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A STUDY OF INEFFICIENT GOING CONCERNS IN BANKRUPTCY

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Abstract

This paper provides the first large-scale study measuring the bias in favour of going concerns induced by court-administered bankruptcy procedures, using Hungarian data. We find that the large majority of bankrupt firms in our sample are kept as going concerns; the results suggest that there is a significant going concern bias, which leads to large losses to pre-bankruptcy creditors. We attribute the high level of going concerns in bankruptcy to the design of the compensation scheme of the trustees administering the bankrupt firm. Inadequate court oversight and a lack of creditor control over the proceedings remove important checks over the trustee. We explore and reject an alternative hypothesis that employment considerations explain the going concern bias

1. Introduction

This paper provides the first large-scale study measuring the bias in favor of going concerns induced by court-administered bankruptcy procedures. Using a unique data set of distressed and bankrupt firms from Hungary, we find that the going concern bias results from a lack of court oversight and the design of the remuneration scheme of the agent who manages the bankrupt firm.

One of the principal roles of a bankruptcy code according to Hart (1999) is to 'deliver an ex post efficient outcome, that is, it should maximize the total value …available to be divided between the debtor, creditors and other interested parties, e.g. workers.' Many countries have tried to achieve this goal of ex post efficiency by designing a bankruptcy code that incorporates a bias towards preserving the going concern, even if the business might realize more for creditors in an early auction or a piecemeal sale. A frequently cited example is Chapter 11 of the 1978 US Bankruptcy Code, which allows the business to be operated as a going concern under court protection until creditors and the debtor can agree on a plan of reorganization.[1] To achieve this end, the code imposes significant restrictions on creditors' rights, for example, it allows new financing secured on the collateral of existing secured creditors.

The design of adequate bankruptcy institutions has increasingly been part of the policy agenda of many emerging market countries as well as international financial institutions. Many transition economies redesigned their bankruptcy laws in order to strengthen creditors' rights and accelerate the reorganization of distressed firms. However, court practices and procedures often dilute creditor protection provisions in the code. Using the Hungarian experience, we find that creditor protection provisions built into the code are not good predictors of the size and significance of the going concern or liquidation bias.

[1] For example, Brealey and Myers write that 'firms are often reorganized even when the assets could be used more efficiently elsewhere. The problems in Chapter 11 usually arise because the goal of paying off the creditors conflicts with the goal of maintaining the firm as a going concern. (P.532, Principles of Corporate Finance, Sixth Edition). An extreme example of an inefficient going concern in Chapter 11 is the case study of Eastern Airlines (see Weiss and Wruck (1998)).

The Hungarian bankruptcy statute allows creditors who can prove outstanding debts to precipitate the bankruptcy of the offending firm quickly and at little cost to themselves. Moreover, once in bankruptcy the Hungarian code has no explicit going-concern bias, in contrast to other bankruptcy codes such as those in the US and France. Their codes explicitly allow for the bankrupt firm to be maintained as a going concern even when an early auction or liquidation would produce greater value for pre-bankruptcy creditors.[2]

The interesting feature of the Hungarian code is that despite its lack of an explicit going concern bias, we find that a large percentage of bankrupt firms are maintained inefficiently, as going concerns. By inefficiently we mean that pre-bankruptcy creditors in aggregate would have received greater proceeds if the bankrupt firm had been immediately closed and sold off. We argue that it is the court procedures, in particular the remuneration scheme of the trustee and poorly constructed creditor committees, which create the going concern bias. We do not find evidence that employment considerations can explain this going concern bias.

To the best of our knowledge, this is the first paper that tries to measure the going-concern bias in bankruptcy and how it affects the distribution of wealth between different creditor classes, for a large sample of firms.[3]

We report five main results. First, we examine whether going concerns enhance asset values compared with immediate closure, controlling for potential selection bias in the two samples. We find no evidence that the going concern improves proceeds from asset sales; rather we find that 72% of going concerns are run with (large) operating losses that diminish the value of the going concerns. On average, going-concern bankruptcies identified by us as inefficient result in an incremental loss of 42% of the

[2] See Davydenko and Franks (2005) for a description and analysis of the French code.
[3] Mitchell and Toth (2001), in an unpublished paper, examine the old 1992 Hungarian Bankruptcy Reform Act, which contained an automatic trigger whereby firms had to file with the bankruptcy court if their payments were overdue by more than 90 days. Their sample of firms is largely state -owned or state-supported. The trigger was repealed shortly thereafter in 1993. In contrast, our paper focuses on the new 1997 Act and our sample of companies are all private ones, where the role of the state is small. Thus, the process of reorganization is very different in the two samples.

face value of all pre-bankruptcy claims; an amount that we estimate could have been saved by immediate closure.

Second, large operating losses arising from the going concern are financed from sales of assets in bankruptcy. On average 78% of the total proceeds, including the sale of assets during bankruptcy, are paid to post-bankruptcy creditors supplying the going concern and the trustee managing the bankrupt firm.[4]

Third, we find a significant relationship between the compensation scheme of the trustee and the incidence and size of inefficient going concerns. We trace this bias to the design of the trustee's remuneration scheme that is based both upon operating revenues and the value of asset sales. Regression results show that the higher the proportion of the trustees' fees deriving from operating revenues, the greater the probability that the going concern is inefficient. These higher fees are correlated with lower Q ratios. Both results suggest that the remuneration scheme reduces the value of the firm to pre-bankruptcy creditors.

Fourth, we find that the size and the incidence of inefficiency depend on whether the trustee is State or privately employed. Private trustees benefit directly from the remuneration scheme whereas employees of the State are salaried and do not. We provide evidence that inefficient going concerns are more likely to occur when the bankrupt firm is managed by a private trustee rather than by a State trustee. These results cannot be explained by higher quality firms being allocated to State trustees.

Fifth, we find that junior claimants, such as trade creditors and owners are mainly responsible for precipitating bankruptcy where the outcome is an inefficient going concern. Conversations with participants in the process suggest that side-payments are made between trade creditors/owners and the trustee. Our results are consistent with this view, although we cannot provide direct evidence. We also find that senior creditors, particularly banks, are not passive against the dilution of their secured claims in bankruptcy. They respond by heavily contracting the borrowings of

[4] Post-bankruptcy creditors claims do not include pre-bankruptcy claims but some post-bankruptcy creditors are pre-bankruptcy claimants.

distressed firms pre-bankruptcy, although we cannot find evidence that such a contraction forces other creditors to trigger bankruptcy.

There is a growing theoretical literature that addresses the question of optimal bankruptcy-law design. For example, Povel (1999) considers the trade-off between creditor- and debtor-friendly bankruptcy procedures, within a framework where the management controls the timing of the bankruptcy decision and can affect the value of the assets of the bankrupt firm. Berkovitch and Israel (1999) describe how the lenders' information set influences the design of optimal bankruptcy law; Ayotte and Yung (2004) argue that a debtor-friendly code requires judicial expertise to be effective; Bernhardt and Nosal (2004) show how ex ante incentives can be improved by court-administered bankruptcy procedure where the judge makes the decision to liquidate, even when prone to error.[5]

Although much of the theoretical literature focuses on the issue of ex ante efficiency, the empirical literature has emphasized measures of ex-post efficiency because of difficulties of measurement. The paper closest to ours is Stromberg (2000) which examines Swedish auctions of small bankrupt firms, managed by a court-appointed trustee. The issue addressed in this paper is how the proceeds of sales are affected by the decision to sell a bankrupt company to incumbent management or third parties. In this case the inefficiency arises because the main bank's existing stake in the firm biases its decision to finance the repurchase of the bankrupt firm by incumbent management. In our case, the inefficiency stems from the trustee's compensation scheme combined with low court oversight and creditors' participation.

Ex-post efficiency is one of the justifications of debtor-friendly bankruptcy regimes. Much of what we know is based largely upon Chapter 11 of the US Bankruptcy Code and distressed exchanges outside bankruptcy. These studies are usually restricted to large listed firms with significant assets, and mainly concern themselves with estimating recovery rates for different types of creditors, deviations from strict

[5] See Berkovitch and Israel (1999), Povel (1999), Von Thadden, Berglof and Roland (2003), Ayotte and Yung (2004), and Bernhardt and Nosal (2004).

absolute priority and the costs of the proceedings, for example, Weiss (1990), Franks and Torous (1994), Gilson (1997) and Bris, Welch and Zhu (2006).[6]

Surprisingly, there are few attempts to estimate the incidence and size of inefficient going concerns; an exception is Weiss and Wruck's (1998) examination of the Chapter 11 bankruptcy of Eastern Airlines. In their clinical study, they provide strong evidence that US bankruptcy procedures can severely deplete the value of pre-bankruptcy claims. Andrade and Kaplan (1998) analyse a sample of distressed LBOs where they measure both direct and indirect costs using industry comparisons. Our paper provides a different and more direct approach to measuring inefficient going concerns and relates those inefficiencies to particular provisions and practices of the code.

In Section 2 we describe the Hungarian bankruptcy procedures and make comparisons with other countries' codes. In Section 3 we outline our main hypotheses and describe the data. In Section 4 we present our results, and in Section 5 we conclude.

2. Hungarian bankruptcy procedures and practices

Hungary is a good example of a transition economy that has dealt directly with loss-making firms by redesigning the bankruptcy code and establishing a commercial court that specializes in supervising bankrupt firms. In 1992, Hungary adopted draconian bankruptcy laws with an automatic trigger that precipitated bankruptcy in the event that the firm had debts which were more than 90 days overdue. The subsequent wave of bankruptcies led to the adoption of a more discretionary approach in subsequent legislation in 1993 and 1996, described below. Since Hungary has privatized most of its banks and firms, the results of our study are not affected directly by political considerations.

In this section we describe the code and its procedures and compare them with the US and France, which both have court-supervised procedures.

[6] Other US studies include Gilson, John and Lang (1990), Asquith, Gertner and Scharfstein (1994), Franks and Torous (1989) and James (1995). Non-US studies include Thorburn (2000) and Stromberg

2.1 Description of the Hungarian code and practices

The Hungarian bankruptcy code has two bankruptcy procedures: liquidation and composition.[7] Our sample consists only of liquidations. Unlike Chapter 7 in the US, liquidation allows both for the sale of the company as a going concern or for its closure and sale piecemeal. In the following discussion, whenever we refer to bankruptcy we mean the liquidation procedure.

Any creditor or debtor can initiate bankruptcy. In the large majority of cases creditors apply to the court for payment of an overdue debt. The court writes to the borrower requiring it to acknowledge the debt within 8 calendar days, and to pay within 30 days. In the event of non-payment the court automatically issues a bankruptcy order. As might be expected, the threat of bankruptcy frequently leads to a settlement. In 2003, 62.5% of applications to the court were settled without recourse to bankruptcy.

In bankruptcy, the court appoints a trustee from an approved list, without consulting the creditors or debtor. Prior to August 2002, judges were required to use a computer program to choose randomly from an approved list of trustees; our bankruptcy sample lies within this period. Trustees can be drawn either from the State or from a list of private trustees.

In the absence of a creditors' committee, the trustee has signifcant discretion over the disposition of the assets of the company. He may decide to close the company immediately and sell it, or maintain it as a going concern for future sale. Immediate closure does not necessarily mean immediate sale. The law does not impose a time limit on the sale of assets.[8] In fact, the average time spent in bankruptcy for those firms subject to immediate closure is four years, although the bulk of the assets are sold during the earlier period.

The trustee can raise new finance to maintain the company as a going concern, although in practice he rarely does so; instead he sells assets. All claims incurred by

(2000) of Swedish auctions of small bankrupt firms, and Franks and Sussman (2005) of small UK firms.

[7] Composition is used for very large companies.

the trustee post-bankruptcy have priority over all pre-bankruptcy debt, subject to the provision that for secured loans, at least 50% of the proceeds of sale must be paid to the holder of the collateral.[9] Post-bankrutpcy claims include the fees and costs of the trustee, payments to suppliers in bankruptcy, wages, and some social security payments.[10] When the trustee operates the firm as a going concern the payments to suppliers can form a large proportion of total claims against the company. The potential size of these payments is illustrated by the length of time firms can spend in bankruptcy, where the median is about 5 years for going concerns.

There is potential for creditor involvement in the bankruptcy process. Once bankruptcy is ordered, the trustee has 90 days to call a creditors' meeting. This meeting is mainly for creditors to check information, for example by approving the list of creditors, the amounts owing and the list of assets available for sale. It is also the venue where creditors can form a 'creditors' committee'.[11] If such a committee is formed, it can overrule a trustee who wishes to operate a company as a going concern; in that event the firm would be closed and put up for sale. However, both judges and trustees have informed us that creditors' committees are rarely formed, particularly for small and medium-sized companies. No creditors' committees were formed in our sample.[12] There are several reasons for their absence. The costs of creditors' committees are not paid from the assets of the bankrupt company, as in Chapter 11 of the US code, but instead fall directly on the particular creditors making up the creditors' committee. This creates an obvious free-rider problem, which is more severe for smaller companies. Another explanation for their absence is that there are no adequate rules for the composition of such committees or provisions for the resolution of disputes between creditors, both in statute and case law. For example,

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[8] This is in contrast to the Swedish procedures, for example, where the trustee 'is required to dispose of the firms' assets in a way that is the swiftest and most beneficial to the bankrupt firms' claimants as a whole. (Stromberg (2000) p. 2646)).

[9] This applies providing the collateral was in place for at least one year prior to bankruptcy, a provision introduced in 1997. The potential significant dilution of secured creditors' claims emphasizes the role of judicial oversight and expertise (see Ayotte and Yung (2004))

10 The order of priority in liquidation is as follows: (a) Arrears of wages, and all costs of liquidation (b) Secured claims, (c) Pension liabilities, (d) Small trade creditors, (e) Tax, social security , etc, (f)Unsecured claims, and (g) Arrears of interest.

[11] A creditors' committee must represent a minimum of a third of pre-bankruptcy claims.

[12] Bris, Welch and Zhu (2006) find that creditors' committees are formed in only 25% of Chapter 11 cases, and are concentrated among the larger cases.

there are no reserved places for secured or large creditors and there are no clear rules in the event of disagreement among members of the creditors' committee.

In the absence of a creditors' committee, only the judge can provide oversight for the trustee. Statute requires the trustee to report to the bankruptcy judge only once a year, although some judges require semi-annual reporting. While there are designated judges specializing in bankruptcy cases, statute gives them little discretion to intervene, unless a creditors' committee is formed and there is a dispute among them. The failure to reimburse creditors for participating in a creditors' committee makes it difficult for an aggrieved creditor to mount a challenge against the trustee, without incurring significant costs. The lack of discretion among judges is also reflected in their workload: they have on average 300 cases per year (for each of the twenty-three judges in the capital).

The discretion awarded to the trustee raises important issues about his incentives to manage the process fairly and efficiently. Trustees' remuneration is based upon 2% of operating revenues (if operated as a going concern) and 5% of asset sales.[13] For a private trustee this remuneration scheme has a direct impact on their income, whereas for the State trustee there is no direct impact, since the latter is salaried.

The Bankruptcy Code makes no specific mention of employment preservation. Nor do trade unions have any rights of representation to the court to influence employment preservation. However, a bankruptcy judge (or a trustee) might take into account employment considerations if the closure would cause unemployment, particularly when the bankrupt company's operations are outside the main cities.[14] We might also expect the State trustees to place more emphasis on employment considerations than the private trustee.

Discussions with banks confirm that trustees often pursue actions that reduce the value of their pre-bankruptcy claims. There is also an impression of collusion and side

[13] From both 1% of income is deducted which goes to a common fund to finance trustees who have to manage companies with no assets and no income to pay their fees and expenses.
[14] This observation reflects conversations with a bankruptcy judge.

payments between some trustees and owners or trade creditors. We have no data on such practices, although we consider this issue in interpreting our results.

Even though secured lender rights are highly diluted in bankruptcy, they are far from powerless during distress. When default occurs, they may force the sale of their collateral through a formal procedure called executorship, providing bankruptcy has not been initiated.[15] The appointment is made automatically by the court, provided there is evidence of default. However, a bankruptcy procedure freezes all attempts by the bank or its executor to sell collateral, and therefore may accelerate bankruptcy.

2.2 Comparison of Hungary with other jurisdictions

In Table I we summarize creditors' rights in Hungary and for comparison purposes those of France and the US. We describe the main features of each country's bankruptcy code and the score for creditors' rights given by La Porta et al. (1998). Hungary's score of 2 reflects the inclusion in their bankruptcy code of an automatic stay, and the dilution of secured creditors' claims as a result of the [partial] use of their collateral to settle other claims.[16]

We take a slightly different approach to the La Porta et al. (1998) analysis of creditors' rights, by comparing the characteristics of the code and procedures that produce the bias towards inefficient going concerns in Hungary with those for the US and France. We have listed some of these characteristics and procedures in Table II. In Hungary, it is a combination of low creditor participation and a low level of court oversight coupled with high incentives for the trustee to maintain the firm as a going concern. In the US, a pro-going-concern management remains in possession (referred to as debtor in possession). However, unlike in Hungarian procedures, Chapter 11 includes both a high level of court oversight and creditor participation in bankruptcy decisions. However, the US bankruptcy court is explicitly encouraged by statute and case law to maintain the firm as a going concern even when liquidation is a higher value alternative. In France, the court is not a referee but rather makes the principal decisions, with creditors having no voting power and playing only an advisory role; for example, the court decides to whom the bankrupt firm should be sold and, if

[15] While bankruptcy is publicly disseminated, executorship is not.

employment considerations should dictate, whether the firm should be sold to the highest bidder.

The important question is what relation is there between particular provisions of the code and the incidence and size of inefficient going concerns? The empirical evidence on this issue is sparse and even then indirect. Andrade and Kaplan (1998) find that both the direct and indirect costs of reorganization of a sample of LBOs that entered Chapter 11 are small. These costs relate to large listed firms that have substantial collateral in the form of assets with high resale value. In a recent study Bris, Welch and Zhu (2006), using a sample of firms reorganized in Chapter 11 and Chapter 7, find that the direct costs of reorganization are not uniform across firms and are as high as 16%. They are sensitive to among other things measurement methods that make it difficult for the authors to identify the determinants of those costs.

3. Hypotheses and Data

This section describes the hypotheses, the data, and some data analysis. A crucial element of our hypotheses is to define an inefficient going concern. An inefficient going concern is one that raises less proceeds for pre-bankruptcy creditors than would accrue from an immediate closure and subsequent piecemeal sale of the business in bankruptcy. We do not mention here equity-holders since they do not receive any payout in any of the bankruptcies in our sample. Nor do we here take account of gains (or losses) that employees or managers might make as a result of continuing employment during the period of the going concern. However, we provide evidence on whether the ultimate sale of these firms was as a going concern or piecemeal liquidation and whether employment preservation was an issue in this decision.

3.1 Determinants and size of an inefficient going concern

To identify an inefficient going concern one would need to compare operating profits/losses with a change in asset value A resulting from the going concern decision. The cost (benefit) of a going concern is the size of operating losses (profits), defined by the trustee as revenues from operations, ρ, minus expenses, c, less an estimate of the change in asset value resulting from the going concern, λA, where

[16] We are referring here to the liquidation code only. There is no automatic stay in composition.

λ is economic depreciation [or appreciation]. Costs include wages and the cost of goods and services supplied by trade creditors during the going concern bankruptcy. Although we know the size of operating losses (or profits) (ρ-c) and the actual value of asset sales, we do not have the data to measure directly the change in the value of the asset due to the going concern, i.e. we do not have data on λ. Given we can estimate λ, we identify a going concern to be inefficient if:

$$(\rho\text{-}c)- \lambda A < 0$$

To find out the sign of λ we run a regression where the dependent variable is proceeds from asset sales normalised by the book value of assets at the beginning of the bankruptcy (referring to as the firm's Q ratio). Independent variables include (i) firm size measured by the log of book value of assets; (ii) specific assets proxied by the book value of machinery and equipment at the beginning of the bankruptcy over total assets (see Berger, Ofek and Swary (1996) and Stromberg (2000)); (iii) the fraction of firm's debt that is secured, and leverage proxying for firm quality; (iv) industry dummies distinguishing between agriculture, manufacturing and services; (v) a sector distress dummy that equals 1 if the particular industry (using 4-digit SIC codes) that the firm belongs to is in distress in the year of bankruptcy; and (vi) a dummy for the going concern decision that equals 1 if the firm is operated as a going concern, and 0 otherwise.

Even if operating the firm as a going concern has no effect on asset sales, we may see a significant point estimate on the going concern dummy, if firms operated as a going concern have different types of assets to those closed immediately. To control for potential selection-biases we use a selection framework that addresses the endogeneity of the going concern dummy. This model is similar to the Heckman (1979) two-stage selection model, differing only in that in our case we observe the second stage variable, asset sales normalized by the book value of assets, for all firms (not only for those that are kept as going concerns).

The first stage is a probit regression, where the going-concern dummy is the dependent variable, and the independent variables include firm variables such as (i)

size; (ii) asset specificity; (iii) percentage of secured debt to total debt; (iv) macro variables such as an industry distress dummy, and a business confidence index; (v) regional unemployment that measures the level of unemployment in the region where the firm is located, at the year of bankruptcy; (vi) a location dummy that equals 1 if the firm is located in a big city, and 0 otherwise; (vii) a trustee dummy that equals 1 if the trustee is State employed, and 0 otherwise.

We use these regression results to establish whether a going concern adds value to future asset sales so as to identify an inefficient going concern.

3.2 Hypotheses

We test three hypotheses in the paper.

Proposition 1A: The remuneration scheme of the trustee increases both the incidence and size of inefficiencies.

The trustee's remuneration, based in part on operating revenues and in part on income from asset sales, provides significant incentives for the trustee to postpone the sale of the firm's assets and administer the firm as a going concern, thereby generating sales revenue and fee income. These incentives are bounded above by any expected decline in asset values. Any decline in asset value reduces the trustee's income from asset sales and therefore offsets the fees from operating revenues while the firm is a going concern.

The court allows fees of 2% of operating revenues and 5% of future asset sales. Using the previous notation, a trustee maximizing his/her compensation, in the absence of discounting, makes the following comparison:

$$0.05A < 0.02\rho + 0.05(1-\lambda)A$$

The trustee can benefit from keeping the company as a going concern, providing the decline in asset values (from the beginning of bankruptcy) as a proportion of revenues from operating the assets is no greater than 40 percent ($(\lambda/\rho)A<0.4$). Thus, there are potentially substantial incentives for the trustee to run the bankrupt firm even if it

destroys asset values. If assets are operated inefficiently as a going concern, we would expect that higher operating losses are associated with a lower resale value. Lower resale values may also reflect poor service and maintenance as the trustee tries to conserve cash

We test this by relating trustee fees from operating revenues to the proceeds from asset sales expressed as a percentage of their book values, i.e. to the Q ratio. We would expect the Q ratio to be negatively correlated with fees from operating revenues expressed as a percentage of total fees of the trustee.[17]

A competing hypothesis is that illiquid asset markets for particular firms force the trustee to manage the firm for longer periods, thereby generating higher fees from operating revenues for the trustee and lower proceeds from asset sales. These lower proceeds and higher fees could reflect illiquid asset markets rather than inefficient going concerns. To distinguish between the two competing hypotheses, we include a control variable for illiquid assets. We measure asset specificity by the book value of machinery and equipment at the beginning of bankruptcy over total assets. We also control for industry distress that may affect returns on assets sales (Shleifer and Vishny (1992)).

Proposition 1B: The going concern bias is greater for the private trustee than for the State trustee since the former directly benefits from the remuneration scheme and the latter does not.

Any potential inefficiency we find might equally be the result of other factors: (i) the trustee's error in forecasting prices of assets, or (ii) employment considerations. It is possible that employment considerations influence the trustee decision to preserve a business as a going concern. The judge who is concerned about employment might consider that the State trustee would give more weight to employment than the private trustee.[18] However, the incentives may be less for the State trustees who are paid a salary and do not benefit directly from the fees received in bankruptcy. Thus, we test

[17] Fees should be measured contemporaneously with the proceeds of asset sales and the book values; in practice, they will not be contemporaneous.
[18] In this case the judge does not choose the trustee randomly, as described earlier.

whether the incentives arising from the remuneration scheme of the (private) trustee are sufficiently strong to exceed any employment considerations that may guide the State trustee. We control for the fact that employment considerations might play a stronger role in a region where unemployment was relatively high in the year a particular firm was placed in bankruptcy. We expect that such employment considerations would be greater in the countryside than in the capital or large towns.

Although we are informed that trustees in our sampling window were selected randomly, the choice of a State-employed or a private one might have been influenced by employment considerations, complexity of firm's debt structure or expertise in particular industries. We examine whether any of these factors has a significant influence on the choice of trustee, and therefore might explain the difference in the proportion of inefficient going concerns for the two types of trustees.

Proposition 2: We expect the incidence and size of an inefficient bankruptcy to depend upon the party triggering bankruptcy. We expect higher losses if it is a trade creditor or owner rather than a bank.

The incentives of the trustee to keep a firm going may be aligned with those of trade creditors/owners. Why might a trade creditor prefer the distressed firm to be in bankruptcy? Out of bankruptcy the firm may contract heavily, reducing sales turnover and thereby the suppliers' income. Also, any new trade credit out of bankrutptcy continues to be treated as junior unsecured claims, whereas in a going-concern bankruptcy, new trade credit will have the highest priority in the distribution of proceeds i.e. Category A creditors. Thus, provided that some pre-bankruptcy suppliers expect to continue supplying the firm in bankruptcy, they may actually be better off than if the distressed firm continued 'limping' along outside bankruptcy. Owners may also wish to see continuation, since they may retain an opportunity to purchase the firm when it is eventually sold.Finally, if markets are not very competitive or if there are side payments, trade creditors may be able to charge higher prices in bankruptcy.[19]

[19] Another reason for trade creditors initiating liquidation procedures is to force the company or other lenders, such as a bank, to purchase their claims. Previous figures showing a large number of withdrawn bankruptcy applications are suggestive that this mechanism is often effective.

This suggests that we might find more bankruptcies being triggered by trade creditors and owners. [20]

In contrast, banks are less interested in maintaining the firm as a going concern (in bankruptcy) since they do not benefit from post-bankruptcy claims and their pre-bankruptcy secured claims are diluted. It is less obvious what the objectives of the State, i.e. tax authorities are: to maximize tax proceeds, or maintain employment by preserving inefficient going concerns.

Should we also expect to find a higher proportion of inefficiencies when the bankruptcy is triggered by trade-creditors rather than by banks? This result is more likely if trade creditors give more side payments to the trustee than a bank provided that bankruptcies initiated by trade creditors/owners do not differ substantially from bank/State initiated ones.

We have argued previously that banks are averse to bankruptcy as their collateral stands to be heavily diluted in bankruptcy. Banks' lending behaviour, however, can play a significant role in determining whether a firm ends up in bankruptcy. We would expect the bank's response to distress to depend upon the quality of the borrower. For high quality firms, banks will try to avoid changes in lending that precipitate bankruptcy. For example, they might expand lending or refrain from making a large contraction in lending if it leads to the sale of key assets. Conversely, the bank's lending may be influenced less by firm quality than by the anticipated credit policy of other lenders and their ability or incentives to trigger bankruptcy. In this case we may find that economically viable firms which are liquidity constrained enter bankruptcy.

Proposition 3: Banks do not adequately take account of the quality of borrower during the period of distress, thereby increasing the probability of bankruptcy.

[20] In the US, the Supreme Court has allowed reorganization plans in Chapter 11 to provide greater recoveries for trade creditors than would be allowed under strict absolute priority. In one Chapter 11 case, all trade creditors were paid in full even though bondholders suffered large writedowns.

In testing this hypothesis we must control for the distressed firm's debt structure.[21] The larger the proportion of bank debt, for example, the smaller the potential co-ordination problems among creditors, and the higher the probability of a private restructuring; while the more trade credit, the greater the co-ordination problems and the higher the probability of a bankruptcy. These effects can be viewed both independently and interactively; in the latter case, banks take into account the degree of dispersion in deciding on their future lending to distressed firms.

To test this hypothesis we regress an outcome dummy (which equals 1 for bankruptcy, and 0 for out-of-court procedures) against changes in bank debt. We control for firm quality separately and as an interactive term with the change in bank debt. Proxies for quality include the amount of collateral as a proportion of total debt, and the interest rate spread at loan origination. If lending contraction does trigger bankruptcy, this may be the result of co-ordination problems between lenders. We control for this by including a proxy for the firm's debt structure separately and as an interactive term with the change in bank debt.

3.2 Description of data

We use two data sets to test our hypotheses. The first data set includes complete bankruptcy information about 85 firms, collected from private and State trustees, and 3 large banks,[22] for the period of 1995-2002. The second data set consists of 117 distressed firms that completed a workout with one of the 3 banks; in, addition, the banks supplied us with data about 92 distressed firms that subsequently entered bankruptcy, of which 23 had complete bankruptcy data, and are included in the first data set. The first data set is used to test hypotheses 1 and 2, and the second data set is used to test hypothesis 3. Panel A of Table III provides the time series of the two data sets, and Panel B includes data on their industry composition.

Description of Data Set 1:

[21] We assume here that the number of trade creditors is large and increases with the size of trade credit. See Franks and Sussman (2005) for some evidence on this issue in relation to UK data.

[22] All three banks are large and their combined market share of total lending is 25%. Two of the banks in our sample have a significant foreign shareholder.

The bankruptcy data include: (i) the party initiating bankruptcy, (ii) the amount owed to creditors in each creditor class when the bankruptcy was initiated, (iii) a detailed description of the activities during bankruptcy, including income from asset sales, and the profit or loss from operating the company as a going concern, (iv) fees to the trustee and any other costs of bankruptcy, and (v) the division of proceeds among the different creditors. These data allowed us to calculate recovery rates for different creditor classes and the division between pre- and post-bankruptcy claims.

In Table IV, we describe the characteristics of firms that end up in bankruptcy, partitioned by those preserved as a going concern and those that are closed immediately and subsequently sold. Firms that are immediately closed are not necessarily sold quickly, and the average time of these firms spent in bankruptcy is four years compared with five years for going concerns. The length of the former reflects the time taken to sell *all* the assets of the firm. Companies retained as a going concern are significantly larger than those closed and put up for 'immediate sale'. The former has on average about 12 times as many employees as the latter, 452 versus 37, and more than twice as many claims on entering bankruptcy. Firms immediately closed in bankruptcy have higher leverage on entering bankruptcy, with a median leverage of 115%, versus 67% for the going concern sample.

The panel also shows the size of post-bankruptcy costs for the sample. The value of Category A creditors averages €1.89 million for going concerns, compared with €0.24 millions for those immediately closed. Category A (post-bankruptcy) claims are relatively large at about 83% of pre-bankruptcy claims for the going-concern sample and only 15% for immediate closures. Although it is not reported in the table, trade creditors initiate the largest proportion of bankruptcies, 42%, with the bank least likely to do so, in only 11% of all cases. Other parties include owner/managers who account for 24%, and the tax authorities, 22% of cases.

Description of Data Set 2:[23]

Selection for the distressed firms' data set provided by the banks was based upon two criteria. First, the firms had to be rated as distressed, which meant that in the vast

majority of cases the company had defaulted on its loan. Second, we imposed a minimum sales turnover level of €400,000.

The company data collected from the banks include the industry, the date and type of default, and the party triggering bankruptcy (the bank, trade creditors, owners or the State i.e. tax authorities). The banks provided us with data on loan interest rates, the size of each loan facility or line of credit with the outstanding balance, the amount and type of collateral, the outcome of default, and the recovery rates for different creditors. In all cases, our bank was the 'main bank'. In addition, we collected balance sheet and profit and loss account data.

Panel A of Table V shows that the average age of companies is 11 years and the length of their relationship with the main bank, 4.5 years. The average firm employs 31 workers, with a median turnover of €0.93 million, and assets of €1.23 millions. Firms are breaking even using the measure of profits before interest and taxes, with median losses of €0.10 million in the year of distress.

Panel B of Table V shows the debt structure of the banks' sample for the workout and the bankruptcy samples: 44 % of distressed firms are placed in the bankruptcy procedures; the remaining 56% are reorganized privately with the bank. For the workout sample, the main bank lends more (bank debt to total debt), with longer maturity (proportion of long-term debt), and with more collateral (percentage of secured debt). Differences for the first two, bank to total debt and maturity, are statistically significant at the 5% level. Also, interest rate spreads at loan origination are higher for the bankruptcy sample than for the workout sample, although the difference is not statistically significant. Finally, leverage is higher for the bankruptcy sample, both one-year before distress and in the year of distress; however, the differences are again not statistically significant. Taken together, these results are suggestive that firms that restructure privately out-of-court have different and higher quality debt structures.

[23] Data set 1 and 2 overlaps as there are 23 firms in data set 2 of which we have complete bankruptcy

4. Results

In the first sub section, we examine the determinants of the going concern decision. We provide statistics on the proportion of bankrupt firms that are kept as going concerns, and explore the extent to which these going concerns add to or reduce pre-bankruptcy claims. In sub sections 4.2 and 4.3, we provide several tests of whether the remuneration scheme of the trustee directly affects the size and incidence of the inefficient going concern. In 4.4, we test whether the likelihood of inefficient going concerns is related to particular parties triggering bankruptcy; in particular, whether it is higher for trade creditors and owners initiated ones, as they are more likely to benefit from the going concern than other creditors such as bank lenders. Finally, in 4.5, we test whether banks contract their lending during distress and precipitate higher quality firms into bankruptcy.

4.1 Determinants and size of an inefficient going concern

A. Going concern decision

Panel A of Table V reports that of the 85 bankrupt firms, 54.12% are continued as going concerns, and the remainder are closed immediately. We relate the probability of a going concern to firm characteristics, industry and macro variables and the type of trustee. The regression results in Table VII show that a firm is more likely to be kept as a going concern if it is larger, has a higher proportion of specific assets and is located in a region where unemployment is high. In contrast, firms with a higher proportion of secured debt and in the service sector have a lower probability of being kept as a going concern. The trustee dummy has a negative sign and is significant, meaning that a going concern decision is less likely with a State trustee than with a private one. We would have expected the opposite sign if unemployment considerations were important in explaining going concern decisions. Rather, controlling for unemployment, the result is consistent with the compensation scheme producing a bias towards the going concern decision.

B. Does a going concern add value for creditors?

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data, and therefore included in data set 1.

We now address the question of whether the going concern decision creates or destroys value for pre-bankruptcy creditors. Table VII shows how the size of the proceeds of sale is affected by the going concern. If the going concern increases firm value we would expect to find that the coefficient on the dummy is positive; a negative coefficient would suggest destruction of value.

In the OLS regressions the two size variables (log of assets and square of log of assets) and industry dummies are significant. A larger size leads to a higher Q ratio but at a decreasing rate. The Q ratio tends to be lower both for firms in manufacturing and services compared to those in agricultural. The coefficient of the going concern dummy is negative but not significant. We investigate whether this is the result of self-selection or of operating the firm as a going concern. In regression (4) we control for endogeneity of selection using as a first step the probit regression from Table VI. The coefficient for the going concern dummy remains negative and insignificant. The coefficient (in absolute value) is reduced in magnitude, suggesting that some firms selected to be a going concern might intrinsically have assets that are more difficult to sell. The inverse Mill ratio is statistically insignificant, indicating that selection bias is not present.

The previous results suggest that going concerns do not improve the proceeds from sale. One concern is that we fail to control adequately for firm characteristics that affect both the choice between going concerns and immediate closures, and the individual firm's Q ratio. To address this problem, we use various definitions to identify and quantify inefficient going concerns. We, also, relate these measures of inefficient going concerns to the type of trustee and the initiator of bankruptcy, controlling for firm characteristics. We explain in Appendix 1, how these measures are conceptually related to the change in asset values (denoted by λ) as a result of the going concern. All these measures assume that $\lambda<0$, that is the going concern can only increase asset values.

Panel A of Table VIII shows four different measures of losses from going concerns. We view each of these as a measure, albeit a crude one, of an inefficient going concern. First, we report that 71.8% of going concerns made operating losses; that is, operating income (this excludes asset sales) was less than the costs of running the

going concern. Second, in 17.8% of cases these operating losses exceed all the income from asset sales. In these cases there are no recoveries for pre-bankruptcy creditors.[24]

Third, we report the incidence of going concerns where operating losses are greater than the proceeds of all asset sold after one year (after the interim report of the trustee). The rationale behind this measure is that the value of asset sales in the early part of a going concern may be less affected by the decision to close or continue the firm as these assets are likely to be the most liquid ones. 43.5% of going concerns fall into this category. Fourth, we find 54.3% of going concerns made losses and were ultimately closed and sold piecemeal, prior to the conclusion of bankruptcy proceedings.

The use of these measures as proxies for an inefficient going concern must be qualified by the fact that we cannot distinguish between what proportion of the inefficient going concerns can be attributed to the bias of the trustee towards a going concern and what proportions would have occurred even with an unbiased trustee, making some forecasting error.

In Panel B of the table, we use measure (iii) (subtracting all income from asset sales after the first year from the operating losses), as a proxy for the size of the inefficiency. We express these losses as a percentage of the proceeds to pre-bankruptcy creditors and as a percentage of the face value of their claims.[25] The assumption underlying this exercise is that if the firm had been closed, the costs of the inefficiency would not have occurred and the proceeds would have been distributed among pre-bankruptcy creditors according to the order of priority as set out by the code. Pre-bankruptcy creditors in aggregate would have received 214% more than they actually received, and 42.4% more as a percentage of the total pre-bankruptcy claims, assuming equal weighting for each creditor class. Using the size of the creditors' claims as the weight, the change in value is 92.1% of actual proceeds and 19.1% of the face value of claims. The largest loss-making class is secured creditors,

[24] The overall deficit from the going concern is met from a special fund levied on the proceeds of all bankrupt companies.
[25] The denominator is zero where a particular category of pre-bankruptcy creditors receives no payout. In the event of a payout to this class, the ratio would be infinite. In this case, we make the conservative assumption that the ratio is one.

Category B, which comprises mostly banks. This provides further evidence for the antipathy of banks towards the bankruptcy process.

4.2The remuneration scheme of the trustee increases both the incidence and size of inefficiencies. (Proposition 1A)

We have suggested that the incidence of inefficient going concerns and the costs of inefficiencies are directly related to the remuneration scheme of the trustee. In particular, compensating the trustee on the basis of operating revenues leads to operating the firm inefficiently and destroying value in terms of future asset sales. Thus, we would expect that the larger the trustee's fees from operating revenues i.e. from operations, the lower the proceeds from asset sales, and therefore the lower the recovery rates for post-bankruptcy creditors.

In Table IX we report results for the going concern relating proceeds of asset sales to fees. In regressions (1) to (3) the dependent variable is proceeds of asset sales normalized by the book value of the assets at the beginning of the bankruptcy. The independent variables are fees from operating revenues as a percentage of total fees, and control variables including the book value of machinery and equipment over total assets (a proxy for the firm assets' specificity); industry (agriculture, manufacturing and commerce); a dummy that equals 1 if the industry the firm belongs to was in distress in the year of its bankruptcy; a location dummy that takes 1 if the firm is located in the countryside rather than a large city; and size of the firm. The regression results confirm our null hypothesis: the percentage of fees from operating revenues is negatively and significantly related to the firm's q ratio. The coefficient of the variable proxying for asset specificity is negative but not significant. Similarly, industry distress seems not to play a significant role in determining the firm's q ratio. This confirms that the going-concern choice is more likely to be influenced by the compensation scheme than liquidity considerations.

In regression (6), the dependent variable is a dummy that is equal to 1 if the going concern is identified as inefficient by measure (iii) in Panel A of Table VIII. The independent variables are the same as in regressions (1) to (5). Regression (6) confirms the prediction that when the percentage of fees from operating revenues is high, the going concern is more likely to be inefficient.

4.3 The going-concern bias is greater for the private trustee than for the State trustee since the former directly benefits from the remuneration scheme and the latter does not (Proposition 1B).

If the compensation scheme is the source of the going-concern bias, we would expect the incidence of inefficiencies to be higher where the bankrupt firm is managed by private trustees, since State trustees do not directly benefit from higher fees.

In Panel A of Table X, we compare whether the incidence of inefficient going concerns is higher for the State trustees than for private ones. We find this is the case for all four measures, although some of the differences are not economically large. For example, the size of these operating losses exceeds all income from asset sales in 26% of cases for the private trustees, and 8.7% for the State trustees. Also, the number of firms kept as going concerns at a loss, and then subsequently liquidated piecemeal, is 69.5% for private trustees compared with only 36.4% for the State trustee.

An important question is what is the cost of the trustee's remuneration scheme to pre-bankruptcy creditors? In Panel B of Table X, we provide an estimate of the rents earned by trustees from an inefficient going concern with the costs borne by pre-bankruptcy creditors in aggregate. Rents are actual fees earned by the trustee less the hypothetical fee that would have been earned from an immediate closure. Since fees are related to the size of company, we estimate the hypothetical fee using the slope coefficient from a regression of fees against size of assets of the company, for the sample of firms that have been immediately closed and sold by the State trustees.[26]

We calculate the ratio of the costs of inefficiency to rents earned by the trustee, where the costs of inefficiency are operating losses minus income from asset sales, as defined by measure (iii) of Panel A, Table VIII. We also repeat the same exercise with measure (iv) of the same table. The ratio is much higher for private trustees, 16.6 compared with 4.5 for the State trustee (using measure (iii)). The interpretation is that for every dollar of rents, the costs of inefficiency are 16.6 dollars for creditors of firms

[26] We repeated this using the sample of firms closed by the private trustees, with similar results.

that are managed by private trustees, compared with only 4.5 dollars for those managed by the State. This implies that for each dollar of rents, deadweight costs to creditors are much higher in the case of private trustees. There is a similar pattern if we express rents as a percentage of total proceeds from bankruptcy. For the private trustee, the mean percentage is 16.7% (median 5.0%) compared with 9.7% (median 1.5%) for the State trustee.

The higher proportion of inefficient cases for the private trustee may be endogenous to how bankrupt firms are allocated between the private and the State trustees. Panel C of Table X examines the determinants of a State or private trustee being chosen as manager of the firm in bankruptcy. The result shows that industry distress significantly influences the choice of trustee, with State trustees being chosen more frequently when the industry is in distress. In contrast, size and regional unemployment do not influence that choice. We also find a low correlation between regional unemployment and industry distress. We control for firm quality by including secured debt to total debt and leverage at the inception of bankruptcy. Both coefficients are significant and suggest that private trustees tend to be selected for better quality firms. This suggests that the lower level of inefficient going concerns does not arise because better-quality bankrupt firms are allocated to the State trustee.

4.4 We expect the incidence and size of an inefficient bankruptcy to depend upon the party triggering bankruptcy. We expect higher losses if it is a trade creditor or owner rather than a bank (Proposition 2).

We reported earlier that trade creditors and owners are the party most likely to initiate bankruptcy, and the bank is the party least likely to do so. We also argued that some trade creditors might be better off in bankruptcy, than outside bankruptcy, if the firm is kept as a going concern.[27]

In Table XI, we explore the extent to which the value to pre-bankruptcy creditors of the going concern, and the incidence of inefficient going concerns, is related to the

[27] Although unreported in a table, loss rates for trade creditors vary considerably, depending upon whether they were contracted pre- or post-bankruptcy. Median loss rates are zero for post-bankruptcy claims and 100% for pre-bankruptcy claims.

party triggering bankruptcy.[28] We use the four measures for identifying and quantifying inefficient going concerns described in Table VIII. For the first measure, we show that the proportion making a loss is higher for owner- and trade creditor-initiated bankruptcies than for those initiated by banks and the State: 78.1% versus 53.3%. For the other measures, the results are similar: a higher proportion of inefficient bankruptcies are initiated by owners and/or trade creditors. When we normalize operating losses by the percentage of total proceeds to creditors, we find median operating losses are 42.4% of total proceeds for owner- and trade-creditor-initiated bankruptcies, compared with only 7.2% for those initiated by the Bank and the State. Also, trustees' fees as a percentage of total proceeds to creditors are significantly higher for trade creditor and owner initiated bankruptcies. [29] [30]

We explore whether firms with trade-creditor/owner-initiated bankruptcies differ from those where a bank or the tax authority triggered bankruptcy. Using size, percentage of specific assets to total assets, percentage of secured debt to total debt and leverage at the start of the bankruptcy, firms in the two sub-samples look very similar. This suggests that differences in the percentage of inefficient going concerns in the two sub-samples are more likely to be the result of side payments, rather than differences in firm characteristics.

In Table XII we examine whether the identity of the initiator of bankruptcy can predict an inefficient going concern, and whether there are significant differences in results when partitioned by a private or State trustee. In regressions (1) and (2) the dependent variable is a dummy that equals 1 if the going concern is inefficient using measure (iv) of Table VIII. In regressions (3) to (6) the dependent variable is the size of the inefficiency divided by the book value of assets at the beginning of the bankruptcy process if the going concern is inefficient (using measure (iv)) and 0 otherwise. The principal independent variables are a trustee dummy that equals 1 for the State trustee and 0 otherwise; an initiator dummy that equals 1 for trade

[28] There is a small discrepancy in the samples in Tables VI and XI because in one bankruptcy there are two initiators.

[29] For trade creditor- initiated liquidations, fees as a percentage of total proceeds are 13% higher in going concerns than for the immediate closure sample. However, when banks/State initiate liquidations the fees as a percentage of total proceeds are much smaller at only 5.4%.

[30] Median fees as a percentage of inefficiencies are 29% for criterion (iii) and 12% for criterion (iv).

creditor/owner initiated bankruptcies and 0 otherwise; a location dummy that equals 1 for the capital and 0 for the countryside, and an interaction term that interacts the dummy for State trustee with the location dummy; we control for firm size (log of total assets), percentage of specific assets to total assets and, percentage of secured debt proxying for firm's quality.

The dummy for the State trustee is significant in all four regressions and indicates that the presence of the State trustee is negatively related to the incidence and size of inefficiency. The initiator dummy is also significant in all regressions and has the right sign: trade-creditor/owner-initiated bankruptcies are more likely to result in inefficiencies. In regressions (5) and (6) the location dummy is not significant on its own or when it is interacted with the dummy for State trustee. The interaction term has a negative sign, which suggests that the presence of a State trustee is less likely to lead to an inefficient decision (by our measures) in the capital. In these regressions we control for the quality and size of the firm's assets, none of which are significant.

The results for proposition 2 support the view that trade creditors and owners play a very different role in bankruptcy than banks and the State. This is not surprising since some trade creditors who expect to continue to supply the firm in bankruptcy will have a strong incentive to maintain the firm as a going concern, even if this means that proceeds to pre-bankruptcy creditors are reduced.

4.5 Banks do not adequately take account of the quality of borrower during the period of distress thereby increasing the probability of bankruptcy. (Proposition 3)

The apparent high level of going concerns among bankrupt firms may reflect on the behaviour of banks prior to bankruptcy. Banks are well aware of the practices of the trustee and their biases that result from the design of the compensation scheme. We would expect them to contract their lending to distressed firms. The question is whether such a contraction precipitates bankruptcy for firms which are still viable but liquidity constrained. In this event, a negative correlation between the trustee's fees from operating revenue and the total proceeds from asset sales, as reported in Table IX, might be the sign of an efficient rather than an inefficient going concern.

In Table XIII we report the evolution of bank debt and trade credit in the year prior to default and the subsequent year, partitioned by the outcome of distress (bankruptcy and out of court procedure). Our univariate analysis shows that main bank debt contracts at a much greater rate for surviving firms than for those that enter bankruptcy. For the firms reorganized out of court, the median contraction is 31.5 % prior to default and 48.3% following default. Contraction is significantly smaller for the bankruptcy sample, 23.34% prior to default and 14.77% thereafter.[31] The lower contraction for firms in bankruptcy might occur either because these firms are of lower quality hence they are unable to meet a demand for repayment by the bank, or the banks' contraction of debt encourages other creditors or owners to 'run' and precipitate bankruptcy, or both.[32]

In Table XIV we test how the bank's lending policy influences the outcome of distress (survival or bankruptcy). We have already reported banks' aversion to triggering bankruptcy. However, banks' behaviour during distress might precipitate bankruptcy by depriving the firm of liquidity or by leading other creditors to apply for the firm's bankruptcy.

In four out of the five specifications the coefficient for the change in bank debt is positive and significant, suggesting that banks contract their lending more heavily to those firms that restructure privately than for those that enter bankruptcy. In all five specifications we introduce an interactive term, where we interact firm quality (proxied by secured debt to total bank debt) with changes in main bank debt. The coefficient is negative, suggesting that the same level of contraction leads to a greater probability of bankruptcy for low quality firms, although the coefficient is not significant. The proxies for quality are significant on their own: the coefficient for secured debt to main bank debt is negative and significant in all five specifications, suggesting that the higher quality borrowers are more likely to restructure privately.

[31] Contraction in trade credit in the two samples is much smaller and in some cases shows an expansion; the median change is 0% for both samples.

[32] We examine whether the change in bank debt during distress is related to the party triggering bankruptcy. We find that the median contraction in bank debt is higher for trade-creditor-initiated bankruptcies than for those initiated by the bank, owner or tax authority. However, as 75% of the bankruptcies in data set 2 are initiated by trade creditors, it is difficult to draw any statistical inferences about how bank behavior varies with initiator.

Interest rate spreads are included in regression (5) and although the coefficient has the right sign, it is not significant.

In four specifications we introduce a co-ordination variable, the proportion of main bank debt to total debt, which will tell us whether co-ordination problems are related to the outcome of distress. The variable on its own is not significant except in one specification (4). We interact it with the change in bank debt, to test whether the relationship between the bank's lending behaviour in distress and the outcome is stronger when the firm's debt is dispersed. Again, although the coefficient has the right sign, it is significant in only one specification.

The evidence is supportive of the view that low quality firms are more likely to enter bankruptcy than high quality firms. Thus, the negative relation between a firm's Q and trustee's fees from operations, reported in Table IX, is more likely to be the result of the trustee operating the firm inefficiently than the result of economically viable firms being precipitated into bankruptcy and operated efficiently.

6. Conclusion

The paper provides a description of a bankruptcy code and procedures that encourage going concerns in bankruptcy. The going-concern bias stems largely from the trustees' remuneration scheme in bankruptcy, the degree of discretion given to them and the lack of court oversight. In addition, the code encourages unsecured trade creditors to trigger bankruptcy at very low cost, in the hope of either being bought out by the bank, or benefiting from the going concern since they continue to supply the firm in bankruptcy.

We provide estimates of the number and size of inefficient going concerns. They constitute a large proportion of bankruptcies and confirm why the banks are reluctant to use these formal procedures. There is some evidence that the level of inefficient going concerns is higher when the party initiating bankruptcy is an owner or trade creditor, and when the trustee is private rather than State-owned. It is predicable that the response of banks is to contract their debt pre-bankruptcy, although there is no evidence that this precipitates the bankruptcy of high quality borrowers.

One solution to these inefficiencies reported in the paper is to change the basis of remuneration of the trustee, for example, make it time-based as in Sweden (see Stromberg (2000) and Thorburn (2000)). A second solution is to pay creditors committees from the proceeds of bankruptcy rather than from their own pockets. This would help to ensure that the going concern decision reflects the wishes of creditors. A more radical alternative is to move to the Swedish system of requiring the trustee to auction the firm speedily, although allowing it to be maintained as a going concern while it is being prepared for sale.

Other bankruptcy codes also provide incentives to maintain going concerns, including many other emerging markets as well as those of the U.S. and France. This is one of the very few papers that attempt to identify the extent to which going concerns in bankruptcy are inefficient and relate them to particular provisions of the code and its practices.

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Table I: Creditors rights in France, Hungary, and US
The table describes creditor rights in bankruptcy for France, Hungary, and the US and their respective LLSV scores.

	France	**U.S.**	**Hungary**
Main procedure or code	'Regime simple and general'	Chapter 11 of 1978 code	Bankruptcy
Court administered	Yes	Yes	Yes
Interference in creditors' rights	High	Moderate	High
Debtor remains in control	No	Yes	No
Court oversight	High	High	Low
Participation by creditors in bankruptcy procedures	Low	High	Low
Who usually triggers bankruptcy	Debtor	Debtor	Trade creditors
Bias to inefficient going concern	High	Moderate	High
LLSV Score on creditors' rights (max=4)[33]	0	1	2

[33] The measure was devised by Rafael La Porta, Florencio Lopez-de-Silanas, Andrei Shleifer and Robert W. Vishny (1998), "Law and Finance," *Journal of Political Economy*, 106 (6) p. 1113-1155. The four measures include: presence of an automatic stay, secured creditors paid first, restrictions for entering reorganization, management does not stay in control. The U.S. only satisfies the second. Hungary scores 2 because management does not stay in control and secured creditors are paid first.

Table II: Measuring the bias towards inefficient going concerns in Hungary, US and France

The table describes some of the characteristics of the bankruptcy code and procedures in three countries that produce a bias towards a going concern, including the degree of court oversight, the party managing the firm in bankruptcy, and the remuneration scheme of that party.

	Hungary	**US**	**France**
Court oversight	Low	High	High
Does the law explicitly allow an inefficient going concern?	No	Yes	Yes
Who is in control of the bankrupt firm?	Court appointed trustee	Debtor in possession	Court appointed trustee
Is remuneration scheme of trustee/manager of bankrupt firm biased to the going concern?	Yes	Yes	No
Creditor participation	Low	Medium	Low
Expected bias in favor of going concern	High	Medium to High	High

Table III: Time series, industry classification and characteristics of firms included in data set 1 and 2

Panel A describes the time series and Panel B includes their industry classification for data set 1 and data set 2.

Panel A: Time series for data set 1 and 2

Year	Number
1995-1998	56
1999	16
2000	45
2001	87
2002	64
2003	1
N/a	2
Total	**271**

Panel B: Industry classification for data set 1 and 2

Industry	No. of Companies
Agriculture	69
Manufacturing	76
Construction	19
Wholesale and retail trade	63
Hotel, restaurants, transports	31
Real estate, business activities and fin. Intermediation	13

Table IV: Summary Statistics on Data Set 1

The Panel describes the characteristics of 85 bankrupt firms, partitioned by outcome: going concern or immediate closure. The sample consists of 23 firms provided by 3 banks and 62 provided by bankruptcy trustees. It includes assets, number of employees, the percentage of fixed assets and pre- and post-bankruptcy claims of the bankrupt firms.
The t-stat is calculated on differences in means.

	Going concern (n=46)			**Immediate closure (n= 39)**			
	Mean	**Median**	**St. dev.**	**Mean**	**Median**	**St. dev.**	**T-stat**
Total assets at inception of bankruptcy (millions of Euros)	3.60	1.30	8.11	1.08	0.41	1.5	2.02**
Number of employees at inception of bankruptcy	452	75	100.2	37	6	96	2.31**
Percentage of fixed assets to total assets (%)	50.8	54.4	27.4	53.7	60.9	38.6	-0.72
Claims pre-bankruptcy (millions of Euros)	3.43	0.88	9.03	1.57	0.47	2.36	1.51
Claims post-bankruptcy (millions of Euros)	1.89	0.73	0.48	0.24	0.01	0.07	1.57

Table V: Summary Statistics on Data Set 2

Panel A provides descriptive statistics for 117 distressed firms that entered workout, and for 92 that entered formal bankruptcy. It includes the age of company, length of bank relationship and number of employees, turnover, total assets and a measure of profitability, profits before interest and taxes. Panel B provides features of the firms' debt structure partitioned by outcome: bankruptcy or out of court procedure. It includes bank debt to total debt, percentage of bank debt that is secured, percentage of long term, interest spreads, and leverage.

Panel A: Age, size and profitability of distressed firms, at the time of default (millions of Euros)

	Mean	Median	St. Dev.	No. of obs.
Age of company (years)	14.5	11.0	14.1	201
Length of Bank Relationship	8.3	7.0	4.5	205
No. of employees	70	31	153	146
Turnover (€m)	2.04	0.93	3.33	143
Total Assets (€m)	2.06	1.23	2.80	147
Profits Before Interest & Taxes (€m)	-0.10	0.00	2.20	143

Panel B: Leverage and debt structure of the distressed firms

	Bankruptcies N=92			Out of court procedures N=117			
	Mean	Median	St. dev.	Mean	Median	St. dev.	T-stat
Percentage of bank debt to total debt including trade credit pre-distress (%)	51.51	44.3	28.9	62.0	64.6	32.3	1.94*
Percentage of secured debt to total bank debt (%)	63.4	68.6	38.2	71.3	95.2	34.8	-5.82***
Percentage of long term debt to total bank debt (%)	44.2	41.1	43.4	60.2	75.1	42.3	2.17**
Interest rate spreads (%)	3.03	2.44	3.2	2.91	2.21	3.1	0.86
Pre-distress leverage (%))	55.2	50.8	28.1	51.8	44.0	39.4	-0.59
Leverage at distress (%)	61.0	59.6	26.3	53.0	54.7	27.2	-1.57

Table VI: Determinants of going concerns

In regressions (1)-(4) the dependent variable is a dummy that equals 1 if the firm is operated as a going concern and 0 if it is immediately closed. The independent variables include size measured as the log of total assets; percentage of specific assets to total assets; percentage of secured debt to total debt and leverage proxying for firm quality; industry dummies; an industry distress dummy that equals 1 if the industry in which the firm operates was in distress in the year the firm entered bankruptcy; regional unemployment that measures the absolute level of unemployment in the region the firm is located and in the year of bankruptcy; a location dummy that equals 1 if the firm is located in a big town, and 0 otherwise; business confidence index which captures expectation about the economy; a liquidator dummy that takes 1 if it is a State liquidator and 0, otherwise.

Estimation method: probit, values in brackets are z-values

	Going concern versus immediate closure			
Independent variables	**(1)**	**(2)**	**(3)**	**(4)**
Size (log of assets)	0.27**	0.27**	0.61***	1.08***
	(2.69)	(2.55)	(3.1)	(3.35)
% of Specific assets	-0.58	-0.77	-0.93	-1.2*
	(-0.96)	(-1.22)	(-1.29)	(-1.54)
% of secured debt to total	-0.08	0.02	0.01	-2.1*
debt	(-0.11)	(0.02)	(0.01)	(-1.83)
Leverage	0.02	0.02	0.14	0.047
	(010)	(0.10)	(0.67)	(0.23)
Industry dummies:	0.23	0.08	-2.3	0.58
Manufacturing	(0.49)	(0.02)	(-.266)	(0.69)
Services	-0.41	-0.55	0.14	-3.41
	(-0.85)	(-1.03)	(0.67)	(-2.04)**
Sector Distress			-1.57***	-1.64***
			(-2.74)	(-2.23)
Regional Unemployment		0.063	0.09**	0.13***
		(1.6)	(2.00)	(2.91)
Location Dummy: big		0.23	0.64	0.98*
city versus small city		(0.61)	(1.55)	(1.85)
Business confidence			0.01	0.04
index			(0.57)	(1.43)
Liquidator				-3.02***
				(-3.31)
Constant	-4.8	-5.24	-10.88	-8.21
	(-2.42)	(-2.53)	(-2.92)	(-3.27)
Number of Observation	69	69	69	69
Pseudo R^2	0.165	0.19	0.33	0.49
Goodness of Fit	13.57	15.14	25.34	22.52

Table VII: Determinants of the firm's Q ratio

In regressions (1)-(4) the dependent variable is proceeds from asset sales over the period of bankruptcy,normalized by the book value of assets at the start of bankruptcy. The independent variables include size measured as the log of total assets and square of log of total assets; percentage of specific assets to total assets; percentage of secured debt to total debt and leverage proxying for firm quality; industry dummies; an industry distress dummy that equals 1 if the industry in which the firm operates was in distress in the year the firm entered bankruptcy, and a going concern dummy. Regressions (1)-(3) use OLS. In regression (4) we control for the endogeneity of selection, using as first stage the probit regression from Table VI.

	Income from Asset Sales/Book value of Assets			
Independent variables	**(1) OLS**	**(2) OLS**	**(3) OLS**	**(4) Treatment Reg.**
Log of assets	0.31*	0.33**	0.342**	0.34**
	(1.96)	(2.35)	(2.39)	(2.09)**
Square of log of assets	-0.01*	-0.01**	-0.01**	-0.01
	(-1.98)	(-2.18)	(-2.23)	(-2.07)
% of specific assets	0.001	-0.04	-0.07	-0.05
	(0.01)	(-0.13)	(-0.23)	(-0.24)
% of secured debt to		0.16	0.17	0.17
total debt		(0.48)	(0.51)	(0.61)
Leverage		0.06	0.07	0.069
		(1.06)	(1.11)	(1.17)
Industry:	-0.27	-0.46*	-0.47*	-0.48***
2.Manufacturing	(-1.27)	(-1.95)	(-1.95)	(-2.94)
3.Services	-0.37	-0.64*	-0.7*	-0.68***
	(-1.29)	(-1.96)	(-1.95)	(-3.23)
Sector distress	-0.02	-0.05	-0.09	-0.092
	(-0.13)	(-.26)	(-0.43)	(-0.62)
Going concern dummy			-0.12	-0.02
			(-0.83)	(-0.09)
Constant	-1.7**	-1.9**	-1.99**	-1.96
	(-.197)	(-2.36)	(-2.4)	(-1.47)
Inverse Mill ratio				-0.07
				(-0.45)
Number of observations	69	69	69	69
R-squared	0.13	0.23	0.26	0.28

Table VIII: Incidence of inefficient going concerns and impact on pre-bankruptcy creditors' wealth in the bankruptcy sample

Panel A reports the proportion of the sample of bankrupt firms that are classified as inefficient, using four measures of inefficiency. Panel B reports the estimated costs of inefficiency, using measure (iii) of Panel A, expressed as a proportion of the proceeds to pre-bankruptcy creditors and as a proportion of pre-bankruptcy claims.

Panel A: Four measures of the incidence of inefficient going concerns

	Mean	N
Measure (i): percentage of going concerns operated at a loss	71.74	46
Measure (ii): percentage of going concerns where loss >income from all assets	17.8	45
Measure (iii): percentage of going concerns where loss >income from assets post interim report[1]	43.5	46
Measure (iv): percentage of going concerns sold piecemeal and made losses	54.3	46

[1]For 10 of these firms we used the ratio of realizations to book values in the intermediate bankruptcy statements to value remaining assets.

Panel B: The cost of inefficient going concerns to pre-bankruptcy creditors' wealth

	Costs of inefficiency as percentage of proceeds to pre-bankruptcy creditors			Costs of inefficiency as percentage of face value of claims of pre-bankruptcy creditors		
	Mean	Median	St. dev.	Mean	Median	St. dev.
Equal weighted: all creditors	214	100	298	42	13.6	102
Value weighted: all creditors	92	55.5	82.5	19	11.4	25.6
Creditor Category: B: secured	168	83.7	260	32	22.5	3.5

Table IX: Trustees compensation and the firm's Q ratio

In regressions (1)-(5) the dependent variable is income from asset sales as a percentage of total book value of assets for the going concern sample. The independent variables include fees from operating revenues as a percentage of total fees; size measured as the log of total assets; percentage of specific assets to total assets; industry dummies; percentage of secured debt to total debt proxying for firm quality; industry distress dummy that equals 1 if the industry in which the firm operates is in distress in the year the firm entered bankruptcy; a liquidator dummy that takes 1 if it is a State liquidator and 0, otherwise. In regression (6) the dependent variable is a dummy that takes the value 1 if the going concern is defined as inefficient, and 0 otherwise; we use measure (iii) for identifying inefficient going concerns. Values in brackets are t-statistics.

Dependent variable	**Income from asset sales / total book value of assets**	**Income from asset sales / total book value of assets**	**Income from asset sales / total book value of assets**	**Income from asset sales / total book value of assets**	**Income from asset sales / total book value of assets**	**Dummy for inefficient going concerns defined by measure (iii)**
Independent variables:	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
% fees from operation		-0.35*	-0.36**	-0.30*	-0.32*	1.56**
		(-1.88)	(-1.92)	(-1.83)	(-1.79)	(2.12)
Size (ln assets)	-0.04	-0.03	-0.04	-0.03	-0.034	-0.15
	(-1.03)	(-0.87)	(-1.04)	(-0.64)	(-0.63)	(-0.88)
% specific assets	0.14	0.002	0.02	0.01	0.04	-0.31
	(0.38)	(0.01)	(0.6)	(0.07	(0.16)	(-0.89)
Industry distress dummy					0.98	
					(0.44)	
% of secured debt to total debt				0.38	0.38	
				(0.1)	(0.1)	
Agriculture vs.	-0.26	-0.26	-0.41	-0.3*	-0.25	0.27
	(-1.23)	(-1.36)	(-1.65)	(-1.78)	(-1.06)	(0.47)
1.Industry 2.Services	-0.27	-0.42**	-0.38**	-0.47**	-0.36**	1.28**
	(-2.05)	(-2.18)	(-2.19)	(-2.6)	(-1.96)	(2.03)
State trustee =1, private = 0			0.3	0.07	0.06	
			(1.27)	(0.31)	(0.27)	
Constant	1.49	1.38	1.87**	1.3	1.35	0.5*
	(1.5)	(1.53)	(2.18)	(1.43)	(1.40)	(1.59)
No of obs.	42	42	42	42	42	35
R-squared	0.13	0.18	0.20	0.24	0.26	0.16

Table X: The incidence of inefficient going concerns in bankruptcy partitioned by the type of trustee

Panel A reports the incidence of inefficient going concerns, using the four measures of Panel A of Table VIII, for the State and private trustees' sub-samples.

Panel B describes the rents earned by trustees and the costs to pre-bankruptcy creditors arising from the going concern bias. The trustees' rent is calculated as the difference between the actual fee earned in an inefficient going concern, and the estimated fee from an immediate closure and sale. Costs include operating losses during the going concern and the estimates of the change in asset values resulted from a going concern.

Panel A: Incidence of inefficient going concerns partitioned by type of trustee

	State Trustee	Private Trustee
Percentage of going concerns	62.2	47.9
Percentage of going concerns which are inefficient:		
Measure (i): making losses	65.2	78.2
Measure (ii): losses > all income from asset sales	8.7	26
Measure (iii): losses > income from asset sale after year[1]	39.1	47.8
Measure (iv): sold piecemeal and with operating losses	36.4	69.5

1. If an interim report is unavailable we subtract all revenues for the entire bankruptcy period.

Panel B: Trustee's rent and costs of inefficient going concerns in the bankrupt sample

	State trustee (n=46)	All private trustees (n=39)
Trustees' rent (in millions of Euros)		
	0.132	0.019
	(0.0204)	(0.005)
Costs of inefficiency using measure (iii) (in millions of Euros)	0.528	0.298
	(0.092)	(0.077)
Costs of inefficiency using measure (iv) (in millions of Euros)	1.125	0.326
	(0.108)	(0.083)
Ratio of costs of inefficiency (using measure (iii)) to the trustee's rent: medians	4.5	16.6
Ratio of costs of inefficiency (using measure (iv)) to the trustee's rent: medians	5.3	18.1

Panel C: Determinants of the choice between Private and State Trustee

In regressions (1)-(4) the dependent variable is a dummy that equals 1 if the trustee is a State trustee and 0 otherwise. The independent variables include size measured by log of total assets; percentage of specific assets measured by book value of machinery and equipment over total assets; percentage of secured debt to total debt; pre-bankruptcy debt over total assets; an industry dummy, taking 1 if the industry in which the firm operated was in distress in the year of the firm's bankruptcy; regional unemployment in the year of the firm's bankruptcy, industry dummies; location dummy that equals 1 for big cities, and 0 otherwise. The estimation method is probit. Values in parenthesis are z-statistics.

	Trustee Dummy (=1 for State trustee)	**Trustee Dummy (=1 for State trustee)**	**Trustee Dummy (=1 for State trustee)**	**Trustee Dummy (=1 for State trustee)**
	(1)	**(2)**	**(3)**	**(4)**
Independent variables				
Size (Log of Assets)	0.13	0.09	0.09	0.17
	(1.47)	(0.83)	(0.81)	(1.26)
Percentage of specific assets		-0.07	-0.068	1.06*
		(-0.14)	(-0.13)	(1.63)
Percentage of secured debt to total debt				-2.04**
				(-2.49)
Pre-bankruptcy debt over total assets				-0.15
				(-0.83)
Industry distress dummy		0.99**	0.98**	0.91*
		(2.2)	(2.21)	(1.79)
Regional unemployment	0.02	0.021	0.02	0.022
	(0.72)	(0.66)	(0.65)	(0.70)
Agriculture vs.	1.38	1.7***	1.76***	1.48**
1.Industry	(3.31)	(3.8)	(3.7)	(2.64)
2.Services	0.02	0.87	0.85	0.54
	(0.04)	(1.48)	(1.38)	(0.75)
Location Dummy			-0.23	-0.22
			(-0.6)	(-0.57)
Constant	-3.55	-3.5		-4.01
	(-1.87)	(-1.54)		(-1.61)
Pseudo-R squared	0.24	0.27	0.28	0.37
No of observations	69	69	69	69

Table XI: Does the initiator of bankruptcy proceedings matter?
The table reports the proportion of firms that are identified as inefficient by using the four measures of Panel A of Table VIII for the sub-samples of trade creditor/owner and bank/tax authorities-initiated bankruptcies. It also reports fees as a percentage of total proceeds and recovery rates for pre-bankruptcy creditors for the two sub-samples.

Going concern bankruptcy initiated by:	**Owner + Trade creditor**	**Bank + Tax authorities**
Sample size	32	15
Measure (i): Proportion of sample making a loss	78.1	53.3
Measure (ii): percentage of cases where loss > income from sales of all assets.	25.00	0.00
Measure (iii): percentage where loss from operations > income from assets post interim report[1]	53.1	26.6
Measure (iv): Percentage of piecemeal bankruptcies	65.6	33.3
Fees as a percentage of total proceeds to creditors	23.86	8.03
Operating losses as percentage of total proceeds to creditors:		
Mean	132.09	55.46
Median	42.37	7.16
Recovery rates for pre-bankruptcy creditors (excluding Category A):		
Mean	16.92	21.92
Median	2.83	6.46

Table XII: The determinants of inefficient going concerns

In regressions (1)-(2) the dependent variable is a dummy that equals 1 if the going concern is inefficient using measure (iv) of Panel A of Table VIII. In regressions (3)-(6) the dependent variable is the cost of inefficiency, defined by measure (iv), divided by the book value of assets at the beginning of the bankruptcy procedures. The independent variables include a dummy for the trustee, taking 1 if it is a State trustee, and 0 otherwise; initiator dummy that takes 1 if the initiator is a trade creditor/owner, and 0 otherwise; size measured as the log of total assets; percentage of tangible assets to total assets is used as proxy for asset specificity; and total pre-bankruptcy debt to total assets measures firm quality; a location dummy that takes 1 if the firm is in the capital city, and 0 otherwise; industry dummies.

The estimation method is a logit. Values in parenthesis are z-statistics.

	Inefficiency dummy (=1 for inefficient going concerns)		**Size of Inefficiency (=Operating losses/book value of assets for inefficient going concerns, =0, otherwise)**			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Independent Variables:						
Dummy for State trustee=1 private=0		-1.05** (-2.23)		-1.5** (-1.98)	-1.55** (-2.05)	-1.49** (-1.96)
Initiator dummy Trade creditor/owner=1 Bank/Tax authority=0		1.05** (2.18)		2.1*** (2.79)	2.15*** (2.79)	2.1*** (2.75)
Size (log of total assets)	0.88 (1.05)	0.18 (1.22)	0.11 (0.55)	0.24 (1.12)	0.23 (1.11)	0.25 (1.15)
Percentage of tangible assets to total assets	-0.88 (-1.05)	-1.22 (-1.22)	-1.48 (-1.15)	-0.47 (-0.37)	-0.46 (-0.37)	-0.45 (-0.37)
Percentage of secured debt to total debt	0.009 (1.27)	0.001 (1.06)				
Location dummy capital=1. otherwise=0					0.28 (0.34)	0.74 (0.75
Interactive term= State trustee*location dummy						-0.72 (-0.47)
Agriculture vs. 1.Industry	-0.38 (-0.75)		-0.68 (-0.76)			
2.Services	0.99 (1.39)		0.56 (0.57)			
Constant	5.7 (1.54)	4.18 (1.36)	-1.34 (-0.34)	-4.9 (-1.2)	-4.8 (-1.2)	-5.1 (-1.23)
Pseudo R-squared	0.12	0.20	0.08	0.22	0.223	0.23
No of obs.	42	42	42	42	42	42

Table XIII: Change in bank lending pre-distress and during the period of distress for the banks' sample of distressed firms; (mean, median, standard deviation and number of observations).

The Panel describes the changes in bank debt prior to pre-and during distress for bankrupt firms and those that reorganise privately.

Percentage change in main bank debt:	Bankruptcies			Out-of-court Procedures			
	Mean	Median	St .dev	Mean	Median	St. dev	T-stat
From 1 year prior to distress to distress (n=19)	-6.00	-23.38	58.51	-37.97	-31.49	27.73	1.01
From year of distress to outcome (n=67)	-6.76	-14.77	107.43	-49.82	-48.32	37.09	3.07***

Table XIV: The determinants of the outcome of distress

The probit examines the impact of changes in bank lending during distress on the outcome of distress, bankruptcy versus informal restructuring. We control for firm quality measured by the amount of collateral as a percentage of the loan and interest rate spreads at loan origination, and debt structure, industry and size. The dependent variable is a dummy taking a value of 1 if bankruptcy occurs and 0 otherwise. The independent variables, which differ across regressions, are (i) change in bank debt from default to outcome as a % of bank debt at default, (ii) quality of the borrower measured by the percentage of secured debt to total debt, and interest rate spread at loan origination (iii) an interactive term where we interact borrower quality with a change in bank debt, (iv) industry dummies and size of the borrower measured by the ln of total book value of assets pre-distress. (v) bargaining power of the bank represented by main bank debt to total debt pre-distress, and (vi) an interaction term where we interact change in bank debt with the bank's bargaining power proxied by main bank debt to total debt.
Estimation method: Probit. Values in parenthesis are z-statistics

	Bankruptcy Dummy (=1 for Bankruptcy, 0 for Out-of-court Procedures)				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Independent Variables:					
Change in bank debt between distress to outcome	1.26 (0.82)	2.83* (1.91)	2.7* (1.8)	4.5*** (2.73)	5.84*** (2.86)
Main bank debt to total debt (pre-distress)			-0.22 (-0.47)	-1.6* (-1.72)	-1.32 (-1.32)
Main bank debt to total debt * change in bank debt (interaction term)				-2.9** (-1.89)	-2.6* (-1.58)
Percentage of secured debt to total debt	-2.09** (-2.13)	-3.25*** (-3.71)	-3.19*** (-3.39)	-2.93*** (-3.00)	-3.00*** (-3.09)
Interest rate spread					0.26 (0.08)
ln(total assets pre-distress)	0.20* (1.59)	0.23* (1.69)	0.22* (1.66)	0.22* (1.63)	0.28* (1.8)
Secured debt to total debt*change in bank debt (interactive term)	-0.64 (-0.37)	-2.29 (-1.35)	-2.2 (-1.27)	-1.9 (-1.11)	-3.24 (-1.54)
Industry dummy: Manufacturing (n=54) Tourism (n=26) Construction (n=11) Wholesale and retail trade (n=51)		-0.09 (-0.24) -0.03 (-0.05) -2.24 (-1.96) -0.29 (-0.82)	-0.07 (-0.17) -0.01 (-0.02) -2.16 (-1.86) -0.3 (-0.86)	-0.07 (-0.18) 0.06 (0.14) -1.9(-1.67) -0.38 (-1.01)	-0.15 (-0.33) 0.03 (0.05) -0.89(-1.54) -0.27 (-0.67)
Constant	-0.7 (-0.41)	0.13 (0.08)	0.23 (0.13)	0.99 (0.52)	0.86 (0.37)
Pseudo R-square	0.17	0.20	0.21	0.234	0.27
No of obs.	98	98	98	98	98

Appendix 1: Metrics for identifying an inefficient going concern

We derive four measures for identifying an inefficient going concern, which can be expressed as follows (where I is a binary variable and equals 1 for an inefficient going concern):

(i) If $\rho-c<0$ then $I_i=1$; otherwise $I_i=0$. ;

(ii) If $(\rho-c)-\rho\lambda A<0$ then $I_{ii}=1$; otherwise $I_{ii}=0$.

(iii) If $(\rho-c)-\rho\lambda A_{1-T}<0$ then $I_{iii}=1$; otherwise $I_{iii}=0$, where 1-T denotes the time period from 1 year after bankruptcy filing through the end of the proceeding (time T).

Metric (iii) is also used for the size of the inefficiency such that

Size=$(\rho-c)-\rho\lambda A_{1-T.}$

(iv) If $(\rho-c)<0$ and S=PL then $I_{iv}=0$; otherwise $I_{iv}=0$, where S~[PL,GC] denotes whether the assets are sold piecemeal (PL) or as a going concern (GC) at the end of the proceedings.

Measure (iv) is also used for the size of the inefficiency such that Size=$(\rho-c)$

The underlying assumption for all the four measures is that the going concern does not destroy assets, i.e. all assume that the economic depreciation λ is non-positive. Thus, these measures are biased against finding an inefficient going concern.

Metric (i) assumes that the going concern does not add or reduce the value of future asset sales, i.e. $\lambda=0$. For measure (ii) we assume that $\lambda\rho$=-1. This measure implies that where there are operating losses, those losses are greater than all income from asset sales, and therefore there are no proceeds available to pay pre-bankruptcy creditors.[34] The implicit assumption behind measure (ii) is that if the firm were immediately closed, income from asset sales would be zero. Thus, a going concern is efficient as long as some proceeds are available for distribution to pre-bankruptcy creditors. This measure is clearly too strong. The third measure assumes that the value of all assets sold in the first year would be the same if the trustee had made the decision to close the firm immediately and offer it for sale.[35] Thus, all income from subsequent sales i.e. after the first year, is assumed to accrue as a result of the going concern; the implication is that if the firm were closed and sold after year one, the net

[34] There is a special fund that pays for losses incurred in bankruptcy. It is funded by a levy on trustees' fees.

proceeds from asset sales would be zero, i.e. $\lambda = 0$ for the first period and $\lambda \rho$=-1 for the second period. The fourth measure assumes that the reason for maintaining a going concern and making operating losses is motivated by an expectation that assets sold together are worth more than those sold piecemeal, and therefore we should expect to observe an eventual going concern sale, i.e. $\lambda < 0$.[36] The third and fourth measures are the most reasonable. However, the fourth measure suffers from the problem that piecemeal liquidation after the going concern may be a better outcome than immediate closure. However, as stated earlier, immediate closure is not the same as immediate sale of assets.

[36] In none of these measures do we adjust for the time value of money so the bias towards the going concern is underestimated.