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Clas Bergström
Cornell Law School

Theodore Eisenberg
Cornell Law School, ted-eisenberg@lawschool.cornell.edu

Stefan Sundgren
Cornell Law School

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Secured debt and the likelihood of reorganization

Clas Bergström, Theodore Eisenberg*, Stefan Sundgren¹

Cornell Law School, Myron Taylor Hall, Ithaca, NY 14853, USA

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Abstract

Theory suggests that secured creditors may increasingly oppose a debtor's reorganization as the value of their collateral approaches the amount of their claims. If reorganization occurs and the value of the firm appreciates, the secured creditor receives only part of the gain. But if the firm's value depreciates, the secured creditor bears all of the cost. Secured claimants, thus, often have more to lose than to gain in reorganizations. This study of Finnish reorganizations filed in districts that account for most of the country's reorganizations finds that creditor groups most likely to be well-secured are most likely to oppose reorganization. We also find a negative correlation between how well-secured banks and other institutional lenders are and the likelihood of a confirmed reorganization plan. Limiting the priority of secured debt might stimulate reorganizations. © 2002 Published by Elsevier Science Inc.

1. Introduction

Secured creditors may increasingly oppose a debtor's reorganization as collateral value approaches the creditor's claim. For well-secured creditors, if the firm's value appreciates, the secured creditor gets only part of the gain. But if the firm's value depreciates, the secured creditor bears all of the cost. This article studies the relation between the degree of creditor security and whether a reorganization plan is confirmed.

Based on a large sample of Finnish reorganization cases, we report two principal results. First, we report the percent of each of several creditor groups that claimed reorganization was unsuitable for a debtor. The groups' attitudes towards reorganization correlate with the hypothesized behavior of creditor groups. In particular, the group most likely to be well-secured,

* Corresponding author. Tel.: +1-607-255-6477; fax: +1-607-255-7193.

E-mail address: te13@cornell.edu (T. Eisenberg).

¹ Stockholm School of Economics, Cornell Law School, Swedish School of Economics and Business Administration.

banks with the largest claims against the debtor, is the most likely to believe that reorganization is inappropriate. The outcome of the reorganization process also supports the hypothesized relation. A negative correlation exists between our proxy for how well-secured banks and other institutional lenders are and the likelihood of a confirmed reorganization plan. Limiting the priority of secured debt might stimulate reorganizations.

Section 2 discusses the hypothesized relation between secured debt and the likelihood of reorganization. Section 3 briefly reviews the law of Finnish reorganizations. Some understanding of that law is necessary to interpret the empirical findings reported in Section 4. Section 5 concludes.

2. Secured debt and reorganizations

Priority differences cause conflicts between high and low priority claimholders. These conflicts hamper the consensus needed for reorganization or an out-of-court workout. Secured creditors who believe they will receive close to full payment in liquidating bankruptcy may prefer bankruptcy over reorganization, even when total payments to creditors would be higher in a reorganization. Secured creditors receive only part of the gain if the value of the reorganized firm increases, but bear all of the costs if the value decreases. Theorists acknowledge the likelihood that secured creditor incentives are skewed towards liquidation over reorganization.² But the relation between how well-secured creditors are and the incentive to support reorganization is not clear-cut. If creditors are very well-secured, they may not push for liquidation because they likely will be paid in full even if the firm's attempt to reorganize fails.³ The secured creditor's bias towards liquidation is most prevalent when its claims are close to or less than the collateral's value.

Empirical findings also suggest a relation between debt structure and likelihood of successful reorganization. In Japanese composition cases, Eisenberg and Tagashira present evidence that firms denied confirmation have an average claim size more than twice that of confirmed cases. If average claim size exceeds 25 million Yen, there is a notably increased chance of confirmation denial.⁴ It is likely that these larger claimholders are Japanese banks that enjoy some measure of secured status. In U.S. Chapter 11 cases, Gilson et al. suggest that strategic distortion of cash flow may explain the lack of precision in cash flow valuations that they detect.

Underestimating value increases the proportional claim of senior claimants because of relative priority. Therefore, senior claimants have incentives to underestimate cash flows to increase their recovery in Chapter 11 proceedings. The junior claimants, of course, have the opposite incentive: overestimating value increases their recovery.⁵

An example illustrates that greater creditor equality can reduce secured creditors' preference for bankruptcy. Suppose a secured creditor is owed 95 and unsecured creditors are owed 100. The secured creditor is considering whether to continue the loan (and charge 5 percent interest). Continued operations will yield 130 with 50 percent probability and 70 with 50 percent probability. Liquidation would yield 90. It is efficient to continue the firm's operations. Yet if the secured creditor has full priority in the assets, it should prefer liquidation. The expected payoff to it if the loan is continued is only 85 ($0.5 \times 70 + 0.5 \times 100$). A partial

priority rule reduces this bias towards bankruptcy. Under a rule that gives the secured creditor only a 60 percent priority, the payoff in liquidation is 64.5,⁶ and renewing the loan is a better alternative.⁷

Thus, conflicts of interest between high priority and low priority creditors might impede reorganizations. Well-secured creditors may have the incentive to prefer liquidation to reorganization even though total payments to creditors would have been higher in reorganization.

We, therefore, predict that the likelihood of reorganization can depend on how well-secured banks and other institutional creditors are. The higher the percentage of secured assets, the lower the likelihood of reorganization. Importantly, at least one country has acted based on this reasoning. Finnish lawmakers acted on the belief that debt structure affects the likelihood of reorganization. They were specifically concerned about secured creditors' incentives to oppose reorganizations. They believed that greater equality among creditors would reduce the obstacles to reorganization.⁸ Thus, the Finnish legislature acted to facilitate reorganizations by reducing the priority of some secured debt.⁹

3. Finnish reorganization law

Since our data come from Finland, assessing our findings relating to the effect of secured claims on the likelihood of reorganization requires some familiarity with Finnish reorganization law. In general, Finnish reorganization law is similar to Chapter 11 of the U.S. Bankruptcy Code.¹⁰ Upon filing a petition, a Finnish debtor may apply to the court for a temporary stay against collection action.¹¹ Whether or not a temporary stay is sought, an automatic stay applies after a case passes initial eligibility screening.¹² To further preserve firm value, Finnish law allows a debtor to preserve most contractual relationships during the reorganization process.¹³

Shortly after the filing of a reorganization case, the court must send a notice to the debtor's major creditors.¹⁴ If any of these creditors opposes reorganization, the court determines the case's eligibility for reorganization. Reorganization proceedings continue only if the court finds that the case does not satisfy an ineligibility criteria. The key ineligibility criteria are: (i) it is likely that insolvency cannot be avoided by a reorganization plan, (ii) it is likely that the debtor's assets are insufficient to pay the case's administrative expenses, (iii) it is likely that the debtor will be unable to pay debts arising after initiation of the reorganization, (iv) the main purpose of the filing is to delay creditors from collecting their claims, (v) there are reasons to expect that a reorganization plan will not be approved by creditors, and (vi) the firm's bookkeeping is not reliable.¹⁵ If the court grants permission to continue the reorganization, the reorganization proceeds and the creditors elect an administrator.¹⁶

The administrator has primary responsibility for drafting the reorganization plan but the debtor's management, creditors, or shareholders may prepare competing plans.¹⁷ The administrator is responsible for important disclosures. Immediately after appointment, the administrator must furnish comprehensive schedules, including the debtor's assets, liabilities, and current and expected financial position, to the court.¹⁸ And the administrator must submit a disclosure statement with the reorganization plan to help creditors make an informed judgment about the plan.¹⁹ Information disclosed should include information about creditors' likely recovery with and without a reorganization plan. But the administrator does not replace the

debtor-in-possession's management. Incumbent management can, and usually does, continue to operate the firm in the ordinary course of business.

Finnish reorganization plans can be confirmed in two ways. A plan can be confirmed if all classes of creditors accept the plan. A class of creditors is deemed to approve the plan if more than half in number and amount of the voting creditors vote in favor of the plan.²⁰ All creditors other than unimpaired creditors (those whose contractual rights are unaltered), creditors receiving full payment within 1 month after the confirmation of the plan, and certain subordinated claims, may vote on the plan.²¹ Shareholders do not vote unless equity interests are issued under the plan.²²

A plan can also be approved if at least one class of creditors votes in favor of the plan, and more than one-fifth of all known creditors approves the plan.²³ The court can confirm a plan only if certain other conditions are met. For example, a plan cannot be confirmed if a disapproving creditor shows that it would receive more in liquidation.²⁴

The classification of creditors influences the probability of a plan being accepted. The party proposing the plan, usually the administrator, proposes classes to the court.²⁵ In general, secured creditors are assigned to separate classes, and unsecured claims can either be assigned to one class or further subclassified.²⁶

4. Empirical results: are firms less likely to reorganize when creditors are well-secured?

Secured creditor priority can affect reorganizations as well as distributions and costs in liquidating bankruptcy. Section 2 suggests a possible relation between how well-secured creditors are and the likelihood of reorganization. Conflicts of interest between high priority and low priority creditors may impede reorganization or out-of-court workouts: well-secured creditors may favor liquidation over reorganization even though total payments to creditors would be higher in a reorganization. Secured debt's impairing reorganizations would raise the question whether secured debt's priority should be limited to avoid the social cost resulting from secured creditors' pressure to prematurely liquidate viable firms and unsecured creditors' incentives to reorganize unviable firms. But, as noted above, the relation between the degree of security and the incentive to reorganize can be ambiguous. If creditors are very well-secured, they may not have the incentive to push for a sale of the firm in bankruptcy, since they may be paid in full even if the firm fails to reorganize.

We study the relation between how well-secured creditors are and reorganization likelihood in two ways. First, we assess whether banks, the holders of floating charges in Finland, are more likely to consider a case unsuitable for reorganization than are general creditors. Creditors' assessments of firms' suitability for reorganization are available from court documents.²⁷ Second, we study whether the extent of likely available collateral, a proxy for a firm's secured debt, correlates with the likelihood of reorganization.

4.1. Data description

A total of 653 cases were identified in court files in the court districts covered by Helsinki, Vantaa, Espoo, Lahti, Tampere, Joensuu, Pori, Vaasa, and Seinäjoki. The sample includes

Table 1
Summary of sample characteristics: reorganizing firms

	Confirmed Reorganization Plan			Reorganization Plan not Confirmed			Significance of Difference
	Mean	Median	N	Mean	Median	N	
Liabilities (million FIM)	53.67	6.80	122	8.81	4.58	169	0.015
Assets (million FIM)	57.43	5.63	122	7.39	3.23	169	0.015
Solvency	-52.11%	-13.26%	122	-141.18%	-26.00%	169	0.444

Note: solvency is defined as shareholders' equity divided by total assets. Significance levels are based on *t*-tests. Monetary amounts are in Finnish marks (FIM).

Source: Finnish firms that filed for reorganization during 1993 or 1994.

all firms that filed for reorganization during 1993 or 1994. Filings in these nine districts accounted for 58.5 percent of all reorganization filings during the sample period.²⁸ From this primary sample, cases filed by farmers and businesses run by individuals (173 firms), cases for which essential data on assets, liabilities, or bankruptcy filings were missing (134 firms), and cases that filed for bankruptcy more than 1 year after a failure to reorganize (55 firms) were excluded. If much time elapses between reorganization and a subsequent bankruptcy filing, it is difficult to know if the liquidating bankruptcy is a consequence of the financial difficulty that led to the reorganization filing or of some subsequent events. The 1-year time limit includes in the sample only cases in which the liquidating bankruptcy quickly followed the failed reorganization effort. Results do not materially vary if these 55 omitted firms are included in the sample.

Table 1 summarizes the reorganization case dataset for the remaining 291 firms. Reorganization plans were confirmed for 122 of the 291 cases. Table 1 shows that most of the firms in this sample are small or mid-sized. Median liabilities of the firms with a confirmed reorganization plan are 6.80 million Finnish marks ("FIM") (one dollar = 6.74 FIM)²⁹ compared to FIM 4.58 million for firms without confirmed plans. The mean liabilities figures are higher because the sample includes a few large firms.

4.2. Trade creditors' and banks' assessments of firms' eligibility for reorganization

While secured creditors might have the incentive to liquidate a firm that should be allowed to continue to operate, low priority creditors have the opposite incentive. Knowing that they will probably receive nothing in bankruptcy, they favor reorganization regardless of the firm's viability. Table 2 explores whether these incentives affect creditors' assessments of cases' suitability for reorganization. We compare the proportion of cases in which trade creditors, who are typically unsecured in Finland, found the case unsuitable for reorganization with the proportion of cases in which banks found the case unsuitable for reorganization. Banks are further grouped by whether they had the largest, second largest, or third largest claims on the firm. Since many of the firms in the sample owed debt to just one bank, the sample sizes are smaller for assessments by the second largest and third largest banks.

The table shows that incentives do matter. Trade creditors opined that 17.9 percent of the firms in the sample were unsuitable for reorganization.³⁰ The corresponding figures for the

Table 2
Trade creditors' and banks' opinions of firms' eligibility for reorganization

	Percent with Negative Opinion	Significance of Difference from Trade Creditors	<i>N</i>
Trade creditors	17.9	–	155
Bank with largest claims	33.2	0.006	211
Bank with second largest claims	26.9	0.009	82
Bank with the third largest claims	29.4	0.061	29
Taxation authorities	76.3	<0.001	135

Note: significance levels are based on paired *t*-tests of whether the difference between the percent of trade creditors and the corresponding group that were negative in their statements is significantly different from zero.

Source: Finnish firms that filed for reorganization during 1993 or 1994.

bank with the largest claims and the second largest claims were 33.2 and 26.9 percent, respectively. Using paired *t*-tests, the difference in the means between trade creditors and the banks with the largest claims, and trade creditors and the banks with the second largest claims, were highly statistically significant (*P*-values <0.01).

Table 2 also shows that the taxation authorities opposed a reorganization much more than any of the other groups studied. One possible explanation is that some firms may not pay their taxes during the period prior to the reorganization because they know that they will have to pay only a fraction of the taxes if a reorganization plan is eventually approved. Knowing this, taxation authorities might be reluctant to approve reorganizations.

4.3. Secured debt and the likelihood of a successful reorganization

Table 2 shows that banks, the holders of floating charges, tend to oppose reorganization more than trade creditors. Since secured creditors influence the decision to reorganize, their opposition to reorganization may cause excess liquidations of viable firms. This effect may be especially strong when the expected payoff in liquidation is close to the amount owed to the secured creditor. We hypothesize that banks or other institutional lenders are likely to have greater security when debtors have more collateralizable assets per unit of secured debt. The more collateral per unit of debt, the less likely it is that secured creditors will gain from reorganization. They should prefer liquidation to allow them to realize on their collateral rather than risk its dissipation in a reorganization. Up to a point, therefore, greater collateralization should correlate negatively with the likelihood of reorganization.

Measuring the relation between collateral value and secured debt, however, is complicated by the fact that true collateral values are not observable. We calculate two indices of collateralization. First, we calculate the ratio of a proxy for assets to a proxy for secured debt. This ratio is denoted "assets/secured debt". The proxy for assets is book value of assets. The secured debt proxy is the sum of bank debt, debts to insurance companies, and debts to investment companies.³¹ Since banks and other institutional creditors are likely, on average, to be better secured when the ratio is higher, we expect a negative relation between the variable and the likelihood of reorganization.

Second, we calculate a collateral to secured debt ratio. We use asset values from the firm's schedule of assets and liabilities to compute the potential value of collateral. The values in the schedule should approximate the market value of the assets.³² We estimate the value of each firm's collateral by assuming that secured creditors have a security interest in (i) real estate, (ii) shares in other firms, and (iii) floating charge assets. The asset value estimates are available for 199 of the 291 firms in the sample. Since, under Finnish law, bankruptcy costs reduce the amount of security, we deduct the expected bankruptcy costs from the market values.³³ The ratio is denoted "collateral value/secured debt" in the analyses.

Studying the relation between secured debt and plan confirmation requires controlling for other factors. Secured creditors have an incentive to resist reorganization most when the firm's prospects are volatile. Volatility is likely to be industry-dependent so we use the standard deviation of the industry's return on assets during the 1986–1994 period to measure it.³⁴

Prior studies show that firms' pre-filing performance affects the likelihood of reorganization. Firms with poorer performance are less likely to successfully reorganize.³⁵ We use operating income divided by sales as a measure of performance. Operating income is defined as net sales less costs of goods sold, salaries, wages, rents, and other fixed expenses, but not depreciation and amortization.³⁶

Reorganization theorists suggest that informational asymmetries between the firm and its creditors may hamper reorganizations.³⁷ Creditors have more experience with older firms and may consider the owners of older firms to be more trustworthy.³⁸ Firm age may also reflect firm quality. The firms with the highest probability of failure are likely to fail the earliest and therefore not be as likely to be observed as healthier firms. We use the firm's age in years (natural logarithm) as the measure of age. We include total liabilities (natural logarithm), and industry variables for manufacturing, construction, trade, and services in the regression.³⁹ We include dummy variables for each court to control for local variation in reorganization practice.⁴⁰

To isolate possible differences in secured creditor attitudes towards reorganization if they are well-secured, we construct a dummy variable equal to one when the collateral value/secured debt ratio exceeds one (collateral exceeds 100 percent of secured debt). We construct an interaction term between the dummy variable and the collateral value/secured debt ratio. If very well-secured creditors are less likely to push for a sale of the firm in bankruptcy because they will almost certainly be paid in full even if the firm's reorganization effort fails, we would expect a positive coefficient on the interaction between collateral value/secured debt and the dummy variable.

Table 3 reports descriptive statistics for the variables used in the regression models.

Table 4 reports logistic regression results.⁴¹ The dependent variable equals one if a plan is confirmed and zero otherwise. The first regression model uses assets/secured debt as the measure of how well-secured banks and other institutional creditors are.⁴² In the second and third regression models, we use the collateral value/secured debt ratio as the measure.⁴³ The third regression includes the interaction term between this ratio and the dummy variable that equals one if the ratio exceeds 100 percent. Table 4 shows a negative relation between both ratios and the likelihood of plan confirmation. The coefficients are significantly different from zero at the 0.05 level in all three regressions. Higher priority creditors resist reorganizations, as Table 2 suggests.

Table 3
Descriptive statistics of variables in regression models of plan confirmation

Variable	Mean	Median	Standard Deviation	N
Confirmed plan (1 = confirmed)	0.41	0	0.49	265
Assets/secured debt	2.31	1.18	5.09	265
Collateral value/secured debt	1.25	0.82	2.31	183
Dummy variable for collateral value/secured debt >1	0.48	0	0.50	265
Operating income/sales	0.00	0.02	0.86	265
Age (log)	2.12	2.16	0.85	265
Liabilities (log)	15.47	15.48	1.33	265
Standard deviation of industry's return on assets	2.08	2.13	1.23	265
Manufacturing	0.29	0	0.46	265
Construction	0.13	0	0.34	265
Retail trade and wholesale	0.26	0	0.44	265
Services	0.32	0	0.47	265

Note: services includes transportation, real estate, information technology companies, the finance sector and 14 other industries measured at the two-digit standard industry classification level.

Source: Finnish firms that filed for reorganization during 1993 or 1994.

But the interaction between collateral value/secured debt and having security exceeding 100 percent of secured debt has a negligible and insignificant coefficient in the third regression. We cannot reject the hypothesis that the likelihood of confirmation is unaffected by higher values of the collateral value/secured debt ratio when collateral value exceeds the amount of secured debt. The interaction term's coefficient suggests that there is little difference between ratios above and below 100 percent. This undermines the claim that banks and other institutional creditors

Table 4
Logistic regression results: secured debt and the likelihood of a confirmed reorganization plan

Dependent Variable = Confirmed Plan	Regression 1	Regression 2	Regression 3
Assets/secured debt (log)	-0.387 (0.043)	-	-
Collateral value/secured debt (log)	-	-0.689 (0.003)	-0.750 (0.018)
Collateral value/secured debt (log) X (ratio > 100% dummy)	-	-	-0.019 (0.760)
Operating income/sales (square root)	1.074 (0.001)	1.063 (0.008)	1.064 (0.009)
Age (log)	0.415 (0.020)	0.513 (0.023)	0.505 (0.027)
Liabilities (log)	0.234 (0.058)	0.057 (0.708)	0.070 (0.658)
Standard deviation of industry's return on assets	0.079 (0.526)	-0.190 (0.187)	-0.184 (0.200)
Industry dummy variables	Not reported	Not reported	Not reported
Court dummy variables	Not reported	Not reported	Not reported
Pseudo-R squared	0.209	0.228	0.228
Number of observations	265	183	183
Percent of cases correctly classified	72.83	72.68	72.13
Error reduction over naive model of plan always rejected	33.94%	36.72%	35.44%

Note: the "ratio >100% dummy variable" equals one if collateral value is greater than secured debt. Significance levels are in parentheses (based on robust standard errors).

Source: Finnish firms that filed for reorganization during 1993 or 1994.

are less likely to push for bankruptcy, and therefore, more likely to approve reorganization plans, when they are very well-secured.⁴⁴ Support for such a hypothesis requires a substantial, significant coefficient on the interaction term.

The models are reasonably successful in describing the pattern of confirmed plans. For the first regression, a naive model, in which one always forecasts rejection of a plan, would be correct in 156 of 265 (58.87 percent) of the cases. As the penultimate row of Table 4 shows, the first regression model correctly describes the confirmation outcome for 72.83 percent of the cases. This reduces the error rate over the naive model from 41.13 to 27.17 percent, a reduction of 33.94 percent, as reported in Table 4 (last row). The second and third models achieve similar reductions in the correct classification rate.

The models also suggest that the effect of the key secured credit variables are not trivial. In the first model, at average values for the other variables, a one standard deviation increase in the value of the “assets/secured debt” ratio (from one-half standard deviation below the variable’s mean value to one-half standard deviation above the mean value) reduces the probability of confirming a plan by approximately 9 percent. In the second model, a one standard deviation increase in the value of “collateral value/secured debt” decreases the probability of confirming a plan by approximately 15 percent. In the third model, the insignificant interaction term has a trivial effect on the probability of confirming a reorganization plan.

Table 4 contains other interesting results. First, a strong positive relation exists between operating income/sales and the likelihood of a reorganization. The coefficient for the ratio is significant at the 0.05 level in all three regressions. Better performing firms are more likely to obtain plan confirmation. Second, a positive and significant relation exists between the firm’s age and the likelihood of confirmation. Creditors generally may consider owners of older firms to be more trustworthy than owners of newer firms. Since owners of older firms have more reputational capital at stake, they are less likely to engage in actions that transfer wealth from lenders to shareholders if the firm reorganizes.

To explore the robustness of the results, we report in Table A.1 a set of logistic regressions in which the financial explanatory variables used in first model of Table 3 are added to the model one variable at a time. Table A.2 reports a similar set of logistic regressions for second model of Table 3. Both Appendix tables show that the results are reasonably robust to the particular combination of variables used. Table A.3 reports the results of the same regressions as in Table 3 except that the “operating income/sales” explanatory variable is omitted. Again, the results do not materially differ from those reported in Table 3. Table A.3 also reports a variation on third model of Table 3 in which the square of the “collateral value/secured debt (log)” ratio replaces the interaction term. If the likelihood of reorganization decreases as this ratio increases for low values of the ratio, and then increases as the ratio grow large, a squared term might help capture that relation. Like the interaction term, however, the squared term is not significant. Table A.4 reports the correlation coefficients for the continuous variables used in Table 3.

5. Conclusion

We present evidence that capital structure influences the likelihood of reorganization. Larger bank creditors, the creditors most likely to be secured in Finland, systematically oppose

reorganization more than unsecured creditors. We also find a significant relation between the likelihood of reorganization and a measure of the degree of creditors' security. The more secured creditors are, the less likely they are to support reorganization.

We do not claim that this paper shows that reducing secured creditor priority and promoting reorganizations is normatively desirable. Some question whether reorganization-like insolvency laws are preferable to laws that regularly mandate liquidation of insolvent firms.⁴⁵ But evidence exists that reorganizations yield returns to creditors that exceed what liquidations would yield.⁴⁶ This paper merely presents evidence that debt structure, in the form of secured debt, can present an obstacle to reorganization.

Can this knowledge be used to achieve welfare gains? Since government-mandated reduced priority of secured credit might reduce the flow of credit, a draconian elimination of secured credit priority is unlikely to increase welfare, even if it does facilitate reorganization. But welfare gains might be obtained through enhancement of parties' *ex ante* knowledge of the effect of secured credit on reorganization likelihood. Debtors considering borrowing on a secured basis should take into account the possible decrease in their ability to obtain confirmation of a reorganization plan. Unsecured lenders considering lending to debtors that also have secured loans should also take into account the decreased likelihood of a successful reorganization.

Notes

2. For example, Gilson, Stuart (1995). Investing in distressed situations: a market survey. *Financial Analysts Journal*, November/December, 8–27; Kordana, Kevin A., & Posner, Eric A. (1999). A positive theory of Chapter 11. 74 *N.Y.U. L. Rev.*, 161, 214 & no. 137 (senior classes might vote against a plan overvaluing a firm's equity).
3. See, for example, Asquith, Paul, Gertner, Robert, & Scharfstein, David. (1994). Anatomy of financial distress: an examination of junk-bond issuers. 109 *Quart. J. Econ.*, 625, 645.
4. Eisenberg, Theodore, & Tagashira, Shoichi (1994). Should we abolish Chapter 11? The evidence from Japan. 23 *J. Legal Stud.*, 111, 138–139.
5. Gilson, Stuart C., Hotchkiss, Edith, & Ruback, Richard S. (1999). Valuation of bankrupt firms. In Practising Law Institute, Commercial Law and Practice Course Handbook Series (pp. 467–473). 21st Annual Current Developments in Bankruptcy and Reorganization.
6. The payments in liquidation to the secured creditor are calculated as the sum of the payments under the partial priority rule and the payments as an unsecured creditor. The 60 percent partial priority rule gives the creditor 54 (0.6×90). The remaining assets are 36 ($90 - 54$) and the secured creditor will share these pro-rata with unsecured creditors. The secured creditor will receive 10.5, calculated as $(36 \times 41)/(41 + 100)$.
7. There are solutions to the problem other than adopting a partial priority rule. First, the interest rate can be increased to make the secured creditor indifferent between renewal of the loan and liquidation. Second, secured creditors could be given part of the equity in the reorganized firm.
8. See Draft Bill RP 181/1992, at 17.

9. *Id.* Law reform was also intended to reduce payments to floating charge-holders.
10. See, Theodore Eisenberg & Stefan Sundgren (1997). Is Chapter 11 too favorable to debtors? 82 *Cornell L. Rev.*, 1532, 1536, for a comparison of Finnish and U.S. reorganization laws.
11. See, Lag om företagssanering 25.1.1993/47 [hereinafter Fin. Reorg. Law] § 22.
12. *Id.* § 7.
13. Fin. Reorg. Law § 27.1–27.3.
14. *Id.* § 70.1.
15. *Id.* § 7.
16. *Id.* §§ 8, 40.
17. Since creditors nominate the Finnish administrator, one might expect Finnish reorganization proceedings to be more creditor oriented than U.S. reorganization proceedings. But evidence suggests that unsecured creditors fare better under U.S. law. Eisenberg & Sundgren, *supra note* 10.
18. Fin. Reorg. Law § 8.1.
19. *Id.* § 41 lists the information that should be provided in the disclosure statement.
20. A class is deemed to accept the plan if more than half in the amount and number of the creditors vote for it. *Id.* § 52.
21. If equity is to be issued under the plan, company law rules regulating equity issues must be followed. These require that a majority of shareholders present at a shareholders' general meeting approve the equity issue. Fin. Comp. Law, Chapter 4, § 1.
22. Fin. Reorg. Law § 52.2.
23. *Id.* § 54. Reorganization plans can be approved if at least one class of creditors has voted in favor of the plan and more than one-fifth of all creditors has approved the plan. *Id.* But the one-fifth rule is seldom used. Data on how plans were confirmed were available for 110 cases, only six of which used the one-fifth rule. Thus, in practice, votes of secured creditors are important to reorganization confirmation.
24. Conditions for when a reorganization plan can be confirmed by the court are in *id.* §§ 53, 54.
25. *Id.* §§ 51.2, 76.2.
26. A claim is considered secured only to the extent that the value of the collateral, as of when the reorganization plan is prepared, covers the claim. The undersecured portion of the claim is treated as an unsecured claim. Pauliine Koskelo, *Yrityssaneeraus* 141 (*Lakimiesliiton Kustannus* 1994). This treatment corresponds with the U.S. treatment. 11 U.S.C. § 506(b).
27. Shortly after a reorganization filing, the court must notify major creditors of the filing. If any creditor asserts that the case is unsuitable for reorganization, the court must determine the debtor's eligibility. Note that the purpose is not to conclusively judge whether the firm should be reorganized, but rather to judge whether reorganization should be allowed to start. Creditors who do not oppose initiating the reorganization proceedings may eventually vote against a reorganization plan.
28. The total numbers of filings in Finland was 593 in 1993 and 443 in 1994. *Statistics Finland, Justice* 1994:4 at 28; *Statistics Finland, Justice* 1995:3 at 29.
29. This was the exchange rate on 9 May 2001.

30. This number is the average of the percent of creditors that took a negative view. The number of trade creditors heard varies substantially across cases. The maximum number was 42 trade creditors, the minimum number zero, the mean 4.98, and the median three trade creditors. Regression results show that, besides size effects, there is also regional variation in the number of trade creditors heard.
31. The principal investment company providing financing to small and mid-sized firms is Kera Oy, a state-owned company.
32. The debtor should file a schedule of major assets. F om Företagssanering 25.1.1993/55 [Fin. Reorg. Ordinance] § 1. Minor assets may be excluded from the schedule.
33. The expected bankruptcy costs were calculated using a regression estimated on the bankruptcy data reported in Clas Bergström, Theodore Eisenberg & Stefan Sundgren, On the design of efficient priority rules for secured creditors: empirical evidence from abroad (unpublished manuscript). The estimate is as follows: direct costs/book value of assets = $-0.079 \times \text{assets (log)} - 0.046 \times ((\text{real estate} + \text{shares})/\text{assets}) + 1.250$. The model explains more than one-half the variance (R -squared = 0.563).
34. Industries' return on assets ratios are taken from Union Bank's (currently Merita Bank's) internal statistics and calculated at a two-digit level. The quality of its statistics surpasses the quality of official statistics. Firms could have significant hidden inventory reserves until the beginning of 1990s in Finland. Thus, reported assets and profits could deviate significantly from actual assets and profits. The effects of the possibility of hidden reserves are taken into account in the bank's statistics but not in official statistics.
35. Sundgren, Stefan (1998). Does a reorganization law improve the efficiency of the insolvency law? The Finnish Experience, 6 *Europ. J. Law & Econ.*, 177, 185; Campbell, Steven V. (1996). Predicting bankruptcy reorganization for closely held firms. 10 *Accounting Horizons*, 12, 23.
36. We took the square root of the absolute value of the ratio and restored the original sign.
37. See, Giammorino, Robert M. (1989). The resolution of financial distress. 2 *Fin. Rev.*, 25; White, Michelle. (1994). Corporate bankruptcy as a filtering device: Chapter 11 reorganizations and out-of-court debt restructurings. 10 *J. Law Econ. & Org.*, 268.
38. See, Petersen, Mitchell A., & Rajan, Raghuram G. (1994). The benefits of lending relationships: evidence from small business data. 49 *J. Fin.*, 3, 5; Diamond, Douglas. (1991). Monitoring and reputation: the choice between bank loans and directly placed debt. 99 *J. Pol. Econ.*, 688.
39. Sundgren, *supra note* 35, at 185; LoPucki, Lynn. (1983). The debtor in full control. 57 *Am. Bankr. L. J.*, 99, 108–109; Eisenberg & Tagashira, *supra note* 4, at 156–157, find that the likelihood of reorganization is higher for larger firms and that the likelihood differs across different industries.
40. For example, Eisenberg & Tagashira, *supra note* 3.
41. See Maddala, G. S. (1989). Introduction to Econometrics 272–283 for a description of the logistic model.
42. The results are based on 265 of the 291 firms in the sample: 19 cases were omitted because data for operating income/sales was missing, six cases were omitted because

data for book value assets/secured debt was missing, and one observation had to be deleted because the age of the firm was missing.

43. These regressions are based on 183 of the 291 observations in the sample: 92 cases were omitted because data to calculate collateral value/secured debt were missing, 15 cases were omitted because operating income/sales were missing and one observation was omitted because the firm's age was not known.
44. A possible explanation of this result is that collateral values are based on estimates, not exact values. If our estimates are higher than actual values, the results could be driven by the fact that collateral values approach the amount of secured creditors' claims when the variable takes on higher values.
45. For example, Thorburn, Karin S. (2000). Bankruptcy auctions: costs, debt recovery, and firm survival. 58 *J. Fin. Econ.*, 337.
46. Eisenberg & Tagashira, *supra note* 4; Fisher, Timothy C. G. & Martel, Jocelyn. (1999). Should we abolish Chapter 11? Evidence from Canada. 28 *J. Legal Stud.*, 233; Sundgren, *supra note* 35.

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Appendix A

Tables A.1–A.4.

Table A.1
Alternative specifications of Regression 1 in Table 3

	Dependent Variable = Confirmed Plan			
Assets/secured debt (log)	−0.328 (0.029)	−0.329 (0.041)	−0.311 (0.069)	−0.387 (0.044)
Operating income/sales (square root)		1.031 (0.001)	1.042 (0.001)	1.097 (0.001)
Age (log)			0.526 (0.002)	0.429 (0.016)
Liabilities (log)				0.232 (0.056)
Observations	265	265	265	265
Pseudo- <i>R</i> squared	0.146	0.173	0.198	0.208

Robust *P*-values in parentheses; coefficients for industry and court dummy variables not reported.

Table A.2
Alternative specifications of Regression 2 in Table 3

	Dependent Variable = Confirmed Plan			
Collateral value/secured debt (log)	−0.600 (0.004)	−0.646 (0.003)	−0.674 (0.003)	−0.687 (0.003)
Operating income/sales (square root)		1.018 (0.012)	1.022 (0.011)	1.036 (0.010)
Age (log)			0.510 (0.017)	0.488 (0.026)
Liabilities (log)				0.063 (0.684)
Observations	183	183	183	183
Pseudo- <i>R</i> squared	0.177	0.200	0.222	0.223

Robust *P*-values in parentheses; coefficients for industry and court dummy variables not reported.

Table A.3
Alternative specifications of models in Table 3

	Dependent Variable = Confirmed Plan			
Assets/secured debt (log)	−0.370 (0.031)			
Collateral value/secured debt (log)		−0.622 (0.003)	−0.694 (0.022)	2.649 (0.412)
Collateral value/secured debt (log) squared				−0.184 (0.311)
Collateral value/secured debt (log) × (ratio > 100% dummy)			−0.022 (0.717)	
Age (log)	0.413 (0.022)	0.512 (0.028)	0.502 (0.034)	0.546 (0.022)
Liabilities (log)	0.207 (0.087)	0.039 (0.796)	0.055 (0.728)	0.002 (0.988)
Standard deviation of industry's return on assets	0.119 (0.346)	−0.166 (0.255)	−0.160 (0.277)	−0.199 (0.189)
Observations	265	183	183	183
Pseudo- <i>R</i> squared	0.182	0.204	0.204	0.208

Robust *P*-values in parentheses; coefficients for industry and court dummy variables not reported.

Table A.4
Correlation coefficients for continuous variables in Table 3 regressions

	Assets/Secured Debt (log)	Collateral Value/Secured Debt (log)	Operating Income/Sales (square root)	Age (log)	Liabilities (log)	Standard Deviation of Industry's Return on Assets
Assets/secured debt (log)	1.000					
Collateral value/secured debt (log)	0.696	1.000				
Operating income/sales (square root)	−0.031	−0.010	1.000			
Age (log)	−0.083	0.024	−0.016	1.000		
Liabilities (log)	0.151	0.072	−0.040	0.301	1.000	
Standard deviation of industry's return on assets	−0.053	−0.001	0.014	0.136	0.058	1.000