

Is bargaining in Chapter 11 costly?

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Abstract

This paper investigates the issue of bankruptcy costs in multiple-plan Chapter 11s. I concentrate on the first (rejected) and last (effective) plans of reorganization and find that the distribution to claimants shrinks by 6.5% during this period of extended bargaining, inducing extra bankruptcy costs of 2.8% of assets. Unsecured creditors constitute the driving force in the negotiation, as they seem to reject plans with unfavorable deviations from absolute priority. In this way, they cause delay in the negotiations, even if they risk ending up with a lower recovery due to firm value erosion along with other classes of claimants.

Key words: Bankruptcy costs; Bargaining; Recovery rates; Deviations from absolute priority; Multiple-plan firms; Single-plan firms.

JEL classification: C72, C78, G33.

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1. Introduction

Dixit & Nalebuff (1991) compare a bargaining process to children arguing over the division of an 'ice-cream pie' that shrinks steadily after each failed round of negotiations. The parties are thus motivated to achieve an immediate settlement and agree on a division based on the strategic principle of 'looking ahead and reasoning back'.¹ However, in the presence of asymmetric information it may be difficult to reach an agreement without delay.

Chapter 11 of the U.S. Bankruptcy Code provides a good illustration of problems of asymmetry of information faced by the parties involved in a bankruptcy process, namely secured creditors, unsecured creditors and equity-holders. All these participants hold their own private information over the 'true' value of the bankrupt firm, but, as Wruck (1990) points out, they do not necessarily have relevant information or there might be no incentive to reveal what they know to the other participants. Bergman & Callen (1991) say that in this case the bargaining process may last several rounds before a settlement is achieved, if ever. Hence, firms might need to

¹ See Dixit & Nalebuff (1991, pp. 45, 286) and also Rubinstein (1982).

have successive plans of reorganization until an eventual agreement is reached.²

Franks & Torous (1989) and Fabozzi et al. (1993) appreciate that the longer the negotiation process, the smaller the value of the firm to be distributed amongst all claimants due to higher bankruptcy costs (see also Jensen, 1989 and Jensen, 1991)³. Bankruptcy costs are the deadweight economic costs of firms going bankrupt (see e.g. Weiss, 1990 and Altman, 1984). They include both direct and indirect costs of bankruptcy. The direct costs of bankruptcy are legal and other professional fees associated with the bankruptcy filing and are about 3% of firm value at the time of filing for bankruptcy (see Weiss, 1990). The indirect costs of bankruptcy account for the unmeasurable opportunity costs, e.g. lost sales and a decline in the value of inventory, increased operating costs and a reduction in the firm's competitiveness. Altman (1984) provides an estimate of 10.5% of firm value at the time of the bankruptcy filing.

Instead of focusing on bankruptcy costs for the whole duration of the Chapter 11 procedure as previous authors did, I concentrate my analysis on the time period between the first (rejected) plan of reorganization and

² See LoPucki (1983a, 1983b), Tashjian et al. (1996), Hubbard & Stephenson (1997) and Carapeto (2002) for some evidence of multiple-plan firms.

³ For example, Weiss & Wruck (1998) report that Eastern Airlines' value dropped by more than 50% during its bankruptcy.

the effective plan of reorganization. I find that the delay to reach an agreement can be costly, as the available 'pie' might shrink meanwhile, in particular when accounting for the growth in the value of the assets that reflects its cost of capital. Using a sample of 70 multiple-plan firms that reorganized successfully⁴, I show that the reduction in the total distribution to all claimants, i.e. the pie, from the first plan of reorganization to the last one is quite significant and generally affects all classes. The pie shrinks on average by 6.5% during the extended period of bargaining, which gives an extra \$26.5 million (direct and indirect) bankruptcy costs, or 2.8% of the assets at the time of filing for bankruptcy for multiple-plan firms. These extra bankruptcy costs seem to fit a concave function in the assets of the firms, which supports Warner's (1977) claims for total bankruptcy costs.

Since the extra bargaining is very costly, why do claimants not accept the first plan of reorganization? Betker (1995) argues that the larger the number of classes of claimants, the more severe the asymmetry problems over the value of the firm and hence a more intense and complex bargaining process. Using the sample of 70 multiple-plan firms and a sample of 27 single-plan firms that reorganized successfully, I find that multiple-plan firms have more classes of claimants than single-plan firms. Wruck (1990) says that claimants will support a value-destroying reorganization provided their share of the pie is greater than that given by a

⁴ A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged.

value-maximizing alternative. In fact, I show that the larger the deviations from absolute priority rules the more difficult it is to reach an agreement. In particular, unsecured creditors seem to constitute the driving force in the bargaining process of multiple-plan firms. Unsecured creditors will most likely reject a plan that does not favor them much in terms of deviations from absolute priority rules. In this way, they cause delay in the negotiations even if they risk ending up with a lower recovery due to firm value erosion.

The paper is organized as follows: Section 2 presents the data and methodology. Section 3 discusses the issue of extra bankruptcy costs and their determinants and provides results for both single-plan and multiple-plan firms in terms of recovery rates and deviations from absolute priority. In addition, some influential factors in multiple-plan firms are examined. Section 4 concludes.

2. Data and methodology

2.1. Data sources

The main source for the data used in this paper was the Bankruptcy DataSource. This database provides information concerning the plans of reorganization and news related to the bankruptcy process for every publicly-traded company with assets in excess of \$50 million. The SEC

(Securities Exchange Commission) filings (including the 8Ks, 10Ks and 10Qs) and the Dow Jones News Retrieval service were also used as a complement to the Bankruptcy DataSource. Information concerning the prices of securities (debt, preferred stock, options, warrants, rights and common stock) and number of outstanding shares was obtained from the Center for Research in Security Prices (CRSP), Bloomberg and Datastream. When these values were not available, I used the estimates provided in the plans of reorganization for share prices, the face value for debt and liquidation preference for preferred stock or calculated them myself (options, warrants and rights)⁵. The Standard & Poor's 500 returns and the 1-year Treasury Bills information were downloaded from CRSP. Accounting & financial data and industry/management characteristics of the companies involved were compiled from COMPUSTAT and the Bankruptcy DataSource.

My sample consists of 97 firms that filed for Chapter 11 and successfully emerged (with their independence preserved or were acquired/merged) over the period January 1989 to December 1997. This sample comprises 27 single-plan Chapter 11s and 70 multiple-plan Chapter 11s, including 27 prepackaged bankruptcies, with 14 single-plan firms and 13 multiple-plan firms.

⁵ My results are not sensitive to the cases (about 5%) where I had to use estimates.

2.2. Methodology

Claimants were classified in three classes: 'secured', 'unsecured' and 'equity'⁶. The estimated allowed claims were obtained from the plans of reorganization, and so were the amounts received upon reorganization, distributed by the categories 'cash', 'debt', 'preferred stock', 'options'⁷ and 'shares'. With this information I computed percentage recovery rates and percentage deviations from absolute priority rules, following Franks & Torous (1994), Eberhart et al. (1990) and Betker (1995). Recovery rates for each class are given by the amount received by all the creditors in that class divided by the estimated allowed claim at face value for that class. Percentage recoveries for equity were measured according to two different metrics: 1) what old equity-holders receive as a percentage of the total value of the fully diluted equity (old + new) upon emergence; 2) what old equity-holders receive as a percentage of the total value of the firm upon emergence. Deviations from absolute priority for each class measure the net dollar deviations as a percentage of the value of the securities that were restructured. In addition, I obtained an index of deviations from absolute priority rules given by the sum of the squared individual class deviations. In this way I am able to assess the fairness of a plan using only one variable.

⁶ The category 'Equity' includes preferred stock, options, rights, warrants and common stock.

Stock prices were generally not available for the first plan of reorganization. However, even when available, their quality was questionable as a result of thin trading. Hence, the stock prices upon emergence were used instead to calculate the payments of the claims, discounted at the implied returns from investing in the Standard & Poor's 500, between the first plan of reorganization and the effective plan.⁸

To facilitate a comparison between the payments under the first plan of reorganization and the last one, an opportunity cost was added to the claims of the creditors in the first plan, in line with the time span between these plans. Thus, the assessment is between the payments according to the effective plan of reorganization, and the cash flows that would have been available from investing the payments following the first plan of reorganization in the Standard & Poor's 500 for the period between these two plans. This approach follows Kaplan & Ruback (1995), where the discount rate for the cash flows is based on the CAPM (Capital Asset

⁷ The category 'Options' includes options, rights and warrants.

⁸ Even if all stock prices were available for the first plan of reorganization, it would still be preferable to use the stock prices upon emergence from bankruptcy. As in the proposed plan of reorganization new equity is often being issued, it is not clear what the relation would be between the prices of old equity and new equity. However, the downside is that the final price might not accurately reflect the expected value when the decisions were made.

Pricing Model), but with an assumed asset beta of one (see Alderson & Betker, 1999). One underlying assumption is that there is no change in the investment strategy of the firms from the first to the effective plan of reorganization. In order to check the results for robustness, alternative investment possibilities were included in the analysis: i) 1-year Treasury Bills (other maturities were also considered without substantially changing the results) and ii) a conservative fixed rate of 5% per year, which is very close to the average 1-year Treasury Bills over the sample period (slightly below 6%).

2.3. Data analysis

Table 1 describes the time-series distribution by filing date for the sample of 97 firms that filed for Chapter 11 over the period starting in January 1989 and finishing in December 1997, including 27 single-plan Chapter 11s and 70 multiple-plan Chapter 11s. Table 2 displays some selected characteristics for both single-plan firms and multiple-plan firms in the sample. There are on average 2.8 plans in multiple-plan firms, which gives a measure of the intensity of the bargaining. Single-plan firms are generally smaller, less solvent, liquid & profitable, with a larger proportion of intangibles but similar leverage to multiple-plan firms. They come predominantly from the manufacturing consumers industry, while multiple-plan firms are mostly retail corporations.

One possible classification of Chapter 11 bankruptcies is in terms of pre-packs and conventional (traditional) Chapter 11s. Pre-packs are a form of corporate restructuring where the debtor and the creditors negotiate the terms of the reorganization outside the Court (under Subsection 1126(b) of the Bankruptcy Code, which allows negotiation prior to filing for bankruptcy). The company then files a bankruptcy petition and the plan of reorganization, which becomes effective after the Court ratifies it, in the same way as a traditional Chapter 11. We can distinguish between pre-voted pre-packs and post-voted pre-packs. In pre-voted pre-packs the debtor files the outcome of the vote together with the bankruptcy petition and the plan of reorganization. This vote is binding on all claimants, provided that there was an adequate disclosure and the vote was properly conducted. In post-voted pre-packs the vote is conducted in Chapter 11 under the supervision of the Bankruptcy Court, and so we may have multiple plans of reorganization as with conventional Chapter 11s. Pre-packs account for 51.9% of the sub-sample of single-plan firms and 18.6% of the sub-sample of multiple-plan firms.

Another distinction is between voluntary and involuntary filings. Chapter 11 filings usually result from a voluntary action of the management of the distressed company. Alternatively, creditors can file an involuntary bankruptcy petition or ask for the firm to be liquidated at once, if the

company is not paying its debts as they come due.⁹ The debtor will then either file a voluntary petition or move for dismissal. In my sample, involuntary filings account for 11.3% of the total, and are more common in multiple-plan firms (81.8% of the total number of involuntary filings) than in single-plan firms.

Single-plan firms spend less time in bankruptcy than multiple-plan firms, which results in fewer cases of debtor-in-possession financing (or DIP financing, which is post-petition financing in bankruptcy) in these firms. Being smaller and less profitable, the number of classes of creditors is smaller and equity committees are often less frequently appointed in single-plan-firm bankruptcies, even though there are more classes of equity-holders. The Districts of New York and especially Delaware (Skeel, 1998) have been shown to provide a faster bankruptcy resolution, and are clearly associated with single-plan firms.

3. Results

This section provides a measure of the bankruptcy costs incurred during the period of extended bargaining in multiple-plan firms. Indicators such as recovery rates and deviations from absolute priority are computed in

⁹ An involuntary petition must be filed by at least three creditors and the unsecured portions of their claims in aggregate should be a minimum of \$10,000 (see KPMG, 1997, p. 323).

order to assess how claimants fare in the plans of reorganization. In addition, there is an investigation of the determinants of these extra bankruptcy costs and the type of firm (single-plan versus multiple-plan).

3.1. Cost of bargaining

Table 3 gives an idea of the loss in firm value as a result of the extended bargaining, i.e. the decrease in the claims' settlement from the (rejected) first plan to the effective plan of reorganization. An adjustment factor that reflects the opportunity cost of not having invested the proceeds of each company in the Standard & Poor's 500 was added to the payments of all claimants in the first plan of reorganization. I show that the total distribution in the first plan was on average 6.5% larger than in the effective plan (p-value smaller than 1%), which gives an extra \$26.5 million bankruptcy costs for multiple-plan firms, for an average effective total distribution of \$407.1 million. This is equivalent to 2.8% of the assets at year-end prior to the filing, based on an average asset value of \$958.1 million. The percentage change in the total distribution for pre-packs was much smaller, actually -0.4%, but this is not significant at conventional levels. For traditional Chapter 11s, the percentage change in value was much larger, 8%, and significant at the 1% significance level, with increased bankruptcy costs of 3.2% of the assets.

The reduction in the value of the pie is still statistically significant at conventional levels with alternative investment possibilities, namely 1-year

Treasury Bills (loss of 3%) and a fixed rate of 5% per year (loss of 3.1%). This confers some legitimacy to the thesis of firm value dissipation during the period of extended bargaining.

It becomes now relevant to investigate the determinants of these extra bankruptcy costs. Table 4 provides such an analysis by showing the results of a linear regression that assesses the determinants of the loss in firm value as a result of the extended bargaining for multiple-plan firms. The variables considered and the rationale behind their choice are:

- Warner (1977) spotted a scale effect in railroad firms, i.e. some evidence of substantial fixed costs associated with the bankruptcy process, implying the existence of large economies of scale with respect to bankruptcy costs (see also Ang et al. (1982), Gilson et al. (1990), Guffey & Moore (1991) and James (1991)). Weiss (1990) however showed that the direct costs of bankruptcy, though highly correlated with total assets, do not fit a concave function. I use a polynomial of second order in the log-assets of the firms and find evidence supporting the scale effect hypothesis that the extra bankruptcy costs fit a concave function.
- A measure of solvency/profitability: The more solvent/profitable the firm prior to filing for bankruptcy, the more feasible it becomes for claimants to delay reaching an agreement, thus potentially incurring in substantial extra bankruptcy costs. Several measures were used, but the best indicators were the ratios assets/liabilities (the inverse was

used) and revenues/assets (again the inverse was used), measured at year-end prior to filing for bankruptcy. The higher the solvency and profitability levels of a firm, the worse the loss in value as a result of the extended bargaining, as expected.

- Complexity of the cases: The more complex the case, the more difficult it is to reach a fast agreement. Betker (1995) states that we can measure the complexity of the bargaining by the number of different creditor classes. The larger the number of creditor classes, the more acute the asymmetric information problems in the process and so the more complex the bargaining. The log-number of classes of secured creditors was used as a proxy for the complexity of the bargaining (the number of classes of unsecured creditors was not a significant variable) and was shown to be positively associated with increased bankruptcy costs between the first and effective plans of reorganization. In addition, a polynomial of second order in the number of plans of reorganization until an eventual agreement (again the log was used) was introduced in the regression. The results show that the extra bankruptcy costs fit a concave function in this explanatory variable.
- Since pre-packs are typically very fast bankruptcy procedures (see e.g. Tashjian et al., 1996), one should anticipate lower firm value depletion as a result of the extended bargaining. A dummy with a value of 1 in case of pre-pack and 0 otherwise was used as a control variable. As expected, the coefficient is significantly negative.

- The appointment of new top managers, both before and during the bankruptcy case, might increase the complexity of the process thus contributing towards extra bankruptcy costs. Several dummy variables were used, but the most significant were two dummy variables with a value of 1 in case of new CEO in bankruptcy and chairman before bankruptcy, respectively, and 0 otherwise. Both coefficients have the expected values and are significant.

We have seen that the extra bankruptcy costs incurred by multiple-plan firms following the need for additional plans of reorganization before reaching an agreement are not trivial. Still, this is a very common practice. This evidence raises the question of whether all claimants lose out in the process or, instead, there is some wealth transfer among the parties involved in the bankruptcy process. The following sections examine this issue by providing recovery rates and deviations from absolute priority for all classes of claimants.

3.2. Recovery rates

Table 5 shows the percentage recovery rates for each class of claimants upon the first and the last plans of reorganization for both pre-packs and conventional Chapter 11s. Starting with multiple-plan firms, we can see that in general unsecured creditors recover more in pre-packs than in conventional Chapter 11s, which supports Tashjian et al.'s (1996) findings, whereas secured creditors recover less. Equity-holders seem to recover

more in traditional Chapter 11s, and this result holds with either metric. They retain a significantly larger ownership and receive a bigger proportion of the total distribution in conventional Chapter 11 bankruptcies.

If we now look at the different plans of reorganization of multiple-plan firms, although most classes of creditors lose out in the last plan, the difference is small and not significant at conventional levels of significance (not shown in the table). There is some strong indication of equity-holders recovering less and retaining a smaller ownership in the effective plan, which supports Hubbard & Stephenson's (1997) results.

In order to compare the two plans of reorganization of multiple-plan firms in a satisfactory way a time value factor was introduced in the analysis. The effect of time value is given by an adjustment factor reflecting the opportunity cost of not having invested the proceeds of each company in the Standard & Poor's 500, which was added to the claims in the first plan of reorganization. We can see that all claimants lose out in the process, in particular in conventional Chapter 11s, where they would have ended up with significantly more had they accepted the very first offer, and also considering time value. This suggests that a prolonged bargaining does not help creditors, as it seems that they do not actually have much leverage in the process in order to obtain larger 'concessions' from the debtor.

Table 5 also provides recovery rates for claimants in single-plan firms. Contrary to multiple-plan firms, all claimants' recoveries are larger in

prepackaged bankruptcies, thus suggesting a much lower value erosion in the process. In general, unsecured creditors recover substantially more in single-plan firms whereas equity-holders, on the other hand, obtain significantly higher recoveries in multiple-plan firms.

3.3. Deviations from absolute priority

In order to shed some light on the issue of multiple-plan firms I computed another important indicator, deviations from absolute priority rules, which gives an idea about the strength of each class in the bargaining process. Percentage deviations from absolute priority rules are produced in Table 6. We can see that equity-holders gain consistently in multiple-plan firms, to the detriment of creditors, in particular secured creditors. If we compare deviations from absolute priority between the two plans of reorganization of a multiple-plan conventional Chapter 11, we can see that unsecured creditors gain more from the first plan to the effective one while secured creditors lose out in the process.

This analysis provides some rationale for the behavior of unsecured creditors as a class. They end up getting less in the last plan of reorganization, in particular when time value is taken into account. However, recovering a small proportion in excess of what they should in the first plan seems to be the driving force to reject such a plan and continue bargaining. The fact that unsecured creditors receive a lower payment in the last plan of reorganization in spite of more favorable (less unfavorable)

deviations from absolute priority rules corroborates the fact that multiple-plan firms potentially face a higher value erosion (bankruptcy costs) than single-plan firms.

If we now compare the plans of reorganization of a multiple-plan firm and that of a single-plan firm, secured creditors display negative deviations from absolute priority in all cases, and they are not significantly different from each other. Equity-holders gain consistently more than they should in multiple-plan firms than in single-plan firms.¹⁰ There is some evidence that creditors lose less (gain more) in single-plan firms, to the detriment of equity-holders. In addition, deviations from absolute priority for secured creditors seem to be significantly different between pre-packs where they give up less and conventional Chapter 11s, where they give up substantially more, thus largely favoring unsecured creditors.

An interesting point is that deviations from absolute priority rules for creditors as a whole in single-plan firms are significantly different from those in multiple-plan firms. This analysis thus suggests that one possible reason for the failure of the first round of negotiations was the fact that equity-holders would have recovered substantially more than they should in that instance. However, further negotiations only seemed to result in

¹⁰ However, one should note that the negative mean deviations for equity-holders in single-plan firms are not significantly different from zero (lowest p-value = 0.3). This means that they do not necessarily lose out in these cases.

value transfer from secured creditors to unsecured creditors, with an overall value depletion.

3.4. Determinants of multiple-plan reorganizations

The last two sections have focused on the payments that the classes of claimants receive in Chapter 11, both in absolute terms and relative to one another, for both single-plan and multiple-plan firms. But what are the determinants of a multiple-plan firm?

Table 7 displays a logistic model that assesses the determinants of multiple-plan reorganizations.¹¹ The variables considered and the rationale behind their choice are:

- A measure of solvency/profitability: The more solvent/profitable the firm, the more likely it is that the claimants can afford to bargain for longer. Several measures were used, but the best indicator was the assets/liabilities ratio, measured at year-end prior to filing for bankruptcy. Multiple-plan firms are more solvent than single-plan firms as expected.

¹¹ This logistic regression has an overall accuracy of 88.1%, with 93.1% correct predictions for reorganizations with multiple plans and 76.9% correct predictions for reorganizations with a single plan, using the optimal cut-off of 50%.

- The concession of debtor-in-possession financing should be associated with multiple-plan firms, as it makes it easier for them to continue business as usual, without being greatly penalized for not reaching a consensus in the earlier stages of the bankruptcy process. A dummy with a value of 1 in case of DIP financing and 0 otherwise was used. However, Carapeto (1999) shows that the relative size of the new loan has a positive impact on creditors' recovery rates, so the larger the relative size of DIP financing the more likely a firm is to have needed just one plan of reorganization before emerging from bankruptcy. The ratio DIP financing/estimated total debt was used.

The presence of DIP financing favors multiple-plan firms, and the coefficient of relative DIP financing is negative and significant at conventional levels as expected.

- Complexity of the cases: The more complex the case, the more difficult to reach an agreement in the first round of negotiations. Betker (1995) argues that the complexity of the bargaining can be measured by the number of different creditor classes. A more complex bargaining process is associated with a larger number of creditor classes, which may cause more asymmetric information problems. The number of classes of secured creditors was used as a proxy for the complexity of the bargaining (the number of classes of unsecured creditors was not a significant variable). In multiple-plan firms there are significantly more classes of secured creditors than in single-plan firms (the log was used).

This can be responsible for more problems of asymmetric information over the value of the firms in the former ones and so a delay in reaching agreement.

- The larger the deviations from absolute priority for all claimants in a plan of reorganization, the more likely that plan is to be rejected, as the distribution of firm value is less than equitable.¹² The index of deviations from absolute priority for all claimants following the first plan of reorganization (the effective one in the case of single-plan firms) was used. As expected, the coefficient of this variable is positive and significant at conventional levels.
- Unsecured creditors seem to be the driving force in the negotiations, as they will most likely reject plans that do not favor them much in terms of deviations from absolute priority rules. The index of deviations from absolute priority for the class of unsecured creditors following the first plan of reorganization (the effective one in the case of single-plan firms) was used, and the results show a significantly negative relation with multiple-plan firms.
- In pre-packs part of the bargaining has already taken place prior to filing for bankruptcy (see e.g. Tashjian et al., 1996), and so the

¹² It is fair to note that this indicator uses ex post information, however Alderson & Betker (1996) have shown that estimates of going-concern value supporting the plans of reorganization are on average unbiased.

likelihood of having multiple-plan firms is lower. A dummy with a value of 1 in case of pre-pack and 0 otherwise was used in order to control for this fact. As expected, the coefficient is significantly negative.

- The appointment of a new top manager before filing for bankruptcy can imply that he will not necessarily align his interests with the equity-holders in terms of trying to delay an agreement, and so he might seek a fast emergence from bankruptcy. If the appointment was made in Chapter 11 already, this compounds the complexity of the process, implying that a previous agreement was not possible with the former top manager and so more bargaining might be needed. Several dummy variables were used to account for CEO and chairman turnover, but the only significant ones were two dummy variables with a value of 1 in case of new chairman before (during) bankruptcy and 0 otherwise. Both coefficients have the expected values and are significant.
- Table 2 shows that one in four single-plan firms are from the manufacturing consumers industry. A dummy with a value of 1 in the case of manufacturing consumers industry and 0 otherwise was used (a classification according to whether the firm is in the retail industry, important for multiple-plan firms, was not critical). The coefficient is negative as expected and significant.

Other independent variables were introduced in the regression but they turned out insignificant at conventional levels. Firstly, the proposer of the

first plan of reorganization (only plan for single-plan firms) might matter. One can reason that if the first plan of reorganization is proposed by the creditors, it is more likely that the bargaining will take longer, with the need for further plans of reorganization. In fact, it is important that equity-holders agree with the plan of reorganization in order to avoid a costly and time-consuming cram-down¹³. The proposer of the first plan does not seem to have a significant impact on the type of firm, though the only two cases of creditors proposing the first plan of reorganization happened in multiple-plan firms.

Secondly, in many cases (e.g. Leslie Fay Companies, Inc.) the sub-classes of unsecured creditors are responsible for delaying the resolution of the bankruptcy process. The index of deviations from absolute priority within the class of unsecured creditors following the first plan of reorganization (the effective one in the case of single-plan firms) was used. Despite larger deviations from absolute priority within the class of unsecured creditors in

¹³ A cram-down allows the Court to confirm a plan by comparing the amounts that were granted with the amounts that would accrue if the firm were liquidated in a piecemeal liquidation and absolute priority rules were followed. Subsection 1129(b) allows cram-down as to any dissenting class, as long as the Court finds that the “non-consensual plan” does not discriminate unfairly, and is fair and equitable, with respect to each class of claims or interests that is impaired under, and has not accepted the plan. In other words, the absolute priority rule holds for the dissenting class and for more junior classes.

the first plan being associated with multiple plans of reorganization, these results were not significant at conventional levels.

Thirdly, Bergman & Callen (1991) use the proportion of intangible assets in the total value of the firm as a proxy for the amount of damage that shareholders can cause, which reflects their bargaining power in the bankruptcy process. The intangibles/assets ratio, measured at year-end prior to filing for bankruptcy was used. One could think that firms with a large proportion of intangibles in their assets should favor only one plan of reorganization to avoid further value delapidation. However, the coefficient associated with this variable was not significant at conventional levels.

Lastly, Hothchkiss & Mooradian (1998) found that the presence of multiple bidders was associated with delay in the negotiations, as shareholders would postpone the resolution of bankruptcy hoping that more attractive offers would turn up. However, this factor does not seem to affect the type of firm.

4. Conclusion

Deviations from absolute priority rules are a key factor in the bankruptcy bargaining process. Secured creditors are chronically harmed in the dispute, usually recovering less than they should. Shareholders, on the other hand, persistently gain from absolute priority violations. Unsecured creditors also want to benefit from these deviations. Thus, there is evidence

that unsecured creditors are 'bribed' when they get larger deviations from absolute priority rules, thus supporting a faster process with lower bankruptcy costs. Otherwise, further plans will have to be put forward. Meanwhile, firm value erosion induces lower recovery rates for all claimants, and so at the end everybody typically is worse off as a result of the extended bargaining.

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Table 1: Time-series distribution of successful bankruptcies by filing date

Firm bankruptcies by year and type of filing, in successful reorganizations. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. The figures are based on 27 Chapter 11s with only one plan of reorganization (one-plan firms) and 70 Chapter 11s with more than one plan of reorganization (multi-plan firms). The sample period is from January 1989 to December 1997.

Years	One-plan	Multi-plan	Total
1989	2	2	4
1990	2	7	9
1991	3	20	23
1992	3	10	13
1993	4	13	17
1994	1	5	6
1995	5	7	12
1996	6	4	10
1997	1	2	3
Total	27	70	97

Table 2: Selected characteristics of bankrupt firms

Selected characteristics of firms that successfully reorganized in bankruptcy. The financial data is measured at year-end prior to filing for bankruptcy. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. The figures are based on 27 Chapter 11s with only one plan of reorganization (one-plan firms) and 70 Chapter 11s with more than one plan of reorganization (multi-plan firms). The sample period is from January 1989 to December 1997.

	Averages (Medians)	
	One-plan firms	Multi-plan firms
Number of plans	1	2.8 (2.0)
Total assets (\$m)	461.9 (247.6)	1,189.1 (359.6)
Total liabilities (\$m)	483.8 (273.0)	975.3 (293.3)
Total assets/Total liabilities (%)	98.9 (100.0)	110.6 (104.2)
Current assets/Current liabilities (%)	86.9 (71.7)	123.4 (107.5)
Fixed assets/Total assets (%)	30.5 (27.8)	33.2 (28.2)
Intangibles/Total assets (%)	16.4 (6.3)	11.2 (3.5)
Long term debt/Total liabilities (%)	45.4 (42.7)	41.4 (47.8)
Revenue/Total assets (%)	99.0 (91.6)	125.3 (111.5)
Manufacturing industrial (%)	14.8	12.9
Manufacturing consumers (%)	25.9	12.9
Air transportation (%)	7.4	7.1
Retail (%)	18.5	32.9
Pre-pack (%)	51.9	18.6
Involuntary filing (%)	7.4	12.9
Time in bankruptcy (days)	272.4 (87.0)	524.7 (405.0)
Debtor-in-possession financing (%)	22.2	54.3
Equity committee (%)	3.7	21.4
Number of classes of secured creditors	2.3 (2.0)	3.9 (2.0)
Number of classes of unsecured creditors	3.1 (2.0)	4.3 (4.0)
Number of classes of equity-holders	1.9 (2.0)	1.8 (1.0)
Venue in the District of New York (%)	33.3	15.7
Venue in the District of Delaware (%)	29.6	18.6

Table 3: Reduction in value of the total distribution for multiple-plan firms

Percentage reduction in value of the total distribution, by type of filing, in successful reorganizations. The reduction in value of the total distribution is given by the ratio of the total distribution according to the first plan of reorganization, including an adjustment factor that reflects the opportunity cost of not having invested the proceeds of each company in an alternative investment, and the total distribution of the effective plan of reorganization, minus one. The alternative investments considered are: Standard & Poor's 500, 1-year T-Bills and a fixed rate of 5%. A positive (negative) percentage means that the value of the distribution decreased (increased) between the two plans of reorganization. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. The figures are based on 70 Chapter 11s with more than one plan of reorganization. The sample period is from January 1989 to December 1997. * and ** mean significant at the 5% and 1% level, respectively.

Type of filing	Standard & Poor's 500	Reduction in value (%)	Fixed rate of 5%
		T-Bills	
Pre-packs	13	13	13
Mean	-0.4	-2.1	-1.8
Lower quartile	-0.9	-1.7	-1.8
Median	0.9	-1.1	-1.0
Upper quartile	1.1	-0.2	0.5
Non-Prepacks	57	57	57
Mean	8.0**	4.1**	4.2**
Lower quartile	-0.5	-0.6	-0.6
Median	2.9**	1.8**	1.5**
Upper quartile	14.4	5.2	4.8
Total	70	70	70
Mean	6.5**	3.0*	3.1*
Lower quartile	-0.8	-1.4	-1.1
Median	1.4**	0.7*	0.6*
Upper quartile	8.8	4.4	4.2

Table 4: Determinants of the reduction in value of the total distribution for multiple-plan firms

Ordinary least squares regression of the determinants of the reduction in value of the total distribution for multiple-plan firms in successful reorganizations. The reduction in value of the total distribution (%) is given by the ratio of the total distribution according to the first plan of reorganization, including an adjustment factor that reflects the opportunity cost of not having invested the proceeds of each company in the Standard & Poor's 500 as an alternative investment, and the total distribution of the effective plan of reorganization, minus one. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. Accounting variables are measured at year-end prior to filing for Chapter 11. The figures are based on 70 Chapter 11s with more than one plan of reorganization. The sample period is from January 1989 to December 1997. P-values are shown in brackets.

Independent variables	Coefficients
Constant intercept	-53.921
Log(Total assets)	13.283 (0.098)
Log(Total assets) ²	-1.076 (0.081)
Total liabilities / Total assets	-7.203 (0.010)
Total assets / Revenues	-0.075 (0.002)
Log(Number of classes of secured creditors)	4.358 (0.034)
Log(Number of plans)	40.635 (0.012)
Log(Number of plans) ²	-14.085 (0.019)
Dummy Pre-pack	-6.975 (0.033)
Dummy New CEO in bankruptcy	6.874 (0.050)
Dummy New chairman before bankruptcy	28.925 (0.007)
R ² (%)	50.315
Sample size	58 ^a

^a Due to data unavailability regarding some independent variables this sample is smaller than the initial one.

Table 5: Recovery rates in bankruptcy reorganizations

Percentage recovery rates for each claimant class^a, by type of filing, in successful reorganizations. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. The figures are based on 27 Chapter 11s with only one plan of reorganization (one-plan firms) and 70 Chapter 11s with more than one plan of reorganization (multi-plan firms). The sample period is from January 1989 to December 1997. *, **, and *** mean significant at the 10%, 5% and 1% level, respectively, and refer to tests on the equality of means/medians of recovery rates located in adjacent columns.

	Secured creditors						Unsecured creditors						Equity-holders ^{c,d}						Equity-holders ^{c,e}					
	Multi-plan			One-plan			Multi-plan			One-plan			Multi-plan			One-plan			Multi-plan			One-plan		
	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan	First plan	First plan	Last plan
Pre-packs	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Mean	89.9	***	92.8	***	89.5	89.5	54.7	**	56.7	56.5	56.5	56.5	56.5	56.5	12.4	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Median	100.0	***	101.5	***	100.0	100.0	58.9	***	59.2	52.6	52.6	52.6	52.6	52.6	3.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Non-Prepacks	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57	57
Mean	95.3	***	101.3	***	92.9	92.9	44.2	***	47.2	43.7	43.7	43.7	43.7	43.7	17.6	**	12.6	***	12.6	***	12.6	***	12.6	***
Median	100.0	***	101.6	***	100.0	100.0	35.8	***	39.7	36.2	36.2	36.2	36.2	36.2	3.0	*	1.9	**	1.9	**	1.9	**	1.9	**
Total	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Mean	94.3	***	99.7	***	92.3	92.3	46.1	***	49.0	46.1	46.1	46.1	46.1	46.1	16.6	**	12.4	***	12.4	***	12.4	***	12.4	***
Median	100.0	***	101.5	***	100.0	100.0	38.2	***	42.1	40.3	40.3	40.3	40.3	40.3	3.0	**	2.1	**	2.1	**	2.1	**	2.1	**

^a Recovery rates for each class are given by the amount received by all the creditors in that class divided by the estimated allowed claim at face value for that class.

^b An adjustment factor reflecting the opportunity cost of not having invested the proceeds of each company in the Standard & Poor's 500 was added to the claims in the first plan of reorganization.

^c 'Equity-holders' include holders of preferred stock, options, rights, warrants and common stock.

^d The percentage recovery rate for equity-holders was obtained as a percentage of the ownership retained by pre-existing share-holders, after dilution.

^e This column reflects a different metric for equity recovery rates: the percentage recovery rate for equity-holders is given by the proportion of their payments over the total distribution to claimants.

Table 6: Deviations from absolute priority in bankruptcy reorganizations

Deviations from absolute priority for each claimant class^a, by type of filing, in successful reorganizations. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. The figures are based on 27 Chapter 11s with only one plan of reorganization (one-plan firms) and 70 Chapter 11s with more than one plan of reorganization (multi-plan firms). The sample period is from January 1989 to December 1997. *, ** and *** mean significant at the 10%, 5% and 1% level, respectively, and refer to tests on the equality of means/medians of deviations from absolute priority located in adjacent columns.

	Secured creditors			Unsecured creditors			Equity-holders ^b		
	Multi-plan		One-plan	Multi-plan		One-plan	Multi-plan		One-plan
	First plan	Last plan	The plan	First plan	Last plan	The plan	First plan	Last plan	The plan
Pre-packs	13	13	14	13	13	14	13	13	14
Mean	-2.0	-2.3	-2.3	-0.3	0.1	2.5	2.3	2.2	-0.2
Median	0.0	0.0	-0.6	0.0	0.0	1.0	0.6	1.2	0.0
Non-Prepacks	57	57	13	57	57	13	57	57	13
Mean	-2.3	-3.5	-3.3	0.2	**	3.2	2.1	2.1	**
Median	0.0	0.0	0.0	0.0	**	0.0	0.0	0.0	**
Total	70	70	27	70	70	27	70	70	27
Mean	-2.2	**	-2.7	0.1	**	2.9	2.1	2.2	**
Median	0.0	0.0	0.0	0.0	*	0.0	0.1	0.2	**

^a Deviations from absolute priority for each class measure the net dollar deviations as a percentage of the value of the securities that were restructured.

^b 'Equity-holders' include holders of preferred stock, options, warrants and common stock.

Table 7: Determinants of multiple-plan reorganizations

Logistic regressions of the determinants of multiple-plan firms in successful reorganizations. A firm reorganizes successfully when it emerges from bankruptcy with either its independence preserved or is acquired or merged. Accounting variables are measured at year-end prior to filing for Chapter 11. The figures are based on 27 Chapter 11s with only one plan of reorganization (one-plan firms) and 70 Chapter 11s with more than one plan of reorganization (multi-plan firms). The sample period is from January 1989 to December 1997. P-values are shown in brackets.

	Independent variables	Multi-plan
Constant intercept		-1.156
Total assets / Total liabilities (%)		0.019 (0.068)
DIP financing / Estimated total debt (%)		-0.061 (0.082)
Log(Number of classes of secured creditors)		1.208 (0.030)
Index of deviations for all claimants in 1 st plan ^a (%)		0.463 (0.001)
Index of deviations for unsecured creditors in 1 st plan ^a (%)		-0.338 (0.000)
Dummy Pre-pack		-1.823 (0.007)
Dummy DIP financing		2.788 (0.004)
Dummy New chairman before bankruptcy		-3.065 (0.008)
Dummy New chairman during bankruptcy		5.755 (0.003)
Dummy Manufacturing consumers industry		-2.790 (0.000)
Pseudo-R ² (%)		47.956
Sample size		84 ^b

^a Or the unique plan, in the case of single-plan firms.

^b Due to data unavailability regarding some independent variables this sample is smaller than the initial one.