WORKING PAPER

Bank Debt Restructuring under Belgian Court-Supervised Reorganization

Bart Leyman

Koen Schoors

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Bart Leyman[*] and Koen J.L. Schoors[**]

Abstract.

We use a unique dataset to analyze the contract renegotiation between a debtor and its secured bank creditors during Belgian court-supervised reorganization. We find that secured banks with higher collateralization succeed in renegotiating higher debt repayments during the court-supervised post-confirmation stage. There is also mild evidence that secured bank creditors renegotiate higher loan repayments during the court-supervised post-confirmation stage if the debtor's assets are more redeployable. The proceeds of asset sales are used to generously repay secured banks and there is some evidence that secured banks push for those sales. Our findings are consistent with theory suggesting that secured creditors prefer liquidation above court-supervised reorganization.

JEL:G10, G20

Keywords: Bankruptcy, bank lending, collateral, liquidation rights

[*] The author is Fellow of the Fund for Scientific Research Flanders – Department of General Economics, Faculty of Economics and Business Administration, Tweekerkenstraat 2, Ghent University, B-9000 Gent, Belgium, e-mail: Bart.Leyman@Ugent.be

[**] Professor of Economics - Department of General Economics, Faculty of Economics and Business Administration, Tweekerkenstraat 2, Ghent University, B-9000 Gent, Belgium, e-mail: Koen.Schoors@Ugent.be; WDI, University of Michigan.

1.   Introduction.

In this paper we use unique Belgian data to analyze debt renegotiation between distressed debtors and their secured bank creditors under Belgian court-supervised reorganization. The pre-distress secured lending contract is renegotiated during the pre-confirmation stage. These renegotiated loan conditions are the heart of any reorganization plan that is executed under the supervision of judges during a fixed post-confirmation period of 24 months. This judicial supervision during the post-confirmation stage sets the Belgian court-supervised reorganization procedure apart from the US Chapter 11 procedure. In addition, Belgian debtors cannot rely on the same legal instruments to enforce secured debt deferral or rescheduling during the post-confirmation stage as US debtors filing for Chapter 11. (section 1129 of the U.S. Bankruptcy Code). Compared to the US, the Belgian bankruptcy system is therefore biased in favor of secured creditors.

Specifically we search for the determinants of the renegotiated loan repayment on secured bank debt due during the court-supervised post-confirmation stage of 24 months. Theory suggests that banks and secured creditors may be biased towards liquidation instead of reorganization (see e.g. Bulow & Shoven, 1978; White, 1989; Kordana et al., 1999) because the expected loan repayment upon reorganization is lower than the loan recovery under immediate liquidation. Bergström et al (2002) argue that secured creditors who belief that they will receive close to full repayment in liquidating bankruptcy may prefer bankruptcy to reorganization, even when the continuation value is higher than the liquidation value. If the reorganization succeeds, secured creditors receive only part of the appreciation of the firm's value, while they bear all of the costs if the reorganization fails. The secured creditor's expected loan repayment under reorganization might therefore be too low compared to the liquidation proceeds, and gives well-secured creditors an incentive to liquidate. Bris, Welch and Zhu (2006) find that firms in which a bank is a creditor are more likely to choose liquidation (Chapter 7) to reorganization (Chapter 11). They argue that this is consistent with the view that pre-bankruptcy negotiations are more likely to occur with banks, and this bank has already shown itself unwilling to compromise during the pre-bankruptcy period. In our analysis of the determinants of the renegotiated loan repayment, we expect that secured banks will call a substantial part of their debt during court-supervised post-confirmation stage of 24 months. This expectation is only further supported by the fact that the Belgian procedure is less debtor-friendly than the US-system.

One of our main findings is indeed that secured creditors with higher collateralization succeed in renegotiating higher debt repayments. This is in line with bargaining theory suggesting that the renegotiated loan call will be higher if the debtor has pledged more assets relative to outstanding bank credit. In addition we find strong support that, if secured creditors are well-secured, they are less likely to reach an agreement with debtors on the loan repayment during the pre-confirmation stage. Asset sales are used to generously repay secured banks. More than one third of the distressed firms did plan to sell at least part of their assets during the court-supervised post-confirmation stage (see Asquith et. al for an empirical study on asset sales, 1994). These planned asset sales are mostly part of the renegotiated and confirmed reorganization plan, and sales largely consist of real estate. In addition, we

find indications that secured creditors push for asset disposal if they have high levels of collateralization.

Our paper contributes to the literature in two ways. First, empirical research that primarily deals with bank behaviour during court-supervised reorganization is largely missing. Second, we find that contract renegotiation critically depends on liquidation values. This finding confirms theoretical literature analyzing the impact of contract renegotiation on the nature of financial contracts (see e.g. Hart & Moore, 1994, 1998; Aghion and Bolton, 1992; Bolton and Scharfstein, 1996; Berglof & Van Thadden, 1994; Gorton & Kahn, 2000).

This paper is organized as follows. Section 2 discusses the legal framework of the Belgian court-supervised reorganization. Section 3 gives an overview of the literature and formulates the hypotheses. Section 4 describes the data. The main dependent variable, i.e. the negotiated loan repayment fraction, is defined and discussed in section 5. Section 6 presents the empirical determinants of negotiated loan repayment. Section 7 analyses the likelihood of asset sales, and the subsequent loan repayment by the sales proceeds. Section 8 reconsiders the robustness of our main findings in a sample of distressed firms without asset sales, and section 9 analyses what happens if debtor and secured creditors did not reach an agreement during the pre-confirmation stage. Section 10 deals with bank policy and judicial discretion. Section 11 concludes.

2.   Legal framework: bankruptcy-reorganization.

An insolvent firm can either liquidate or reorganize. In Belgium, liquidation and reorganization are regulated by distinct legislations. The United States Bankruptcy Code makes an equivalent distinction between Chapter 7 (bankruptcy-liquidation) and Chapter 11 (bankruptcy-reorganization) within the same legislation. The Belgian reorganization legislation was enacted in 1997, with the objective to reduce the number of bankruptcies and to preserve firms with profitable operations by means of a process of court-supervised financial restructuring. This legislation is called the Law on Judicial Composition (hereafter LJC) and came into force on January 1st 1998.

Figure 1 below illustrates the timing of the Belgian LJC procedure in three stages. In the pre-bankruptcy period (stage I), the debtor first decides whether or not to file for LJC[1]. If the firm files a petition, the bankruptcy court makes an initial assessment of the viability of the distressed firm. If the court accepts the petition, the debtor remains in possession and must draft and confirm a reorganization plan during a six-month exclusivity period. The court appoints an examiner who controls and assists the debtor in drafting the plan[2]. This exclusivity period can be extended by maximum 3 months to deal with bargaining issues. In the U.S., Bris et al. (2006) refer to the bargaining period as the Chapter 11-phase 'from submission to plan confirmation'. We define stage II of the Belgian bankruptcy system as the pre-confirmation stage consisting of both phases 'from filing

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[1] In principle, the debtor takes the decision to file a petition for reorganization. The public prosecutor may also initiate the petition, but this is exceptional. Creditors cannot file a petition for reorganization.
[2] See Hahn (2004) for a discussion on the appointed examiner (trustee) in the U.S.

to plan' and 'from submission to plan confirmation'. Like in the U.S., secured creditors are subject to an automatic stay during the pre-confirmation stage.

At the end of stage II, a meeting of the unsecured creditors votes on the proposed reorganization plan. The unsecured creditors mainly consist of trade creditors and the social security administration. A reorganization plan is approved if (i) a majority of unsecured creditors present at the meeting vote in favor of the plan, and (ii) the value of the claims voting in favor of the plan represent at least 50% of the total value of claims of unsecured creditors present at the meeting. The debts of those creditors have to be, in principal, repaid during a fixed period of maximum 24 months, i.e. the court-supervised post-confirmation stage (stage III – see further).

Secured creditors do not vote collectively. Their individual approval is required when the debtor proposes an alteration to their legal entitlements. If the secured creditor and the debtor reach a new agreement on the loan repayments, the creditor can not seize or sell assets during the post-confirmation stage as long as the debtor fully complies with this new contract. If on the other hand no agreement is reached between both parties, the Belgian legal framework provides the debtor with only one alternative, i.e. the deferral of the principal amount of the loan for a maximum of 18 months, on the condition that during this period interest is paid. As a consequence, the secured creditor will temporarily not be able to seize and sell the pledged assets. The secured creditor will however always regain his liquidation rights after 18 months. Further reaching legal measures, comparable to the forced rescheduling of secured debt in accordance with § 1129 U.S. Bankruptcy Code, are not available to Belgian debtors.

After the approval by the unsecured creditors and any arrangement with secured creditors (or forced deferral), the court confirms the plan and the debtor enters stage III of the procedure.[3] The plan execution takes place during a period of maximum 24 months under supervision of the judge and the appointed examiner (further the court-supervised post-confirmation stage – stage III). This court-supervised period is however fixed on 24 months for 96% of the sample firms. This implies that plans are drafted for a period of 24 months in 96% of the cases. During this fixed period, the court and creditors can however decide to extend this period with a maximum of 12 months. Upon prolongation, a new and adjusted plan needs to drafted and confirmed. A prolongation does not occur frequently (approx. 10 % of the cases). The distressed firm either goes bankrupt during the court-supervised post-confirmation period - mainly by judicial conversion to bankruptcy-liquidation or by debtor bankruptcy-confession[4] - or leaves the procedure intact as going concern.

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[3] Because the L.C.J. states that the court 'can' confirm the plan, certain courts have assumed the authority to test the feasibility of the plan. We are however only aware of a few cases where the Bankruptcy Court refused to confirm the plan.

[4] Motions filed by creditors occur rarely.

Figure 1: Time schedule of the judicial composition (bankruptcy-reorganization).
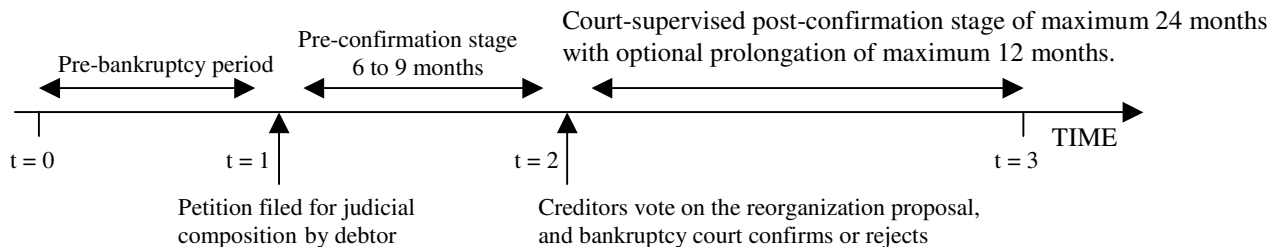
3. Literature and hypotheses.

Theory shows that secured creditors and banks oppose a debtor's reorganization if their expected loan repayment in reorganization is lower than the loan recovery under immediate liquidation (see example given Bulow & Shoven, 1978; White, 1989). Bergström et al. (2002) specifically argue that secured creditors may increasingly oppose a debtor's court-supervised reorganization as collateral value approaches the creditor's claim. If the reorganization succeeds, secured creditors receive only part of the appreciation of the firm's value, while they bear the brunt of the depreciation of the firm's value if the reorganization fails[5]. This results in an expected loan repayment that is less than the loan recovery of well-secured creditors under immediate liquidation. Kordana et. al (1999) also suggest that secured creditor's incentives are skewed towards liquidation over reorganization.

Empirical evidence on the relation between creditor security and the reorganization process is however scant. Bergström et al. (2002) analyze the impact of secured debt on the likelihood of plan confirmation under Finnish court-supervised reorganization. They conclude that highly secured banks oppose plan confirmation. Franks and Sussman (2005) hypothesize that banks have an incentive to liquidate distressed companies as the collateral value equals or exceeds the value of bank debt exposure, regardless of the firm's restructuring efforts. They use a sample of U.K.-firms restructuring out-of-court to test their hypothesis. Although not significant, they find that the incentive to liquidate is increasing with the collateral value, while banks have little interest in liquidation when the loan

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[5] Consider the simple example of a firm that obtained a bank loan at time t=0 to finance a project with a positive net present value. The bank credit assigned at time t=0 is € 100 and needs to be repaid at time t=1 before the business project ends at time t=2. Interest is assumed to be zero. The bank is secured and can exercise a liquidation right upon contractual default at time t=1. If the entrepreneur is unable to repay the credit of € 100 at time t=1, the bank has the option to seize and sell the business assets.
We specifically discuss the case of contractual default (due to distress) at time t=1; the bank may then opt for liquidation at time t=1 or continuation until time t=2. In case of liquidation, the bank receives the certain liquidation proceeds of € 90. Upon continuation, the business value at time t=2 is uncertain as it can appreciate or depreciate both with probability ½. The business value is € 150 under successful reorganization (surplus value of € 60 compared to immediate liquidation) and € 50 in case of unsuccessful reorganization (depreciation of € 40 compared to immediate liquidation). If the reorganization succeeds, secured creditors collect their loan of € 100, and the entrepreneur receives € 40. The bank receives € 50 if the reorganization fails, and the entrepreneur receives zero. If the bank chooses continuation at time t=1, the expected loan repayment is ½ * € 100 + ½ * € 50 = € 75. Clearly, the secured bank opts at time t=1 for liquidation instead of reorganization, although the expected continuation value at time t=1 is € 95 (½ * € 140 + ½ * € 50) and larger than the liquidation proceeds of 90 € at time t=1. If the bank however receives a loan repayment of at least € 130 instead of € 100 in case of an appreciation, she would prefer continuation to liquidation.

value exceeds the collateral value[6]. They use managerial replacement as a proxy for the restructuring efforts of the company and its prospects of recovery. In addition, Bris, Welch and Zhu (2006) show that banks, whether secured or not, prefer liquidation (Chapter 7) over reorganization (Chapter 11). They argue that this is consistent with the view that pre-bankruptcy negotiations are more likely to occur with banks, and this bank has already shown itself unwilling to compromise.

We expect that banks are less willing to accept a loan rescheduling if their loan enjoys a higher level of collateralization, because they have a more valuable outside option to liquidate. The literature on non-cooperative bargaining with outside options, pioneered by Osborne & Rubinstein (1990) and further developed in the context of optimal debt theory by Hart & Moore (1994) readily supports these expectations[7]. Specifically, a higher liquidation value of collateral provides a more credible threat to liquidate assets and therefore enhances the bargaining power of secured creditor. By consequence, secured creditors with higher collateralization are expected to succeed in renegotiating a higher level of loan repayment during the court-supervised post-confirmation stage.

The threat of liquidation is more than real in the Belgian context. If the debtor breaches the renegotiated contract, for example by not paying the due principal or the due interest, secured creditors can seize and sell assets during the court-supervised post-confirmation stage (see section 2). If secured creditors are completely unwilling to reach an agreement, they can even freely seize and sell assets during the post-confirmation stage after a maximum stay of 18 months (see also section 2). This yields our first testable hypothesis:

Hypothesis 1: Higher liquidation values result in a higher renegotiated loan repayment to be repaid during the court-supervised post-confirmation stage.

Liquidation values fall with the degree of asset specialization. More specialized assets[8] are therefore expected to lower the bargaining power of banks during contract renegotiation. Ronen & Sorter (1972) classify current assets as less specialized than fixed assets, non-inventory current assets as less specialized than inventory, and land and buildings as less specialized than other fixed assets[9]. Berger et al. (1996) find that more specialized assets results in less liquidation option value per dollar of book value. Their findings are consistent with Ronen en Sorter's classification[10]. This leads to the following hypothesis on asset specialization:

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[6] In the latter case of very high collateralization, banks may not fear negative effects of depreciation in the asset value of the distressed business. They therefore might have little interest in immediate liquidation.

[7] Hart & Moore (1994) specify how a new contract would be negotiated as follows: "If a new contract is to be renegotiated at some time t, the parties split up the future gross revenues, R(t), on a 50:50 basis, unless the creditor's option from liquidation, L(t), is preferable to her, in which case the creditor receives L(t). In other words, the creditor's payoff from time t onwards is max$\{1/2 \, R(t), L(t)\}$."

[8] More specialized assets are less redeployable. The term 'redeployability' originates from Williamson (1988).

[9] In addition, Schleifer and Vichny (1992) note that whereas 'commercial land can be used for many different purposes', fixed assets often 'have no reasonable other uses'.

[10] E. Benmelech et al. (2005) use commercial zoning regulation to capture the flexibility of a property's permitted uses as a measure of assets redeployability. Among plenty of other findings, they show that more redeployable assets receive larger loans with longer maturities and durations.

Hypothesis 2: A higher degree of asset specialization results in a lower renegotiated loan repayment during the court-supervised post-confirmation stage.

The theoretical literature argues that priority rules (in bankruptcy-liquidation) and control rights affect the reorganization process and contract renegotiation. Using a sample of small firms that defaulted on their bank debt in France, Germany and the U.K., Davydenko & Franks (2006) find that banks significantly adjust their lending and reorganization practices in response to costly aspects of bankruptcy law. Their principal findings suggest for two main aspects of bankruptcy regulation affecting bank behaviour: priority rules and control rights. First, they find that specific priority rules determine the composition of different types of collateral in the three countries. In France, prioritized preferential creditors such as employee wages and bankruptcy fees dilute the sales proceeds of real estate. Therefore, the French banks' real estate collateral recovery is far less valuable, while immovable property proceeds are the most important source of bank's recovery in the U.K. and Germany. Second, Davydenko & Franks argue that French bankruptcy courts tend to sell real estate below market value to preserve employment. This contrasts with the direct realization of accounts receivables and personal guarantees by French banks. Therefore, these latter collateral types are more subject to collateralization at loan origination than real estate in France.

In a Belgian bankruptcy-liquidation, a court-appointed receiver collects the liquidation proceeds for security interests in real estate and in all other floating charge assets like inventory, receivables not subject to factoring, machinery, furniture and vehicles. The secured creditors are subject to the automatic stay and the other rules described in section 2. Therefore, control rights do not matter for contract renegotiation in our study. Contrary to France, the realized fixed charge proceeds are free of dilution by preferential creditors, such as employees. The scope of floating charges on the other hand is limited by Belgian law. In case of liquidation, 50% of the inventory proceeds are reserved for the benefit of unsecured creditors, which is comparable with the fencing-technique in the U.K. with floating charges as explained in Frisby (2004). This dilution on inventory proceeds is further commented in the empirical sections.

A bank with a guarantee can directly liquidate assets without interference of the court-appointed receiver, because a guarantee pledges assets that fall beyond the scope of the distressed firm and is therefore independent of the other creditors' rights. Direct liquidation increases the expected liquidation value resulting in additional bargaining power for banks. Therefore, the renegotiated principal installment payments due during the court-supervised post-confirmation stage are likely to be higher for banks with a guarantee. On the other hand, the provision of a guarantee may act as a signal on the firm's viability as entrepreneurs pledge private wealth in favor of banks. If this latter signal effect dominates, we could have the opposite effect that banks with guarantees accept lower loan repayment during the court-supervised reorganization, simply because they regard a firm that has given a guarantee as more viable. Since there is no theoretical guidance on the direction of the effect, we formulate hypothesis 3 as follows:

Hypothesis 3:   A guarantee in the hands of a bank affects the outcome of the debt renegotiation.

4.   Data

4.1.   Data sources and sampling procedure.

Our dataset consists of unique private information on bank debt restructuring under court-supervised reorganization. Data input largely originates from reorganization plans filed with 17 of the 23 regional Bankruptcy Courts in Belgium. Approximately 306 plans were confirmed between 1 January 1998 and 30 June 2004. We obtained the full legal records of all confirmed reorganization plans from 17 Bankruptcy Courts. This amounts to 190 reorganization plans or 62,1% of the population of confirmed plans. We aggregated the data of closely related companies that filed for bankruptcy-reorganization together. On average a legal record contains 300 pages of information that were scanned and handcoded. The dataset distilled from the legal records is validated and complemented with financial statement data from the Graydon-database and the Belfirst DVD's, which are respectively delivered by the private data vendors Graydon Belgium and Bureau van Dijk. We additionally acquired specific data on bank credit flows during the pre-bankruptcy and post-confirmation stage (see figure 3) by intermediation of the Central Corporate Credit Register of the National Bank of Belgium.

4.2.   Summary statistics on sample firms

Banks are involved with 148 reorganization plans as 42 firms (190-148) do not rely on bank credit. Of the 148 businesses financed by bank debt, 95 (64,19%) are incorporated companies and 53 (35,81%) are sole proprietorships. Of those 95 corporations, 56 firms are non-quoted public limited liability companies, 35 are private limited companies and 4 corporations have another legal form. Table 1 gives summary statistics by legal form[11]. Except for total debt reported in the reorganization plans, company data are taken from the last annual accounting statement prior to the petition filing for bankruptcy-reorganization. First, public limited liability firms are clearly more sizeable, and are about 1,5 times as large as the median Chapter 11 bankruptcy in the study of Bris et al. (2006). The size of the private limited companies is comparable to the sample firms of Morrison (2007). Second, the sample firms are heavily indebted, although they tend to be no more underwater than Chapter 11 firms. Third, the internal money flows are clearly weak, with both the average and the mean cash flow numbers in deep red for Public limited Liability Corporations and Private Limited Companies alike.

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[11] We have no balance sheet data on sole proprietorships because they are not obliged to publish a financial statement.

Table 1: Summary statistics on firms by legal form.

Total assets, employees and cash flow are firm characteristics reported in the last annual account prior to petition filing for bankruptcy-reorganization. Total debt is the amount of debt reported in the reorganization plan. Data are sorted by legal form: public limited liability corporations, private limited companies and sole proprietorships.

	N	Mean	Median	Std. Dev.	Min	Max
Public Limited Liability Corporation						
Total Assets (€ 1000)	56	6833	1912	25760	126	188899
Employees (No.)	56	28.57	10	70.36	1	512
Total debt (€ 1000)	56	4491	1374	13321	103	83210
Total debt / total assets (%)	56	104.46	91.62	60.34	24.95	424.00
Cash flow / Total assets (%)	56	-16.06	-2.95	42.11	-263.04	18.78
Private Limited Companies						
Total Assets (1000 €	33	564	258	662	21	3015
Employees (No.)	35	5.31	2	7.58	1	28
Total debt (€ 1000)	35	521	343	500	44	18478
Total debt / total assets (%)	33	119.62	106.79	55.12	46.82	263.15
Cash flow / Total assets (%)	33	-10.92	-3.49	30.87	-140	24.41
Sole Proprietorships						
Employees (No.)	53	0.43	0	0.84	0	3
Total debt (€ 1000)	53	244	185	177	48	875

4.3. Debt contract characteristics

Like Davydenko and Franks (2006), we analyze financial characteristics of all loans, overdrafts and other credit facilities for each sample firm. The amount of the aggregated bank credit is obtained from the 148 confirmed reorganization plans in our study. Panel A of table 2 shows that multiple-bank financing is scant[12], but if it occurs, outstanding credit amounts are sizeable.

Like in for example given the U.K. and Finland, we distinguish two main security interests in Belgium: a security interest in real estate and a security interest on the pool of floating charge assets (see Franks & Sussman, 2005; Bergström et al., 2002). The floating charge assets mainly consist of (non-factored) receivables, inventory, machinery, furniture and vehicles. Panel B summarizes the bank credit amounts by collateral or security types and by personal guarantee provision. First, like in many European countries, we find that banks heavily rely on collateral rights (see Franks and Davydenko (2006) for France, Germany and the U.K.). Only approximately 10 % of the bank debt is not secured. Second, banks that hold a security both on real estate and on floating charge assets provided more credit. Third, panel B shows a positive relation between the provision of guarantees and bank debt exposure[13], which reveals the complementary characteristics of a personal guarantee as collateral type.

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[12] There are only 4 firms financed by more than three banks in our sample study. The maximum number of banks involved with a distressed firm is 6.

[13] A guarantee is provided in addition with both a security interest on floating charge assets and in real estate for 13 sample firms (out of 18). The other 5 firms with guarantee only granted a security interest on floating charge assets.

Table 2: Bank credit exposure by number of banks, collateral and guarantees.

This table gives summary statistics on the bank debt exposure for our 148 sample firms. We aggregated all loans, overdrafts and other credit facilities for each sample firm as reported in the confirmed reorganization plans. Panel A shows the bank debt exposure by the number of financing banks. Panel B summarizes the aggregated bank credit amounts by collateral types and by guarantee provision. The number of firms in the categories 'No collateral', 'Security interest on floating charge assets', 'Security interest in real estate', and 'both a security on floating charge assets and in real estate sum up to 145 firms (3 missing cases out of 148). 19 of those 145 firms provided the bank with a guarantee in addition to a security interest on floating charge assets and/or in real estate.

Bank claim (€ 1000)	N	Mean	Median	St. dev.	Minimum	Maximum
Panel A: Number of banks financing the distressed firm						
Single bank	113	274	126	387	5.84	2345
Multiple bank	35	3580	466	11209	29.81	60802
Panel B: collateral types and guarantees						
No collateral	15	116,19	24,79	244,12	5,84	923,48
Security interest on floating charge assets	32	213.58	57.91	406.28	11.76	1951.87
Security interest in real estate	22	100.25	82.32	76.79	19.58	343.14
Both a security on floating charge assets and in real estate	76	1900.31	326.45	7713.65	21.87	5184.21
Guarantee (in addition to other collateral types)	19	665.90	594.94	641.42	15.74	2345.27
Missing data	3	-	-	-	-	-

5. Loan repayment during the court-supervised post-confirmation stage

5.1. The renegotiated loan repayment

Secured banks and debtors renegotiate the original lending contract during the pre-confirmation stage to reach an agreement on the loan repayment during the court-supervised post-confirmation period. 134 plans report this renegotiated loan repayment for a fixed period of 24 months[14]. We calculate the *renegotiated loan call* as a fraction of the initial loan for each sample firm as:

$$\frac{\text{Renegotiated loan repayment in € during the court-supervised post-confirmation stage of 24 months}}{\text{Bank credit exposure in €}}$$

The renegotiated loan repayment consists only in the principal amount of the loan. Interest payments are not the scope of this study[15]. The renegotiation process results in newly granted bank credit for 13 out of 134 firms. Our dataset does not allow us to distinguish loan repayments on the new credit from those on the original credit. The new credit and its principal payments during the court-supervised post-confirmation stage are therefore included in respectively the denominator and nominator. Also, we only analyze the loan renegotiation with respect to the initial plan drafted for a period of 24 months. The few additional renegotiations during the fixed period of 24 months resulting in a prolongation of maximum 12 months are not further analyzed in this paper.

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[14] 14 firms are excluded for the analysis in the remainder of this paper. Seven of those 14 firms drafted a (confirmed) plan for a period less then 24 months. 7 firms are additionally excluded because their confirmed plans did not report a loan repayment.
[15] We have no data on interest adjustments.

Figure 2.a. shows the histogram of the renegotiated loan repayment for all 134 firms. The figure reveals a high fraction on the y-axis for the bar ranging from 0.9 to 1 on the x-axis. 33 firms out of 134 have a renegotiated loan repayment of 1. Those full repayment fractions of 1 are most likely due to non-agreements on the loan repayment between secured creditors and entrepreneurs. As stated in section 2, entrepreneurs must repay the full loan at most 18 months after plan confirmation to avoid seizure of collateralized assets if there is no agreement. Asset sales definitely occur to repay the bank in full when no agreement is reached[16]. Figure 2.b. shows the histogram for firms without asset sales (89 firms). The share of full repayment cases (renegotiated loan repayment fraction =1) drops by almost 50%.

Figure 2: Histogram of the Renegotiated Loan Call Fraction during the court-supervised post-confirmation period.

The x-axis shows the renegotiated loan repayment fraction. The y-axis shows the fraction of sample firms for each bar defined on the x-axis. Figure 2.a. shows the histogram of the 134 sample firms, while the histogram of figure 2.b. omits firms with asset sales as bargaining outcome. The number of firms without asset sales is 89.

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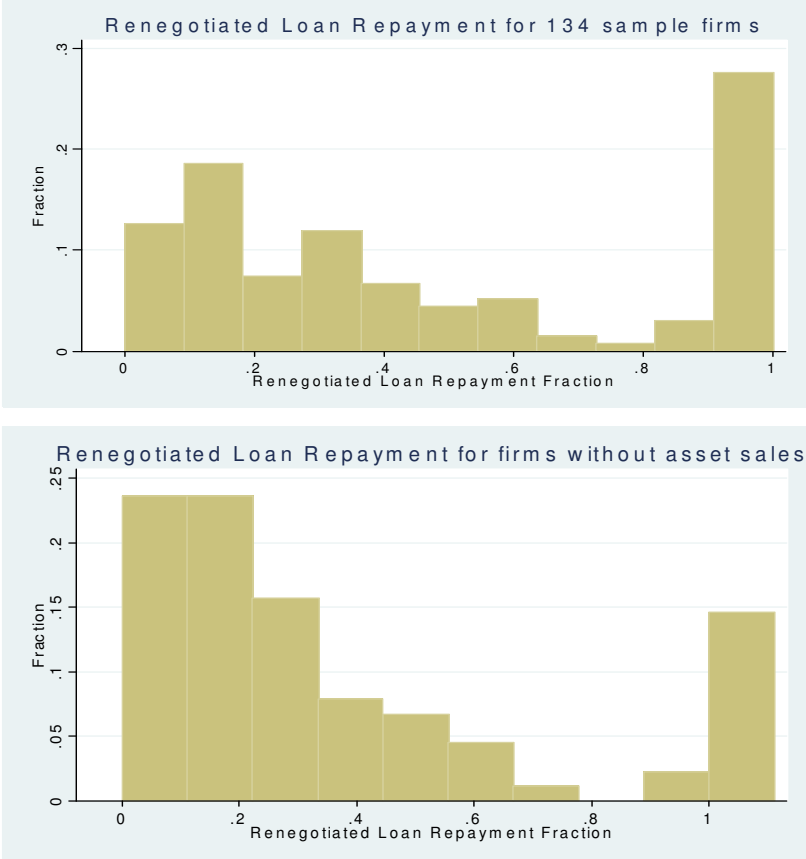
[16] Asset sales can also take place on initiative of the debtor.

5.2.   The actual loan repayment

Banks and debtors renegotiate their contract during court-supervised reorganization. The renegotiated loan repayment described above (section 5.1) is the outcome of this renegotiation process. The newly written contract will be incomplete as banks and entrepreneurs are unable to specify all the relevant contingencies. Therefore, additional renegotiations during the court-supervised post-confirmation stage are not excluded.[17]

Figure 3 plots the actual loan repayment and the initially renegotiated loan repayment for firms not ending in bankruptcy-liquidation during the court-supervised post-confirmation period. The actual principal installments payments are reported in the Central Corporate Credit Register of the National Bank of Belgium for aggregated credits larger then € 25.000[18][19]. The few cases with a negative loan repayment fraction are those where banks and debtors renegotiate a higher lending level, i.e. the cases where banks decide to refinance. We find a high correlation coefficient of 0,7272 between the actual and negotiated loan repayments in figure 3, which suggests that the renegotiated contracts are strictly enforced and largely renegotiation-proof during the post-confirmation stage.

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[17] See Hart & Moore (1998) for a seminal paper on incomplete contracts and renegotiation

[18] Unfortunately, we cannot use the actual loan repayment fraction of firms converted to bankruptcy-liquidation during the court-supervised post-confirmation period. Bank data is not reported anymore in the dataset of the Central Corporate Credit Register of the National Bank of Belgium at the time that firms convert to bankruptcy-liquidation. Therefore, we can only calculate the actual loan call fraction between plan confirmation and the conversion time to bankruptcy-liquidation. We do not have (structured) data on the renegotiated monthly bank debt repayments, and are therefore unable to determine the renegotiated repayment during plan confirmation and conversion to bankruptcy-liquidation.

[19] We have data on the actual loan repayments for 44 firms not converted to bankruptcy-liquidation. 4 firms out of those 44 sample firms are however excluded to plot the scatter diagram of figure 3. Those 4 firms obtained new bank credit, but we have strong evidence that the amount of new credit granted is incorporated in the nominator of the actual loan repayment fraction, while new credit is incorporated in the denominator for the construction of the negotiated loan repayment. However, we have some evidence that the amount of new credit is not always incorporated in the nominator of the actual loan repayment. Therefore, we simply drop those 4 observations, and use 40 observations to plot the scatter of figure 3.

Figure 3: Scatter diagram between the actual and negotiated loan repayment for firms not converted to bankruptcy-liquidation.

In this diagram, we compare the renegotiated loan repayment fraction (x-axes) with the actual loan repayment fraction (y-axes) during the court-supervised post-confirmation period of 24 months. Our analysis is restricted to 40 cases because of data limitations (see further). The renegotiated loan repayments are reported in the confirmed reorganization plans, and the fraction is calculated in section 5.1. The actual loan repayments are reported in the Central Corporate Credit Register of the National Bank of Belgium, and the fraction is likewise calculated as in section 5.1. The actual data are only available for firms not transferred to bankruptcy-liquidation during the court-supervised post-confirmation period of 24 months (which restricts our sample to 40 cases) as data are not reported anymore in the Central Corporate Credit Register at the time that firms are transferred to bankruptcy-liquidation. The few cases with a negative actual loan repayment fraction are due to banks that do not require the negotiated loan repayment, but instead expand their lending (which results in a 'negative' actual loan repayment in our analysis).
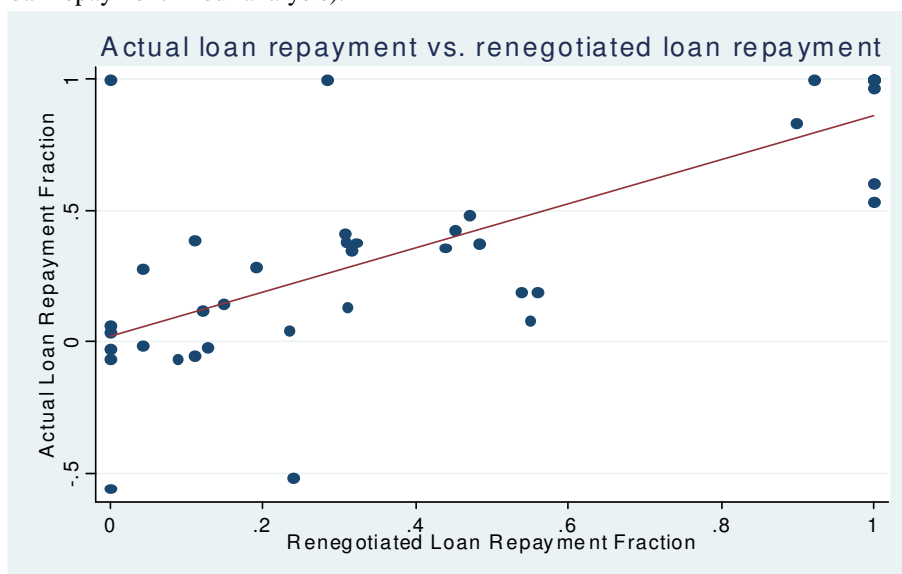
6.   The determinants of the renegotiated loan repayment.

The descriptive statistics in table 2 indicate that the pre-renegotiation level of bank debt varies among the different collateral types and that it is larger for firms financed by multiple banks. These bank debt characteristics might co-determine the renegotiated loan repayment fraction. Specification 1 of table 3 estimates the renegotiated loan repayment as a function of the collateral types, the binary variable D-multiple bank (1 if multiple banks are involved), and controls for the legal form of the distressed firm. The estimates are based on the full sample of distressed firms including both corporations and sole-proprietorships. The results indicate that personal guarantees lower the repayment fraction, while the other collateral types seem to bear no effect on the renegotiation.

Apparently collateral type does not play a major role in debt renegotiation[20]. In the following estimations we will only keep the personal guarantees variable. Since the object of our study is the

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[20] Our analysis of collateral types on the negotiated loan repayment fraction is based on dummy variables. We are unable to control for other aspects of a collateral right such as the amount of its legal subscription right (e.g. the registration of a mortgage for a residential real estate). If the amount of this subscription right is lower than the outstanding bank claim, the bank is actually unsecured for the non-subscribed part of its loan. This might affect bank behavior in distressed companies.

behavior of secured banks, we drop firms with unsecured bank debt in the remaining equations of table 3. All sole proprietorships are additionally excluded because of missing data: the liquidation values included in further specifications demand data on asset values from the annual accounts, but sole proprietorships are not obliged to draft and publish their accounts. Together, this limits our sample to 66 corporations with secured bank debt[21].

We hypothesized that secured banks and entrepreneurs with higher liquidation values renegotiate a higher loan repayment due during the court-supervised post-confirmation stage (hypothesis 1). Specification 2 introduces the log of Collateral value/secured debt. The collateral value is estimated by the sum of the book values of the major asset types: receivables, inventory, land & buildings, machinery, furniture and vehicles. Inventory is accounted only for half of its book value, in accordance to legal limitations on the scope of floating charges for the benefit of unsecured creditors. (see section 3). 2 sample firms did not provide a floating charge security. Their floating charge collateral is valued at zero. Another 3 firms did not provide a fixed charge on their real estate. The value of their land & buildings is valued at zero[22]. We also introduce the log of the level of bank debt[23] and leverage (Pre-bankruptcy total debt/total assets) as control variables. The results of specification 2 indicate a strongly significant estimate for Collateral value/secured debt, which does not allow us to reject hypothesis 1 that higher liquidation values are related to higher renegotiated loan repayments. The estimate of D-guarantee loses significance, but retains its sign. Using standardized variables in specification 2 (available on demand), we find that a standard deviation increase in the collateral value leads, on average, to a 0.3542 standard deviation increase in the renegotiated loan repayment fraction. The standardized coefficient of the collateral variable is larger than this of all other standardized variables that appear in specification 2 (see further) As noted before, we use logarithmically transformed collateral variables, as in Bergström et al. (2002). In appendix D, we show that our main estimation results and conclusions of this paper are fairly robust when we do not use logarithmic transformations.

In specification 3 and 4 we introduce measures for the expected going concern value to control for the distressed firm's financial capacity to repay the negotiated principal installments payments. Specification 3 includes the pre-bankruptcy cash flows[24] (scaled by total assets), industry sales growth

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[21] Our complete sample consists of 95 corporations. 11 of those corporations did not report bank loan repayments, or the plan was drafted for less then 24 months. 11 corporations did not provide security rights. Another 4 corporations published no recent annual account (2 private limited companies and 2 other partnership forms). The account of 1 public limited liability corporation is not useful because the corporation did split up in two entities (the collateral value per entity cannot be determined anymore – see further on the collateral value). Finally, two special cases are excluded because they provided security rights to the bank but the actual collateral value is zero. Our final sample of corporations with secured debt therefore amounts 66.

[22] All estimation results in this paper are however robust with respect to the 5 revaluations.

[23] The summary statistics of table 2 show that the bank debt exposure indirectly controls for multiple bank situations and for the different types of collateral rigths. In an unreported analysis, we noticed that the estimation of L(Bank debt) is driven by a few large firms in our 66-case sample (idem in specification 3 to 9 – see further). All other findings of table 3 are however robust to the exclusion of the largest sample firms.

[24] Unreported, we also introduced the distressed firm's Z-score and net profit scaled by total assets as going concern proxies in specification 3 (unreported). The estimates were however insignificant in line with the estimate of the pre-bankruptcy cash flows scaled by total assets.

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and industry profit margin[25], but surprisingly, without any statistical findings. Specification 4 controls for uncertainty by introducing the variation in the industry's profit margin[26] and the industry attrition rate. The latter rate is the proportion of small businesses within a particular industry that are discontinued each year (see Morrison, 2007). The variable Industry profit margin is dropped in specification 4 because of high correlation with the variable Industry variation in profit margin. The results indicate that going concern values do not affect the outcome of the renegotiation process.

Banks possess private information on a firm's viability and going concern value. We expect that private information held by banks may affect the reorganization outcome. Three proxies on private information are tested and discussed. The granting of new credit by the bank is expected to reveal positive information on a distressed firm's viability. Specification 5 shows that banks lower their renegotiated loan repayment when they promised the provision of additional credit (D-new credit) during the renegotiations. The ratio Equity/Bank[27] debt introduced in specification 5 contains information on the past financing decisions. A high ratio, i.e. relatively more subscribed capital than bank debt, identifies firms with limited access to bank financing (i.e. firms with limited bank debt capacity). We expect that secured banks contract their lending with bank debt-constrained firms. The positive sign of Equity/Bank debt confirms our expectations. Using standardized variables in specification 5 (available on demand), we find that a standard deviation increase in the collateral value leads, on average, to a 0.2732 standard deviation increase in the renegotiated loan repayment fraction. The beta coefficients for D-new bank credit and Equity/bank debt are respectively -0.2718 and 0.1785, which suggests that the effect of a bank's private information on the negotiated loan repayment is considerable.

The variable Pre-bankruptcy credit flow is the fraction of bank credit contraction and/or expansion during a 12-month pre-bankruptcy period prior to petition filing for bankruptcy-reorganization[28]. A positive and negative flow is respectively an expansion and contraction. These expansions and contractions may reveal the bank's private information about the viability of the firm. The estimate of the variable Pre-bankruptcy credit flow of specification 6 implies a lower renegotiated bank loan repayment for a pre-bankruptcy expansion and a higher renegotiated loan repayment for a pre-bankruptcy contraction, which is consistent with the idea that pre-bankruptcy credit flows reveal the bank's private information and that banks react coherently on their own private information both in pre- and post-bankruptcy stages[29].

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[25] The industry sales growth is the industry average of the annual sales growth over the last three fiscal years before the distressed firm's filing for bankruptcy-reorganization. The industry profit margin is the operating profit margin for the last fiscal year. Both variables are based on 3-digit Nace codes.
[26] The industry's variation in profit margin consists in the industry average of the standard deviation of the operating profit margin over the last 3 fiscal years. This variable is based on variation in profit margin within businesses over time (i.e. non cross-sectional).
[27] Equity consists in the debtor's subscribed capital.
[28] The data are obtained from the Central Corporate Credit Register of the National Bank of Belgium.
[29] The beta coefficients (of the standardized variables) of specification 6 for the collateral variable, D-new bank credit and Pre-bankruptcy bank credit flow are respectively 0.3525, -0.3401, and –0.2509. The effect of Pre-bankruptcy bank credit flow on the negotiated loan repayment is substantial.

We hypothesized that a higher degree of asset specialization results in a lower loan repayment. Despite the relatively high redeployability of inventories[30], the legal limits on the allocation of their proceeds in bankruptcy-liquidation potentially mitigate the secured bank's bargaining power. In general, we expect that receivables and real estate provide banks with more bargaining power resulting in a significantly higher loan repayment, while inventory and other fixed assets than real estate do not significantly affect the loan repayment. Specification 7 introduces the variables Receivables/secured debt and Real estate/secured debt. Both variables are significant. In section 7, we show that Real estate/secured debt is largely driven by the proceeds of real estate sales during the court-supervised reorganization. In section 8, we find that banks rely on pledged receivables to renegotiate a higher loan repayment. The variable Equity/bank debt is dropped from specification 7, because of its relatively high correlation with the collateral proxies. Specification 8 both estimates Inventory/secured debt and Fixed assets excluding real estate/secured debt, but without any significant result. The variable Fixed assets excluding real estate/secured debt includes the relatively large asset category machinery. Specification 9 therefore includes the variable machinery/secured debt, but without any significant results. We find support for our second hypothesis in the significant results for the real estate and receivable variables in specification 7.

We also hypothesized that a personal guarantee affects the renegotiation outcome (hypothesis 3). The significant estimate for D-guarantee in specification 1 shows that the provision of a guarantee results in a relatively debtor-friendly renegotiation outcome. The significant estimate however disappears in specification 2 until 9 after controlling for other variables, although the consistently negative sign suggests that guarantees are related to a lower renegotiated loan repayment.

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[30] The accounts of small to medium sized firms do not provide detailed information on the composition of the inventory.

Table 3:   Determinants of the renegotiated loan repayment.

The dependent variable is the renegotiated loan repayment fraction. This fraction is calculated in section 5.1. as the renegotiated loan repayment in € during the court-supervised post-confirmation stage of 24 months scaled by bank debt exposure in €. The coefficients are estimated using ordinary least squares. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%. We refer to **appendix A** for a detailed description of all explanatory variables in this table, The estimates of specification 1 are based on a full sample of 133 bank-financed distressed firms, which includes both sole proprietorships and corporations, and both cases with secured and unsecured bank debt. The specification 2 to 9 are restricted to both corporations (because sole proprietorships do not draft and publish accounts) and cases with secured bank debt, which results in a sample of 66 corporations with secured bank debt. The estimates of specification 6 are equally based on the 66-case sample, but data limitations on the variable Pre-bankruptcy bank credit flow restrict our analysis to 49 cases. Our findings in this table are robust to regression analysis using a Tobit with an upper limit on the renegotiated loan repayment fraction of 1 (see figure 2 for the high frequency of cases with full loan repayment during the 24-month period) .

	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6	Spec. 7	Spec. 8	Spec. 9
Collateral type									
D-Floating charge	-0.0624								
	[-0.81]								
D-Fixed charge	-0.0530								
	[-0.77]								
D-Guarantees	-0.2007	-0.1153	-0.1030	-0.1089	-0.0603	-0.1173	-0.0809	-0.0637	-0.0682
	[-2.31]**	[-1.05]	[-0.91]	[-0.94]	[-0.59]	[-0.96]	[-0.81]	[-0.55]	[-0.58]
Liquidation values									
Collateral value / secured bank debt (log)		0.1557	0.1532	0.1445	0.12.00	0.1653			
		[3.72]***	[3.54]***	[3.28]***	[3.07]***	[3.50]***			
Receivables / secured bank debt (log)							0.0417		
							[1.80]*		
Real estate / secured debt exposure (log)							0.0396		
							[2.39]**		
Inventory / secured bank debt (log)								0.0071	0.0124
								[0.24]	[0.48]
Fixed assets excluding real estate / secured bank debt (log)								0.0452	
								[1.12]	
Plant & Machinery/ secured bank debt (log)									0.0309
									[1.13]
Going concern value									
Pre-bankruptcy cash flow / total assets			-0.1206	-0.1186					
			[-1.02]	[-0.95]					
Industry sales growth			-0.1726	-0.2492					
			[-0.15]	[-0.22]					
Industry profit margin			-0.1233						
			[-0.14]						

Continuation of table 3	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6	Spec. 7	Spec. 8	Spec. 9
Industry variation in profit margin				-0.4550					
				[-0.15]					
Industry attrition rate				-0.0866					
				[-0.94]					
Private information									
D-new bank credit					-0.3544	-0.3952	-0.4324	-0.3316	-0.3472
					[-4.65]***	[-4.28]***	[-6.08]***	[-4.70]***	[-4.57]***
Equity / Bank debt exposure					0.0761				
					[1.97]*				
Pre-bankruptcy bank credit flow						-0.1665			
						[-2.13]**			
Controls & other variables									
D-Multiple banks	-0.0706								
	[-1.00]								
D-Public Limited Liability Corporation	0.0542								
	[0.63]								
D-Sole proprietorships	-0.0948								
	[-1.17]								
L(Bank debt)		-0.0440	-0.0466	-0.0473	-0.0407	-0.0156	-0.0659	-0.0623	-0.0577
		[-1.68]*	[-2.02]**	[-1.99]**	[-1.71]*	[-0.50]	[-3.22]***	[-2.60]**	[-2.44]**
Pre-bankruptcy total debt/total assets		0.0956							
		[0.54]							
Constant	0.6159	0.8825	1.0287	1.1763	0.9371	0.6350	1.7791	1.3739	1.3607
	[6.80]***	[2.80]*	[2.98]***	[3.06]***	[2.88]***	[1.50]	[6.74]***	[4.36]***	[4.01]***
R-squared	0.0624	0.2224	0.2371	0.2459	0.3183	0.3488	0.2711	0.2042	0.2044
Number of observations	133	66	66	66	66	49	66	66	66

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7. The likelihood of asset sales and loan repayment.

More than one third of the distressed firms plan to sell assets during the court-supervised post-confirmation stage, which is reported in the confirmed reorganization plans. Panel A of table 4 shows that the majority of asset sales consists in real estate. Panel B shows a renegotiated loan repayment for those sales of 0.9660 on median. The reorganization plans show that the floating charge asset sales mainly consist of stock and machinery. If floating charge asset sales occur, banks are clearly not fully repaid. However, if both real estate and floating charge asset sales are sold, which occurs with 11 firms, panel B shows that banks are repaid to a very large extent. A liquidation scheme is confirmed for 8 out of those 11 firms[31].

Notwithstanding the theoretical support for the liquidity and redeployability of accounts receivable, we find no evidence from our confirmed plans that firms sell receivables during Belgian court-supervised restructuring. Instead it is common practice that the entrepreneur collects receivables under supervision of the court-appointed examiner, who then uses the collected money to repay banks and other creditors. This practice at least partially substitutes a factoring system where receivables are sold to a third party.

Table 4 : Summary statistics on planned asset sales during the court-supervised post-confirmation stage.

Panel A gives an overview of the planned asset sales as reported in the confirmed reorganization plans. The asset sales are categorized as real estate and floating charge asset sales. Floating charge assets consist of (non-factored) receivables, inventory, machinery, furniture and vehicles. Panel B gives summary statistics on the renegotiated loan repayment per type of asset sales.

Type of asset sales	Panel A: Overview of asset sales.		Panel B: Summary statistics on the renegotiated loan repayment				
	Number of firms per type of asset sales	Fraction of firms per type of asset sales provided asset sales take place.	Mean	Median	St. Dev.	Min.	Max.
Real estate	26	26/52 = 0,50	0,7797	0.9660	0,2867	0,1326	1
Floating charge asset sales	9	9/52 = 0.1730	0,4490	0,3302	0,3390	0	1
Both real estate and floating charge asset sales	11	11/52 = 0.2115	0.7328	0.9206	0.3507	0.1480	1
Not specified	6	6/52 = 0.1154					
	Total = 52 (of 148)	-					

We wonder to what extent asset sales are explained by the structure of assets and the liquidation value of assets. In table 5 we model the likelihood of planned asset sales (asset sales equals 1 if assets are sold and 0 otherwise) as a function of the structure of assets, the liquidation value of assets and a set of control variables. Since the dependent variable is limited to the values 0 and 1, a probit regression seems the appropriate econometric methodology. The sample consists of 66 corporations financed by secured banks.

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[31] A liquidation scheme is confirmed for only 8 of the 146 firms with secured debt.

We start by looking at the asset structure of firms selling assets, which allows us to roughly identify the profile of firms with redeployable assets during court-supervised reorganization. Specification 1 introduces Real estate/total assets and Fixed assets excluding real estate/total assets. Total assets acts as control variable. We find a significant estimate for Real estate/total assets, which is consistent with our findings on real estate sales reported in table 4. In specification 2 we add Plant & Machinery/ total assets to the list of dependent variables, which is found to be significant. Specification 3 shows that the significance of the Plant &machinery/ total assets is driven by firms that hold more than 20% of their assets in machinery.

Table 5: Which distressed firms sell assets?

We estimate the likelihood of planned asset sales as reported in the confirmed plans by using a probit model. The binary dependent variable equals 1 if any assets are planned to be sold and 0 otherwise. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%. We refer to **appendix A** for a description of the explanatory variables. The estimates of specification 1 to 9 are based on our 66-sample of corporations with secured bank debt,

	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6	Spec. 7	Spec. 8	Spec. 9
Asset structure									
Receivables / total assets		0.8765							
		[0.90]							
Inventory / total assets		0.8449							
		[0.62]							
Real estate/total assets	1.4114	2.0811	1.6438			1.4019			
	[2.09]**	[2.16]**	[2.26]**			[1.84]*			
Fixed assets excluding real estate/total assets	-0.0381								
	[-0.04]								
Plant & Machinery/total assets		2.8077				2.1714			
		[1.94]*				[1.63]			
Dummy if -Plant & machinery /total assets >=0.20			1.1401						
			[2.04]**						
Liquidation values									
Collateral value/secured debt (log)				0.2419	0.4978	0.5749			
				[1.15]	[2.18]**	[2.07]**			
Real estate / secured debt (log)							0.2389	0.2380	0.2337
							[3.02]***	[2.85]***	[2.81]***
Plant & Machinery/ secured debt (log)							0.2325	0.2077	0.2129
							[2.23]**	[2.06]**	[2.11]**
Controls									
L(Total assets)	0.2929	0.2982	0.2954	0.2710					
	[2.61]***	[2.62]***	[2.56]**	[2.53]**					
L(Bank debt)					0.3098	0.2912	0.2231	0.2371	0.2114
					[2.91]***	[2.52]**	[2.17]**	[2.04]**	[1.81]*
Industry Attrition Rate							-0.8754		-0.8095
							[-1.87]*		[-1.80]*
Industry Profit Margin							-0.9409		
							[-0.30]		
Pre-bankruptcy total debt/ total assets									-0.4551
									[-0.68]
Constant	-2.6687	-3.4806	-2.8770	-2.3580	-4.5976	-4.8969	-0.5371	0.4776	1.1172
	[-3.30]***	[-3.17]***	[-3.28]***	[-3.11]***	[-3.24]***	[-3.01]***	[-0.33]	[0.25]	[0.53]
Pseudo R-squared	0.1208	0.1530	0.1715	0.0934	0.1161	0.1736	0.1905	0.2349	0.2401
Number of observations	66	66	66	66	66	66	66	66	66

We hypothesized that secured banks and entrepreneurs with higher liquidation values renegotiate a higher loan repayment due during the court-supervised post-confirmation stage (hypothesis 1). Therefore we expect that banks with higher collateral value/bank values are more likely to push their debtors to liquidate assets. In specification 4 the collateral value/bank debt variable is found to be positive, as expected. This positive sign becomes significant in specification 5, where we introduce a control variable for the level of bank debt and remains borderline significant in specification 6, where we include some asset subcategories that are part of the total collateral value. We interpret this as mild evidence that higher liquidation values are related to a higher likelihood of asset sales, suggesting that creditors may play a role in bringing these assets sales about.[32]

In the last specifications we introduce more specific asset categories scaled by the level of secured debt instead of assets. The results are very comparable to those in specifications 1 to 3. In specification 8 we introduce the Industry Attrition Rate and the Industry Profit Margin (see Asquith, Gertner and Scharfstein (1994) and Schleifer and Vichny (1992) for industry effects on asset sales) as additional control variables[33]. Not surprisingly asset sales are less likely in industries with higher attrition rates, since the high supply of sector specific assets and the low demand thereof in sectors with high attrition rates yields low prices in the secondary market. In specification 9 we additionally control for leverage, which is found to be unrelated to asset sales.

In summary we find in line with Ronen & Sorter (1972) and with empirical findings of Berger et al. (1996) that real estate is very redeployable. In addition, firms with high levels of machinery are more likely to sell assets, which is slightly more surprising[34]. The court-supervised reorganization might be used by economic agents to sell rather specialized assets like machinery to avoid fire sales under bankruptcy-liquidation. This might explain why firms with a lot of machinery sell more-specialized assets during the post-confirmation stage of the Belgian court-supervised restructuring. Also the consistently positive sign of the collateral variable suggests that secured bank creditors may play a role by requiring these asset sales from debtors.

8.   Robustness check 1: The renegotiated loan repayment for firms without planned asset sales.

In this section we verify whether our earlier findings are robust for a more limited sample with only firms that do not sell assets in the post-confirmation stage. In the first 4 specifications of table 6, we control for asset sales in the full sample of 66 corporations, by introducing the dummy D-Asset sales (1 if assets sales will be sold, 0 otherwise). In specification 1 we find that the estimate of the collateral variable is robustly positive, which does again not allow us to reject hypothesis 1. In specification 2 we introduce the liquidation value measures Receivables/secured debt and Real estate/secured debt.

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[32] In unreported regressions, we limit our sample to sizable assets sales like in Asquith et al. (1994), where asset sale are defined as sizable if companies sell at least 20% of their assets. The coefficient for the liquidation value variable (Collateral value/bank debt) remains positive but is not significant in this smaller sample.

[33] We also introduced Industry sales growth and Industry variation in profit margin (see table 3) in the probit model, but standard errors of the coefficient estimates were rather large.

[34] Firms with much machinery are not necessarily larger firms.

The significance found earlier in specification 7 of table 3 for real estate variable falters. In specification we add Inventory/secured debt and Fixed assets excl. real estate/secured debt and in specification 4 we additionally add Machinery/secured debt, to no avail. This suggests that the differences in asset specificity that drive asset-specific liquidation values only affect the renegotiated loan repayment through their effect on forced asset sales.

In the remainder table 6, we restrict the sample to 41 corporations without planned asset sales and re-estimate specifications 1, 2, 3 and 4, obviously without the dummy D-asset sales as an explanatory variable. Specification 5, 6, 7 and 8 show the respective estimation results. Collateral value/secured debt is significant, confirming once more earlier results. Interestingly the variable receivables/secured debt shows up with a significant coefficient when the variable is introduced in specification 6. If banks do not force the debtor to sell assets in order to repay bank debt, they apparently rely on pledged receivables to renegotiate a higher loan repayment, which gives again mild support for hypothesis 2 that asset specificity matters for loan renegotiation.

The main conclusion of this section is however the consistently positive and significant estimate for the collateral variable. Clearly, the presence of collateral that can be liquidated changes the bargaining position of secured creditors to the effect that they succeed in renegotiating better terms of loan repayment even if no collateral is eventually sold. The presence of a credible threat seems to suffice for the renegotiation result.

Table 6:   Determinants of the renegotiated loan repayment for firms without planned asset sales.

The dependent variable is the renegotiated loan repayment fraction. This fraction is calculated in section 5.1. as the renegotiated loan repayment in € during the court-supervised post-confirmation stage of 24 months scaled by bank debt exposure in €. The coefficients are estimated using ordinary least squares. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%. We refer to **appendix A** for a detailed description of all explanatory variables in this table, The estimates of specification 1 to 4 are based on our 66-sample of corporations with secured bank debt, Firms with planned asset sales are excluded to estimate specification 5 to 8, which results in a sample of 41 cases.

	Sample of 66 firms controlling for asset sales				Sample of 41 firms without asset sales			
	Spec. 1	Spec. 2	Spec. 3	Spec. 4	Spec. 5	Spec. 6	Spec. 7	Spec. 8
Liquidation values								
Collateral value/bank debt (log)	0.1112				0.1306			
	[3.42]***				[3.17]***			
Receivables / Secured debt (log)		0.0311				0.0503		
		[1.54]				[2.25]**		
Real estate / Secured debt (log)		0.0160				0.0167		
		[1.01]				[0.85]		
Inventory/ Secured debt (log)			0.0155	0.0225			0.0289	0.0458
			[0.59]	[0.96]			[0.69]	[1.39]
Fixed assets excluding real estate/bank debt (log)			0.0386				0.0401	
			[1.13]				[0.79]	
Plant & Machinery/ Secured debt (log)				0.0106				-0.0111
				[0.43]				[-0.34]
Asset sales								
D-Asset sales	0.3004	0.3093	0.3529	0.3505				
	[3.86]***	[3.61]***	[4.82]***	[4.50]***				
Controls								
D-new bank credit	-0.3015	-0.3272	-0.2580	-0.2707	-0.2415	-0.2830	-0.1912	-0.1814
	[-3.38]***	[-3.44]***	[-2.94]***	[-3.04]***	[-3.10]***	[-3.10]***	[-2.42]**	[-1.89]*
L(bank debt)	-0.0789	-0.0923	-0.0920	-0.0883	-0.0663	-0.0781	-0.0787	-0.0777
	[-3.68]***	[-4.33]***	[-4.27]***	[-3.04]***	[-2.43]***	[-2.79]***	[-2.91]***	[-2.87]***
Constant	1.3490	1.7517	1.6018	1.5568	1.1765	1.5982	1.4416	1.3734
	[4.68]***	[6.18]***	[5.55]***	[5.29]***	[3.23]***	[4.66]***	[4.00]***	[3.64]***
R-squared	0.4162	0.3863	0.3854	0.3735	0.3153	0.2914	0.2566	0.2416
Number of observations	66	66	66	66	41	41	41	41

9. Robustness check 2: The renegotiated loan repayment for firms without agreement.

We argued in section 2 that secured creditors and debtors do not necessarily reach an agreement on the renegotiated loan repayment. It might therefore be interesting to analyze the impact of liquidation values on the likelihood that an agreement is reached or not. Unfortunately, our dataset provides only noisy information on the fact whether an agreement is effectively reached. We strongly suspect, though we have no proof, that a renegotiated loan repayment of 1 means that there was not really a successful renegotiation. This is possible in the Belgium context because an uncompromising bank can always force the debtor legally to repay the loan in full not later than 18 months after plan confirmation, which implies that the reorganization plan, drafted for a period of 24 months, reports a full loan repayment of 1.

In this section, we will therefore *assume* that no agreement is reached when the loan repayment fraction amounts to 1. To model the determinants of the failure of renegotiation, we estimate a probit regression with D-No agreement (1 when the loan repayment fraction is 1, zero otherwise) as the dependent variable. Results are shown in Panel A of table 7. The likelihood of non-agreement clearly increases with the liquidation value of collateral (Collateral value/secured debt). Banks with higher liquidation values are less likely to compromise. In addition, we find that distressed firms with relatively weak pre-bankruptcy cash flows are less likely to reach an agreement.

In summary, we still conclude that higher liquidation values result in a higher loan repayment (hypothesis 1). More specifically highly secured banks are more unwilling to compromise, resulting in a full loan repayment.

Table 7:   Determinants of the negotiated loan repayment for firms without agreement.

We estimate the likelihood that no agreement on the loan renegotiation is reached between banks and debtor by using a probit model. We *assume* that firms and secured banks did not reach an agreement when the loan repayment fraction amounts 1. The binary dependent variable equals 1 if no agreement is reached, and zero otherwise. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%. We refer to appendix A for a description of the explanatory variables. The estimates are based on our 66-sample of corporations with secured bank debt,

	Probit model with dependent variable D-No agreement between secured creditors and entrepreneurs
Collateral value/secured debt (log)	1.1470
	[3.33]***
Controls	
Pre-bankruptcy cash flow/total assets	-0.9719
	[-2.30]**
L(bank debt)	-0.2411
	[-1.75]*
Constant	1.4580
	[0.79]
Pseudo R-squared	0.2962
Number of observations	66

10.   Robustness Check 3: Bank strategy and judicial discretion.

Bris, Welch & Zhu (2006) show that banks are more likely to choose liquidation (chapter 7) over reorganization (chapter 11) irrespective whether banks are secured or not. They argue that banks are unwilling to compromise during Chapter 11 because pre-bankruptcy negotiations were already brought to a standstill. We expect that this unwillingness to compromise might depend on the respective banks' strategies with respect to court-supervised reorganizations. Our conclusions with respect to liquidation values as a bargaining instrument (hypothesis 1) could therefore be driven by heterogeneous bank strategies.

The three largest banks active in corporate finance in Belgium are frequently present in our sample. In specification 1 of table 8 we control for those three large banks by including bank dummies. The dummies equal one when a large bank did exclusively finance a distressed firm (respectively for 15, 12 and 12 firms out of 66 firms) and zero otherwise. Multiple bank situations take place for 20 of the 66 cases. The estimates show that large bank 1 seemingly has another strategy resulting in lower renegotiated loan calls, but also that the collateral variable remains significantly positive, again hinting at the fact that the evidence in support of hypothesis 1 is robust.

Recent literature shows that judicial discretion significantly affects the restructuring process and outcome (see Bris et al., 2006, and Chang & Schoar, 2006). Judicial discretion might drive our earlier findings with respect to the impact of the collateral value on the loan repayment. Unlike in the U.S., more then one judge is assigned to a firm filing for bankruptcy-reorganization, and those judges act as a college. We however have no structured data on the specific judges involved with a distressed firm. Specification 2 simply controls for judicial discretion by including court dummies for the three largest bankruptcy courts in our sample (respectively 12, 10 and 9 firms out of 66 firms). Although the loan repayments for firms filing a petition with the court of Charleroi are larger, the introduction of court dummies does not significantly affect the collateral proxy, which again shows the robustness of our primary result.

Table 8: Regression analysis on the negotiated loan repayment

The dependent variable is the renegotiated loan repayment fraction. This fraction is calculated in section 5.1. as the renegotiated loan repayment in € during the court-supervised post-confirmation stage of 24 months scaled by bank debt exposure in €. The coefficients are estimated using ordinary least squares. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%. The dummies on large banks equal 1 if one of the three largest Belgian banks (active in corporate finance) exclusively financed the distressed firm (Large bank 1, 2 and 3 for respectively 15, 12 and 12 firms out of 66) and zero otherwise. The court dummies represent the three largest bankruptcy courts in our sample (Court of Antwerpen, Charleroi and Leuven for respectively 12, 10 and 9 firms out of 66).

	Spec. 1	Spec. 2
Liquidation values		
Collateral value / secured bank debt (log)	0.1556	0.1574
	[3.76]***	[4.42]***
Bank variables		
D-Large bank 1	-0.2018	
	[-1.36]	
D-Large bank 2	0.0083	
	[0.05]	
D-Large bank 3	0.0544	
	[0.38]	
D-Multiple banks	0.0754	
	[0.53]	
Court variables		
Court of Antwerpen		0.1048
		[1.01]
Court of Charleroi		0.2295
		[2.45]**
Court of Leuven		-0.0648
		[-0.45]
Controls & other variables		
D-new bank credit	-0.4585	-0.4090
	[-5.93]***	[-6.72]***
L(Bank debt)	-0.0682	-0.0444
	[-2.75]***	[-2.15]**
Constant	1.3280	0.9615
	[3.92]***	[3.08]***
R-squared	0.3597	0.3497
Number of observations	66	66

11. Conclusion

We analyze unique data on contract renegotiation between entrepreneurs and secured banks under Belgian court-supervised reorganization. The initial lending contract is renegotiated during the pre-confirmation stage and enforced during the post-confirmation period. Unlike the U.S., Belgian courts supervise this enforcement during a fixed period of 24 months. Strict contractual enforcement demands that the negotiated principal installments payments are paid during this fixed period of 24 months. Using a sample of firms not-converted to bankruptcy-liquidation (Chaper 7 in U.S.), we find a strongly positive correlation between renegotiated and actual loan repayments during this court-supervised time-fixed period suggesting that the renegotiated contracts are strictly enforced during the post-confirmation stage.

Our main research objective is to understand the determinants of the renegotiated loan repayment fraction during the court-supervised post-confirmation period of 24 months. This fraction amounts to the renegotiated principal installments payments scaled by bank debt exposure at the moment of plan confirmation. Theory suggests that secured creditors are more likely to oppose a debtor's reorganization if their collateral has a higher liquidation value. In line with this theory, we hypothesize that secured banks succeed in renegotiating higher loan repayment fractions during the post-confirmation period if they have higher liquidation values. Controlling for a distressed firm's expected going concern value, for the bank's private information on the debtor's viability and for loan size, we cannot reject our main hypothesis that higher liquation values of collateral result in higher renegotiated loan repayment fractions. More specifically secured banks with higher liquidation values of collateral are less willing to accept anything less than a full loan repayment.

Asset sales are planned in the confirmed reorganization plans for more than one third of our distressed sample firms and largely consist of real estate. Firms with more machinery, which are not necessarily large firms, frequently liquidate inventories, machinery, and other assets. Possibly, firms with more machinery use the court-supervised reorganization to sell specialized assets to avoid fire sales under bankruptcy-liquidation. Secured banks are generously repaid by the proceeds from asset sales and there is some evidence that banks push for these asset sales.

Although receivables are commonly regarded as redeployable assets, we find no clear evidence of their disposal to a third party (factoring). It is common practice in Belgium that receivables are simply collected by the entrepreneur under supervision of the appointed examiner, and that the collection proceeds are used to repay banks and other creditors. However, if the debtor does not sell assets to repay its loans, banks rely on pledged receivables to insist on a higher renegotiated loan repayment.

In sum, we find that the liquidation values of the collateral and of the specific asset types are more important for the outcome of loan renegotiation than the legal form of the collateral[35] or the continuation value of the distressed firm. This is consistent with the theoretical result that secured creditors prefer liquidation to court-supervised reorganization

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[35] Personal guarantees, that pledge assets outside the distressed firm, may be the exception to this rule.

Appendix A: Description of all explanatory variables analyzed in table 3 on the renegotiated loan repayment fraction.

D-Floating charge	Dummy variable that is assigned the value of one in case the bank possesses a security interest on floating charge assets, and zero otherwise. Floating charge assets are mainly working capital like inventories.
D-Fixed charge	Dummy variable that is assigned the value of one in case the bank possesses a security interest in real estate (land and buildings), and zero otherwise.
D-Guarantees	Dummy variable that is assigned the value of one in case the entrepreneur provided a personal guarantee to the bank, and zero otherwise.
D-Multiple bank	Dummy variable that is assigned the value of one in case the distressed firm is financed by more than one bank, and zero otherwise.
D-Public Limited Liability Corporation	Dummy variable that is assigned the value of one in case the distressed firm is a Public Limited Liability Corporation, and zero otherwise.
D-Sole proprietorship	Dummy variable that is assigned the value of one in case the distressed firm is a sole proprietorship, and zero otherwise.
Collateral value/secured debt (log)	A logarithmically transformed ratio of the bank's collateral value divided by the amount of outstanding secured debt. The collateral value is estimated by the sum of the book values of the major asset types: receivables, inventory, land & buildings, machinery, furniture and vehicles. Inventory is accounted only for half of its book value, in accordance to legal limitations on the scope of floating charges for the benefit of unsecured creditors. The book values of the asset types are obtained from the latest annual account prior to petition filing for bankruptcy-reorganization. The amount of the outstanding secured bank credit is reported in the confirmed reorganization plans.
L(Bank debt)	The logarithmic variable of the outstanding bank debt amount as reported in the confirmed plans.
Total debt /Assets	Total debt scaled by assets (as reported in the latest annual account prior to petition filing for bankruptcy-reorganization).
Pre-bankruptcy cash flows/assets	Cash flows scaled by assets (as reported in the latest annual account prior to petition filing for bankruptcy-reorganization).
Industry sales growth	The industry sales growth is the industry average of the annual sales growth over the last three fiscal years before the distressed firm's filing for bankruptcy-reorganization (based on 3-digit Nace codes).
Industry profit margin	The industry profit margin is the operating profit margin for the last fiscal year before the distressed firm's filing for bankruptcy-reorganization (based on 3-digit Nace codes).
Industry's profit margin	Uncertainty parameter for the going concern value. The industry's variation in profit margin consists in the industry average of the standard deviation of the operating profit margin over the last 3 fiscal years. This variable is based on variation in profit margin within businesses over time (i.e. non cross-sectional).
Industry attrition rate	Uncertainty parameter for the going concern value. The Industry attrition rate is the proportion of small businesses within a particular industry that file a petition for bankruptcy-liquidation each year.
D-new bank credit	Dummy variable that is assigned the value of one in case a bank did promise (in the confirmed reorganization plan) the provision of additional credit, and zero otherwise.
Equity/Bank debt	The variable is a proxy for the distressed firm's bank debt capacity. Equity consists in the debtor's subscribed capital (as reported in the latest annual account prior to petition filing for bankruptcy-reorganization). The amount of bank debt is reported in the confirmed reorganization plans.
Pre-bankruptcy credit flow	The variable is the fraction of bank credit contraction and/or expansion during a 12-month pre-bankruptcy period prior to petition filing for bankruptcy-reorganization. A positive and negative flow is respectively an expansion and contraction. (Data obtained by intermediation of the National Bank of Belgium).
Receivables/secured debt (log)	A logarithmically transformed ratio of the book value of receivables divided by the amount of outstanding secured bank debt.
Real estate/secured debt (log)	A logarithmically transformed ratio of the book value of land and buildings divided by the amount of outstanding secured bank debt.
Inventories/Secured debt (log)	A logarithmically transformed ratio of the book value of inventories divided by the amount of outstanding secured bank debt.
Fixed assets excluding real estate/secured debt (log)	A logarithmically transformed ratio of the book value of fixed assets excl. real estate divided by the amount of outstanding secured bank debt.
Plant & machinery/secured bank debt (log)	A logarithmically transformed ratio of the book value of plan and machinery divided by the amount of outstanding secured bank debt.

Appendix B: summary statistics of variables used in table 3 for 66-case sample.

	Mean	Median	St. dev.
Renegotiated loan repayment fraction (dependent variable)	0.4864	0.3746	0.3777
D-Guarantees	0.2121	0	0.4119
Collateral value / secured bank debt (log)	0.5350	0.5496	0.8594
L(Bank debt)	12.7747	12.7666	1.6522
Pre-bankruptcy total debt/total assets	1.0702	0.8903	0.6012
Pre-bankruptcy cash flow / total assets	-0.1340	-0.0051	0.4187
Industry sales growth	0.0705	0.06575	0.0442
Industry profit margin	0.0892	0.0675	0.0528
Industry variation in profit margin	0.0413	0.0390	0.0168
Industry attrition rate (%)	1.3721	1.4000	0.4306
D-new bank credit	0.0909	0	0.2897
Equity / Bank debt exposure	0.6540	0.3556	0.8863
Pre-bankruptcy bank credit flow	-0.0239	-0.1220	0.5800
Receivables / secured bank debt (log)	-0.9835	-0.5225	1.7613
Real estate / secured debt exposure (log)	-8.9261	-8.0081	2.2767
Inventory / secured bank debt (log)	-1.0311	-0.7607	1.7731
Fixed assets excluding real estate / secured bank debt (log)	-0.9015	-0.7447	1.2306
Plant & Machinery/ secured bank debt (log)	-2.5409	-2.4018	1.7350

Appendix C: correlation table of the variables used in the regression analysis on the negotiated loan repayment fraction for sample of 66 firms (table 3).

	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18
S1	1,0000	-0,2805	0,3870	-0,2200	0,0389	-0,1652	-0,0449	-0,1023	-0,0063	-0,0588	-0,3263	0,3013	-0,2064	0,1772	0,1358	0,0593	0,2561	0,2062
S2	-0,2805	1,0000	-0,1217	0,1089	-0,0748	0,0959	-0,0300	0,2013	0,0539	-0,0630	0,2467	-0,0331	0,0737	-0,0644	0,1516	-0,0275	-0,0948	-0,0414
S3	0,3870	-0,1217	1,0000	-0,3044	-0,2764	0,1140	0,2024	-0,0982	-0,0761	-0,0157	0,0118	0,5811	-0,0166	0,7238	0,1123	0,4947	0,3679	0,3367
S4	-0,2200	0,1089	-0,3044	1,0000	-0,2890	0,1085	0,0011	-0,0058	-0,0761	0,0766	0,0775	-0,3517	0,0433	-0,1440	0,1616	-0,2416	-0,0288	-0,0734
S5	0,0389	-0,0748	-0,2764	-0,2890	1,0000	-0,6690	-0,3816	-0,1575	-0,0805	0,0323	-0,0578	0,0553	-0,0114	-0,1793	-0,1396	-0,3282	0,0266	0,0687
S6	-0,1652	0,0959	0,1140	0,1085	-0,6690	1,0000	0,2620	0,0498	-0,0669	-0,0538	0,0948	-0,1986	0,0408	0,1337	0,0375	0,2994	-0,0992	-0,1228
S7	-0,0449	-0,0300	0,2024	0,0011	-0,3816	0,2620	1,0000	0,1286	0,1372	-0,1301	0,0681	0,1732	0,0084	0,0529	-0,1587	0,4445	0,1419	0,1619
S8	-0,1023	0,2013	-0,0982	-0,0058	-0,1575	0,0498	0,1286	1,0000	0,6566	-0,1875	-0,0220	0,0022	0,0104	-0,2478	0,1260	-0,0672	-0,3955	-0,1377
S9	-0,0063	0,0539	-0,0761	-0,0761	-0,0805	-0,0669	0,1372	0,6566	1,0000	-0,1628	-0,0524	0,0532	0,0544	-0,2453	0,0162	-0,1366	-0,2382	-0,1421
S10	-0,0588	-0,0630	-0,0157	0,0766	0,0323	-0,0538	-0,1301	-0,1875	-0,1628	1,0000	-0,0190	-0,0330	-0,0865	-0,2342	0,0338	-0,2452	-0,1512	0,0399
S11	-0,3263	0,2467	0,0118	0,0775	-0,0578	0,0948	0,0681	-0,0220	-0,0524	-0,0190	1,0000	-0,0138	-0,1838	0,0834	0,2523	-0,0237	-0,0665	-0,0017
S12	0,3013	-0,0331	0,5811	-0,3517	0,0553	-0,1986	0,1732	0,0022	0,0532	-0,0330	-0,0138	1,0000	-0,0769	0,3685	-0,0220	0,3170	0,4095	0,4220
S13	-0,2064	0,0737	-0,0166	0,0433	-0,0114	0,0408	0,0084	0,0104	0,0544	-0,0865	-0,1838	-0,0769	1,0000	0,0378	-0,1249	0,1282	-0,0131	-0,1002
S14	0,1772	-0,0644	0,7238	-0,1440	-0,1793	0,1337	0,0529	-0,2478	-0,2453	-0,2342	0,0834	0,3685	0,0378	1,0000	0,0500	0,4014	0,2689	0,1757
S15	0,1358	0,1516	0,1123	0,1616	-0,1396	0,0375	-0,1587	0,1260	0,0162	0,0338	0,2523	-0,0220	-0,1249	0,0500	1,0000	-0,3339	-0,3154	-0,1458
S16	0,0593	-0,0275	0,4947	-0,2416	-0,3282	0,2994	0,4445	-0,0672	-0,1366	-0,2452	-0,0237	0,3170	0,1282	0,4014	-0,3339	1,0000	0,3193	0,1929
S17	0,2561	-0,0948	0,3679	-0,0288	0,0266	-0,0992	0,1419	-0,3955	-0,2382	-0,1512	-0,0665	0,4095	-0,0131	0,2689	-0,3154	0,3193	1,0000	0,6497
S18	0,2062	-0,0414	0,3367	-0,0734	0,0687	-0,1228	0,1619	-0,1377	-0,1421	0,0399	-0,0017	0,4220	-0,1002	0,1757	-0,1458	0,1929	0,6497	1,0000

S1: Negotiated Loan repayment Fraction
S2: D-Guarantees
S3: Collateral value/Secured bank debt (log)
S4: L(Bank debt)
S5: Total debt/total assets
S6: Pre-bankruptcy cash flow/total assets
S7: Industry sales growth
S8: Industry profit margin
S9: Industry variation in profit margin

S10: Industry attrition rate
S11: D-new bank credit
S12: Equity/bank debt exposure
S13: Pre-bankruptcy credit flow
S14: Receivables/secured bank debt (log)
S15: Real estate/secured bank debt (log)
S16: inventory/secured bank debt (log)
S17: Fixed assets excluding real estate/secured bank debt (log)
S18: Machinery/secured bank debt (log)

Appendix D: main specifications of table 3 without logarithmically transformed collateral variables.

Table 1 of this appendix estimates the main specifications of table 3 using non-logarithmically transformed collateral variables. The distribution of the collateral variables Collateral value/secured bank debt, Receivables/secured bank debt, and Inventory/secured bank debt are skewed to the right, and we recoded the upper percent of values to the 95th percentile of the distribution (i.e. 2 cases out of 66). Our previous findings on the main specifications 2, 7, 8 and 9 in table 3 are highly robust. Further, the estimate of the variable Plant & Machinery/secured bank debt becomes significant, and is consistent with our findings that firms with much machinery have a higher likelihood to sell assets, and that the sales proceeds are used to repay banks (see table 5 on planned asset sales). In unreported analysis (available on demand), we find that all other results reported in this paper are robust to non-logarithmically transformed collateral variables

Table 1 of appendix D: Determinants of the renegotiated loan repayment.

The dependent variable is the renegotiated loan repayment fraction. Specification 2, 7, 8 and 9 of table 3 are estimated using non-logaritmically transformed collateral variables. The distribution of the collateral variables Collateral value/secured bank debt, Receivables/secured bank debt, and Inventory/secured bank debt are skewed to the right, and we recoded the upper percent of values to the 95th percentile of the distribution (2 cases). The coefficients are estimated using ordinary least squares. The values in brackets are robust t-statistics; * / ** / *** significant at 10% / 5% / 1%.

	Spec. 2 of table 3	Spec. 7 of table 3	Spec. 8 of table 3	Spec. 9 of table 3
Collateral type				
D-Guarantees	-0.1167	-0.1049	-0.0581	-0.0491
	[-1.07]	[-1.06]	[-0.51]	[-0.43]
Liquidation values				
Collateral value / secured bank debt	0.1164			
	[4.18]***			
Receivables / secured bank debt		0.1036		
		[2.14]**		
Real estate / secured debt exposure		0.1421		
		[2.96]***		
Inventory / secured bank debt			0.0040	-0.0191
			[0.06]	[-0.43]
Fixed assets excluding real estate / secured bank debt			0.0609	
			[1.23]	
Plant & Machinery/ secured bank debt				0.2154
				[3.31]***
Private information				
D-new bank credit		-0.3871	-0.3203	-0.3239
		[-5.59]***	[-4.53]***	[-4.74]***
Controls & other variables				
L(Bank debt)	-0.0241	-0.0521	-0.0612	-0.0611
	[-0.89]	[-2.31]**	[-2.40]***	[-2.50]***
Pre-bankruptcy total debt/Assets	0.0735			
	[0.76]			
Constant	0.4976	1.0522	1.2602	1.2660
	[1.08]	[3.20]***	[3.56]***	[3.75]***
R-squared	0.2574	0.2925	0.2014	0.2529
Number of observations	66	66	66	66

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