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Forced to make mistakes: Reasons for complaining about Bebchuk's scheme and other market-oriented insolvency procedures

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Abstract Bebchuk's proposal for bankruptcy reform is analysed, in particular his claim that using options is fair and prevents justified complains. However, the proposal has a systematic bias against junior creditors and former shareholders because they have to pay for unavoidable mistakes in estimating the company's value, may lack the financial resources to exercise their options and lose by a day of reckoning. A market solution will be specified that is simpler and at least as fair as Bebchuk's scheme according to his own standards. However, a complete solution to these problems may have to be a non-market one.

Keywords Absolute priority · Auction · Bankruptcy · Estimate · Insolvency

JEL Classification G33 · K39 · K22

1. Introduction

Eighteen years ago Lucian Arye Bebchuk made a famous proposal for bankruptcy reform.[1] Its main idea is that the senior creditors of an insolvent firm get the firm, whereas junior creditors and the old owners get options to buy it by paying the (senior) claims. There have been many positive reviews of this proposal and other proposals for bankruptcy reform used Bebchuk's one as their foundation.[2]

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[1] Bebchuk (1988). For the newest version of his proposal see Bebchuk (2000), the main idea is also used and applied to secured claims by Bebchuk and Fried (2001).

[2] See Aghion, Hart, and Moore (1992, 1995) and Hart et al. (1997). See Dilger (1999) for a critique of the proposal by Aghion et al. which is adopted by Bebchuk (2000) in its main parts.

No major criticism has been voiced,[3] just some doubts as to the practical applicability of such a complicated proposal.[4] In addition, the minor "unpalatable feature that junior claimants may receive cash even when senior creditors have not been fully paid" was judged to be a problem.[5] Nobody questioned Bebchuk's claims that "the participants will never end up with less than the value to which they are entitled" and that "no participant will have a justifiable basis for complaining about the method's outcome",[6] if his proposal is implemented. In this article it will be shown that reasons for complaining remain. A market solution in which all shares are sold at one market clearing price is at least as fair as and in some possible cases even fairer than the scheme proposed by Bebchuk according to his own standards. Non-market solutions may be stil better in answering the objections raised here, although they have problems of their own.

In the next section Bebchuk's proposal is outlined. There is an explanation why and in which sense there should be no reason for complaining about the proposal's outcomes. The third section is an examination of remaining reasons for complaining. At least one of them seems to be rather strong. Junior creditors are at a disadvantage since they would make mistakes in estimating the value of the insolvent firm. It is true that they are making these mistakes by themselves, but they cannot avoid them. They are forced to make mistakes. Other serious problems and therewith reasons to complain are illiquidity and the consequences of a day of reckoning. Thus, in Section 4 a market solution is specified that is simpler and gives less reasons for complaining at least in some cases such that it is fairer than Bebchuk's scheme. Remaining problems with this solution are discussed and how a non-market procedure may avoid them. Section 5 concludes.

2. Bebchuk's proposal

The main problem that Bebchuk's proposal is meant to solve is the fair distribution[7] of the value of an insolvent firm between the creditors and the former owners, in short the participants. If there were no different classes of participants and therefore no order of seniority between classes, then the distribution would be easy. Each participant could get shares in the firm according to the portion of claims he previously had on the insolvent firm. Since there are different classes the claims of senior creditors have to be fulfilled before junior creditors are entitled to get anything. In order to maintain absolute priority, the junior creditors also have to be paid off before the former owners can get the rest.

[3] One possible exception is the paper by Adler and Ayres (2001), who claim that their own proposal is better and encloses Bebchuk's one as a special case. This shows, however, that they are sympathic to it. They also do not raise but are affected themselves by the main objections of this paper.

There are quite a lot of authors who are sceptical about all market proposals for bankruptcy reform, e.g. White (1989, 1994), Easterbrook (1990), LoPucki and Whitford (1990) and Gertner and Scharfstein (1991). However, they have nothing special to say about Bebchuk's proposal. See Hansen and Thomas (1998) for an interesting synthesis of market (auction) and non-market (Chapter 11) elements.

[4] Aghion et al. (1992).

[5] Hart et al. (1997), p. 10. They propose as a remedy against this feature the additional use of an inside auction.

Bebchuk (2000) answers to some of the objections to his proposal. He announced for 2000 another paper "to address all the questions that have been raised about the proppsal", p. 830, but this has not been released as yet.

[6] Bebchuk (1988), p. 777.

[7] To be precise, absolute priority is the objective and that is not only a question of justice but also of efficiency, ex ante as well as ex post, see, e. g., Eberhart, Moore, and Roenfeldt (1990), Weiss (1990), Bebchuk (1998, 2002) and Hansen and Thomas (1998).

2.1. The distribution of a given amount

Observing the rule of absolute priority is not difficult as long as the value of the insolvent firm is known. Consider the case of liquidation. Every asset of the firm is sold piecemail or the whole company is sold as one unit for cash. Afterwards the amount of cash is known and can be distributed without violating absolute priority. All senior classes have to be paid off completely before a junior class gets anything. If anything remains after all debts have been paid to the creditors, this belongs to the old owners of the firm. Inside the classes the money is distributed in proportion to the former claims of the participants.

2.2. The case of uncertainty

Bebchuk argues that a liquidation of the insolvent firm may not be optimal for the participants.[8] A piecemail liquidation is suboptimal, if the company has a higher value as a going concern than the sum of its separate assets. Selling the whole company is not a good idea as long as there are not enough potential buyers who are sufficiently informed and have the necessary money. Without liquidation there has to be a reorganization by the participants themselves. But the reorganization procedure according to Chapter 11 of the U.S. Bankruptcy Code violates the principle of absolute priority and opens the way for inefficient rent-seeking behavior. Therefore, Bebchuk proposes to allocate shares and options in the firm without neglecting the given seniority of claims.

As long as the value of the firm is obvious to all, it is easy to allocate its shares. The allocation of shares simply follows the allocation of a given amount of money. Difficulties arise as soon as the value of the firm is uncertain. If there is one binding estimate of the value, failures in the estimate threaten to put some classes at a disadvantage. The senior creditors are getting too few shares, if the estimate is too high. If it is too low, the senior creditors are getting too many shares. Even if the estimate is correct in some cases, all classes will complain, because the correctness is not obvious. Senior creditors always want low estimates, high estimates are in favor with junior creditors and former shareholders. The problem of fair distribution comes down to the problem of finding the right estimate.

Bebchuk's brilliant solution to this problem is to let each participant make his own estimate. If there is one binding estimate for all, all participants will protest that it is too high or too low, but in any case wrong and unfair. If, instead, everybody has his own estimate, nobody can object to it. Instead of complaining that she gets too few shares because her estimate is too high, a senior creditor could simply lower her own estimate. Likewise, a junior creditor or former shareholder cannot protest that he gets too few shares, because he could raise his estimate and get more.

2.3. The distribution of and by options

How is it possible that every participant can use his own estimate of the company's value, even if different participants have widely differing estimates? Bebchuk's idea is to use options. To begin with, the most senior creditors, the participants of class 1, get all the shares in the new firm, which is the insolvent firm without any remaining debts. All other creditors and the shareholders of the old, insolvent firm get no shares, but options to buy shares by paying off the more senior creditors.

[8] Bebchuk (1988), p. 776.

The participants of class 2, the creditors with the second highest seniority, get the option to buy shares from the most senior creditors at a price corresponding to the original claims of the most senior creditors. Thereby the class 2 does not have to act uniformly, but each individual creditor gets his own options and can decide to exercise them as he likes. As an example, the sum D_1 of the claims of the most senior creditors may be \$2,000, the sum D_2 of the claims of class 2 \$5,000 and there are 10,000 new shares. Each of the most senior creditors provisionally gets 5 shares for every dollar the insolvent firm owed her. But she has to hand over a share whenever she gets 20 cents for it from one of the junior creditors. The participants of class 2 get the option to buy 2 shares at a price of 20 cents each for every dollar the insolvent firm owed them.

The same holds for all classes of participants. Every participant gets options in proportion to his claims. He can buy shares at a price as high as the corresponding share of all more senior claims has been. He loses shares to junior participants if they pay off his claims. If the old owners exercise their options, then they can keep the shares for sure, because nobody is junior to them and they are entitled to any residual after all debts have been paid.

The participants have the opportunity to trade the shares and, in particular, the options. Thus participants who estimate the value of the company lower than others can sell their options. If someone does not want to exercise his option, but sells it in the market, he earns something instead of receiving nothing. If someone thinks his option has some value but he can sell it at a higher price in the market, he earns more instead of receiving less. Also participants who lack the necessary money to exercise their options can profit from the options' market, if they can sell their options which otherwise would have been useless to them. Finally, an option market is an important source of information for the participants.

2.4. The fairness of the distribution

Independently of the trading opportunity, the outcome of Bebchuk's mechanism will be fair according to him: "The proposed method addresses the possibility of different subjective estimates by enabling each participant to decide individually, based on his *own* estimate of the reorganized company's value, whether to exercise his rights. Consequently, each participant will get no less, and may indeed get more, than the value to which he believes he is entitled based on his *own* estimate of the reorganization value."[9] Therefore, "no participant has any basis for complaining about the method's outcome."[10]

Bebchuk stresses that the fairness of his proposed method does not depend on the existence of efficient markets where the options and shares can be traded.[11] Trading opens new opportunities, fairness should exist without it. This is important to Bebchuk because, if there is any advantage of his proposal to others, then it is the fact that fairness exists independently of the functioning of markets. If efficient markets exist, the allocation of shares according to absolute priority is no problem because these markets generate one common estimate of the firm's value.

3. Reasons for complaining

There are several reasons why participants could complain about the outcome of Bebchuk's mechanism. However, complaints about the lost money caused by the insolvency, which

[9] Bebchuk (1988), p. 794, italics in the original.

[10] Bebchuk (1988), p. 790.

[11] Bebchuk (1988), pp. 789 et seq. See also Section 3.1 below.

are probably heard most often in practice, are not a valid argument against the proposal.[12] Someone may also object that others (or he himself) get too much instead of too little, which would be a form of breaking absolute priority, though not a really serious one as long as everyone can guarantee himself what he believes to be entitled to.

More seriously, participants could object that they lack the necessary information to make a meaningful estimate of the company's value. Whereas this will be shown as not really convincing, too, a much stronger critique of the proposed mechanism is close at hand. Insufficient information and failures in estimation have different consequences for the participants. Junior participants are systematically at a disadvantage. Another strong point, mentioned by Bebchuk but without a convincing counterargument, is the lack of money which could prevent participants from exercising their options. This is another bias of the proposed mechanism against the junior participants. Finally, Bebchuk's scheme brings about a day of reckoning, whereas the maturity of the claims could be far in the future. Again, the junior creditors lose by this day of reckoning before maturity compared to the senior ones who only lose risks.

3.1. Insufficient information

Participants could object that they lack the necessary information to make reasonable estimates of the company's value. If someone has an estimate, he can guarantee himself what he is entitled to according to this estimate. But what happens if someone is not able to come up with an estimate? Without an estimate, even a merely subjective one, it is not possible for junior participants to make decisions about exercising their options.

The counterargument to this objection is that it is always necessary to make decisions under incomplete information. There is no difference in this regard between the case of insolvency and any other situation of (economic) life. Even if someone has no information at all, he may find himself in a situation where it is necessary to make decisions. Doing nothing would be a decision, too, although a bad one in many cases. Mere guessing or flipping a coin are possible decision procedures in the absence of information.

The absolute amounts of information and lacking information are not reasons for complaining. So Bebchuk is right that the relative differences between different insolvency procedures is decisive: "Under the proposed method, as well as under the existing process of division, participants must make decisions on the basis of whatever information they have concerning the reorganized company's value. Therefore, it is necessary to examine whether, in comparison to the existing process, the proposed method might either increase the amount of information that participants need or decrease the amount of information that they possess."[13] One qualification is necessary, though. The comparison has not only to include the proposed and the existing insolvency procedure but also other possible candidates for insolvency reform.

Bebchuk argues that the participants need less information under his procedure than under the existing one: "under the proposed method, participants will not even need to make a judgment, as they must under the existing process, concerning their best estimate of the reorganized company's value. They will only have to make the much more limited judgment whether the reorganized company's value exceeds the estimate that is implicit in the market price of their rights (that is, whether the value of their rights exceeds the rights' market

[12] They do not differentiate between the losses that caused an insolvency and those that were caused by an insolvency procedure. An efficient procedure should minimize the losses which are there anyway and emerged quite independently of the procedure.

[13] Bebchuk (1988), p. 795.

price).”[14] They also have more information under his procedure than under the existing one: “there is no reason to assume that participants will have less information under the proposed method than under the existing process. Indeed, the proposed method provides an important additional source of information–the market pricing of rights.”[15] Because the participants need less and have more information than at present, if Bebchuk’s proposal is realized, the participants then cannot protest about insufficient information.

This conclusion would be fine, but its premises are questionable. To start with, it is not correct that the participants “will only have to make the much more limited judgment whether the reorganized company’s value exceeds the estimate that is implicit in the market price of their rights”.[16] If a participant thinks the market price is higher than the value of the firm, he has indeed nothing more to do than to sell his rights, his options or shares to the market. In this case it does not matter what the correct value is. But this case is quite rare, an underrating by the market has to be expected to justify the whole proposal: “the primary rationale for the existence of the reorganization alternative to liquidation is the concern that the market often undervalues such companies; if the market could be relied on to price such companies perfectly, there would be no reason to expect that a reorganization would ever provide the participants with a greater value than they would get from a going-concern sale effected through a chapter 7 liquidation proceeding.”[17] However, if the market price is too low, it does not help the participants to decide whether to exercise their options. They need an estimate of the company’s value. At least they have to know whether the value of a share is higher or lower than the exercising price.

This shows that the participants normally do not need less information under Bebchuk’s proposal, when compared with the present state. In a way they need more, because every single participant has to make his own decisions and therefore his own estimate. Under the present procedure whole classes can decide and estimate, whereas individual participants do not have this problem (and can complain ex post about wrong estimates).

It is also questionable whether the participants have more information under Bebchuk’s proposal than now. As has been shown, the market is not a reliable source of information in this context. Conversely, there may be less information under Bebchuk’s proposal as he himself acknowledges: “the proposed method may still reduce the amount of information that participants will have if it substantially decreases the extent to which participants take advantage of the available sources of information. Such a decrease may arguably take place because of collective action problems: under the proposed method, participants will act individually rather than collectively, and they may have less incentive or ability to look for information.”[18] Bebchuk sees the possibility of working together as a remedy against this problem: “the proposed method will not prevent participants from acquiring information as a class rather than individually when there are some advantages in doing so: in such cases, the committee representing the class will likely engage in information acquisition (say, by hiring an investment banker to do the job) and then disseminate its conclusions to individual class members.”[19] However, the collective action problem does not consist in a prohibition of working together. The problem is how to organize the collective action, if nobody has

[14] Bebchuk (1988), p. 795.

[15] Bebchuk (1988), p. 795.

[16] Bebchuk (1988), p. 795.

[17] Bebchuk (1988), p. 789.

[18] Bebchuk (1988), pp. 795 et seq.

[19] Bebchuk (1988), p. 796.

sufficient individual incentives to do so. The present reorganization procedure organizes the classes and their representatives by law. It is much more difficult to do this individually, especially if there are many individuals.

In conclusion, there are at least some doubts whether Bebchuk's proposal really is at an advantage concerning information relative to the existing reorganization law. If other possible procedures are considered, these doubts grow. Imagine the shares being distributed according to the estimate of the company's value by an investment bank. Then a specialist could use efficient means to gather information, there would not be a parallel search for the same information, the participants could take it easy, but if they have some favorable information, they could hand it over to the investment bank. Auctions could also be a more efficient way to use information. Nevertheless, more fundamental objections to the lack of information are not justified. Information is always scarce, its availability is a matter of degree.

3.2. Bias of failures in estimation

As has been shown in 2.4, Bebchuk's proposal is fair in the sense that, if some participant has an estimate of the company's value, he can get what he is entitled to according to his own estimate. It has also been argued in 3.1 that the necessity to make estimates is no objection to the proposal. Information is seldom complete. It is often necessary to make estimates or even guess. Thereby one can overestimate as well as underestimate. But as long as there is no bias and systematic failure, these mistakes should cancel each other out so that one is right on the average. Therefore, one gets the expected value of what one is entitled to.

The decisive critique of Bebchuk's proposal is that it does not give the junior participants the expected value of what they are entitled to. Since the participants have to estimate the value of the firm, they will surely not pick out the correct value every time–otherwise they would not be estimating but determining the value. The crucial point is that their mistakes do not cancel each other out on average. Every time there is a difference between the estimated and the real value, they can only lose, never win. At best a difference does not matter.

On the one hand, if a junior participant overestimates the company's value, he can lose by deciding to exercise his option although it would have been better not to do so. This is the case if he estimates a share's value to be above the exercising price of the option whereas the true value is below. In other cases the overestimation has no costs but also no gains. These other cases are those in which the estimated and the real value are both below or both above the exercising price.

On the other hand, if a junior participant underestimates the company's value, he can lose by deciding not to exercise his option although he should have done so. This is the case if he estimates a share's value to be under the exercising price whereas the true value is higher. There are also other cases in which underestimating is free of cost but there are no gains, either. These cases are again those in which the estimated and the real value are both below or both above the exercising price.

This means a junior participant loses every time a divergence of the estimated from the real value matters for his decision to exercise his options.[20] The winners are the senior participants who get either more shares or more money than they are entitled to by the failures in estimation. This bias against junior participants is a clear violation of absolute priority. It is no excuse that the junior participants are making the estimates which hurt them

[20] An overestimation of the shares' value on the market for options could benefit the junior participants. However, such an overestimation is rare as has been argued in Section 3.1 above.

by themselves because they are forced to estimate and to thereby make mistakes.[21] As long as they are not able to determine the true value of the firm exactly they cannot expect to get the expected value of their entitlement. This constitutes a sound justification for complaining about the fairness of Bebchuk's proposal.

3.3. Illiquidity

Another important objection to Bebchuk's proposal could be the absence of sufficient financial means. If junior participants want but lack the necessary money to exercise their options, they cannot get the value to which they are entitled according to their own estimates. This is an argument Bebchuk sees himself: A "possible objection to the method arises from the fact that the method will require some participants to invest in the enterprise to capture the value to which they are entitled. Participants in an insolvent company, so the argument might go, may reasonably be reluctant to make such an investment or may lack the necessary financial resources."[22]

Bebchuk has three counterarguments against this: "although the need to invest funds might pose some problems to the effectiveness of the proposed method, these problems appear to be quite limited. Most participants will not need to invest any amount in order to capture the value to which they believe they are entitled, because their rights will be either redeemed or valued sufficiently by the market. Furthermore, those who will need to invest will have no basis for complaining as long as the amount at stake is small relative to their wealth. Finally, as for those whose rights will be neither redeemed nor sufficiently valued by the market and whose wealth is not sufficiently large relative to the amount at stake, any problem resulting from the need to invest will be mitigated by their ability to borrow."[23] It will be shown that all three counter arguments are not convincing and reasons to complain remain.

First, it is true that some participants will not have to invest money because their claims will be redeemed or because they can sell their options in the market. However, these are only the more senior participants who would have to pay low exercising prices anyway. One of the classes of participants near the real value of the company has to put in an amount of money as high as the claims of all more senior classes. Not all claims can be redeemed, someone has to do the redeeming. The market for options is no help because it normally underestimates the company's value.[24]

Second, Bebchuk may be right that "the amounts that participants need to invest to exercise their rights are small relative to their wealth, which I suspect is the case for most participants in reorganizations of publicly traded corporations".[25] But most is not all, and the few participants for whom this is different are the ones that matter. In many insolvencies there are some creditors who gave substantial credits and are at risk of becoming insolvent themselves simply because they lose their claims. Whereas they hardly have the wealth to bear their own losses, they clearly lack the money to pay off the probably much larger claims of the creditors senior to them.

[21] This is the central difference to the traditional winner's course probleme where any losses can be prevented by simply abstaining from bidding.

[22] Bebchuk (1988), p. 796.

[23] Bebchuk (1988), p. 797.

[24] See Section 3.1 above.

[25] Bebchuk (1988), p. 797.

Third, the creditors who do not possess the money to exercise their claims should be able to borrow it, according to Bebchuk. "In a well-functioning capital market, the junior creditor's borrowing power will be augmented by his ability to use as collateral the very" shares he wants to buy.[26] However, the markets cannot be expected to function well, otherwise the whole proposal would be unnecessary.[27] Even if there were well-functioning capital markets, only small sums could be borrowed by using the shares as collateral because these shares are a quite risky investment and the participant would have to take the risk. Thus, some participants with large claims are not able to exercise their options at all. Others may be able to do so by using all of their own money and lending some more, but they have to pay the costs of lending as well as the opportunity costs of other uses of their wealth. They even have to take all the large risks which are not only inherent in the company but also follow from the estimation process.

3.4. Day of reckoning

Bebchuk's scheme requires a day of reckoning, which is normally the day of opening the insolvency procedure.[28] Optimally, the value of the firm at this day would be known and could be distributed respecting the absolute priority of the claims as they are at this day. They become all mature at this day. If their original maturity dates were somewhere in the future, the claims have to be discounted accordingly, of course. $1,000 in ten years are less than $1,000 today. If, e. g., the interest rate is 5% and $1,000 have to be payed in exactly ten years, then the present value is $613.91. Therefore, the creditor gets $613.91 now or the same fraction of this amount as all other creditors of her priority class. She loses nothing by discounting (as long as the discount factor is correct) because she could bring the money to a bank, get 5% interest per year and would have her $1,000 in ten years. Actually, this creditor wins something, namely the opportunity to do something else with her money, and loses at the same time any further (above the actual insolvency) risks connected with holding the money longer in this firm. Without the insolvency the claim would not be mature now and the creditor would have to bear these risks for ten more years.[29]

Of course, these risks cannot be eliminated without a price. Any buyer of the firm with all its risks lowers his offer accordingly. The amount that can be distributed in accordance with the absolute priority rule is therefore lower or, to see it from the other side, the discounted claims are higher than their market values. On the one hand, the senior creditors with unmatured claims win liquidity now and lose their risks at the cost of junior creditors. On the other hand, the day of reckoning destroys all chances for the junior creditors (and also the former owners) that the value of the firm may rise in the future. Although the firm's value today reflects these chances as well as the risks of a further fall, it makes a large difference whether all claimholders can participate in these value fluctuations or a day of reckoning excludes the more junior ones of them from upward trends. Option value is destroyed for them.[30]

[26] Bebchuk (1988), p. 797.

[27] See Section 3.1 above.

[28] It can be any other day not too far in the future, e. g. the day of ending the procedure.

[29] The creditor can sell her claim of course, but the risks will influence the price and reduce it to less than $613.91.

[30] Baird and Bernstein (2004a, 2004b) take this as a justification of a relative instead of the absolute priority rule. However, their explanation of the frequent relative priority outcomes in reality would be the power of junior participants to prolongate the insolvency procedure. This power has value independently of its justification.

There would be a problem with different dates of maturity even without an absolute priority rule and instead a proportional distribution between all creditors because those with claims which would have matured far in the future without the insolvency win at the cost of those with actually mature claims even without the insolvency. The insolvency procedure changes by the day of reckoning the course of events and the distribution and value of claims. A firm under water with more debts than assets could have some earnings in the future to change this before the debts mature or even the creditors notice. An insolvency procedure like Bebchuk's scheme gives the whole firm to the (more senior) creditors, even though there is a positive probability that there will be more than enough money to pay all debts in full at their maturity. With different classes of creditors this problem is aggravated because all more junior creditors, even those with actually mature claims are ranked behind and thereby pay for the more senior ones with claims which would be unmatured for a very long time outside insolvency. This is one more disadvantage for the junior creditors and a justified reason for complaining by them.

4. Market and non-market solutions

In the following it will be shown that a well-designed market solution dominates (weakly) Bebchuk's scheme in regard to fairness considerations. There are situations with less reasons for complaining about the market than about Bebchuk's proposal, whereas there is no case in which somebody can complain about the market where he cannot also object to Bebchuk's scheme. Alas, this domination is a weak one only without much practical importance.[31] Especially, as long as there are only a few potential buyers, high uncertainty and liquidity restritions, reasons for complaining remain and the absolute priority rule will be violated. The day of reckoning with its problems persists, too. Then the best solution may be a non-market one, about which everybody individually can complain, but that has no systematic bias (for or) against junior participants and is therefore fair on average.

4.1. A market solution that dominates Bebchuk's scheme

A market solution that dominates Bebchuk's scheme is as follows: The shares of the new debtfree company are sold in a multi-unit English auction. Everyone can submit bids, specifying the number of shares he wants at any price. Then, all shares are sold at the one price that clears the market. Outside bidders with bids as high as or higher than this price have to pay the price in cash. Former participants have to pay the price in cash, too, but they can deduct from it the money they are entitled to by the distribution of the auction's revenue because the price of all shares, the revenue of the auction, is distributed to the former participants according to the rule of absolute priority.

Why is this market procedure at least as fair as and sometimes even fairer than Bebchuk's scheme? First, every participant can guarantee himself the same result as by using options without paying a higher price. If a participant submits a bid as high as the exercising price of the next higher class of participants,[32] then, in the auction he pays at most the exercising price of the options of his class and gets shares, or he receives the money the old company owed him. This means the market procedure can do everything Bebchuk's scheme is supposed

[31] In fact, the participants in an insolvency procedure following Bebchuk's scheme can simulate the market solution such that there does not remain any difference in the results.

[32] One of the former shareholders can submit a bid as high as possible.

to do. It is fair according to Bebchuk's standards. Everyone can guarantee himself what he believes to be entitled to. If a participant believes that the company has a higher value than the claims of all creditors senior to himself, he can submit a bid to get his entitlement which is either shares in the firm by paying off the senior creditors or the fulfillment of his claims in cash. This is exactly what Bebchuk considers to be fair and what he proposed the options for.

Second, using the auction can even be fairer than Bebchuk's scheme. No participant has to pay more in the auction compared to exercising the options, but some may get their shares for less. This is an improvement because it has been shown in Section 3 that Bebchuk's scheme has a bias against junior participants. Therefore, it is an improvement if the shares are cheaper for the junior participants without violating the rights of senior participants. That the rights of the more senior participants are not violated follows simply from the fact that they can guarantee themselves what they think to be entitled to in the same way that all other participants can do this. Nevertheless, shares can be cheaper in the auction than the exercise price of options because not all more senior creditors need to bid as high as this price. If they estimate the firm's value to be lower or do not want to take the risk, they may bid lower to the benefit of the junior participants, who have to pay a lower price to get shares. The junior participants do not have to take all the risk of failures in estimation. They also do not have to exercise an option or submit a bid to get anything because they always get their fraction of the auction's revenue.[33] The fairness of the auction cannot be lower but may be higher than that of Bebchuk' scheme, even though it has not to be perfect.

An example may help to see the point made here. Consider the example from Section 2.3 above. The sum D_1 of the claims of the most senior creditors is \$2,000, the sum D_2 of the claims of class 2 is \$5,000 and there are 10,000 new shares. A participant of class 2 can guarantee himself the same or a better result in the auction as under Bebchuk's proposal, if he bids 70 cents for each share, the number of shares he bids for being two times as high the amount of dollars the insolvent firm owed him.[34] If the market price of the share is below 20 cents, he pays this price to get a share. If the market price is between 20 cents and 70 cents, he gets each share for a net price of 20 cents. Should the market price be over 70 cents, this participant of class 2 gets no shares but a dollar for every dollar he had a claim for. If one of the most senior creditors wants to guarantee herself the same result as under Bebchuk's scheme, she has to bid 20 cents for each share, bidding for a number of shares five times as high as the amount of dollars the insolvent firm owed her. Certainly, no participant is obliged to simulate the option process by his bidding. The participants can do better by using their estimates of a share's value.[35]

What about the problem that the market often undervalues the firm, which was the starting point of Bebchuk's proposal?[36] This undervaluation may still exist but it gives the participants no reason to complain under the specified auction rule, at least no more than under Bebchuk's scheme, because each of them can submit his own bid according to his own evaluation and

[33] Accordings to Bebchuk's proposal participants have to take the risk of exercising their options to get anything, unless more junior participants exercise their options and pay them off or they can sell their options on the market. See Section 2 above.

[34] If he decided not to exercise his option under Bebchuk's proposal, he could submit no bid in the auction and would get no less and sometimes more than under Bebchuk's proposal.

[35] Thereby they should be careful of the winner's curse. This could bring them back to simulate the option process, see below Section 4.2.

[36] For Bebchuk (1988), p. 789, "the primary rationale for the existence of the reorganization alternative to liquidation is the concern that the market often undervalues such companies".

thereby guarantee himself everything he believes to be entitled to. Therefore, the perceived underestimation of the firm's value by the market is due only to other estimates by other participants. Each single participant cannot complain but wins through the opportunity to buy shares at a low price. By this way, even the problem of illiquidity is reduced because the market price may be lower than the exercising price of Bebchuk's options, so that less money is needed to get shares, or higher, so that the creditors receive more money without buying shares.

The market is an ambiguous entity. The fairness of the market depends on its organization. If the firm is sold as a whole in an auction,[37] single participants may be unable to influence the price and have to take what they get. Therefore, they could complain. If, instead, shares of the firm are sold as proposed here, single participants may still lack the power to change the price, but they can decide whether they like money or shares better at any given price. Thereby they have less reason to complain than by using the options as Bebchuk proposes.

Certainly, if there is a market for these options, the results in this option-market and the English auction described here will be the same. The price per share has to be identical in both markets, at least in equilibrium. This shows, however, that Bebchuk's scheme needs this additional market for options to be as fair and efficient as a direct market approach, and even with it is a mere detour.

Accordingly, an additional advantage of this kind of auction is its simplicity compared to Bebchuk's scheme, potentially reducing transaction costs. There is only one kind of shares and one price for them, not many different options with potential sub-markets. As long as the markets are "thick", with many bidders and liquidity, all market solutions, the auction of shares or the total firm as well as Bebchuk's proposal, will bring about the same solution, a reasonable valuation of the firm[38] and compliance with absolute priority. The problem is that markets for insolvent firms may be "thin". Even then the proposed multi-unit auction works at least as good as Bebchuk's scheme as has been shown above. But does it really work better, especially concerning the bias against junior participants?

4.2. Why the problem remains

Assuming that the market for an insolvent firm is as "thin" as possible, that is with just one senior and one junior creditor as the only potential buyers, and that the value of the firm is clearly below the claims of the senior creditor, one might think that the creditor with the higher estimate of this value gets the firm. If the senior creditor believes the value to be higher, she keeps the firm and the junior creditor gets nothing. This is in accordance with absolute priority because the value is lower than the claims of the senior creditor by assumption. What happens if the junior creditor has the higher estimate of the common value, still clearly below the claims of the senior creditor? Can he buy the shares of the firm at a market clearing price as high as the estimation of the senior creditor? The answer is no, because a rational senior creditor knows that every possible profit of the junior creditor is at her expense (as long as the common value assumption holds). She can win by too high estimates of the junior creditor but on average she can only lose as long as he can expect any profit. This kind of common value auction with the seller as one bidder is a zero-sum game. The best strategy of the seller, that is the senior creditor, is to raise her bid until the other bidder, the junior creditor,

[37] This is proposed by Baird (1986, 1993), Jackson (1986) or Jensen (1991) and criticized by Bebchuk (1988, 1998, 2000).

[38] See Milgrom (1979).

can only lose and therefore stops bidding at all. Then the senior creditor gets the firm and all its value. In practice, the senior creditor will simply bid as high as her claims are (see below). This is also the exercise price of the options given to the junior creditor according to Bebchuk's scheme. The result is the same, the junior creditor gets nothing, even if he has a higher estimation of the firm's value than the senior creditor.

What happens if the value of the firm is clearly above the claims of the senior creditor (and below these plus his own claims to keep the analysis as simple as possible)? Now the junior creditor is the de facto seller of the firm. He has to pay the claims of the senior creditor in full, but everything else is his and he can secure the full value by raising his bids. Then the senior creditor can only lose by bidding even higher. Here is also no difference to Bebchuk's proposal, where the junior creditor exercises his option and gets the firm, whether the senior creditor estimates its value higher or not.

Finally, what happens if the value of the firm is uncertain at the edge, possibly below or above the claims of the senior creditor? The senior creditor still has a simple strategy. She should bid exactly as high as her claims are, independently from her own estimate of the firm's value. Then she will get repaid all of her claims or the full value of the firm, it may be lower or higher than her claims. What is the best strategy of the junior creditor? He is forced to make mistakes (with some positive probability). The problem is the same as that one with Bebchuk's scheme analysed above in Section 3.2. Neither he can bid high in all cases because the value of the firm may be below the claims of the senior creditor he has to repay by getting the firm. Nor he can abstain from bidding in all cases because the value of the firm may be above the claims of the senior creditor.[39] The best he can do is to use his own estimate of the firm's value. As long as the estimated value is higher than the claims of the senior creditor, he should bid quite high to get the firm for sure. Otherwise he should not bid at all. With this rule there is some probability that he buys the firm for too high a price and that he fails to buy it at a bargain, but he cannot help this and there is no better strategy available for him. There is no difference to Bebchuk's scheme.

Now think about a third, outside bidder. It has been said that "thicker" markets work better and the market price approximates the real value with a raising number of bidders. Alas, this kind of common value auction is of no interest to any third bidder. Such a bidder needs a positive expectation value to be attracted, but it is still a zero-sum game. With the strategies given above the creditors can prevent any outsider from making any profits. Therefore, this market remains endogenously "thin".[40] If there are more creditors in any class or more classes of participants, they all should behave accordingly for their respective parts of claims, such that the market for shares or also options by using Bebchuk's scheme remains as "thin" as before and does not generate any additonal information or liquidity. Bebchuk's option approach and the proposed multi-unit auction of shares will bring about the same result to the detriment of the junior participants.[41]

[39] This is different to the traditional winner's curse problem where outside bidders can always forego bidding without any losses.

[40] The problem results from an asymmetry in this auction. The bidding creditors have large toeholds in the firm. For an analysis of toeholds in takeovers see Singh (1998), Bulow, Huang, and Klemperer (1999) and Betton and Eckbo (2000). Bikhchandani (1988) shows how any arbitrarily small extra value for one bidder (and for the senior creditor the extra value by getting the price is quite high) that is common knowledge leads to a complete breakdown of common value second-price or English auctions.

[41] The dilution mechanism proposed by Adler and Ayres (2001) is even worse in this regard because the senior shareholders can only win and never lose by it, have low incentives to determine the exact value of the firm, can instead minimize their risk by selling all shares at once and could also collude with one class of junior

4.3. Are non-market solutions better?

Non-market alternatives are a solution to this kind of problem.[42] If e.g. a judge or an investment bank estimates the value of the insolvent firm, the estimate may be too high or too low, but on average it will be correct absent any systematic bias. This means that all participants get on average what they are entitled to. The senior creditors may complain that the estimate is too high, whereas the junior creditors lament over its lowliness. That all are complaining at the same time is an indicator for the fairness of this estimation process. There is no longer any systematic bias against the junior creditors. They are not forced to make mistakes that do not cancel each other out as the mistakes of the judge or investment bank do. An additional advantage is that liquidity constraints are not an issue here. The junior participants have not to raise money to get what they are entitled to.

Certainly, non-market solutions are far from perfect and it would be worthwhile to look for improvements of them, e.g. by giving the right incentives for the person who estimates the value of the insolvent firm, or to search for the best one of them. The starting problem of Bebchuk's analysis remains, every participant may complain about the concrete estimate ex post. However, the estimation procedure has no bias,[43] therefore the expectation of the estimate is fair ex ante. It is even possible that seemingly clear violations of absolute priority by giving something to junior creditors or even owners before the senior creditors are paid in full are not really such violations because the exact value of the firm is very uncertain, such that the owners should possibly get a lot or nothing and the expectation of their position is a small, but positive amount. At the same time, the senior creditors should be paid in full with a high propability and get much less with some positive probabilty, such that the expectation of their position is a bit less than full payment.[44]

5. Conclusion

There is one important and justified reason for complaining about the outcome and fairness of Bebchuk's proposed insolvency procedure, namely that junior participants do not get the expected value of what they are entitled to.[45] They are forced to estimate the company's value, but they can only lose when there is a discrepency between the estimated and the real value. Winners of this violation of absolute priority are the more senior participants. Senior participants also profit from restricted financial resources of the junior participants. Junior participants can lose what they are entitled to, if they lack the money needed to exercise their options. Moreover, the day of reckoning at which all claims mature is a disadvantage for the junior creditors and even owners.

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participants at the expense of others (selling too early benefits the (more senior of the) junior creditors, selling too late helps the old owners (and/or most junior creditors)).

[42] A more market-oriented solution could be a part of the proposal by Bradley and Rosenzweig (1992). Accordingly, in case of insolvency the old owners lose everything and the most junior creditors become the new owners. All other creditors remain creditors with their old, unchanged claims. If the firm is still insolvent or becomes so again, the process is repeated: The new owners have to leave the firm and the then most junior creditors turn into owners. (The other part of the proposal dismissed here is the idea of Bradley and Rosenzweig that the markets would react in such a way that neither any insolvency procedure nor judges will be necessary in the future. However, this is neglecting transaction costs, see the critique by LoPucki (1992).)

[43] This depends on the used procedure. E. g. Chapter 11 may have a bias against senior creditors.

[44] This could also be a solution to the day of reckoning problem, see Section 3.4 above.

[45] See Section 3.2 above.

These violations of absolute priority are not specific to Bebchuk's proposal but are also present at other market solutions, though perhaps to a lesser degree. Non-market insolvency procedures–like a distribution of shares following a central estimation of the company's value by a judge or an investment bank–do not have these problems. They certainly have problems of their own, but it was not intended to compare the qualities of these different procedures in this paper. Instead, the aim was to demonstrate that Bebchuk's proposal should not be included in such a comparison because, in any case, it is simpler and at least as fair or even fairer to sell the firm's shares in the market by using an English auction.

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