for all bidders.[42] The curve $E(\pi|N)$ shows the expected profit to a representative bidder before consideration of the cost C. This expected profit declines as N, the number of participating bidders, increases. If bidders are free to enter or exit the auction, then the number of participating bidders will tend to N^*, where $E(\pi|N) = C$. Any individual bidder's expected profit would be $1/N^*$ times the quantity $[E(v) - E(p)]$, where $E(v)$ is the true expected value of the company being sold and $E(p)$ is the expected auction price. Thus, we can write

$$E(\pi|N^*) = 1/N^*(E(v) - E(p)) = C \Rightarrow E(p) = E(v) - N^*C \qquad (1)$$

Equation (1) implies that competition via entry to the auction dissipates bidders' profits through the route of increased total expenditure on information costs. Indeed, the seller ends up bearing all bidders' information costs in that the expected auction price is the expected value reduced by N^*C.[43]

This result is important because it implies lower prices for the seller, but it must be noted that lower price is a reflection of real resources being expended on evaluation of the bankrupt company. This revenue cost—equal to N^*C, and referred to henceforth

[41]See French and McCormick (1984). For a critique of French and McCormick's model, see Goldberg (1994).

[42]If we allow bid preparation costs to vary, the C line would become upward sloping. That would not affect our basic results.

[43]Goldberg (1994), p. 13, disputes French and McCormick's conclusion that the seller bears *all* bid preparation costs. He does agree, however, that "sellers will indirectly bear at least some of the costs." We disagree with his conclusion that this mechanism will not count for much, at least for auctions of companies where the number of potential serious bidders is likely to be relatively small and the information costs in making a bid cannot be spread over a large number of transactions.

as the auction information cost—is a critical *ex post* indirect cost of an auction. To weigh the relative efficiency of an auction, this cost needs to be weighed against the indirect costs of Chapter 11 (which we discuss below).

Can we estimate the magnitude of the auction information cost? There are two sources that may give a ballpark estimate of the expected effect of uncertainty: data from the underpricing of IPOs; and the theoretical auction work by Reece.[44] We stress, however, that these comparisons give us at best the expected effect of uncertainty; the actual effect will be either higher or lower, depending upon the specific circumstances.

Ritter's data on IPO costs show an average underpricing cost of 14.8% of gross proceeds. This is an estimate for the effect that uncertainty will have on auction prices, in that accepted explanations for underpricing rely on reasoning very similar to that for the effect of uncertainty in auctions: Essentially, uncertainty over the value of the issuing firm requires underpricing to ensure uninformed investors that they will not suffer from adverse selection.[45] This is analogous to bidders in an auction correcting their value estimates for the winner's curse problem. Furthermore, empirical tests have shown that underpricing is greatest where uncertainty over value (suitably proxied for) is greatest.[46] This not only supports the argument that uncertainty is the source of IPO underpricing as for auctions, but it also lends support to our contention that the actual effect of uncertainty varies depending upon conditions.

It seems clear then that IPO underpricing and the phenomenon of prices in common-value auctions being less then true expected value arise from the same fundamental effect of uncertainty. We would further argue that, as an approximation, the degree of uncertainty present for bankrupt companies is no greater than that for firms undertaking an IPO. Our rationale here is simply that bankrupt firms have been around for years and have a long history of audited financial records.[47]

Taking Ritter's (1987) findings on underpricing, we would then infer a similar expected cost of uncertainty in auctions—that is, the expected price in an auction would be 14.8% less than the true expected value of the asset being sold. This figure is in general accord with Reece's (1978) theoretical work on auctions.[48] Using Reece's work with 10 bidders, the percentage of value captured by the seller ranges from 100% with no uncertainty to about 70% with very high uncertainty. Thus, a figure of 15% would not seem inappropriate as an expected value. This is a very significant cost that we attribute to using auctions, especially as compared to the 2.7% estimate for direct costs that we derived above. But we should not be surprised, because it is well established in auction theory that uncertainty is detrimental to auction performance. We stress that both Ritter's empirical work and Reece's theoretical work show that the effect of uncertainty has a wide range.

Will greater uncertainty about a company's value have the same impact on the values to be received in a Chapter 11 process? In a Chapter 11 proceeding, evaluation costs would be incurred by the court in performing any valuations and by the various

[44]Reece (1978) is the only paper we are aware of that solves for equilibrium expected auction prices and thereby derives explicit results on the effect of uncertainty. For example, with 10 firms in the auction, the seller captures 100% of the value of the item being sold when there is no uncertainty, but this fraction falls relatively quickly to around 75% of the value with modest uncertainty.

[45]See, e.g., Rock (1986), and Beatty and Ritter (1986).

[46]See Ritter (1984).

[47]We owe this insight to an anonymous referee of this paper.

[48]See Reece (1978).

claimant groups in determining whether they will vote to approve a plan of reorganization. Rational creditors will find it desirable to spend more resources on evaluation in a highly uncertain environment. Although the court may conduct much of the evaluation on behalf of all interested parties, there is certainly the possibility of duplicative evaluations. Thus, increased uncertainty increases the transaction costs associated with Chapter 11 to the extent that it causes concerned parties to demand the court to spend more resources on evaluation, or to the extent that concerned parties themselves perform additional evaluation.

The effect of uncertainty will, however, be less in a Chapter 11 context than in an auction precisely because a Chapter 11 process will not involve competition. Above, we explained that uncertainty lowers prices in auctions because of a strategic effect that depends upon competition between bidders. This strategic effect is absent in the negotiated valuation of Chapter 11. Increased uncertainty will increase the costs of Chapter 11 only insofar as it leads the court and creditors to expend more resources on evaluating the company. If nobody spent more on evaluation in Chapter 11 with increased uncertainty, there would be no impact on proceeds; this is not true in an auction context where the competitive effect of uncertainty by itself reduces proceeds.

Indeed, French and McCormick (1984), as well as others, have argued that in the presence of high uncertainty, a rational seller will forego an auction in favor of a negotiated transaction with limitations on information collection by the buyers. This is exactly what we propose holds for bankrupt companies: when uncertainty is great, the efficient mechanism for resolution will be the negotiated context of a Chapter 11, with a single entity (the court) conducting much of the evaluation and providing the results to all interested parties.

Second ex-post indirect cost of auctions: Valuation of claims to assets—secured-credit and other valuation problems. The auction costs we have discussed to this point deal only with valuation of the company's assets, not its existing liabilities. Yet in a typical Chapter 11 bankruptcy, the existing claims also will be valued. If auctions are to act as a substitute for the existing Chapter 11 process, then the procedure instituted must perform this second valuation as well. Thus, to fully assess the costs of an auction system, we must include a cost for valuing the existing claims on the company's assets as well. The way in which these valuation issues are dealt with in an auction context will critically affect the costs, and efficiency, of an auction process.[49]

A partial answer to this problem is that auction proceeds could be allocated according to the absolute priority rule (APR).[50] This procedure values each class of claims

[49]Adler (1993b) and Jackson (1993) make points similar to ours by noting that an auction does not necessarily eliminate the need for court valuations We expand on this by delineating the conditions that will require court valuations to be done and by noting the costs to the overall capital allocation process if such valuations are not done. As we argue below, the issue is not one of just duplicated effort but of possibly serious changes to the financing patterns for firms. Jackson also points out that in certain cases it may be difficult to separate ownership and liability claims from a valuation of the assets. We agree with Jackson (1993), p. 667, "... that these issues can largely be handled, through one device or another, without undermining the basic advantage of the auction system...," although there may be costs to resolving them. In this section, we discuss one of those costs, duplicative valuations.

[50]In a liquidation, the APR calls for paying creditors in full in the order of their seniority until all assets are exhausted. The bankrupt company's administrative expenses are paid first, including the company's legal fees, postbankruptcy loans, and outside bankruptcy official's charges. Next, priority claims, such as unpaid taxes, social insurance payments, and wage claims, are paid. Finally, unsecured creditors are paid. Under current law, secured creditors are entitled to claim their collateral in a liquidation [White (1989)]. By comparison, secured creditors in a

according to its priority and would distribute the proceeds of an auction in an easily determined manner.[51] Unfortunately, distributing auction proceeds under the APR may cause misallocations of resources where there are insufficient proceeds to pay off all classes of creditors. This problem stems from the presence of secured creditors, whose claims are secured only up to the current value of their collateral.

The first issue with auctions in the presence of secured debt has to do with the allocation of auction proceeds between secured and unsecured creditors. An example serves to illustrate the issue. Suppose there is a company that initially had a market value of $200, of which $100 was a loan for which a machine serves as collateral, $75 was unsecured debt, and $25 was share capital. At a later date, the company becomes insolvent. Suppose that the market value of the machine is now only $75. An auction of the company is held and the sale nets $125, which now must be allocated among the different claimants.

How should the allocation be made? The answer depends on whether the drop in the collateral's value is known. If the value is known, then the secured creditor should only get $75, the amount it would get if it were to claim the machine and sell it separately.

On the other hand, what if the fall in the collateral's value is not known? Two outcomes are possible, both of which may be less efficient than under the current Chapter 11 regime. The first outcome is not to value the secured creditor's collateral and to pay it the full $100. This outcome avoids the costs of valuing the collateral, but it distorts the overall capital allocation process.

The capital allocation process is distorted because once secured creditors know they will have priority without regard to the current value of their collateral, they have little incentive to do a careful *ex ante* evaluation of these assets or to continuously monitor the borrower. To the extent that these are efficiency-enhancing aspects of secured credit, the overall efficiency of capital markets will suffer by always paying secured creditors in full.[52]

Suppose that a formal valuation of the secured creditors' collateral is performed and that priority is given only to that portion supported by the valuation. As Baird and Jackson (1985) stress, participants in Chapter 11 proceedings typically avoid formal valuations because they are costly and potentially very inaccurate. Furthermore, in an auction context, this valuation is likely to be duplicative. The reason is straightforward: Potential bidders must already value the entire company, including at least implicitly the secured creditors' collateral, and auction proceeds will be reduced by the cost to bidders of performing these valuations. If collateral valuations must be done again, then claimants are paying two valuation costs (once in the form of lower auction proceeds and again in the formal collateral valuation). In Chapter 11, the valuations will be done as part of the reorganization process.

There are further reasons to believe that the auction valuation process will be more inefficient than it is in Chapter 11. In a Chapter 11 proceeding, the secured creditors' interests are sometimes impaired. The secured creditors accept this impairment (and a

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reorganization are subject to the automatic stay and cannot remove their collateral. Under our auction proposal, secured credit would need to be subject to the automatic stay so that the company could be auctioned as a going concern.

[51]In practice, the APR is frequently violated. Bebchuk and Picker (1993) have argued that permitting these violations decreases the severity of managers' overinvestment in projects that require their unique skills and underinvest in firm-specific capital.

[52]For discussions of the role of secured debt, see Schwartz (1981); Scott (1986); and Adler (1993a).

reorganization) if they believe that forcing a liquidation and a formal collateral valuation will lower their net proceeds. One factor inducing secured creditors to accept such impairment is the debtor-in-possession's power under current law to extend the time of the reorganization period. Delay can result in the secured creditors' collateral declining further in value. Thus, a Chapter 11 proceeding may be a relatively efficient way for different parties to arrive at a mutually agreeable division of value.

It is hard to imagine similar give-and-take negotiations after an auction has been conducted. Taking up again our earlier example, suppose that the company were auctioned for $125, and that there is secured debt of $100, unsecured debt of $75, and some shareholders who once had equity of $25. With the auction completed, the only issue remaining is the division of proceeds. In the absence of valuation data on the secured creditors' collateral, the secured creditors would be entitled to $100. Supposing the unsecured creditors think that the collateral has fallen in value, how can they force the issue?

We suppose that all creditor classes would have to vote on any plan to allocate the auction proceeds, although this issue has not been analyzed by previous commentators. Suppose voting is required. What power does that give to the unsecured creditors and shareholders? They could refuse to approve any allocation and thereby delay payment to the secured creditors. However, this is a much weaker threat than in a Chapter 11 reorganization, where the secured creditors' (real, not monetary) assets may be depreciating in value.[53] Thus, an auction process will strengthen the hand of secured creditors by taking away some of the threat power that unsecured creditors and shareholders have in Chapter 11.[54]

Voting against an allocation plan could also force a bankruptcy judge to conduct a valuation of the collateral to resolve the dispute between secured and unsecured creditors. The unsecured creditors will view a formal valuation like an option: It has no value if the value comes in high, but if the value comes in low, then they will benefit. The cost of this option is the cost of performing the valuation, which must come out of gross auction proceeds. Whether the unsecured creditors will buy the option will depend on their own beliefs concerning collateral value and on its likely allocation if no valuation is performed. If the unsecured creditors believe that collateral value has fallen significantly, or if they are simply very uncertain, they will force a valuation. Likewise, if unsecured creditors believe they will receive nothing after the secured creditors are paid, they will force a valuation.

A similar set of problems with auctions arises when several different classes of secured creditors exist and some of these classes must be impaired. When auction proceeds are insufficient to pay all secured creditors, the issue is which secured creditors should be impaired and by how much. As before, the need for a formal valuation arises. If no valuation is done, then all secured creditors are likely to receive *pro rata* shares of the total auction proceeds. This solution would seriously impair the efficiency of the capital markets in allocating credit by giving secured creditors little incentive to conduct *ex ante*

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[53]Jackson (1993).

[54]Jackson (1993). Jackson notes that a mandatory auction regime may dramatically change the distribution of assets from the reorganization process by eliminating much of the existing negotiations over how to divide up the proceeds. He argues that the adoption of an auction regime requires a careful reexamination of its distributional effects to insure they are consistent with the underlying policies of Chapter 11. *Id.* Our discussion adds to this by pointing out that there are efficiency consequences as well as distributional consequences to changing the way assets in bankruptcy are allocated.

investigations of the value of the assets backing their loans or to monitor the secured assets. Because of these problems, it would seem that the more likely outcome when some secured creditors must be impaired would be to conduct valuations of all the secured assets and to allocate auction proceeds accordingly. This will reward those creditors who selected assets that retained value, but it has obvious administrative costs. And just like before, the costs are redundant because the secured assets were already valued once, in total, during the course of the auction.

These outcomes should be compared to those arising in a Chapter 11 proceeding. Secured creditors should be impaired if their collateral has fallen in value. Chapter 11 often effects this without a *formal* valuation process. This does not mean that Chapter 11's valuation of the claimants' interests is costless. However, the auction method is likely to result in a duplicative valuation procedure, a cost that Chapter 11 can avoid.

In short, auctions may create three inefficiencies with respect to secured credit that do not exist in Chapter 11: (1) There may be a duplication of valuations if assets are formally valued; (2) if there is no such formal valuation, secured creditors will be strengthened by taking away the ability of unsecured creditors to threaten delay and depreciation of collateral, which should lead to an increased use of secured debt and to decreased due diligence concerning the secured assets' value; and (3) if there is no formal valuation, there will be an increased reliance on *pro rata* allocations of proceeds among impaired secured creditors and, therefore, further reduced incentives *ex ante* to investigate asset value. These costs, coupled with the adverse impact of uncertainty on auction revenues, lead us to conclude that the indirect *ex post* costs of auctions could be significant. Next, we compare these costs with the indirect *ex post* costs of Chapter 11.

Ex Post Indirect Costs of Chapter 11 Reorganizations

The indirect costs of Chapter 11 reorganizations are primarily opportunity costs. Baird[55] notes that these costs are often large because "managers may continue to run the firm as a going concern long after it should have been liquidated." Several other indirect costs of bankruptcy result from inaction by its managers. For example, companies in Chapter 11 have difficulties in taking advantage of profitable new business opportunities or they may be slow to develop new products. Second, as Bradley and Rosenzweig[56] suggest, Chapter 11 might be an entrenchment device by current managers, or at least an impediment to needed changes. To the extent that managers (or their replacements in bankruptcy) are not running the company in a value-maximizing way, failure to remove those managers will result in lost potential increases in value.[57]

Weiss[58] has pointed out several other indirect costs of Chapter 11. His list includes lost sales and a decline in the value of inventory. During a prolonged reorganization, some customers will stop purchasing the company's products because they are afraid of supply interruptions or warranty failures. At the same time, the firm may experience increased operating costs during a reorganization. Key employees may defect, or the firm will have to offer them financial inducements to get them to stay. Suppliers may demand better payment terms and may refuse to sell goods to the firm without them. This would cause the

[55]Baird (1993).
[56]Bradley and Rosenzweig (1992).
[57]Baird (1993b).
[58]Weiss (1990). See also J.J. White (1995) for a review of Chapter 11 costs and Bhagat et al. (1994).

firm's costs of capital to increase.[59] To these indirect bankruptcy costs, Bebchuk and Chang[60] add that financial distress leads to inefficient management decisions, especially with respect to the choice of projects and investments. Weiss (1990) also notes that the firm's management may be diverted from its normal operations and forced to focus on the bankruptcy. The firm is more vulnerable to competitors during this period.

Altman estimates the indirect costs of bankruptcy using the difference between actual and expected earnings.[61] Altman (1984) finds that these costs range from 11% to 17% 3 years before bankruptcy. They increase to 20% of the value of the firm immediately before the bankruptcy filing. We note that Altman's estimate exceeds our estimate of the costs of uncertainty in an auction that was discussed earlier; this supports our claim that, on average, auctions will not be more expensive than Chapter 11.

These costs vary directly with the time a company remains in Chapter 11.[62] For example, lost business opportunities increase with time spent in Chapter 11. The cost of management entrenchment also hinges on the time spent in reorganization, in that a longer period of reorganization allows managers to divert more corporate value and to take actions to secure their positions. In all of this, it is critical to note that managers and shareholders derive their power in Chapter 11 from their ability to threaten creditors with delay and losses in value.[63] By limiting the time spent in reorganization negotiations, our proposal reduces the threat power of management and shareholders and thereby places an upper limit on the indirect costs of Chapter 11.

IV. Ex Ante Costs of Auction Versus Chapter 11

All of the stockholders in a corporation must consider the *ex ante* effects of bankruptcy law on their investment. Managers look at the impact of a Chapter 11 filing on their firm-specific capital, on their decision whether to file for bankruptcy, and on the firm's investments. Investors look at how different rules will affect their ability to recoup their investments. Yet, until recently, little attention had been focused on these *ex ante* effects.[64] As with the *ex post* indirect costs of bankruptcy, this lack of research constrains our comparative analysis to a qualitative comparison of their costs and benefits of auctions and existing Chapter 11 procedures.

Following White's analysis, we compare the *ex ante* effects of our auction proposal with those of Chapter 11. We consider four different aspects of these *ex ante* costs: the punishment effect, the gambling effect, the delay effect, and the effect of errors in reorganizing or liquidating the wrong firms. We describe each of these effects in turn.[65]

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[59]Weiss (1990) p. 289. See also White (1983).

[60]Bebchuk and Chang (1992).

[61]Altman (1984). Other researchers have documented enormous losses in value that can be attributed to financial distress. See, e.g., Cutler and Summers (1988), who estimate $3 billion in losses from Texaco Chapter 11 bankruptcy; and Weiss (1993), who analyzes Eastern Airlines operating losses of $1.6 billion during Chapter 11 bankruptcy. Other studies on the indirect costs of Chapter 11 include Baldwin and Mason (1983) and Wruck (1990).

[62]Nearly two-thirds of Chapter 11 reorganizations take 2 to 3 years to reach confirmation. See Aghion et al. (1992), p. 529 (citing other studies).

[63]Adler (1993b), p. 316. See also, Kaiser, (1993); and Bebchuk and Chang (1992).

[64]See White (1996) and Rasmussen (1994). Johnson et al. (1993) did compare the effect of the 1978 Bankruptcy Reform Act on the efficiency of the bankruptcy process and were unable to conclude it increased economic efficiency. An interesting comparative study of American and Canadian bankruptcy law, which has a procedure similar to that proposed here, was recently published by [LoPucki and Triantis (1994)]. Unfortunately, none of these studies have estimated the relative costs of these two types of legal regimes.

[65]White (1996). White also considers how changes in the bankruptcy law will have *ex ante* effects on the riskiness

The punishment effect rests on the idea that managers will exert their maximum effort if they know they will be immediately replaced once a firm files for bankruptcy. This concept derives from an economic model that dictates that managers of high-performance firms should be paid well, whereas managers of firms in financial distress, or in bankruptcy, should be punished by dismissal. The cost of not doing so, that is, the reduction in the value of the firm due to the managers' reduced effort when they know they will be treated leniently in bankruptcy, is the punishment effect.[66] This cost is incurred by all firms whether they are financially distressed or not.

Once a firm is in financial distress, two further *ex ante* costs arise: the gambling effect and the delay effect. Managers of financially distressed firms have incentives to undertake excessively risky investments to avoid bankruptcy, that is, to gamble. This effect interacts with the punishment effect in that managers will tend to gamble more if they know that they will be severely punished for the failure of their firm.

The delay effect arises out of managers having an incentive to delay filing bankruptcy proceedings, particularly when they believe that they will be automatically replaced. This delay is costly whenever the firm is an inefficient one because its resources are not being redeployed to a more productive use. Furthermore, in general, the earlier that firms enter bankruptcy, the less distressed their financial condition will be. The delay effect is also interactive with the punishment effect, because managers will tend to delay filing for bankruptcy more when the punishment effect is strong.

The last *ex ante* cost of bankruptcy, errors in liquidation and reorganization of the firms, arises only after firms have filed for bankruptcy. Two types of costs can be incurred. Type-I error costs arise whenever economically inefficient firms go through reorganization. Truly inefficient firms will probably not be saved by a reorganization but only will have their eventual failure postponed. This increased delay in having inefficient firms' resources reallocated to a more productive use is an economic cost. The more successful bankruptcy policies are in identifying inefficient firms and liquidating them quickly, the lower will be type-I error costs.

The costs of failing to save economically efficient but distressed firms are type-II error costs. These costs reflect the loss of going-concern value that occurs when a "good" firm is liquidated, and they will be minimized (though not eliminated) if a new owner buys the firm's assets and reopens the firm quickly.[67] Bankruptcy policies affect the level of type-II error costs by how well they identify efficient firms and how effective they are in saving these firms. The level of type-II error costs is also influenced by how well managers are treated in bankruptcy—managers are more likely to file early, and thereby increase the likelihood of a successful reorganization, if the bankruptcy regime treats them leniently.

How does our auction regime compare with Chapter 11 in terms of these *ex ante* costs? Under current law, the punishment effect is high. Chapter 11 generally treats managers leniently by allowing them to choose between reorganization and liquidation and to retain control of the insolvent firm during much of its reorganization period. By comparison, in our auction proposal, management has only a limited guaranteed tenure during an initial

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of creditors' investments. She concludes that creditors, unlike managers, can diversify their portfolios by buying and selling claims. Their ability to diversify suggests that they can protect themselves against adverse effects of changes in bankruptcy law. She argues, therefore, that these effects should not be considered as a factor in bankruptcy costs.

[66]White (1996).

[67]However, certain costs may be unavoidable. For example, key employees, suppliers, and customers may defect once the firm is sold to a new owner.

180-day reorganization period. After that time, if the company has not reorganized, the firm will be sold, probably to a third party, with management's jobs at risk. Thus, under our proposal, the punishment effect will be lower than under Chapter 11.

On the other hand, the gambling effect and the delay effect are likely to be lower with Chapter 11. Managers are more likely to gamble with risky projects and to delay filing for bankruptcy, where they believe it is more likely that they will suffer adverse consequences. Any auction system is more likely to put their jobs at risk than Chapter 11.[68] However, our proposal does give managers a "soft landing" by providing them with some time to try to reorganize the company.[69]

Finally, Chapter 11 allows both efficient and inefficient firms to reorganize, leading to low type-II error costs but high type-I error costs. By contrast, auctioning firms as going concerns after a reorganization period minimizes both type-I and type-II error costs. Type-I error is small because inefficient firms that should be liquidated are sold without undue delay. Type-II errors are minimized, even though some "good" firms are auctioned, because these firms have several months to attempt to reorganize themselves before an auction would be commenced. Furthermore, to the extent that financial bidders are the auction winners, they are more likely to offer jobs to existing managers, thereby further reducing type-II error costs by inducing them to make an earlier bankruptcy filing.

Comparing Chapter 11 with an auction system, neither regime clearly dominates the other based solely on their *ex ante* costs. In part, this result stems from the fact that any policy that raises the punishment effect lowers the gambling and delay effects. However, our proposal does have the limited advantage of minimizing both type-I and type-II error costs, whereas Chapter 11 leads to high type-I error costs. This suggests that a system that provides a limited reorganization followed by an auction if no agreement to reorganize can be reached will be more efficient than the existing Chapter 11 procedure.

V. Implementing an Auction System

Under our proposal, the debtor-in-possession has 120 days after filing Chapter 11 to submit a reorganization plan. During this time, all existing bankruptcy law would apply, in particular the automatic stay. On filing the plan, the debtor-in-possession would get another 60 days to have the plan (or a renegotiated version of it) approved. Approval will follow existing law: acceptance by all impaired classes of creditors, with votes in each class representing at least two-thirds of claim value and one-half of the number of creditors. A majority of old equity must also vote to accept the plan. If such acceptance is not attained, the bankruptcy judge will order commencement of a bankruptcy auction.

We envision auctions for bankrupt companies being run in a manner similar to that currently used for selling solvent firms. Investment bankers would be hired to run the auction process because they have considerable expertise in conducting auctions.[70] Using generally accepted auction procedures as a guide, a typical bankruptcy auction would run as follows.

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[68]The one exception to this is where management intends to bid for the firm themselves in the bankruptcy auction. Now management may have perverse incentives to cause efficient firms to file for bankruptcy so that they can purchase the firm, possibly more cheaply than they could buy it in a leveraged buyout. This factor suggests excluding management bidders from bankruptcy auctions. See Section V below for further discussion of management as bidders in a bankruptcy auction.

[69]LoPucki and Whitford (1993).

[70]Thomas and Hansen (1992). See also Hansen (1998).

On the failure to accept a reorganization plan, a bankruptcy judge would select an investment banker to act as auctioneer. The first step in the auction process would be to decide how the company should be sold; piecemeal or as a package. In some cases, the investment banker/auctioneer will have a strong basis for selling the company piecemeal—when, for instance, a bankruptcy was brought on by an unsuccessful diversification strategy. Decisions on packaging are not, however, irreversible. If bids come in for parts of the company, the auctioneer could reverse a decision to sell the whole, and vice versa. Next, the auctioneer will send out preliminary packages of data to a large group of selected potential bidders. These potential bidders would be asked to submit nonbinding "indications of interest." These indications would typically give a range of prices that the potential bidder feels it would be willing to buy the company for.

Using these indications of interest, as well as qualitative evaluations of the potential bidders, the auctioneer would then narrow the large initial group down to a much smaller group of "serious" bidders. This smaller group would be invited to conduct a thorough due-diligence investigation of the company, including visits with management, site visits, and access to a "data room" of detailed and confidential information on the company's operations. After these investigations were completed, bidders would be asked to submit first-and-final sealed bids for purchase of the company. If any of these included securities as payment, the auctioneer would be called on to value them and to issue a recommendation as to the best offer. Assuming that there is some reservation price below which a sale would not occur, which we discuss below, a sale would take place only if at least one bid exceeded the reserve price. Typically, the entire auction process for a solvent company takes about 3 months to complete and thus seems a reasonable estimate for insolvent firm auctions.

Several aspects of the mechanics of the auction process deserve more discussion. These include: what form of auction to use (sealed bids versus oral auction); how to select the proper reserve price; whether or not to permit management to act as a bidder; and whether auctions will yield an appropriate price for the company. We examine each of these issues in turn.

Most private auctions of companies use the sealed-bid auction with some slight deviations. In general, sealed bids will be requested, but the auctioneer may engage in some final negotiations with one or a couple bidders. Thus, current practice suggests using the sealed-bid form of auction.

Auction theory lends further weight to the choice of sealed bids. In particular, we envision that claimants will vote to accept or reject a reorganization plan primarily based on their comparison of their expected net proceeds of the auction versus their expected net proceeds from the reorganization. From an overall efficiency perspective, these decisions should be based upon expected outcomes, not on unlikely outcomes in the tails of probability distributions. However, creditors with a low priority and equityholders will necessarily be looking at tails of distribution, because they will get paid only if net proceeds exceed other creditors' obligations.

If the chosen auction procedure is one that generates a large variance in sales price, creditors and equityholders will tend to reject any reorganization in favor of an auction even if the expected proceeds are very low. Thus, the auction procedure chosen should be one that minimizes the variance in sales price. From auction theory, we know that sealed bids produce a lower variance than does an oral auction.[71]

[71]See Vickrey (1961).

Setting the reserve price presents further dilemmas. A first point to make here is that there might be relatively little leeway in setting a reserve price. According to Hansen,[72] for the initial indications of interest to be accurate reflections of bidders' initial valuations—and we want them to be so that a useful screening of bidders can be accomplished—the reservation price for the auction must be an increasing function of the preliminary indications of interest. The intuition behind this result is that potential bidders must face the risk of a higher reserve price if they are to have incentive to give honest indications of interest (i.e., to be deferred from giving very high indications just to get into the final round of the auction).

This model, however, instructs sellers only on how to vary the reserve price as a function of initial indications; it leaves leeway for the average level of the reserve price. A bankruptcy judge could say that only bids that do not meet the payments proposed by the filed reorganization plan to the first n creditors' classes will definitely be rejected. We propose leaving it to the discretion of the bankruptcy judge—aided by an experienced auctioneer—in choosing how many creditor classes should be included in this calculation.[73] What must be avoided, however, would be a reserve price policy that permits an auction to go through only if the auction price exceeds the reorganization plan's implicit value. This would create tremendous incentives for the debtor-in-possession to propose a plan that promised infeasibly high payments to all classes, because by so doing the debtor-in-possession could virtually guarantee a failed auction and a return to reorganization. A reserve price that is too high also will cause fewer bidders to enter the auction and therefore will cause a low expected sales price.[74]

This raises another issue concerning reserve prices: What happens when the reserve price is not met? There could have been a mismanaged auction, and if the bankruptcy judge found this to be the case, a new auction could be ordered. More likely would be a conclusion that the price was the best that can reasonably be expected from an auction. In such a case, the two alternatives to accepting the highest bid would seem to be either a return to a traditional Chapter 11 reorganization, with the original, rejected plan as the starting point, or a piecemeal liquidation of the firm similar to the Canadian system.

The last auction issue concerns bids by management. Management is likely to be the most informed party in an auction, and it is well established in auction theory that the presence of an informed bidder lowers auction prices and results in an inefficient allocation (the bidder with the highest value for the asset might not win).[75] Allowing management bidders may also lead some managers to cause efficient firms to file Chapter 11 proceedings in the hopes that they will be able to buy them cheaply. However, as some scholars have pointed out, current management might be the bidder with the highest value for the company.[76] By omitting them, the seller would receive a lower expected price and the company's assets might wind up in a lower valued use.

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[72]Hansen (1998).

[73]We have argued in a different context that judges are well placed to set reservation prices. See Thomas and Hansen (1993). This is especially true where they are aided by experienced investment bankers.

[74]This is one reason why we believe our proposal is superior to that of Aghion et al. (1992). Their proposal has also been criticized on several other grounds, including that: It would only work effectively in a perfectly efficient market; it would force claimants to contribute new cash to participate in the process; it would require the court to resolve the claimants' entitlement disputes before distributing options to the claimants; and it would allow the firm's managers to become bidders [Skeel (1993), p. 480–481]. Our proposal suffers from none of these problems.

[75]Thomas and Hansen (1993).

[76]Macey and Miller (1993).

This issue cannot be resolved on purely theoretical grounds, and therefore we propose leaving it to the discretion of the auctioneer. In fact, this issue arises often in the sale of solvent companies, and investment banker auctioneers decide to permit management to bid on the basis of the given situation. We would expect that management would be excluded from the auction whenever management might be either untrustworthy or in possession of hard-to-transfer qualitative information. In any case, it is always necessary that the disclosure of information from management to bidders be monitored closely by the investment banker/auctioneer to ensure as level an informational playing field as possible.

Finally, LoPucki and Whitford and others[77] have argued that auctions of insolvent companies will not bring an appropriate price for these companies because few bidders will enter the auction, these bidders will have difficulty estimating the value of the insolvent companies, their costs of bidding will be high, and they will demand breakup fees as a condition of bidding. Although, as we discussed earlier, uncertainty over the value of the company can depress auction prices, the auction procedure that we offer is designed to address these concerns by insuring that a large number of potential bidders are given the best available information with which to evaluate the company.[78] These bidders would include competitors in the same, or overlapping, fields but will also include financial bidders, such as the large buyout and vulture funds. The latter group of bidders have large pools of investment funds readily available for purchasing companies.[79]

Financial bidders will be particularly important in bankruptcy auctions for several reasons. First, their presence will lessen the punishment effect of a mandatory auction regime because if they win the auction, they are more likely to offer jobs to existing management than to a competitor of the insolvent firm.[80] Second, financial bidders frequently offer existing management potential equity participation to induce them to stay with the firm, which would reduce the potential loss of managers' firm-specific capital from declaring bankruptcy. Third, as Baird notes,[81] a well-functioning competitive bidding process requires a player with "the virtues imputed to the buyout firms of the 1980s"—access to capital, the ability to value target companies quickly and accurately, the willingness to take substantial risks, and the ability to act decisively if victorious.

We believe that financial players would be likely to actively participate in bankruptcy auctions. For one thing, financial bidders already have emerged under the existing legal structure in many Chapter 11 proceedings, such as the America West, Integrated Resources, New Valley, and Hillsboro Holdings cases.[82] Adopting an auction regime

[77]LoPucki and Whitford (1993); Aghion et al. (1992).

[78]Jackson (1993). Jackson's concern about divulgence of proprietary information in an auction can be addressed directly through the use of confidentiality agreements and other restrictions on bidders. *Id.*

[79]See, e.g., Molly Baker, "New Valley's Western Union Gets Three Bids," *Wall Street Journal* (Sept. 6, 1994), p. A4, who details offers by three financial bidders to acquire a company in bankruptcy auction. Compare this with Skeel (1993).

[80]In the leveraged buyout field, it is quite common for financial buyers to keep some of the existing management in place to operate the firm. We see no reason why a similar practice would not prevail in bankruptcy auctions. Thus, we disagree with Shleifer and Vishny's (1992) argument that financial players that are victorious in an auction would simply hold onto a company until they could resell it to a firm within the industry.

[81]Baird (1993).

[82]See, e.g., Molly Baker, "Judge Declares First Financial Winner in Three Way Fight For Western Union," *Wall Street Journal* (Sept. 20, 1994), p. A3, who recounts the heated bidding war among financial bidders to acquire Western Union.

would lower the barriers to buying these companies and would facilitate the entry of more financial bidders into this area. Furthermore, not many targets are available—the existing empirical evidence indicates there are only 10 to 20 Chapter 11 filings per year of large ($100 million or more in assets), publicly held companies,[83] and this may decrease with an auction regime, as we note above. Thus, relatively few financial players would be needed to ensure that bankruptcy auctions are competitive bidding contests.

Finally, there are very large pools of capital currently being invested in the securities of distressed firms, so-called vulture funds, that could be easily redeployed into the auction market if the risk and return calculus warranted these investments. The presence of these funds should act to establish a floor level for bidding in bankruptcy auctions that would eliminate the very low bidding problems experienced under the former equity receivership regime.[84]

Where LoPucki and Whitford's (1993) critique of auctions may have more force would be in auctions of small, closely held corporations. If the auction regime proposed here were extended to this type of corporation, which we are not advocating in this article, the small value of the debtors' assets would not justify the full-blown sale process described above. In lieu of employing investment bankers to act as auctioneers, bankruptcy judges would need to develop a lower cost alternative method of informing potential bidders of the auction and of providing them with sufficient information to value the company.

Few bidders are likely to enter auctions for small, closely held corporations. First, many potential bidders may not learn of the auction without an auctioneer directly contacting them. Second, the costs of valuing nonpublic companies will be relatively high because the market has no historical experience with them. Furthermore, much of the value of closely held companies is tied up in their managers and employees. These "assets" are hard to value and hard to hold onto when ownership changes. For all of these reasons, we would not expect that auctions would be the most efficient means of resolving small, closely held corporate bankruptcies. Instead, fast-track Chapter 11 reorganizations for these entities may be more promising.[85]

For large, publicly held companies though, our proposal should work well. Under our procedure, all bidders will be given the same information to review and have the same opportunity to obtain further information. Bidders would have sufficient time, say 3 months, to examine this data and to formulate their bids.[86] No breakup fees or other financial inducements would be offered to any bidder before the auction. Once the bidding is over, the auction winner could be offered the protection of a breakup fee, although this is not absolutely necessary. In short, the auction procedure we offer has worked well for solvent companies and should work equally well in auctions of insolvent companies.

VI. Conclusion

Any proposal advocating increased use of auctions in bankruptcy should address Easterbrook's (1990) argument that auctions must be inefficient or they would be appearing

[83]LoPucki and Whitford (1993), p. 675.

[84]Baird (1993b).

[85]See, e.g., Small (1993), who proposes a "Chapter 11(a)" procedure of expedited treatment of small business reorganizations to cut costs of reorganization. Judge Small's proposal has been adopted by a number of bankruptcy courts. For a list of these courts, and a discussion of its merits, see Paskay and Wolstenholme (1993).

[86]Allowing this lengthy time to examine the bankrupt firm's finances should answer Gertner and Picker's (1992) claim that a mandatory auction may not give third parties a chance to determine the value of the firm.

regularly in debt covenants or corporate charters. One answer to this argument is very simple: Writing contracts that call for auctions automatically in bankruptcy would likely be inefficient because auctions are not guaranteed to be the low-cost mechanism.[87]

We do not, therefore, expect to see such contracts written. An efficient process is one that permits the parties to choose judiciously between auctions and reorganization at the time of reorganization. In many cases, the claimants will agree on a reorganization plan, and the company will come out of Chapter 11. Where the parties cannot agree on a reorganization, an auction would be the efficient choice for liquidating the company.

We also argue that existing bankruptcy law permits exactly this kind of choice. That is, Chapter 7 liquidations are supposed to be the fail-safe mechanism for creditors if opportunistic behavior or irreconcilable beliefs make a reorganization difficult. Bankruptcy courts, however, have been too reluctant to force auctions, thereby leaving too much power in the hands of the debtor-in-possession. What is needed is for bankruptcy courts to set, and to rigorously enforce, time limits on reorganization negotiations, then to stand ready to conduct an auction after a reasonable time period if the negotiations fail to produce an acceptable plan.

We hypothesize that courts have been reluctant to force auctions because they are afraid the auction will fail and are unaware of the ease with which corporate auctions can be conducted. This reluctance is unwarranted in light of the large, successful auction market run by investment bankers for many years and the success of the bankruptcy auctions that have been conducted in recent years. Auctions can be held cheaply in many situations, with net sales prices that will often yield more to creditors than will a drawn-out reorganization. Courts should stand willing to force an auction under the terms of our proposal.

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[87]Other responses include that current laws do not permit parties to opt out of the federal bankruptcy laws, and that writing such contracts would be very costly and difficult [Aghion et al. (1992), p. 526].

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