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## ABSTRACT

### A Study of Inefficient Going Concerns in Bankruptcy\*

This paper provides the first large-scale study measuring the bias in favour of going concerns induced by court-administered bankruptcy procedures. Although we find that the large majority of bankrupt firms in our sample of Hungarian firms are kept as going concerns, the evidence suggests that the going concern bias sharply reduces aggregate proceeds to pre-bankruptcy creditors. The high costs are accompanied by the eventual closure and piecemeal sale of three quarters of going concerns. These results arise because of poor court oversight and the compensation scheme awarded to the court appointed trustee managing the bankrupt company. Comparisons with other bankruptcy codes suggest that the application of the code and court procedures have an important impact on outcomes, including the degree of inefficiency.

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## 1. Introduction

This paper provides the first large-scale study measuring the bias in favour of going concerns induced by court-administered bankruptcy procedures. Using a unique data set of distressed and bankrupt firms from Hungary, we find that these inefficiencies result from a lack of court oversight and the design of the remuneration scheme of the agents who manage the bankrupt firm, what might be termed the governance of bankruptcy procedures.

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 sold piecemeal. The most 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. To achieve this end the code imposes significant restrictions on creditors’ rights.

Bankruptcy law has a crucial role in transition and emerging economies. In the absence of developed capital markets and related mechanisms such as a market for corporate control that ensures the transfer of resources to the most efficient users, bankruptcy provides perhaps the only mechanism to improve allocative efficiency in the economy. 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.

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

that explicitly allow for the bankrupt firm to be maintained as a going concern code even when an early auction or liquidation would produce greater value for pre-bankruptcy creditors (see Davydenko and Franks (2005)).

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 as going concerns inefficiently. By inefficiently we mean that pre-bankruptcy creditors in aggregate would have been better off if the bankrupt firm had been sold off immediately rather than managed as a going concern in bankruptcy. We argue that it is the court procedures that create the going concern bias rather than particular provisions of the bankruptcy code itself. The Hungarian example therefore illustrates the importance of the application of the code and court practices and not only the design of the code.

To the best of our knowledge, this is the first paper that measures the going concern bias in bankruptcy and how it affects the distribution of wealth between different creditor classes for a large sample of firms.<sup>1</sup> We show that the bias produces strong conflicts of interest between secured creditors and the court-appointed trustee managing the bankruptcy process. The rights of secured creditors in bankruptcy are so diluted that they rarely trigger bankruptcy. Instead, trade creditors often do so, either to force settlement of their claims by secured creditors or to benefit from the going concern bias in bankruptcy.

We report five main results. First, we show that for the majority of going concerns in bankruptcy, pre-bankruptcy creditors lose a large part of their claims compared with our estimates of the proceeds that would arise from immediate closure and the sale of the firm. On average, going concern bankruptcies identified by us as inefficient result in an incremental loss of 42% of the face value of all pre-bankruptcy claims.

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<sup>1</sup> 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 60 days. Their sample of firms are 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 where the role of the state is small. Thus, the process of reorganization is very different in the two samples.

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 and the trustee. Of the 78%, one half accrues to trade creditors supplying the firm as a going concern.

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 trustee's remuneration that is based both upon sales turnover and the value of asset sales. We find that the going concern is frequently accompanied by operating losses, which are not compensated for by improvements in the value of asset sales.

Regression results show that the higher the proportion of the trustees' fees deriving from sales turnover, the greater the probability that the going concern is inefficient. In addition, the higher the fees from sales turnover, the lower the Q ratio of the bankrupt firm. Both results suggest that the remuneration scheme increases significantly the incidence and size of inefficient going concern. We find that trade creditors and owners are mainly responsible for precipitating bankruptcy where the outcome is an inefficient going concern. We interpret this as evidence that at least some trade creditors' interests are aligned with those of the trustee.

Fourth, we find that the size and the incidence of inefficiency depend on whether the trustee is state or privately employed. Inefficient going concerns are far more likely when it is managed by a private trustee rather than by a State trustee.<sup>2</sup> We interpret this as further evidence of the role of the remuneration scheme since private trustees benefit directly from the remuneration scheme whereas employees of the State do not.

We find that for every dollar of rents earned by the private trustee another 16.6 dollars of deadweight costs are imposed on pre-bankruptcy creditors. The ratio for the State trustee is much lower at only 4.5. These results indicate that the deadweight costs arising from an inefficient going concern can be a large multiple of the rents arising from the remuneration scheme.

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<sup>2</sup> There is one large State owned firm of trustees and about 118 privately registered firms.

Fifth, we provide evidence that banks are not passive against the dilution of their secured claims in bankruptcy. They respond by heavily contracting the borrowings of distressed firms pre-bankruptcy. We also look for evidence that such a contraction in lending forces other creditors to trigger bankruptcy. We find no evidence for this.

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, and Ayotte and Yung (2004) discuss how the quality of enforcement affects the optimality of procedures, while 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 with incomplete information which makes him prone to error.<sup>3</sup>

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. *Ex-post* efficiency is one of the justifications of creditor friendly bankruptcy regimes. Much of what we know is largely based upon Chapter 11 of the U.S. 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 absolute priority and the costs of the proceedings. For example, (for example, Weiss (1990) and Franks and Torous (1994) estimate recovery rates for creditors in Chapter 11 proceedings and the deviations from strict absolute priority, Gilson (1997) and Bris, Welch and Zhu (2004) examine the direct costs of U.S. bankruptcy procedures. Andrade and Kaplan (1998) measure both direct and indirect costs for a sample of distressed LBOs.<sup>4</sup> Few attempt to estimate the incidence and

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<sup>3</sup> See Berkovitch and Israel (1999), Povel (1999), Von Thadden, Berglof and Roland (2003), Ayotte and Yung (2004), and Bernhardt and Nosal (2004).

<sup>4</sup> Other US studies include Gilson, John and Lang (1991), Asquith, Gertner and Scharfstein (1994), Franks and Torous (1989) and James (1995). Non-US studies include Thorburn (2001) and Stromberg (2000) of Swedish auctions of small bankrupt firms, and Franks and Sussman of small UK firms.

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.<sup>5</sup>

Our paper contributes to the literature on optimal bankruptcy design by demonstrating how particular bankruptcy procedures can lead to high levels of inefficiencies. We would predict that the incentives to the debtor in possession in Chapter 11 procedures can also produce a bias towards the going concern as with the Hungarian trustee. Indeed the fact that part of the trustee's remuneration in Hungary depends upon asset values suggests some mitigation of the going concern bias. The question is, does the greater court oversight and creditor involvement in the US system mitigate the going concern bias?

In Section 2 we describe the Hungarian bankruptcy procedures. In Section 3 we outline our main hypotheses and describe the data. In Section 4 we present our results, and in Section 5 we explore the implications for other countries' bankruptcy codes. Section 6 concludes.

## **2. Hungarian bankruptcy procedures and practices**

Hungary is a good example of a transition economy that has dealt directly with loss-making firms through 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 more than 90 days overdue. The subsequent wave of bankruptcies led to the adoption of a more discretionary approach towards bankruptcy in subsequent legislation in 1993 and 1996, described below. Since Hungary has privatised most of its banks and firms, the results of our study are not affected directly by political considerations.

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<sup>5</sup> It is possible that Andrade and Kaplan's (1998) comparisons of distressed versus healthy firms might capture some of the costs of an inefficient going concern.

In this section we describe the code and its procedures and compare them with the US and France, which both have court-supervised procedures, and the UK where the role of the courts is largely limited to the enforcement of the debt contract.

### *2.1 Description of the Hungarian code and practices*

The Hungarian bankruptcy code has two bankruptcy procedures: liquidation and composition.<sup>6</sup> 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 forgoing discussion whenever we refer to bankruptcy we mean the liquidation procedure.

Any creditor and the 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 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 consultation with creditors or debtor. Prior to August 2002, judges were required to use a computer program to randomly choose from an approved list of trustees; all bankruptcy cases included in our sample are within this period. In the absence of a creditors' committee, the trustee has much discretion over the disposition of 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. 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.

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

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<sup>6</sup> Composition is used for very large companies.

collateral.<sup>7</sup> Post bankruptcy claims (Category A) include the fees and costs of the trustee, payments to suppliers in bankruptcy, wages and some social security payments.<sup>8</sup> 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, including those of pre-bankruptcy claimants. 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 receive information such as 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'.<sup>9</sup> 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, a bankruptcy judge and a trustee informed us that creditors committees are rarely formed, particularly for small and medium sized companies, and none were formed in our sample. We believe this reflects the absence of rules for the composition of such committees in both statute and case law and the failure to provide adequately for the resolution of disputes between creditors.<sup>10</sup> This must greatly increase the costs of these committees to the parties involved.

In the absence of a creditors committee only the judge can provide oversight for the trustee. Although there are designated judges specialising in bankruptcy cases, they have little if any business training, thereby preventing them from challenging the trustee.<sup>11</sup> As a result the trustee's reports to the court is frequently a formality, completed in writing, on an annual or semi-annual basis. The discretion awarded to

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<sup>7</sup> Providing the collateral was in place for at least one year prior to bankruptcy.

<sup>8</sup> The order of priority in liquidation is as follows: (a) Arrears of wages, and all costs of liquidation Secured claims, (b) Pension liabilities, (c) Small trade creditors, (d) Tax, social security , etc, (e)Unsecured claims, and (f) Arrears of interest.

<sup>9</sup> A creditors' committee must represent a minimum of a third of pre-bankruptcy claims.

<sup>10</sup> There are no reserved places for secured or large creditors and there are no clear non-unanimity rules in the event of disagreement among members of the creditors committee.

<sup>11</sup> Although this is currently the case a committee has been appointed to review the code and its workings.

the trustee raises important issues about his incentives to manage the process fairly and efficiently. Their remuneration is based upon 2% of sales revenues [if operated as a going concern] and 5% of asset sales.<sup>12</sup> We estimate assets would have to decline more than 40% over the life of the going concern to offset the bias in the component of fees based upon sales turnover. Discussions with banks confirm that trustees often pursue actions that reduce the value of their pre-bankruptcy claims. There is also an impression among some practitioners of collusion and side payments between some trustees and owners or trade creditors. We have no data on such practices.

Although 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.<sup>13</sup> The appointment is automatic when there is evidence of default. A bankruptcy procedure freezes all attempts by the bank or its executor to sell collateral. Similarly, the tax authorities may also apply to the court for payment of back taxes and thereby force the company to sell assets.

## *2.2 Comparison of Hungary with other jurisdictions*

In Table I we summarize creditors rights in Hungary and for comparison purposes with France, the UK 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.<sup>14</sup>

In the UK, there is little interference in the enforcement of the debt contract by lenders and court oversight is largely confined to enforcing the debt contract. In the US, court oversight is high precisely because there is significant interference in creditors' rights. In contrast, in Hungary low court oversight combines with substantial interference in creditors' rights. However, in both the US and Hungarian codes bankruptcy is often triggered by junior creditors or owners, whereas in the UK

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<sup>12</sup> 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.

<sup>13</sup> While bankruptcy is publicly disseminated, executorship is not.

it is triggered by senior creditors. These differences reflect directly the allocation of control rights and the going concern bias.

An important question raised by our paper is the predictions it might provide for other court-administered codes, for example, US Chapter 11 procedures or for French procedures. As described, both are important examples of bankruptcy procedures that contain formal provisions for a going concern bias. Because of the lack of empirical studies, much of our reasoning is based upon our knowledge of the particular country's bankruptcy procedures. Because creditor rights are higher for Hungary than those for the US and France, we might expect that to be translated into a smaller going concern bias although the relationship is not a direct one.

A different approach to the La Porta et al (1998) analysis of creditors' rights is to compare 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 the combination of low creditor participation and low 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 high court oversight and creditor participation in bankruptcy decisions. But the US bankruptcy court is explicitly encouraged by statute and case law to maintain the firm as a going concern even when there are higher value alternatives. Thus, creditor participation with court oversight can be said to mitigate the costs of the going concern rather than favoring higher value alternatives. Weiss and Wruck (1998) for example document large-scale destruction of value of Eastern Airlines as a result of Chapter 11 procedures.

Other empirical evidence is sparse and indirect. Andrade and Kaplan (1998) find that the both the direct and indirect costs of reorganization of a sample of LBOs that entered Chapter 11 are small. In a recent study Bris, Welch and Zhu (2004), using a sample of firms reorganized in Chapter 11 and Chapter 7, find that the direct costs of

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<sup>14</sup> We are referring here to the liquidation code only. There is no automatic stay in composition.

reorganization are not uniform across firms and are as high as 16%. They are sensitive to the particular judge in bankruptcy and many other variables that makes it difficult for the authors to identify the determinants of those costs. Whereas Andrade and Kaplan use proxies for an inefficient going concern, Bris et al do not.

In France, like in the US, there is high court involvement in bankruptcy backed by explicit legislation that allows the court to reject higher bids for the business in favor of lower bids where there is a greater commitment to employment preservation. An important difference with US procedures is that there is low creditor participation. The result is that we would predict a high level of inefficient going concerns in both countries although the lack of creditor participation would suggest higher levels in France than in the US.<sup>15</sup>

### **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 would raise less proceeds for the pre-bankrupt firm and its pre-bankruptcy creditors than would an immediate piecemeal sale of the business in bankruptcy. We do not mention here the equityholders since they do not receive any payout in any of the bankruptcies in our sample.

#### *3.1 Hypotheses*

We test four hypotheses in the paper. In the first, we conjecture that the lack of court oversight and the remuneration scheme of the trustee in bankruptcy leads to a high incidence of going concerns.

*Proposition 1: 1a. There is a high incidence of inefficient going concerns in bankruptcy that reduce proceeds to pre-bankruptcy creditors.*

The trustee's remuneration, based in part on sales turnover 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 can be restricted by a potential decline in asset values caused by the delay in sale. Any decline in asset value reduces the trustee's income from asset sales and therefore offsets the fees from sales turnover while the firm is a going concern. The court allows fees of 2% of sales revenues per unit of assets and 5% per unit of future asset sales. Assuming that a unit of assets generates  $\rho$  units of revenues and asset values depreciate at a rate of  $\lambda$  per unit of revenues (i.e. economic depreciation is proportional to revenues), after normalising the sale price of assets to 1, the trustee compares:

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

Economic depreciation could in principle be positive or negative. Using the above fee rates, in the absence of discounting, the trustee benefits from a going concern providing the decline in asset value is no greater than 40% of the value of assets at the beginning of the bankruptcy. Thus, there are substantial incentives for the trustee to run the bankrupt firm inefficiently.

We construct four benchmarks to measure losses to pre-bankruptcy creditors resulting from an inefficient going concern. We use the previous notation to illustrate the assumptions behind these metrics. The cost of a going concern is the size of operating losses, defined by the trustee as income from operations,  $\rho$ , minus expenses,  $c$ , less an estimate of the change in asset value resulting from the going concern,  $\rho\lambda$ . An inefficient going concern is:

$$\rho - c < \rho\lambda$$

Costs include wages and the cost of goods and services supplied by trade creditors during the going concern bankruptcy i.e. post bankruptcy claims and fees paid to the trustee.

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  $\lambda$ . However, we do know the size of

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<sup>15</sup> One test might be to relate the size of remuneration to the debtor in possession to estimates of both direct and indirect costs.

operating losses (or profits) and the actual value of asset sales. Using these data, we develop four metrics to define an inefficient going concern. The underlying assumption behind all of them is a conservative one: the going concern does not reduce asset values over the proceeds that would have accrued from immediate closure and sale. As a result, the metrics are biased against finding inefficient going concerns:

- (i) Presence of an operating loss from bankruptcy operations;
- (ii) Operating loss  $>$  income from all asset sales over the period of bankruptcy;
- (iii) Operating losses  $>$  income from asset sales made after the first year of bankruptcy;
- (iv) An operating loss in a going concern followed by a piecemeal sale.

The first metric assumes that the going concern does not add or reduce the value of future asset sales. This is a weak metric since the trustee may incur an operating loss in order to increase the value of future assets sales. The second metric implies that where there are operating losses, those losses are greater than all income from asset sale, and therefore there are no proceeds available to pay pre-bankruptcy creditors.<sup>16</sup> This metric assumes that the net proceeds from immediate closure and sale are not as negative as those from the going concern. The third metric assumes that the value of all assets sold in the first year would be the same as if the business had been immediately closed and sold. All income from subsequent sales after year one is assumed to be the result of the going concern; and therefore would be zero if the firm were immediately closed and sold. The fourth metric 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.

An important question is how costly are these inefficiencies to pre-bankruptcy creditors? To answer this, we use the size of the inefficiency defined by metric 3, which is the difference between operating losses minus income from asset sales made after the first year in bankruptcy, to calculate how much pre-bankruptcy creditors lose from the going concern bias. We express these costs as a percentage of total proceeds

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<sup>16</sup> There is a special fund that pays for losses incurred in bankruptcy. It is funded by a levy on trustees' fees.

accruing to pre-bankruptcy creditors and as a proportion of the face value of pre-bankruptcy claims.

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

We previously argued that the compensation scheme of the trustee is one of the main causes of the continuation bias in bankruptcies. We would expect that compensating the trustee on the basis of sales turnover would lead the trustee to operate the assets regardless of the profitability of doing so, even if it incurred a loss. It is likely that assets operated at a loss will also be associated with a lower resale value, reflecting poor service and maintenance as the trustee tries to conserve cash. This leads to the prediction that higher fees for the trustee from sales turnover will lead to lower proceeds of asset sales, expressed as a percentage of the written down cost of the assets or book value i.e. a q ratio. We would expect the q ratio to be negatively correlated with fees from sales turnover expressed as a percentage of total fees of the trustee. Alternatively, we would expect that the probability of an inefficient going concern is positively correlated with a higher fees from operations, again expressed as a percentage of total fees. We add controls for the quality of the assets (% of tangible assets), industry and size of the firm.

The inefficiencies we find might equally be the result of both the trustee's error in forecasting prices of assets or from the remuneration scheme. It is possible that employment considerations play a role, although discussions suggest it is a rather limited one. Thus, we hypothesise that an inefficient going concern is more likely with a private trustee since he obtains a direct benefit from the remuneration scheme whereas employees of the state trustee do not. Thus, the latter's compensation is not directly related to the fees obtained from bankruptcies. The next proposition addresses this issue.

*Proposition 2A: The going concern bias is greater for the private trustee than for the state trustees since the former directly benefit from the remuneration scheme and the latter do not.*

To test this, we compare the incidence of inefficient going concerns for the state trustee's sample with those of private trustees.

The incentives of the trustee maybe aligned with those of trade creditors/owners who also wish to see the firm preserved as a going concern. Why might a trade creditor prefer the 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 bankruptcy 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, providing 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. Finally, if markets are not very competitive or if there are side payments, trade creditors may be able to charge higher prices in bankruptcy.<sup>17</sup>

In contrast, banks are less interested in maintaining the firm as an inefficient 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 through preserving inefficient going concerns.

*Proposition 2B: 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.*

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 and avoid changes in lending that precipitate bankruptcy. For example, they might expand lending to substitute for a

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<sup>17</sup> 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 the large number of bankruptcy applications withdrawn is suggestive that this mechanism is often effective.

reduction in trade credit or refrain from making a large contraction in lending if it leads to the sale of key assets. In the absence of such a response a contraction of lending might encourage other lenders to precipitate bankruptcy. Conversely, the bank's lending may be influenced by the anticipated credit policy of other creditors and whether they have incentives to trigger bankruptcy

*Proposition 3: Banks' lending behaviour, while the borrower is in distress, frequently precipitates bankruptcy procedures.*

In testing this hypothesis we must control for the distressed firm's debt structure.<sup>18</sup> 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, we regress the outcome of distress, a dummy which equals 1 for bankruptcy and 0 for an out-of-court restructuring, against changes in bank lending during the period of distress. Controls include (i) pre-distress main bank debt as a proportion of total debt including trade credit, (ii) proportion of secured bank debt to total bank debt and the interest rate spread at loan origination, both proxies for borrower quality, (iii) firm size, and (iv) industry dummies. We interact debt structure with the change in bank debt, and with secured debt to total debt, respectively.

### *3.2 Description of data*

We collected data from two sources. The first data set consists of 209 firms classified as distressed by three Hungarian banks for the period 1999 to 2003.<sup>19</sup> 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

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<sup>18</sup> We assume here that the number of trade creditors is large and increases with the size of trade credit. See Franks and Sussman (2004) for some evidence on this issue in relation to UK data.

<sup>19</sup> This period is one of relative prosperity for the corporate sector.

Selection for the banks' data set 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 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.

We have complete bankruptcy data for only 23 firms out of the total of 92 bankrupt firms in the banks' sample. The small sample reflects two considerations. First, the banks frequently sell the claims of distressed firm to third parties and therefore are uninvolved in the bankruptcy process. Second, bankruptcies are lengthy events and some are still ongoing.

The banks gave us the name of the trustees in the event the distressed company was in bankruptcy. Because the number of bankruptcy reports was limited, we collected bankruptcy statements for 62 additional firms from trustees. One of these trustees is a State trustee and the others are privately employed.

The 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, the division between pre- and post bankruptcy claims, and deviations from strict absolute priority. The data were also used to calculate different measures of an inefficient going concern.

In the following data description we describe separately the sample of firms collected from the banks, and then the sample collected from the trustees. The information sets are significantly different in the two samples because of the different sources of information. The sample collected from the trustees does not include detailed information on the pre-bankruptcy period.

Panel A of Table III provides the time series of the non-bankrupt distressed and bankrupt samples, and Panel B the industry composition of the total sample, including bankrupt and non-bankrupt distressed firms. Panel C reports summary statistics for the bank sample only. The average age of companies at 11 years and the duration 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 million. Firms are breaking even using the metric of profits before interest and taxes, with median losses of €0.10 million in the year of distress.

In Panel A of 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. 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 than 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 illustrates the size of post bankruptcy costs for the sample. The value of Category A creditors average €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.

Trade creditors initiate the largest proportion of bankruptcies, 42%, with the bank least likely to do so, only 11% of all cases. Other parties include owner/managers account for 24% and the State, 22% of cases.

Panel B of Table IV shows the debt structure of the banks' sample for the out of court and the bankruptcy samples. 44 % of distress firms are placed in the bankruptcy procedures; the remaining 56% are reorganised privately with the bank. For the out of court 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 out of court 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 out of court have different and higher quality debt structures.

#### **4. Results**

We report the results by hypothesis as described in section 3.1.

##### *4.1 There is a high incidence of inefficient going concerns in bankruptcy that reduce proceeds to pre-bankruptcy creditors (Proposition 1A)*

In Panel A of Table V we report an analysis of going concerns for 85 firms that enter bankruptcy. Of these 85, 54.95% are continued as going concerns, and the remainder are closed immediately. We provide four criteria to assess the extent to which the going concern creates or destroys value for pre-bankruptcy creditors.

In the table the first criterion measures whether the firm made an operating loss. We find that 71.8% of going concerns incur losses from continuing the operations. The presence of an operating loss is not in itself an indication of an inefficient going concern. The trustee may operate a company at a loss in order to sell assets at a higher value than would be the case with immediate closure. To measure an inefficient going concern, we need to know the value the assets would have realized from a closure and sale.

The other two metrics attempt to capture some estimate of the change in value of assets resulting from a going concern. The first, which is the strictest, deducts from

the operating loss the income from all asset sales during the period of bankruptcy. Only if the operating loss is less than the value of all asset sales is there a distribution to pre-bankruptcy creditors. In 17.8% of going concerns operating losses are sufficiently high that there is no payout to pre-bankruptcy creditors.

The second metric only deducts from operating losses part of the value of asset sales - those realized after the interim report of the trustee, which is one year into bankruptcy (bankruptcies of going concerns take on average 5 years). The assumption here is that the value of asset sales in the early part of a going concern is not much affected by the decision to close or continue the firm, whereas we attribute all the value in later years to continuation. According to this metric 43.5% of going concerns are inefficient because they have operating losses that exceed asset sales after the interim report.

Finally, the results for our fourth metric show that 54.3% of going concerns were ultimately closed and sold piecemeal prior to the conclusion of bankruptcy proceedings. These results provide strong evidence that the trustee's decision for closure or continuation as a going concern is not significantly influenced by an eventual sale as a going concern.

In Panel B of the table, we express the costs of an inefficient going concern, using metric 3, as a percentage of the proceeds to pre-bankruptcy creditors and as a percentage of the face value of their claims.<sup>20</sup> The assumption underlying this exercise is that if the firm had not been run as an inefficient going concern 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, weighting equally each creditor class. Using value weightings for the classes the change in value is 92.1% of actual proceeds and 19.1% of the face value of claims. The largest losing class are secured creditors, category B, which are mostly banks.

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<sup>20</sup> 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 1.

This provides further evidence for the antipathy of banks towards the bankruptcy process.

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

We have suggested that the incidence of inefficient going concerns and the costs of inefficiencies that we have measured are directly related to the remuneration scheme of the trustee. In particular, compensating the trustee on the basis of 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 operations the lower the proceeds from asset sales, and therefore the lower the recovery rates for post-bankruptcy creditors.

In Table VI we report regression results relating proceeds of asset sales to fees. In regressions (1) to (3) the dependent variable is proceeds of asset sales normalised by the book value of the assets at the beginning of the bankruptcy. The independent variables include fees from sales turnover as a percentage of total fees and control variables such as the quality of the assets (% of tangible assets), industry and size of the firm. The regression results confirm our null hypothesis: the percentage of fees from operations is negatively and significantly related to the firm's q ratio. This result suggests that going concerns are likely to reduce proceeds to pre-bankruptcy creditors.

In regressions (4) and (5) the dependent variable is a dummy that is equal to 1 if the going concern is identified as inefficient by metrics 3 and 4. The independent variables are the same as in regressions (1)-(3). The results of regressions (4)-(5) confirm our predictions, that when the percentage of fees from operations is high the going concern is more likely to be inefficient.

*4.2 The going concern bias is greater for the private trustee than for the state trustees since the former directly benefit from the remuneration scheme and the latter do not (Proposition 2A).*

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 being managed by private trustees.

In Panel A of Table VII, we describe the characteristics of firms supervised by the State trustee and by private trustees, respectively. The size of firms supervised by the State is much larger than those supervised by private trustees, using size of assets, proceeds of bankruptcy and trustee fees (although the latter two are endogenous to the process). The larger size is reflected in the proportions kept as going concerns, 61% by the State and 49% by private trustees.<sup>21</sup>

When we normalize fees by the proceeds of bankruptcy, we find that fees are much higher for private trustees than for the State, 51.6% compared with 27.5%; there are also large differences in the medians. This result might be expected given economies of scale in administering bankruptcies.<sup>22</sup>

In Panel B of Table VII, we use the four metrics to determine if the incidence of inefficient going concerns is higher for State trustees. In all four cases, the incidence of inefficiency is higher for private trustees, and the differences are economically large. For example, using criterion 1, 78.2% of going concerns for private trustees are judged inefficient compared with 65.2% for the State. For criterion 2, it is 26% versus 8.7%; and for criterion 3, 47.8% versus 39.1%. For criterion 4, we find that 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. In subsequent regressions we control for the size of the bankrupt company when we analyse whether inefficiencies are related to the type of trustee.

An important question is how costly the remuneration scheme of the trustee is to pre-bankruptcy creditors. In Table VIII, we compare 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

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<sup>21</sup> Using tangible assets over total assets, the samples are similar, 55.3% for the State and 49.0% for private trustees.

<sup>22</sup> See further evidence in Franks and Sussman (2003).

fee that would have been earned from an immediate closure. To estimate this hypothetical fee we use 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 trustee.<sup>23</sup> The costs of inefficiency are operating losses minus income from asset sales, as defined in criteria 3 and 4.

We report rents for both the State and the private trustees. Those rents are higher for the State, in part attributable to the larger size of bankrupt firms. The costs of inefficiency are also higher for the State. However, when we calculate the ratio of the costs of inefficiency to rents earned by the trustee, we find a much higher ratio for private trustees, 16.6 compared with 4.5 for the State trustee (using criterion 3). The interpretation is that for every dollar of rents the costs of inefficiency are 16.6 dollars for creditors of firms 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.

*4.3 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 2B)*

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 creditor might be better off in bankruptcy if the firm is kept as a going concern than outside bankruptcy. Panel A of Table IX describes how the proceeds of bankruptcy are shared out between the different claimholders. Post bankruptcy Category A claims take 78.9% (median is 91.7%) of all proceeds when the firm is kept as a going concern. The largest component is trade creditors, with more than 50% of claims. We do not know how much they would have earned if they did not triggered bankruptcy. However, their payouts in immediate closure and sale might be a good approximation of their payouts outside bankruptcy

When the firm is closed and put up for sale, post bankruptcy trade creditors' claims are zero. On pre-bankruptcy claims they receive very little, between 2-5.5%

depending upon size of claim, independent of the outcome of bankruptcy .The implication is that if some pre-bankruptcy trade creditors continue to supply the firm post-bankruptcy they earn high returns from going concerns in bankruptcy compared with immediate closure and sale.

Panel B reports very different loss rates for trade creditors depending upon whether they are pre- or post bankruptcy claims and on their size. Using medians the losses are zero post bankruptcy and 100% pre-bankruptcy. The means are similar.

*Does the initiator matter for inefficiencies?*

In Table X, we explore the extent to which the value to creditors of the going concern and the incidence of inefficient going concerns is related to the party triggering bankruptcy. We use the four metrics for measuring inefficient going concerns described in Table V. In the first metric, 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%. Operating losses, as a percentage of total proceeds to creditors, are also higher where the initiator is the owner or a trade creditor; the difference is economically large. For example, median 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.

For the second metric, the proportion of inefficient going concerns is 25% for those initiated by the owner or trade creditor compared with 0% for those initiated by the Bank and State. The other metrics also confirm that trade creditors and owners are responsible for higher levels of inefficient going concerns.

If trustees' interests are aligned with a going concern, we might expect that fees as a percentage of proceeds to creditors are much higher in trade creditor/owner initiated

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<sup>23</sup> We repeated this using the sample of firms closed by the private trustees with similar results.

bankruptcies, than those triggered by banks/State. The results in the table show this to be the case, 23.9% versus 8.3%.<sup>24</sup>

### *The determinants of inefficiencies*

In Table XI we examine the determinants of inefficient going concerns. The dependent variable is a dummy that equals 1 if the bankruptcy is inefficient (using metric 4) and 0 otherwise. For regressions (1) - (3) the sample includes only going concerns. In regressions (4)-(6) we include samples of going concerns and immediate closures. The principal independent variables are a trustee dummy which equals 1 for the State trustee and zero otherwise, an initiator dummy which equals 1 for trade creditor/owner initiated bankruptcies, firm size (log of total assets), percentage of tangible assets to total assets measuring asset specificity, pre-bankruptcy leverage proxying for firm's quality, and in regression (6) the time spent in bankruptcy.

The dummy for state trustee is significant in all six regressions and indicates that the presence of the State trustee is related to the incidence of *efficient* going concerns. The initiator is also significant in all regressions. In these regressions we control for the quality and size of the firm's assets, both of which are significant in some specifications.

We also find that the initiator and the type of trustee is significantly related to the size of the inefficiency, measured by operating losses as a proportion of pre-bankruptcy claims, controlling for the size of firm. The private trustee and trade creditors/owners are both positively and significantly related to the size of inefficiency at better than the 10% level. These regressions are available on request.

The results for propositions 2A and 2B support the view that trade creditors and owners play a very different role in bankruptcy than the other parties such as banks and the State. It is not surprising that trade creditors and owners have a strong incentive to maintain the firm as a going concern, even if this means that proceeds to

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<sup>24</sup> 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 fee as a percentage of total proceeds are much smaller at only 5.4%.

pre-bankruptcy creditors are reduced and that the firm is ultimately closed and sold. It might be argued that the going concern maintains employment, although such employment is often temporary since the large majority of going concerns are ultimately closed. We believe that since the private trustees are responsible for a much higher proportion of inefficient going concerns fee considerations influence their judgement.

#### *4.3 Banks' lending behaviour during distress frequently precipitates bankruptcy procedures. (Proposition 3)*

In Table XII 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 are liquidated. 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.<sup>25</sup> 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.

In Panel B, we report the bank's loss rates for the two sub samples where the outcome is bankruptcy and a private restructuring. Loss rates are defined as one minus the undiscounted estimated recoveries during the period of distress (and bankruptcy) divided by the face value of the claims at the beginning of distress. We use loss provisions as estimates for recovery rates for companies in all three banks. Loss rates, based upon provisions, are 47.26% for the bankruptcy sample versus 20.72% for out of court settlements, a statistically significant difference at the 1% level (t-stat 3.91).<sup>26</sup> In comparison with the UK, Franks and Sussman (2004) show much smaller loss rates

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<sup>25</sup> 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.

for banks (median is 0%) for similar sized companies that end up in bankruptcy; moreover these loss rates are similar to those in workouts. Differences in the two countries may be attributable to their respective bankruptcy codes.

In Table XIII 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 lead to other creditors doing so. 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 the firm's debt structure separately and as an interactive term with the change in bank debt.

In four 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. 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 also 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 the quality of borrower the more likely the firm is to restructure privately. 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 where the latter includes trade credit. This will tell us whether co-ordination problems are related to the outcome of distress. The variable on its own is not significant except in only one specification (4). We interact it with the change in

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<sup>26</sup> We have data on actual loss rates for Bank 1 and they are similar to loss rates based on provisions for the same bank: 54.31% for the bankruptcy sample and 20.25 for the out-of-court sample.

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.

These results taken together suggest that the outcome of distress is more likely to reflect the quality of the borrower than the contraction of bank lending in distress.

## **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 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 predictable 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.

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. No work has yet been able to identify the extent to which these going concerns are inefficient and relate them to particular provisions or practices. Equally important it is uncertain the extent to which these ex post inefficiencies affect ex ante incentives.

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**Table I: Creditors rights in France, Hungary, UK, and US**  
The table describes particular aspects of bank / procedures for UK

	<b>U.K.</b>	<b>France</b>	<b>U.S.</b>	<b>Hungary</b>
<b>Main procedure or code</b>	‘Administrative receivership’	‘Regime simple and general’	Chapter 11 of 1978 code	Bankruptcy
<b>Court administered</b>	No	Yes	Yes	Yes
<b>Interference in creditors’ rights</b>	Low	High	Moderate	High
<b>Debtor remains in control</b>	No	No	Yes	No
<b>Court oversight</b>	None	High	High	Low
<b>Participation by creditors in bankruptcy procedures</b>	High	Low	High	Low
<b>Who usually triggers bankruptcy</b>	Secured creditor	Debtor?	Debtor	Trade creditors
<b>Bias to inefficient going concern</b>	Low	High	Moderate	High
<b>LLSV Score on creditors’ rights (max=4)<sup>27</sup></b>	4	0	1	2

<sup>27</sup> The metric 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 paid first.

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

The table describes the characteristics of the bankruptcy code and procedures in three countries, including the degree of court oversight, the party managing the firm in bankruptcy and the remuneration scheme of that party.

	<b>Hungary</b>	<b>US</b>	<b>France</b>
Court oversight (4)	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 the sample of distressed and bankrupt firms**

Panel A describes the time series of our sample of bankrupt firms. Panel B describes their industry classification, and Panel C provides some descriptive statistics for a sub-sample, including 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 A: Time series of bankrupt and non bankrupt samples**

Year	Non-bankrupt distressed firms	Bankrupt firms
1995-1998	7	49
1999	12	4
2000	38	7
2001	69	18
2002	58	6
2003	1	0
N/a	1	1
<b>Total</b>	<b>186</b>	<b>85</b>

**Panel B: Industry classification for the sample of bankrupt and non-bankrupt firms**

Industry	No. of Companies
Agriculture	69
Manufacturing	80
Construction	19
Wholesale and retail trade	63
Hotel, restaurants, transports	31
Real estate, business activities and fin. Intermediation	13

**Panel C: Summary statistics on the age, size and profitability of the Banks' sample of distressed firms only, 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

**Table IV: Leverage and debt structure of the trustees' sample and the banks' sample of distressed firms**

Panel A describes the characteristics of 85 bankrupt firms, partitioned by outcome: going concern or immediate closure. The sample consists of 23 firms from the banks' sample and 62 from trustees. The t-stat is calculated on differences in means. Panel B provides features of the debt structure of the banks' sample 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: Descriptive statistics of the sample of bankrupt firms**

	Going concern (n=46)			Immediate sale (n= 39)			T-stat
	Mean	Median	St. dev	Mean	Median	St. dev	
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	1.31
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
Category A claims (millions of Euros)	1.89	0.73	0.48	0.24	0.01	0.07	1.57

**Panel B: Descriptive statistics of the Banks' sample of distressed firms**

	Bankruptcies			Out of court procedures			T-stat
	Mean	Median	St. dev	Mean	Median	St. dev	
Percentage of bank debt to total debt including trade credit pre-distress (%)	51.51	44.3	28.9	62.0	64.6	32.3	<b>1.94*</b>
Percentage of secured debt to total bank debt (%)	63.4	68.6	38.2	71.3	95.2	34.8	<b>-5.82***</b>
Percentage of long term debt to total bank debt (%)	44.2	41.1	43.4	60.2	75.1	42.3	<b>2.17**</b>
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 V: 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 the four criteria for inefficiency developed in the paper. Panel B reports the estimated costs of inefficiency 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
Percentage of bankrupt firms continued as a going concern by the trustee	54.12	85
Criterion 1: percentage of going concerns operated at a loss	71.74	46
Criteria 2: percentage of going concerns where loss > income from all assets	17.8	45
Criteria 3: percentage of going concerns where loss > income from assets post interim report <sup>1</sup>	43.5	46
Criterion 4: percentage of going concerns sold piecemeal and made losses	54.3	46

<sup>1</sup>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
E: taxes	112	100	150	19	9.8	2.5
F: large unsecured	3	0	52	19	0	38

**Table VI: Trustees compensation and the firm's q ratio**

In regressions (1)-(3) the dependent variable is sales proceeds as a percentage of total book value of assets run on the going concerns sample. The independent variables include fees from operation as a percentage of total fees; size measured as the log of total assets; percentage of tangible assets to total assets; industry dummies; and a liquidator dummy which takes 1 if it is a State liquidator and 0, otherwise. In regression (3) and (4) the dependent variable is a dummy that takes the value 1 if the going concern is defined as inefficient, and 0 otherwise; we use criteria 3 and criteria 4 for identifying inefficient going concerns.

<b>Dependent variable</b>	<b>Sales proceeds / total book value of assets</b>	<b>Sales proceeds / total book value of assets</b>	<b>Sales proceeds / total book value of assets</b>	<b>Dummy for inefficient going concerns defined by Criteria 3</b>	<b>Dummy for inefficient going concerns defined by Criteria 4</b>
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>
<b>Independent variables:</b>					
Fees from operation as a % of total fees		-0.35* (-1.88)	-0.36** (-1.92)	1.56** (2.12)	1.61** (1.95)
Size (ln assets)	-0.04 (-1.03)	-0.03 (-0.87)	-0.04 (-1.04)	-0.15 (-0.88)	0.22 (0.04)
% tangible assets	0.14 (0.38)	0.002 (0.01)	0.02 (0.6)	-0.31 (-0.89)	-0.48 (-1.55)
Industry	-0.26 (-1.23)	-0.26 (-1.36)	-0.41 (-1.65)	0.27 (0.47)	0.04 (0.31)
1.Industry	-0.27 (-2.05)	-0.42** (-2.18)	-0.38** (-2.19)	1.28* (2.03)	1.87** (2.22)
2.Services			0.3 (1.27)		
State liquidator =1, private = 0					
Constant	1.49 (1.5)	1.38 (1.53)	1.87** (2.18)	0.5* (1.59)	-0.59 (-0.17)
Number of observations	42	42	42	35	35
R-squared	0.13	0.20	0.26	0.16	0.26

**Table VII: The incidence of inefficient going concerns partitioned by the trustee in the bankruptcy sample**

Panel A provides statistics on the size of the company's assets, proceeds of bankruptcy, and fees to the trustee. Panel B reports the incidence of inefficient going concerns using four metrics for the State and private trustees sub-sample.

**Panel A: Size characteristics**

Size of:	State Trustee (n=46)			Private Trustee (n=39)			T-stat
	Mean	Median	St. dev	Mean	Median	St. dev	
Assets (in million of Euros)	4.07	1.03	0.89	1.79	0.568	1.49	5.48
Proceeds (in million of Euros)	0.97	0.14	2.31	0.163	0.06	0.243	11.83
Fees (in millions of Euros)	0.186	0.025	0.416	0.03	0.013	0.053	18.38
Fees as a percentage of proceeds	0.27	0.1	0.38	0.51	0.17	0.89	-1.78

**Panel B: 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		
Criterion 1: making losses	65.2	78.2
Criterion 2: losses > all income from asset sales	8.7	26
Criterion 3: losses > income from asset sale after year) <sup>1</sup>	39.1	47.8
Criterion 4: (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.

**Table VIII: Trustee's rent and costs of inefficient going concerns in the bankrupt sample**

Table describes the rents earned by trustees and the costs to pre-bankruptcy creditors arising from the going concern bias. The trustee's 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.

	<b>State trustee</b>	<b>All private trustees</b>
Trustee's rent (in millions of Euros)	0.132 (0.0204)	0.019 (0.005)
Costs of inefficiency using criterion 3 (in millions of Euros)	0.528 (0.092)	0.298 (0.077)
Costs of inefficiency using criterion 4 (in millions of Euros)	1.125 (0.108)	0.326 (0.083)
Ratio of costs of inefficiency (using criterion 3) to the trustee's rent: medians	4.5	16.6
Ratio of costs of inefficiency (using criterion 4) to the trustee's rent: medians	5.3	18.1

**Table IX: Division of bankruptcy proceeds and loss rates for different classes of creditors for 86 bankrupt firms**

Panel A shows the division of bankruptcy proceeds between pre and post-bankruptcy creditors for the sub-sample of going concerns and immediate closure. Panel B reports loss rates for each category of creditors for the same sub-samples. Loss rates are defined as one minus the undiscounted amount recovered divided by the face value of the claim at the start of bankruptcy.

**Panel A: Division of proceeds for each category of creditors in bankruptcy partitioned by going concern and immediate closure**

	Going concern (n=46)			Immediate closure (n=39)		
	Mean	Median	St. dev.	Mean	Median	St. dev.
A: Claims of creditors during bankruptcy <sup>1</sup>	78.87	91.74	24.99	59.96	63.08	29.36
B: Secured creditors	6.20	0.00	13.62	18.18	0.00	27.94
C: Pension liabilities	0.71	0.00	4.20	0.34	0.00	1.41
D: Small trade creditors	3.34	0.00	10.90	2.54	0.00	9.02
E: Tax / s.s. arrears	8.43	0.00	14.43	11.88	0.00	21.28
F: Large trade creditors	2.12	0.00	7.48	5.53	0.00	20.63
G: Arrears of interest payments	0.34	0.00	1.31	1.57	0.00	6.67
Total	100.00			100.00		

<sup>1</sup>Category A contains all post-bankruptcy claims (trade creditors, wages, legal costs and fees)

**Panel B: Loss rates for each category of creditors in bankruptcy partitioned by going concern and immediate closure**

	Going concern			Immediate closure		
	Mean	Median	Weight of claim as a % of total claims	Mean	Median	Weight of claim as a % of total claims
A: Claims of creditors during bankruptcy <sup>1</sup>	5.56	0.00	41.05	4.53	0.00	18.48
Category A: Trade creditors	0.00	0.00	22.08	0.00	0.00	0.57
B: Secured creditors	50.30	57.11	7.32	56.05	67.34	14.67
C: Pension liabilities	33.34	0.02	0.30	59.43	78.29	0.34
D: Small trade creditors	64.93	100.00	1.72	52.09	34.94	2.68
E: Tax / s.s. arrears	74.85	100.00	22.56	78.84	100.00	24.58
F: Large trade creditors	85.47	100.00	15.04	87.93	100.00	21.56
G: Arrears of interest payments	90.49	100.00	12.02	94.15	100.00	18.18

**Table X: Does the initiator of bankruptcy matter?**

The table reports the proportion of firms that are identified as inefficient by our four metrics 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.

<b>Bankruptcy initiated by:</b>	<b>Owner + Trade creditor</b>	<b>Bank + State</b>
Number	32	15
Criterion 1: Proportion of sample making a loss	78.1	53.3
Criterion 2: percentage of cases where loss > income from sales of all assets.	25.00	0.00
Criterion 3: percentage where loss from operations > income from assets post interim report <sup>1</sup>	53.1	26.6
Criterion 4: 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 XI: The determinants of inefficient going concerns**

In regressions (1)-(3) the dependent variable is a dummy which equals 1 if the going concern is inefficient using metric 4. The independent variables include a dummy for the trustee, taking 1 if it is a State trustee and 0 otherwise; initiator dummy which takes 1 if the initiator is an 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. In regression (4)-(6) the dependent variable is a dummy that takes 1 for inefficient going concerns and zero for efficient going concerns and immediate closures.

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

<b>Regression</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
Independent Variables:						
Constant	-0.045 (-0.93)	-3.6 (-1.08)	-3.2* (-1.84)	-6.37** (-2.37)	-6.7** (-2.1)	1.6 (0.44)
Dummy for state trustee	-0.78* (-1.68)	-0.9* (-1.8)	-1.13** (-1.96)	-0.75** (-2.00)	-0.76** (2.00)	-0.82*** (2.8)
Initiator dummy	1.36*** (2.85)	1.33*** (2.77)	1.19** (2.37)	1.01** (2.63)	1.01** (2.46)	1.05* (1.87)
Ln (total assets)	0.14 (0.89)	0.14 (0.91)	0.02 (0.14)	0.28** (2.57)	0.27* (1.89)	0.09 (0.51)
Percentage of tangible assets to total assets		-0.59** (-1.93)	-0.86** (-2.17)	-0.11 (1.09)	-0.12 (-1.11)	-0.09 (-0.61)
Total pre-bankruptcy claims to total assets			-0.2 (-0.97)		-0.02 (-0.26)	-0.16 (-1.48)
Time						0.005 (0.72)
Pseudo R-squared	0.19	0.25	0.27	0.14	0.15	0.18
Number of observations	37	37	37	60	60	44

**Table XII: Change in bank debt and trade credit pre-distress and during the period of distress and estimated loan loss rates for the banks' sample of distressed firms. (mean, median, standard deviation and number of observations).**

In Panel A we describe changes in bank debt pre- and during distress.

In Panel B, loss rates are defined as one minus the undiscounted amount recovered during the period of distress (and bankruptcy) divided by the face value of the claims at the beginning of distress.

**Panel A: Change in bank debt pre-distress and during distress**

Percentage change in main bank debt:	All bankrupt firms			All non-bankrupt firms			T-stat
	Mean	Median	St .dev	Mean	Median	St. dev	
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	<b>3.07</b>

**Panel B: Loss provisions and actual loss rates for bankrupt cases**

	All bankrupt firms (n=81)			All non-bankrupt firms (n=109)			T-stat
	Mean	Median	St. dev	Mean	Median	St. dev	
Loss rates based upon provisions (in percentage)	47.26	43.79	37.5	20.72	5.56	31.74	<b>5.81</b>

**Table XIII: 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

Regression	(1)	(2)	(3)	(4)	(5)
Independent Variables:					
Constant	-0.7 (-0.41)	0.13 (0.08)	0.23 (0.13)	0.99 (0.52)	0.86 (0.37)
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)		-0.09 (-0.24)	-0.07 (-0.17)	-0.07 (-0.18)	-0.15 (-0.33)
Tourism (n=26)		-0.03 (-0.05)	-0.01 (-0.02)	0.06 (0.14)	0.03 (0.05)
Construction (n=11)		-2.24 (-1.96)	-2.16 (-1.86)	-1.9 (-1.67)	-0.89 (-1.54)
Wholesale and retail trade (n=51)		-0.29 (-0.82)	-0.3 (-0.86)	-0.38 (-1.01)	-0.27 (-0.67)
Pseudo R-square	0.17	0.20	0.21	0.234	0.27
Number of observations	98	98	98	98	98

