A Study of Bankruptcy Costs and the Allocation of Control

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Abstract

This paper studies how the allocation of control rights in bankruptcy influences outcomes. Using Hungarian data, we find that the large majority of bankrupt firms in our sample are maintained as going concerns despite the fact that these firms generate large operating losses and low recovery rates for pre-bankruptcy creditors. We trace the bias to the allocation of control rights between secured and unsecured creditors and the compensation scheme of the agent managing the bankruptcy process. Our findings shed light on a very important bankruptcy design question: how particular provisions of the bankruptcy code affect the costs of bankruptcy and the size of the pie available to pre-bankruptcy creditors.
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1. Introduction

This paper provides one of the few studies measuring a potential 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 relate particular provisions of the bankruptcy code to observed outcomes in bankruptcy. We examine three features of the bankruptcy code: (1) lack of control by secured creditors over the proceedings, (2) the compensation scheme for the court-appointed trustee, and (3) the potential advantages derived by trade creditors from supplying the firm when it is maintained as a going concern in bankruptcy. We argue that these features lead to a going concern bias which significantly increases the costs of bankruptcy and lowers the recovery rates of pre-bankruptcy creditors. Hungary provides an example of a code with minimum court involvement, but curtailed control rights for secured creditors. This paper suggests that in this setting, the incentives given to trustees have a very significant impact on the outcomes in bankruptcy.

The design of adequate bankruptcy institutions is increasingly part of the policy agenda of many countries as well as of international financial institutions. Our findings shed light on a very important bankruptcy design question: how the allocation of control rights between secured and unsecured creditors, and the role of the agent managing the bankrupt firm, affects the size of the pie available to creditors in bankruptcy. The empirical evidence on these issues is sparse, and even then, indirect. One exception is Djankov, Hart, McLiesh and Shleifer (2008), who measure the size of inefficiency of different bankruptcy codes using a hypothetical investment and insolvency situation presented in the form of a template to lawyers in a large sample of countries. They use three indicators of inefficiency: costs of bankruptcy, length of bankruptcy procedures and percentage of inefficient outcomes. It is the only paper we are aware of that analyzes how particular structural characteristics of debt enforcement influence costs and efficiency. Our paper can be considered as a clinical study of one particular country that, by using real data on distressed firms, provides a more precise assessment of the contribution of particular provisions of the bankruptcy code to bankruptcy costs and losses to pre-bankruptcy creditors. This is particularly important because Djankov et al. use as their example a financially distressed firm (hotel) that generates enough revenue to cover operating costs in bankruptcy and therefore there is no loss from maintaining the bankrupt firm as a going concern. Whereas Djankov et al. do not come to any conclusion as to the precise role of the agent managing the bankrupt firm (trustee in Hungary and administrator in other countries), we provide direct evidence on how the relationship between creditors and the trustee can affect the outcomes of bankruptcy.[1]

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[1] Jostarndt and Sautner (2010) discuss the role of the trustee in their study of distressed companies in Germany.

Our paper uses a sample of 120 bankruptcies to measure the costs of immediate closures and going concern bankruptcies and the recovery rates of different creditor classes. We find that for Hungary going concerns result in higher bankruptcy costs than immediate closures. These higher costs are not associated with larger revenues for assets sold in bankruptcy; hence, the Loss Given Defaults (LGDs) are higher for pre-bankruptcy creditors in going concern bankruptcies. We also find that costs and LGDs are significantly affected by the choice of trustee. When the trustee is from a State-owned firm, the going concern is less likely to deplete creditor claims than when the trustee is from a private firm. At the same time, we observe higher costs and lower recoveries for pre-bankruptcy creditors when the initiator is a junior creditor. We believe this result can be explained by the compensation scheme of the trustee, and the weak rights accorded to secured creditors to make the trustee act in their interests in bankruptcy.

We report three main results. First, we estimate the direct and indirect costs of going concerns. Our direct cost estimates include administrative costs, liquidation costs (transaction costs for the sale of assets, and costs of closing the firm) and trustees' fees. We find that the median direct costs as a percentage of pre-filing assets are 22% for going concern bankruptcies and 25% for 'immediate' closures. These costs are high when compared with those reported for the UK at 18.1% and for Sweden at 4.5% (Franks and Sussman (2005), Thorburn (2000), respectively). The costs for the UK include any net operating losses from the going concern, but these are infrequent and small because the potential for legal liability makes it difficult for the agent supervising bankruptcy procedures to incur losses from the going concern. The low costs in Sweden are the result of a speedy auction of the firm that is completed, on average, within 2 months of filing for bankruptcy.[2] For the US, Bris et al. (2006) report median costs of 2.5% for Chapter 11 and 1.9% for Chapter 7 liquidations. The means are substantially higher at 8.1% and 16.9%, respectively, reflecting the greater costs of a small number of companies.

We also measure the indirect costs of bankruptcy, which we define as net operating losses from maintaining the firm as a going concern. The net operating losses are calculated as the difference between operating revenues and operating costs. The intuition behind this measure is that the indirect cost measured in the bankrupt firm's operating losses/profits would have been avoided if the company had been immediately closed and offered for sale. We find that median operating losses amount to 18% of pre-filing assets. Furthermore, 80% of the going concern bankruptcies are eventually sold piecemeal by the trustee at the end of the period of bankruptcy.

Thus, one of the primary differences between bankruptcy costs in Hungary and those of the US, UK and Sweden is that in Hungary the trustee frequently operates the firm during bankruptcy at a substantial loss and those losses are almost as large as direct costs.

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[2]Both the UK and Swedish studies have firms with comparable sizes to those in our Hungarian sample.

Second, we argue that one reason for the high costs might be the structure of the compensation scheme for trustees. The trustee's remuneration scheme is outlined in the Bankruptcy Act and is based both on a fixed percentage of (gross) operating revenues accruing during bankruptcy and a fixed percentage of the income from asset sales. When expected operating revenues are considerably larger than the potential income from asset sales, the compensation scheme creates incentives to operate the firm as a going concern. This occurs even when the losses deplete a large part of the income available to pre-bankruptcy creditors from the bankruptcy proceedings. This incentive scheme, however, is less likely to affect the decisions of trustees employed by the State than those privately contracted, as State employees are salaried and their internal promotions are not directly related to the income they generate from bankrupcies.

The main concern in measuring the impact of the trustee type (private versus State) on outcomes (costs and LGDs) in bankruptcy is that the same unobservable factors that influence our outcome variables might also determine the choice of the trustee by the judge. Hence, to address this endogeneity problem we use an instrumental variable approach. We use as an instrument for the trustee choice the political leaning of the municipal government where the bankrupt firm is located. The idea is that in localities with a socialist mayor we are more likely to observe a State trustee, while in localities with a right-wing mayor bankrupt companies are more likely to be supervised by private trustees.

We show that, after controlling for firm quality, industry and macro effects, bankruptcy costs and LGDs are statistically significantly higher for pre-bankruptcy creditors in bankruptcies managed by private trustees compared with those managed by State trustees. Bankruptcy costs as a percentage of total pre-filing assets are 20-25% higher, and Loss Given Defaults (LGDs) for pre-bankruptcy creditors are around 16-20% larger when the bankrupt firm is managed by a private trustee.

Third, we find that going concerns administered at a loss are more likely to be precipitated by junior creditors e.g., trade creditors rather than senior creditors such as a bank. This seems puzzling because junior creditors usually wish to delay bankruptcy proceedings, since they will receive little recovery in such proceedings. The compensation scheme makes the incentives of the private trustee aligned with the junior claimants, the owner and trade creditors. Given that bankrupt companies might be run as a going concern for a significant period and that payments to creditors arising from the going concern bankruptcy are treated as priority claims, it is in the interests of trade creditors to precipitate bankruptcy if they expect to continue to supply goods to the going concern. We find that when the initiator of bankruptcy is an owner or trade creditor, the average total bankruptcy costs as a percentage of pre-filing assets are approximately 14% higher than those triggered by a bank or tax authority. Similarly, LGDs to pre-bankruptcy creditors are 17% larger in trade creditor/owner initiated bankruptcies.

Our paper is related to the literature that examines a potential bias in favor of the going concern in bankruptcy codes. The evidence is based largely upon Chapter 11 of the US Bankruptcy Code.[3] Two papers closest to ours are Weiss and Wruck (1998) and Bris, Welch and Zhu (2006). Weiss and Wruck provide a clinical study that examines the Chapter 11 bankruptcy of Eastern Airlines. They find strong evidence that Chapter 11 of the US bankruptcy code can severely deplete the value of pre-bankruptcy claims as a result of the going concern bias. Bris, Welch and Zhu (2006) use a large sample of bankruptcies to compare the direct and indirect costs of Chapter 7 liquidations and Chapter 11 going concerns. They show that while direct costs are similar for the two procedures, Chapter 11 preserves assets better than Chapter 7, thereby producing higher recovery rates for creditors.

Other studies have looked at how particular features of Chapter 11 may affect the value of the firm in bankruptcy. Dahiya, John, Puri and Ramirez (2003) analyze debtor-in-possession financing (DIP) for firms in Chapter 11 and find little evidence that it leads to systematic over-investment, while it is likely to lead to a more successful emergence from bankruptcy. Carapeto (2003) examines the same issue and finds, like Dahiya et al., that DIP financing leads to a higher probability of successful emergence from Chapter 11 as well as higher recovery rates for creditors. However, she also finds that where DIP financing is secured on assets that have a pre-existing lien, there are lower recovery rates and also value destruction. Thus, DIP financing only increases value when it does not dilute the collateral of existing creditors' claims.

Our paper provides a new piece of evidence on how the allocation of control rights between secured and unsecured creditors can affect the outcomes in bankruptcy.

In Section 2 we describe the Hungarian bankruptcy procedures and compare the role of the trustee in bankruptcy with other countries. In Section 3 we present the data and outline the main hypotheses. In Section 4 we present our results, and in Section 5 we compare the costs of bankruptcy and LGDs in Hungary with those of other countries focusing on the question of how the role of the trustee might explain differences in outcomes. Section 6 concludes.

2. Hungarian Bankruptcy Procedures and Practices

In this section we first describe the Hungarian code and its procedures and discuss how control rights are allocated in bankruptcy. Thereafter we compare the Hungarian procedures with those

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[3]Whereas much of the theoretical literature focuses on the issue of ex ante efficiency, the empirical literature emphasizes measures of ex-post efficiency. The theoretical literature includes Povel (1999) who considers the trade-off between creditor- and debtor-friendly bankruptcy procedures. Bernhardt and Nosal (2004) show how ex ante incentives can be improved by court-administered bankruptcy procedures where the judge makes the decision to liquidate. Other papers include Ayotte and Yung (2004), Berkovitch and Israel (1999), and Von Thadden, Berglof and Roland (2003).

of the US, UK, Germany and Sweden, focusing particularly on the role of the agent managing the bankruptcy.

2.1 The Hungarian Bankruptcy Code

The Hungarian bankruptcy code has two bankruptcy procedures: liquidation and composition. Our sample focuses only on the liquidation procedure. Compositions which involve more complex going concern procedures are rare and only used for very large firms which are not the focus of this analysis. The procedure called 'liquidation' allows both for immediate closure and for a going concern bankruptcy. Thus, it can be described as allowing for both Chapter 7 liquidations and Chapter 11 reorganizations. One important difference between the Hungarian and US bankruptcy code is that when the firm is placed in the 'liquidation procedure' it is the trustee who decides whether to operate the bankrupt firm as a going concern or close it. Whenever we refer to bankruptcy throughout the paper 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. In bankruptcy, the court appoints a trustee from an approved list, without consulting the creditors or the debtor. The trustee has a significant 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. However, an immediate closure does not necessarily mean immediate sale. The law does not impose a time limit on the sale of assets. In fact, the average time spent in bankruptcy for those firms subject to immediate closure is 3.65 years (median: 2.8 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 the trustee post-bankruptcy (category A claims) have priority over all pre-bankruptcy claims, subject to the provision that for secured loans, at least 50% of the proceeds of sale of the asset must be paid to the holder of the collateral.[4] Post-bankruptcy claims include legal fees and costs of the trustee, payments to suppliers in bankruptcy in the case of a going concern, wages, and some social security payments.[5]

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[4]This provision, introduced in 1997, applies only if the collateral was in place for at least one year prior to bankruptcy. Even though secured lender rights are highly diluted in bankruptcy, they are not powerless during distress, i.e., pre-bankruptcy. When default occurs, they may force the sale of their collateral through a formal procedure called executorship, providing bankruptcy has not been initiated. However, bankruptcy procedures freeze all attempts by the bank or its executor to sell collateral. The potential significant dilution of secured creditors' claims emphasizes the role of judicial oversight and expertise (see Ayotte and Yung (2004)).

[5]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 and social security, (f) Unsecured claims, and (g) Arrears of interest.

There is a 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 owed and the list of assets available for sale. It is also the venue where creditors can form a 'creditors' committee'. A creditors' committee must represent a minimum of a third by value of pre-bankruptcy claims. If such a committee is formed, it can overrule a trustee's decision to operate a company as a going concern.

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. There are two main reasons for their absence in the Hungarian sample. First, 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. Second, there are no adequate rules for the composition of such committees or provisions for the resolution of disputes between creditors, either in statute or case law. Similarly in Chapter 11, Morrison and Edward (2007) find that those companies with debt of less than $2 million have creditors' committees in 3% of cases.

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 once a year, although some judges require semi-annual reporting. Statute gives judges little discretion to intervene, unless a creditors' committee is formed and there is a dispute among them. The lack of discretion is also reflected in their workload: a judge located in Budapest handles on average 300 cases per year.

The discretion awarded to trustees raises important issues about their incentives to manage the process fairly and efficiently. Trustees' remuneration is based on 2% of operating revenues (if the bankrupt firm is operated as a going concern) and 5% of asset sales. In our sample period there was one State owned reorganization company (REORG Rt) and 95 private liquidation companies. For a private trustee this remuneration scheme has a direct impact on his income, whereas for the State trustee there is no direct impact, since the latter is salaried. Salary and promotion in the case of the State trustee is only a function of age and experience.

2.2 Comparison of Hungary with Other Jurisdictions

In Table I, we outline some of the principal characteristics of the trustee or administrator by country. The purpose of this table is to show how the trustees' actions or decisions are influenced by the legal rules that govern their appointment, and their responsibilities to different groups of creditors. We shall refer to the agent managing the bankruptcy as the 'trustee' or the

'administrator', depending on the name given by the jurisdiction. For example, the UK and Germany use the term 'administrator' while Hungary, the US (in Chapter 7) and Sweden use the description 'trustee'.

[Insert Table I]

We examine how the trustee is appointed, who he reports to and the extent of creditor control. In Hungary, the court appoints the trustee without any reference to creditors. The trustee reports to the court, usually on an annual basis. Secured creditors have no vote on the decision whether to close or retain a firm as a going concern. While a creditors committee could challenge the trustee's decisions, they are rare. The result is that the secured creditors have far fewer control rights than in other jurisdictions.

In contrast, in the UK, the secured creditor appoints the administrator, and unsecured creditors play little role in the bankruptcy process. This is important because the secured creditor's decision of who to appoint will depend on the perception of how well the administrator has protected the secured creditors' interests in past bankruptcies. This will likely affect the way the administrator manages the bankrupt company. For example, he will wish to maximise recovery rates for the secured creditors and at the same time minimize any losses from a going concern. These incentives may result in under-investment or premature liquidation when there is a conflict between maximising the value of the enterprise and the value of the secured creditors claims.

In Germany, until recently, the court appointed the administrator as in Hungary. However, unlike in Hungary, the administrator reports both to the court and the creditors. Braun (2006) describes the duties of the German administrator. If in doubt, the administrator must seek the agreement of the creditors and report to the creditors' assembly or a creditors' committee, for a specific course of action. This prevents him from keeping the firm as a going concern if this would reduce the recovery rates of creditors. The administrator's actions are also limited by the rights of German creditors to monitor. The creditors' committee has similar powers to a German corporate supervisory board in their rights to question the administrator.

In Sweden, the trustee is appointed by the court, although the party filing the bankruptcy petition may suggest a particular trustee. Trustees are required by law to dispose of the bankrupt firm's assets in the swiftest and most beneficial way for creditors. The trustee may take 'special care' to promote employment if this can be done 'without appreciable loss to creditors' (see Stromberg (2000, page 2646). Most importantly, they are required by law to complete the sale of assets within one year unless given special permission by the court. During this time they may maintain the firm as a going concern or close it prior to auction. Since the trustee cannot raise supra priority finance, quick sales of going concerns are encouraged. Trustee compensation and

performance are reviewed by a special government agency, so as to limit any potential misbehavior by the trustee towards creditors.[6]

In the US, in Chapter 7 the court appoints an interim trustee to oversee the liquidation of the bankrupt firms' assets. The firm is closed prior to its sale. At the first meeting, the creditors elect a permanent trustee, which is usually the interim trustee. During the bankruptcy, the trustee gathers the firm's assets, decides on the method of selling the asset, and distributes the proceeds to creditors according to the priority of claims, outlined in the bankruptcy code. The trustee reports to the court at the end of the process.

An important legal characteristic that affects the incentives of the trustee is his legal liability. In Hungary there is legal liability for the trustee, capped at 200,000 Euros. However, because the legal duties of the trustee are not prescribed in detail and there are no creditors' committees, we find a complete absence of lawsuits by creditors. In contrast, in Germany, as described by Jostarndt and Sautner (2010), the administrator is liable in the event of negligence and this will affect his incentives to maintain the business as a going concern if there is the possibility of losses (see also Sections 55-56 of Braun (2006)). In the UK, there is a personal liability for losses if expenditures by the administrator reduce the value of the firm (see Sections 8-12 to 8-14, in Lightman and Moss (1994)).

In the last column of Table I, we describe the compensation of the trustee. In Hungary, compensation is based on the proceeds of asset sales and revenue from operations; but not profits. In Germany and the UK, trustees are almost always rewarded on a time basis. This does not seem to extend greatly the duration of the procedure, most likely because of significant creditor control and in the case of the UK by the secured creditors' right to appoint the administrator. The situation is the same in Sweden. Compensation is on a time basis, but the trustee also faces a legal time limit to sell the assets.

For Chapter 7 of the US code, the trustee's compensation is based on the amount of assets sold which provides strong incentives for the trustee to maximize bankruptcy proceeds. However, unlike in Hungary, the trustee in Chapter 7 will not maintain the firm as a going concern. Trustees can be appointed in Chapter 11, however, the trustee appointment is made only in special circumstances, for example where fraud is suspected.

Thus, the crucial aspects that affect how the trustee supervises the bankrupt firm are its fiduciary duty to creditors, the balance between secured and unsecured creditors, and the degree to which the law allows creditor monitoring and control of the trustee/administrator during bankruptcy.

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[6] See Stromberg (2000) and Thorburn (2000).

3. Data and Hypotheses

3.1 Data Description

Table II provides summary information for our sample of 120 bankrupt firms that were placed under bankruptcy procedures in the period 1995-2002. The data is collected from the State reorganization company, the records of two bankruptcy courts in Budapest and from the workout departments of the three largest commercial banks in Hungary.[7] The most important selection criterion for inclusion in our sample was that the bankrupt company had to have a positive amount of pre-filing assets upon the inception of bankruptcy. Approximately 4-5% of bankrupt companies fall into this category.

The data is based on confidential liquidation reports of trustees to the courts: trustees are required by law to submit an interim report to the judge after the first year of bankruptcy, and a final report. The same reports are also sent to the creditors of the bankrupt firm. The reports 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, (v) administrative costs of the bankruptcy, including court and legal fees, (vi) costs relating specifically to the closure and sale of the business (called 'the liquidation costs'), and (vii) the division of proceeds among the different creditors. These data allow us to calculate recovery rates for different creditor classes and the division of proceeds between pre- and post-bankruptcy claims.

[Insert Table II]

In Table II we describe the characteristics of firms that end up in bankruptcy, partitioned into three groups: (1) those preserved as a going concern and subsequently sold as a going concern, (2) those preserved as a going concern and eventually closed and sold piecemeal, and (3) those that are closed immediately and subsequently sold. Firms that are immediately closed are not necessarily sold quickly; the median time firms spend in bankruptcy is 2.8 years compared with 4.15 years for going concerns. We get some idea of why the period of time taken is so long from the trustee's report describing the proportion of assets sold in the first year. For the median firm that is immediately closed and sold piecemeal, only 10% of the total is sold in the first year, indicating a slow rate of disposals. It is higher for going concerns: 24% for those that are eventually liquidated and 44% for those that are eventually sold as going concerns. The last category accounts for only 20% of going concerns.

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[7] We have 29 private trustees in the sample.

Going concerns that end up in a piecemeal sale do not seem to be very different from those sold as going concerns. The only statistically significant difference between them appears to be in terms of the amount of assets sold in the first year. When describing Table II, we focus on comparing the immediate closure sample with the sample of going concerns that are eventually piecemeal liquidated.

Table II shows that companies retained as a going concern are significantly larger than those closed and put up for 'immediate sale'. The median firm in the going concern has on average about 3 times as many employees as the median firm that is immediately closed and sold, 77 versus 29; it has about 3-4 times as many claims on entering bankruptcy. The finding that smaller firms tend to be closed while larger firms tend to be operated as a going concern in bankruptcy is not surprising: operating a firm entails some fixed costs which require a minimum level of assets and cash flow. Similarly, employment concerns might make it more likely that larger firms are operated as a going concern in bankruptcy.[8]

Firms immediately closed in bankruptcy have much higher leverage on entering bankruptcy than those kept as a going concern, with a median leverage of 197%, versus 135%.[9]

Firms that are kept as a going concern in bankruptcy but eventually sold piecemeal generate a significant amount of post-bankruptcy claims: the median is 0.75 million Euros, compared with pre-bankruptcy debt of 1.80 million Euros. These new claims are classified as Category A claims and have the highest priority when it comes to distributing the proceeds of bankruptcy; they are equivalent to supra-priority claims in Chapter 11. In contrast, few new claims are contracted in cases where firms are immediately closed (median 0.03 million Euros). Although unreported in the table, there is a larger representation of manufacturing firms in the immediate closure sample and a lower representation of firms involved in commerce and services.

3.2 Hypotheses

We argued earlier that trustees have a great amount of discretion in managing the firm in bankruptcy. Trustees are compensated on the basis of assets sold and the operating revenues of the firm. In particular, trustees receive 5% of the income from asset sales and 2% of the gross operating revenues that are generated if the company is maintained as a going concern in

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[8] Bris et al. (2006) also find that the median firm entering Chapter 11 is approximately 10 times as large as the median firm entering Chapter 7. The difference in means is even larger.

[9] For a sample of 60 firms that entered bankruptcy, the median reported leverage ratio (debt/total assets) in the year prior to bankruptcy was 77.6%, which is close to that reported by Davydenko and Franks (2008) for a sample of small to medium sized firms in France, Germany and the UK of 63%, 79% and 66%, respectively.

bankruptcy. As described earlier, the compensation scheme directly affects the income of the private trustee, but not that of the State trustee.

The remuneration scheme provides significant incentives for the private 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 will be mitigated by any expected decline in asset values that result from operating the firm. A decline in asset value reduces the trustee's income from future asset sales and therefore offsets the fees from operating revenues.

At the same time, a State trustee might give more weight to employment considerations than the private trustee, which would encourage the State trustee to preserve a business as a going concern. Hence it is not clear a priori whether the incentives to keep the firm operating are greater for a private or a State trustee. The question is, 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?[10]

Hypothesis 1: Bankruptcy costs and LGDs for pre-bankruptcy creditors are expected to be higher for the private trustee than for the State trustee since the former directly benefits from the remuneration scheme and the latter does not.

We test this hypothesis by relating the different categories of bankruptcy costs and recovery rates for pre-bankruptcy creditors to the type of trustee. Ceteris paribus, we expect to find higher costs and lower recovery rates in bankruptcies managed by a private trustee if the incentive pay structure leads to (more) biased decisions.

Our second hypothesis concerns the relation between bankruptcy outcomes and the party triggering bankruptcy. We argue that the incentives of the trustee to keep a firm as a going concern are aligned with those of trade creditors and/or owners. Why might a trade creditor prefer the distressed firm to be in bankruptcy? First, outside bankruptcy the firm may contract heavily, reducing sales turnover and thereby the suppliers' income. Thus, the firm may produce more in bankruptcy as a going concern than if the firm stayed out of bankruptcy. Second, any new trade credit out of bankruptcy continues to be treated as junior unsecured claims, and is unlikely to be repaid; whereas in a going-concern bankruptcy, new trade credit will have the highest priority in the distribution of proceeds i.e., Category A. Thus, provided that a pre-bankruptcy supplier expects to continue supplying the firm in bankruptcy, it may be better off if the firm is in bankruptcy than if the distressed firm continued 'limping along' outside

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[10] State trustees do not face different legal liabilities from private trustees. For example, they are not protected by any form of legal immunity that might alter their incentives.

bankruptcy. Owners may also wish to see continuation, since they may retain an opportunity to purchase the firm when it is eventually sold.

In contrast to trade creditors, 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 potentially diluted by claims contracted during bankruptcy if the net present value of the going concern is negative. The objectives are of the State, i.e., tax authorities, are less obvious: to maximize tax proceeds, or maintain employment albeit by preserving inefficient going concerns?

Hypothesis 2: Bankruptcy costs and LGDs for pre-bankruptcy creditors depend upon the party triggering bankruptcy. We expect higher costs if it is a trade creditor or owner compared with a bank or the tax authorities.

4. Results

In this section we describe the results on both the direct and indirect costs of bankruptcy, and the extent to which these costs deplete pre-bankruptcy creditors' recovery rates. We also analyze how these outcomes are affected by the type of trustee and the particular creditor precipitating bankruptcy.

4.1 Bankruptcy Costs

We examine three different categories of bankruptcy costs: administrative, liquidation and going concern costs. In addition to these costs, we report separately fees to the trustee. Administrative costs include court fees, experts' fees, documentation costs and book keeping fees. Liquidation costs relate to the costs of closing the firm, including redundancy payments, transaction costs of the sale of assets[11], and cleaning up the site for environmental damage. We define direct costs as the sum of administrative costs, liquidation costs and trustee fees.

Going concern costs are considered as a measure of indirect costs. They are defined as costs of operating the company net of operating revenues during bankruptcy; in effect an operating loss (or profit). Going concern costs include wages, costs of goods supplied by trade creditors, social security contributions and associated taxes. The intuition behind this is that the indirect cost measured in the bankrupt firm's operating losses/profits would have been avoided if the company had been immediately closed and offered for sale.

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[11] This cost is the pure administrative cost of selling the asset, and cannot be interpreted as a fire sale cost. As the average time spent in bankruptcy is 3.65 years even for firms that are immediately closed, the trustee does not seem to be pressured to dispose of the assets quickly at fire sale prices.

4.2 Determinant of Type of Reorganization

In Table III we present regression results for the determinants of the two outcomes of bankruptcy: going concern versus immediate closure. We find that larger firms are more likely to be kept as a going concern, using two measures for firm size: the log of pre-filing assets and the log of pre-bankruptcy debt. Firms are less likely to be kept as going concerns if they are located in the capital, Budapest, and have a higher percentage of secured debt. The negative sign of the 'Budapest' dummy can be interpreted as indicating that greater opportunities for displaced employees are available in Budapest than elsewhere and therefore they allow trustees more discretion to close firms.

[Insert Table III]

The going concern decision of the trustee might be affected by the specificity/illiquidity of the firm assets and industry conditions (Shleifer and Vishny (1992)). We measure asset specificity by the book value of machinery and equipment at the beginning of bankruptcy over total pre-filing assets (Berger, Ofek and Swary (1996)), and denote it in the regressions by "percentage of specific assets". While firms with a higher percentage of specific assets are more likely to be kept as a going concern, the coefficient of this variable is not significant.

Industry distress can have the effect of both reducing operating revenues and income from asset sales; the former discourages a going concern, the latter encourages one. The negative coefficient on 'industry distress' suggests that the former effect dominates the latter, encouraging the trustee to close the firm rather than operate it as a going concern. The coefficient of the unemployment variable has a positive sign, indicating that with higher unemployment in the region, the firm is more likely to be operated as a going concern, although the coefficient is not significant.

In regressions (2) and (3), we control for the type of trustee. In regression (3) we instrument for the trustee by using the political affiliation of the mayor of the town where the bankrupt firm is located; we discuss this further in Section 4.5. The sign of the trustee variable is negative and significant, suggesting that when a State trustee is appointed, a going concern bankruptcy is less likely once we control for firm, industry and general economic conditions.

4.3 Description of the Direct and Indirect Costs of Bankruptcy

In Table IV we describe the direct and indirect costs of bankruptcy by the type of reorganization. These costs are partitioned by the eventual outcome of the going concern, either piecemeal sale or sale as a going concern. The size of the sample of going concerns followed by eventual liquidation is much larger than the sample of going concerns followed by an eventual sale as a

going concern. According to both Tables II and IV there are few differences between these two samples. Hence, in the subsequent analysis we do not distinguish between them.

Table IV reports the costs of bankruptcy as a percentage of pre-filing assets. The average direct costs are higher for immediate closure than for going concerns, 42% (median 25%) versus 36% (median 22%), although the differences are not statistically significant. The difference is mainly due to higher administrative costs for immediate closures, which are 10% compared with only 3% for going concerns. Because these costs have a fixed component, it is not surprising that as firms in the immediate closure sample are smaller, administrative costs as a percentage of pre-filing assets are higher for them. Liquidation costs are high in both samples. In the case of immediate closure they are 26% (median 13%) and for going concerns followed by eventual liquidation, 27% (median 12%).[12] Fees as percentage of pre-filing assets are similar in the two samples. However, the absolute value of fees in going concerns is much larger; the average is more than eight times that of immediate closures even though the average size of going concerns, based on balance sheet assets, is approximately four times larger (see Table II).

[Insert Table IV]

The higher fees in going concerns are related to the fees charged on revenues for operating the company as a going concern even when it is making an operating loss. The most striking difference between going concerns and immediate closures is with respect to the indirect costs i.e., operating losses. These are 0 for immediate closures and 24% for going concerns, expressed as a percentage of the book value of pre-filing assets.

Operating losses make the total costs of bankruptcy higher for going concerns than for immediate closures: 53% (median 46%) versus 42% (median 25%). Although the differences in means are economically large they are not statistically significant.

Given the size differences between the immediate closure and the going concern samples, one concern is that, if there are substantial fixed costs associated with operating the firm as a going concern, the main determinant of immediate closures could be the fixed costs of bankruptcy rather than the appointment of the State or the private trustee. There is, however, a significant size overlap between the two samples. For example, the smallest going concern is at the 20th size percentile of immediate closures, i.e., 80% of the immediate closure sample is larger in terms of total assets than the smallest going concern. This suggests that the fixed costs of bankruptcy or

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[12] In an unreported regression, we explore the effects of firm size on both administrative and liquidation costs. We find that, while size is a significant variable in explaining the cross-sectional heterogeneity in administrative costs, expressed as percentage of pre-filing assets, it does not seem to explain much of the variation in liquidation costs.

the fixed costs associated with operating the firm cannot always explain why a bankrupt firm is immediately closed.

4.4 LGDs for Different Creditor Classes

Table V describes LGDs by creditor class. For category A claims, LGDs are close to zero for both going concerns and immediate closures. Since category A claims are paid prior to pre-bankruptcy claims, the low LGDs are to be expected. The weight of category A claims as a proportion of all claims (pre-and post- bankruptcy) is much higher for going concerns, at 36%, compared with only 13% for firms subject to immediate closure. For pre-bankruptcy debt, both the composition and the LGDs of different creditors' claims do not seem to differ by the type of reorganization.

For pre-bankruptcy secured claims (Category B) the mean LGDs are similar for immediate closures and going concerns: 56% versus 58% (medians are higher, 79% versus 67%). The size of these claims is only 13% of the total claims for going concerns and 16% for immediate closure, but if we exclude post-bankruptcy claims these percentages almost double.

The next important debt class is Category F claims: these are unsecured pre-bankruptcy claims, and have a high weight of 21% and 24% for going concerns and immediate closures, respectively. The mean LGDs are very high at 88% and 90%. However, some of these trade creditors might have supplied the firm while it was kept as a going concern; in this event those trade creditors had post-bankruptcy claims in Category A, where recovery rates are close to 100%. [13]

[Insert Table V]

4.5 Multivariate Analysis

In this section we examine through a multivariate analysis how the type of trustee and the party initiating bankruptcy influence the size of bankruptcy costs (direct and indirect) and the LGDs.

4.5.1 Costs of Bankruptcy and Trustee Type

In Table VI we provide a more refined test of the relationship between the type of trustee managing the bankrupt firm and the costs of bankruptcy, controlling for firm and industry level characteristics and macro variables.

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[13] They will still incur large losses on their pre-bankruptcy claims, but then that would also have happened if the bankrupt firm had been immediately closed and piecemeal liquidated.

An important issue in this test is the problem of endogeneity. Although judges were able to randomly select trustees by means of a computer program in our sampling window until 2002, we were informed that the judges rarely did so. The judge's decision might be affected by various factors including observable and unobservable (to us) characteristics of the bankrupt firm and certain attributes of the trustee. The choice of a State-employed or a private trustee can be influenced by the complexity of a firm's debt structure, the expertise of the trustee in particular industries or employment considerations at a regional level. Thus, the main concern in measuring the impact of the trustee type (private versus State) on outcomes (costs, and LGDs) in bankruptcy is that the same unobservable factors that influence our outcome variables might also determine the choice of the trustee by the judge. To address this endogeneity problem we use an instrumental variable approach.

We use as an instrument for the trustee choice the political leaning of the municipal government where the bankrupt firm is located. The intuition is that a socialist mayor might exercise some pressure on the bankruptcy judge to steer the choice towards a State trustee rather than a private one. A right-wing mayor instead might be more sceptical towards State institutions such as a State reorganization company and thereby prefer a private trustee. Hence, we might see a correlation between the political leaning of the mayor and the choice of trustee type: while right-wing mayors might be more inclined to trust market solutions delivered by a private trustee, left-wing mayors might rather trust State solutions. A similar argument could be constructed based on party networks: socialist mayors are more likely to have personal connections to trustees in the State reorganization company and might be willing to help them obtain a larger fraction of bankruptcy companies.

A valid instrument must satisfy two conditions: the relevance and the exclusion conditions. The relevance condition requires that the partial correlation between the instrument and the trustee type should be non-zero.

The exclusion condition requires that the political leaning of the municipal government does not influence firm performance through other channels than the direct effect on the trustee choice. To put it differently, the political leaning of the municipal government is not correlated with the residuals in our main regressions that explain bankruptcy costs and LGDs. An instrument may not exactly fulfil the exclusion restriction. For example, one channel through which political affiliation might affect performance is a preference in favour of a certain group of claimholders in the firm. Regions with a conservative ruling party might be more creditor/investor friendly, while regions with a socialist ruling party might be more worker-friendly. However, in this case, ceteris paribus we would expect a higher operating performance, measured by total bankruptcy costs and LGDs, in regions with a conservative ruling party.

One concern with this argument is that with the goal of saving jobs, socialist regimes might provide subsidies to bankrupt firms, which would lead to higher performance observed in bankruptcy for companies in localities governed by socialists. We believe that both types of parties have incentives to help bankrupt companies, though they may apply different measures to achieve this. Unless left or right-wing mayors are (systematically) more successful in their ambitions, this will not affect firm performance. If municipalities were giving subsidies to bankrupt firms, we might expect to observe such payments in the trustee reports to the courts. However, we find no indication that bankrupt firms have benefitted from any form of direct or indirect subsidies.[14]

Regression (1) in Table VI reports our first stage regression for the instrumental variable estimation. It shows that the identifying variable, the political leaning of the municipal government, is highly significant at the 1% level. Larger companies, measured by the book value of pre-filing assets, are more likely to be managed by State trustees. Similarly, companies that belong to a distressed industry, have a lower percentage of secured debt, and went bankrupt in the 1990s are more likely to be allocated to State trustees.

[Insert Table VI]

In regressions (2)-(4) of Table VI, our dependent variable is total bankruptcy costs defined as the sum of direct and indirect costs over total pre-filing assets. In regression (2) we report the results of an OLS regression. We find that the coefficient of the 'Going concern' dummy is positive and significant at a 1% level, meaning that going concern bankruptcies have higher bankruptcy costs than immediate closures. The trustee dummy has the predicted sign but is not significant. Larger firm size leads to lower bankruptcy costs expressed as a percentage of total pre-filing assets, while a higher percentage of secured debt increases them.

In regressions (3) and (4) we use our two stage approach to further explore the relation between trustee type and bankruptcy costs.[15] While in regression (3) we proxy firm size by the natural logarithm of pre-filing assets, in regression (4) we use the logarithm of pre-bankruptcy debt. The results show that the choice of State trustee is associated with lower costs of bankruptcy, and the coefficient is significant at a 5% level. When the trustee is from the State, bankruptcy costs as a

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[14] The exclusion condition in our sample cannot however be tested because the estimated system is just identified, i.e., we have only one instrument for our endogenous variable. If we had more than one instrument we could use a linear combination of these instruments (via two-stage least squares or a generalized method of moments) and could test the over identification restrictions to assess the validity of the instrument (Sargan test). We can in principle find many instruments that are weakly relevant to the endogenous variable in hand and generate over-identification restrictions to test. However, this may create more problems than the endogeneity itself, as it has been established that weak instruments can lead to coefficient biases in a finite sample as in this case (Hahn and Hausman (2003), Stock, Wright and Yogo (2002)).

[15] We use robust standard errors estimation to control for heteroskedasticity.

percentage of pre-filing assets are reduced by around 20-25%. When we use the instrumented value of the trustee dummy, the explanatory power of the type of reorganization variable ('Going concern') is reduced and loses its significance. One interpretation of this result is that it is the type of trustee rather than the type of reorganization itself that affects the costs of bankruptcy.

The regression results also show that industry distress has a significant impact on total bankruptcy costs. Costs expressed as a percentage of pre-filing assets are 27% higher when the bankrupt company belongs to a distressed industry. Similarly, the time spent in bankruptcy also increases costs in our sample of firms. Size measured by pre-filing assets becomes insignificant in the instrumented regressions, while size measured by the log of pre-bankruptcy debt is marginally significant at a 10% level.

4.5.2 LGDs and Trustee Type

Table VII relates aggregate LGDs for pre-bankruptcy creditors to the type of trustee, controlling for firm characteristics and macro variables and the type of reorganization. In regression (1) we report the results of an OLS regression. In regression (2) we instrument for the type of trustee. We do not find in any of these regressions a significant impact of the type of reorganization on the LGDs for pre-bankruptcy creditors. At the same time, the coefficient for the trustee type is significant. State trustees are associated with lower LGDs, and this effect becomes significant at the 5% level once we instrument for the trustee type. Companies operated by a State trustee generate on average 21% lower LGDs for pre-bankruptcy creditors. Firms with a higher leverage and in a distressed industry are more likely to have higher LGDs for pre-bankruptcy creditors. Our time dummy is also significant at the 10% level: bankruptcies initiated in the 1990s produced lower recoveries for pre-bankruptcy creditors. Regional unemployment also has a dampening effect on losses to pre-bankruptcy creditors. One channel through which regional unemployment can affect LGDs is through reducing the income from asset sales or operating revenues (see Table VI). Hence, it is conceivable that our regional unemployment variable may pick up general economic conditions at the regional level. None of the other control variables in the regression are significant.

[Insert Table VI]

4.6 The Impact of the Initiator on Outcomes

In our sample, 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 owners, who account for 24% of cases, and the tax authorities, 22% of cases. This is in itself surprising because unsecured creditors (category F) receive very low recovery rates in bankruptcy (see Table V), while owners receive nothing. The fact that trade creditors precipitate so many bankruptcies suggests that they

benefit from the bankruptcy and one of the ways they can benefit is by supplying the going concern.

In Table VIII we report regression results controlling for the initiator of the bankruptcy. The initiator dummy is set to 1 when it is an owner or trade creditor, and 0 when it is triggered by a bank or the tax authorities. In regressions (1) and (2) the dependent variable is total bankruptcy costs divided by total assets, and in regressions (3) and (4) it is LGDs for pre-bankruptcy creditors. Regressions (1) and (3) are simple OLS regressions, while regressions (2) and (4) are instrumental variable regressions. We include various control variables that are also used in regressions reported in Tables VI and VII.

In regression (1) the initiator dummy is significant at a 10% level and has a positive coefficient, implying that bankruptcies initiated by a trade creditor or owner tend to have higher costs as a percentage of pre-filing assets. In regression (2), where we use the instrumented value of the trustee dummy, the coefficient of the initiator dummy becomes significant at the 5% level. The interpretation of the coefficient is that when the initiator is a trade creditor or an owner, bankruptcy costs as a percentage of pre-filling assets are 14% higher than in those initiated by a bank or the tax authorities.

[Insert Table VIII]

Higher bankruptcy costs should be reflected in higher LGDs if the costs are spent without benefitting pre-bankruptcy creditors. In that event we would expect to see higher LGDs for those bankruptcies initiated by trade creditor or owner. Regression (4) shows that LGDs are approximately 17% higher in trade creditor/owner initiated bankruptcies after controlling for the type of trustee, firm characteristics, industry and real GDP growth.

Our interpretation is that both trade creditors and owners benefit from the operations of the firm as a going concern in bankruptcy. This is more transparent in the case of trade creditors who supply the firm in bankruptcy, and whose debts are treated as priority A claims. When the trustee is a private one, there is a greater alignment of incentives between trade creditors/owners and the trustee to operate the firm as a going concern even though it destroys value for pre-bankruptcy creditors. These results may be interpreted as supporting the view of Djankov et al. (2008) that reducing the power of unsecured creditors improves the efficiency of debt enforcement.

5. Comparisons with Empirical Results across Jurisdictions

In this section we compare results on bankruptcy costs and LGDs for Hungary with other jurisdictions. In particular, we aim to address the question whether the different role of the agent

managing the bankruptcy process across jurisdictions can explain the differences in outcomes, both in terms of costs and LGDs, found in other studies. The empirical evidence on this issue is sparse and even then indirect. One exception is Djankov et al. (2008) who find that, after controlling for income and legal origin of the country, efficient outcomes are increased with minimum court involvement, secured creditor control and voting procedures that reduce the power of unsecured creditors. However, Djankov et al. (2008) are inconclusive with regard to the question whether an independent trustee should be appointed by creditors and about how he should be remunerated: "The results in their tables 5-7 do not provide consistent evidence that it matters whether Bizbank has the right to appoint or to dismiss the bankruptcy administrator and whether that administrator is paid on the basis of the market value of the estate" (See page 1144).[16]

Our paper does not allow for the kind of cross-country evidence which is the strength of the Djankov et al. paper. However, by using real data on bankrupt firms, our paper provides a more precise assessment of the contribution of the particular provisions of bankruptcy codes to costs and losses to pre-bankruptcy creditors in bankruptcy. The novelty of this paper lies in addressing the question of how control rights given to the trustee can matter.

In the absence of direct evidence from other jurisdictions, we can only conjecture on how control rights, compensation and legal responsibilities of the trustee might relate to observed bankruptcy costs and LGDs. In Table IX we provide a comparison of costs and LGDs across four jurisdictions including Hungary, the US, UK, and Sweden. Evidence is available on direct costs, and in some cases indirect costs for these four jurisdictions.

Both the average and median direct costs for Hungary are higher than those for the other three jurisdictions. A comparison of medians shows costs are 18% for the UK, 4.5% for Sweden, 1.9% for Chapter 11s of the US, and 2.5% for Chapter 7s. This compares with median costs for Hungary of 22% for going concerns and 25% for immediate closures. Thus, Hungarian procedures look expensive compared with these three other jurisdictions, particularly in comparison with Sweden and the US.

UK costs are relatively high compared with the US and Sweden. The reason may be that the agent administering bankruptcy in the UK has a duty of care primarily to the secured creditors and very little duty of care to unsecured creditors. As a result, those costs are borne entirely by the unsecured creditors who have median LGDs of 100%, while the median LGDs for the secured are close to 0 % (see Franks and Sussman, 2005). It is therefore not surprising that in the UK trade creditors rarely trigger bankruptcy, unlike trade creditors in Hungary.

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[16] In the panel describing Djankov et al., the scores for the US and Hungary are similar at 54.8% and 46.7%, suggesting that the costs (45.2% and 53.3%, respectively) are a little higher for Hungary. Sweden has a far higher score at 86%, suggesting that bankruptcy costs are much lower.

The higher costs in Hungary might be explained by the longer period spent in bankruptcy which is about 3.4 years (for immediate closures and going concerns combined) compared with 2.3 years for Chapter 11 of the US, 2 years for Chapter 7, 0.17 years for Sweden and 0.6 years for the UK.[17] These differences in the length of the procedures may be due either to the differences in the liquidity of asset markets or to differences in bankruptcy procedures, or both.

[Insert Table IX]

As for indirect costs, the evidence is sparse. The metrics are more difficult to construct and the definitions of indirect costs vary considerably. In our study, indirect costs are defined as the operating losses incurred in a going concern bankruptcy and average at 24%, with a median of 18%. Bris et al. (2006) report median indirect costs of 62% in Chapter 7s and 14% in Chapter 11s, respectively, but they have a much broader definition of indirect costs. They use the proceeds of bankruptcy divided by the declared (book) value of those assets upon entering bankruptcy: if this value is less than one then there is an indirect cost of bankruptcy.

Using our definition of indirect costs, they are likely to be virtually zero in both Sweden and the UK. In Sweden the firm is operated on average for 2 months (See Stromberg (2000)), while in the UK the administrator will only operate the firm as a going concern if it improves the recovery rates of the secured creditors. Cook and Pond (2006) conclude in their comparison of bankruptcy regimes for the UK and Sweden that 'the powerful position of the banks means that the insolvency regime is efficient in preserving businesses, if not companies' (page 43).

How much of these differences are due to differences in the role of the agent in managing the bankrupt company? An important difference between Hungary and the UK is that in the UK the secured creditors appoint the administrator, equivalent to the Hungarian trustee. The UK administrator has a fiduciary duty to secured creditors and a much weaker one towards the unsecured. For example, he can arrange a pre-packaged bankruptcy without securing the vote of unsecured creditors (see Polo (2012). Thus, whatever the compensation scheme of the administrator in the UK the control rights of the secured creditor would prevent the kind of loss making going concerns we observe in Hungary.[18]

Another implication of strong secured creditor control in the UK is that trade creditors prefer the firm to remain outside bankruptcy, because inside bankruptcy the recovery rates for their claims are virtually zero; whereas in Hungary trade creditors frequently trigger bankruptcy because they

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[17]It may be that some categories of costs are included in one jurisdiction but not in another. Costs for Hungary and the UK are taken from the receiver/trustees statement made to the court.

[18] Polo (2012) points out potential conflicts of interests between the administrator and secured creditors. He includes the following citations: "The whole thing stank of fish. […] Does that raise a potential conflict of interest for owner-directors and administrators? Only one the size of France" (Financial Times, January 21, 2010) and "Britain is in danger of becoming the bankruptcy brothel of the world." (The Times, October 18, 2010)

expect that the firm is likely to be kept as a going concern for very long periods. There will be fewer going concerns in the UK and more importantly they will be of shorter duration because of the administrator's duty to operate the firm as a going concern only if it does not diminish recovery rates for secured creditors. In Hungary, the interests of trade creditors are aligned with those of the private trustee who receives greater compensation in bankruptcy from a going concern compared with an immediate closure.

Only in Chapter 7 of the US do we find the trustee's remuneration based upon the proceeds of bankruptcy. However, the firm must be closed in Chapter 7 so there is no possibility of the dissipation of funds by the trustee that we see in Hungary. In Chapter 11 there is generally no appointment of a trustee, unless fraud is suspected. The debtor is allowed to act as an agent and run the bankrupt firm. However, unlike in the Hungarian procedures, Chapter 11 includes both a high level of court oversight and creditor participation in bankruptcy decisions. Creditors' committees, unlike in Hungary, are remunerated by the bankrupt firm. 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 likely to produce a higher value. Through the 1980s this was reflected in the bankruptcy process being significantly influenced by the equity holders (see Franks and Torous 1989). However, Skeel (2004) and Baird and Rasmussen (2006) show that secured creditors have exercised significant control in Chapter 11 through secured lines of credit, that are extended to the firm both before and after it files for bankruptcy. In a more recent paper, Ayotte and Morrison (2009) show that in recent years the deviations from absolute priority for equity, documented by Franks and Torous (1989), have largely disappeared in Chapter 11 reorganizations. This reflects a combination of legal changes and a more assertive judiciary in upholding the rights of secured creditors.

Table IX also provides evidence on how these costs affect LGDs and therefore recovery rates for pre-bankruptcy creditors. The median LGDs in Hungary are 94% for both immediate closures and for going concerns. The LGDs for Chapter 7 reported by Bris et al. are the same as those for Hungary (94%) but the LGDs are much lower for Chapter 11s (21%).

Although we do not have overall LGDs for Sweden and the UK, we do have LGDs for particular creditor classes. For secured claims, LGDs are much lower in Sweden than in Hungary (17% compared with 76%). The LGDs are even lower for secured creditors for the UK: they vary between 0 and 12%. Thus, the high direct costs of the UK procedures reported earlier do not seem to affect recovery rates for secured creditors. Thus, going concerns achieve much less for pre-bankruptcy creditors in Hungary than in the US, UK, or Sweden which reflects, we believe, the greater control rights of secured creditors to limit loss making going concerns.[19]

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[19]Differences in costs and LGDs might also reflect differences in the average (median) firm size of the samples collected in different countries. Comparing the average firm size across samples, we do not find significant differences. The analysis is available upon request.

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 weak rights allocated to secured creditors. The code encourages unsecured trade creditors to trigger bankruptcy at very low cost, in the hope of benefiting from a going concern bankruptcy: if they continue to supply the firm in bankruptcy, their post-bankruptcy claims are treated as Category A claims and are likely to be paid in full.

We provide estimates of the incidence and the costs of going concerns. They constitute a large proportion of bankruptcies and confirm why the banks are reluctant to use these formal procedures. There is evidence that the costs associated with going concerns are higher when the party initiating bankruptcy is an owner or trade creditor, and when the trustee is private rather than State-employed. LGDs for pre-bankruptcy creditors are also higher with private trustees and when trade creditors/owner initiate the bankruptcy.

These results provide an interesting comparison with Djankov et al. (2008). The costs of bankruptcy in their study for Hungary are far lower than those found in this study. This is to be expected since going concerns in our sample are run at a loss, whereas in Djankov's the template going concerns are assumed to run at zero or positive NPV.

The obvious lessons are to give the trustees less discretion, by changing their compensation scheme and providing stronger rights for secured creditors in bankruptcy. This could be done by prescribing tighter voting rules for creditors' committees or by prescribing that the trustee reports to the creditors and allows them more control over the way it manages the firm in bankruptcy. On the other hand, Hungary might pursue a more radical alternative consistent with Djankov et al., and change the debt enforcement procedures by adopting the floating charge such as in the UK; the latter would give large control rights to secured creditors and bypass court procedures almost entirely. However, such a choice would likely disadvantage the unsecured, particularly trade creditors. An alternative is to make a provision that the firm must be sold within a limited time period, as is the case in Sweden.

References

Ayotte, K. and Morrison, E. (2009) Creditor Control and Bankruptcy in Chapter 11, *Journal of Legal Analysis* **1**, 510-551.

Ayotte, K. and Yung, H. (2004) Matching Bankruptcy Laws to Legal Environments, working paper, Columbia Business School.

Baird, D. G. and Rasmussen, R. K. (2006) Private Debt and the Missing Lever of Corporate Governance. University of Pennsylvania Law Review **154**, 1209–1251.

Berger, P.G., Ofek, E., and Swary, I (1996) Investor Valuation of the Abandonment Option, *Journal of Financial Economics* **42**, 257-287.

Berkovitch, E. and Israel, T. (1999) Optimal Bankruptcy Laws across Different Economic Systems, *Review of Financial Studies* **12**, 347-377.

Bernhardt, D. and Nosal, E. (2004) Near-sighted Justice, *The Journal of Finance* **59**, 2655-2685.

Braun, E. (Editor) (2006) Commentary on the German Insolvency Code, IDW-Verlag GmbH, Dusseldorf.

Bris, A., Welch, I., and Zhu, N. (2006) The Costs of Bankruptcy: Cash Auctions Versus Chapter 11 Bankruptcies, *The Journal of Finance* **61**, 1253-1303.

Brunner, A. and Krahnen, J.P. (2002) Multiple Lenders and Corporate Distress: Evidence on Debt Restructuring, working paper, University of Frankfurt.

Carapeto, M. (2003) Does Debtor-in-Possession Financing Add Value?, working paper, Cass Business School.

Cook, G. and Pond, K. (2006) Explaining the Choice Between Alternative Insolvency Regimes for Troubled Companies in the UK and Sweden, *European Journal of Law and Economics* **22**, 21-47.

Dahiya, S., John K., Puri, M., and Ramirez, J. (2003) Debtor in Possession Financing and Bankruptcy Resolution: Empirical Evidence, *Journal of Financial Economics* **69**, 259-280.

Davydenko, S. and Franks. J. (2008) Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany and the UK, *The Journal of Finance* **63**, 565-608.

Djankov, S., Hart, O., McLiesh, C., and Shleifer, A. (2008) Debt Enforcement Around the World, *Journal of Political Economy* **116**, 1105-1149.

Franks, J. and Sussman, O. (2005) Financial Distress and Bank Restructuring of Small to Medium Size UK Companies, *The Review of Finance* **9**, 65-96.

Franks, J. and Torous, W.N. (1989) An Empirical Investigation of U.S. Firms in Reorganisation, *The Journal of Finance* **44**, 747-770.

Hahn, J., and Hausman, J. (2003) Weak Instruments: Diagnosis and Cures in Empirical Econometrics, *American Economic* Review, Papers and Proceedings **93**, 118-125.

Jostarndt, P. and Sautner, Z. (2010) Restructuring versus Formal Bankruptcy in a Non-Interventionist Bankruptcy Setting, *Review of Finance* **14**, 623-668.

Lightman, G. and Moss, G. (1994) The Law of Receivers of Companies, Sweet & Maxwell, London.

Morrison, E. and Edward, R. (2007) Bankruptcy Decision Making: An Empirical Study of Continuation Bias in Small-Business Bankruptcies, *Journal of Law & Economics* **50**, 381-419.

Polo, A. (2012) Secured Creditor Control in Bankruptcy: Costs and Conflict, unpublished working paper, Said Business School.

Povel, P. (1999) Optimal Soft or Tough Bankruptcy Procedures, *Journal of Law, Economics and Organization* **15**, 659-684.

Shleifer, A. and Vishny, R.W. (1992) Liquidation Values and Debt Capacity: A Market Equilibrium Approach, *Journal of Finance* **47**, 1343-1366.

Skeel, D. A. (2004) The Past, Present and Future of Debtor-in-Possession Financing. *Cardozo Law Review* **25**, 1905–1934.

Stock, J., Wright, J.H., and Yogo, M. (2002) A Survey of Weak Instruments and Weak Identifications in Generalized Methods of Moments, *Journal of the American Statistical Association* **20**, 518-29.

Stromberg, P. (2000) Conflicts of Interest and Market Illiquidity in Bankruptcy Auctions: Theory and Tests, *Journal of Finance* **55**, 2641-2692.

Thorburn, K.S. (2000) Bankruptcy Auctions: Cost, Debt Recovery and Firm Survival, *Journal of Financial Economics* **58**, 337-368.

Von Thadden, E., Berglof, E., and Roland, G. (2003) Optimal Design and the Role of Bankruptcy, CEPR Working Paper.

Weiss, L. and Wruck, K. H. (1998) Information Problems, Conflicts of Interest, and Asset Stripping: Chapter 11's Failure in the Case of Eastern Airlines, *Journal of Financial Economics* **48**, 55-97.

Welch, I. (1997) Why Is Bank Debt Senior? A Theory of Asymmetry and Claim Priority Based on Influence Costs, *The Review of Financial Studies* **10**, 1203-1236.

Wooldridge, J. (2009) Introductory Econometrics: A Modern Approach, 4th edition, South-Western. Cengage Learning

Table I. Characteristics of the Trustee or Administrator in Bankruptcy in Six Countries

Country	Who appoints trustee / administrator	Trustee / administrator reports to:	Is there creditor control	Personal liability	Compensation of trustee or administrator
Hungary	Court (trustee randomly chosen from an approved list)	Court	In principle creditors' committee has control rights, but rarely formed	Yes. Capped but no evidence of any lawsuits	Commission on revenue from sale of assets and operating revenues
Germany	Court. More recently creditors can appoint trustee provided no dissent	Court & creditors assembly and creditors' committee	Creditors' committee has strong monitoring powers and acts like a corporate supervisory board	Significant personal liability	Usually time basis
UK	Secured creditors	Secured creditors	Yes by secured creditors. Very strong because of who appoints administrator	Evidence of lawsuits	Usually time basis
US Ch. 7	Court (trustee randomly chosen from an approved list)	Court	No	Yes	Small fee but % of proceeds
Sweden	Court	Court	No	Yes	Time basis

Table II. Summary Statistics for Three Forms of Reorganization in Bankruptcy

This table describes the characteristics of 120 bankrupt firms, partitioned by outcome in bankruptcy: immediate closure, going concern followed by a going concern sale, going concern with eventual piecemeal sale. It includes total pre-filing assets, number of employees, the percentage of fixed assets, pre- and post-bankruptcy claims of the bankrupt firms, leverage, the percentage of total assets sold in the first year of bankruptcy and time spent in bankruptcy.
The p-values are calculated on differences in means.

	(1) Immediate closure (sold piecemeal)				(2) Going concern (sold piecemeal)				(3) Going concern (sold as G.C)				Difference in means	
	N	Mean	Median	St. dev.	n	Mean	Median	St. dev.	n	Mean	Median	St. dev.	p-values of (1) - (2)	p-values of (2) - (3)
Total book assets at inception of bankruptcy (millions of Euros)	57	0.80	0.28	1.26	50	3.65	1.42	8.28	13	3.24	0.58	3.94	0.03	0.81
Number of employees at inception of bankruptcy	25	52	29	109	30	388	77	1012	10	464	135	733	0.08	0.80
Percentage of fixed assets to total assets	53	0.51	0.55	0.40	50	0.52	0.55	0.29	12	0.47	0.37	0.23	0.96	0.58
Debt claims pre-bankruptcy (millions of Euros)	48	1.49	0.48	2.50	46	4.39	1.80	8.82	9	2.31	1.71	1.97	0.04	0.16
New debt claims contracted in bankruptcy (millions of Euros)	50	0.13	0.03	0.30	47	4.25	0.75	17.24	9	1.92	0.83	3.66	0.12	0.40
Leverage ratio	53	4.23	1.97	6.61	50	2.36	1.35	2.93	13	2.25	1.42	2.33	0.07	0.89
Percentage of assets sold in first year	18	0.17	0.10	0.21	29	0.27	0.24	0.23	6	0.44	0.44	0.14	0.16	0.05
Time spent in bankruptcy	57	3.65	2.80	2.43	50	4.79	4.15	2.98	13	4.68	3.14	3.18	0.05	0.91

Table III. The Determinants of Going Concerns in Bankruptcy

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. Regressions (1) and (2) are probit regressions. Regression (3) is an instrumental variable regression. The explanatory 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 (agriculture, services and industry); 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 where the firm is located in the year of bankruptcy; Budapest dummy that equals 1 if the firm is located in the capital, and 0 otherwise; business confidence index which captures expectation about the economy; a trustee dummy that takes 1 if it is a State trustee and 0, otherwise. Z-values are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)
Dependent variable:	Going Concern (Yes/No)		
Size	0.469***	0.445***	0.472***
	(4.31)	(4.40)	(4.13)
Industry dummy	0.818**	1.005***	1.132***
	(2.29)	(2.67)	(2.93)
Services dummy	-0.391	-0.286	0.0436
	(-0.49)	(-0.34)	(0.07)
% of specific assets	0.0337	0.152	0.352
	(0.07)	(0.31)	(0.81)
% of secured debt	-1.668**	-1.187*	-1.289**
	(-2.41)	(-1.74)	(-2.08)
Leverage	-0.0426	-0.0662	-0.0519
	(-0.95)	(-1.26)	(-1.26)
Budapest dummy	-0.780*	-0.897**	-0.841*
	(-1.83)	(-2.32)	(-1.95)
90s dummy	-0.280	-0.0707	1.385*
	(-0.74)	(-0.17)	(1.93)
Real GDP	7.447		
	(1.56)		
Industry distress dummy	-0.673**	-0.750**	-0.592*
	(-2.03)	(-2.14)	(-1.83)
Regional unemployment	4.137		
	(1.01)		
Trustee		-0.471*	-0.671***
		(-1.66)	(-3.42)
Business confidence index		0.0704**	0.0419
		(2.01)	(1.06)
Constant	-8.486***	-7.517***	-8.360***
	(-3.95)	(-3.94)	(-4.22)
Number of observations	98	98	98
pseudo R^2	0.28	0.31	.

Table IV. The Relation between the Form of Reorganization and the Direct and Indirect Costs of Bankruptcy

Table 4 provides measures of different types of bankruptcy costs expressed as a proportion of pre-filing assets by the type of outcome in bankruptcy: immediate closure, going concern followed by a going concern sale, going concern with eventual piecemeal sale. Administrative costs include court fees, experts' fees, documentation costs and book keeping fees. Liquidation costs relate to the costs of closing the firm, including redundancy payments, transaction costs of sale of assets, and cleaning up the site for environmental damage. We define direct costs as the sum of administrative costs, liquidation costs and trustee fees. Operating P/L are operating losses (profits) which equal operating revenues minus operating costs. The total costs figure include both directs costs and operating P/L.

	(1) Immediate closure				(2) Going concern followed by liquidation				(3) Going concern followed by going concern sale				Difference in means
	N	Mean	Median	StD	N	Mean	Median	StD	N	Mean	Median	StD	p-values of (1) – (2)
Admin costs as a % of pre-filing assets	47	0.10	0.02	0.29	46	0.03	0.02	0.04	8	0.07	0.06	0.07	0.13
Liquidation costs as a % of pre-filing assets	47	0.26	0.13	0.39	46	0.27	0.12	0.56	8	0.23	0.13	0.25	0.92
Fees as a % of pre-filing assets	50	0.04	0.03	0.04	49	0.03	0.03	0.03	13	0.05	0.02	0.07	0.34
Direct costs as a % pre-filing assets	47	0.42	0.25	0.61	45	0.36	0.22	0.57	8	0.37	0.30	0.31	0.59
Operating P/L as a % of pre-filing assets	-	-	-	-	47	-0.24	-0.18	0.43	10	-0.14	-0.20	0.87	-
Total costs as a % of pre-filing assets	47	0.42	0.25	0.63	44	0.53	0.46	0.45	8	0.50	0.51	1.10	0.385

Table V. Loss Rates for Each Category of Creditors in Bankruptcy Partitioned by Going Concern and Immediate Closure

This table reports loss rates for each creditor class by the outcome of bankruptcy: going concerns and immediate closures. Loss rates are defined as one minus the undiscounted amount recovered divided by the face value of the claim at the start of bankruptcy.

| | Going Concern | | | | | Imediate Closure | | | | |
| | Loss rate | | | | Weight of claim as a% of total claims | Loss rate | | | | Weight of claim as a % of total claims |
	N	Mean	Median	Std.		N	Mean	Median	Std.	
A: Claims of creditors during bankruptcy	49	0.01	0.00	0.05	0.36	50	0.00	0.00	0.00	0.13
B: Secured creditors	32	0.56	0.79	0.43	0.13	29	0.58	0.67	0.40	0.16
C: Pension liabilities	3	0.33	0.00	0.58	0.00	4	0.45	0.39	0.52	0.00
D: Small trade creditors	18	0.79	1.00	0.39	0.01	13	0.67	1.00	0.45	0.02
E: Tax / s.s. Arrears	56	0.75	1.00	0.39	0.23	56	0.75	1.00	0.39	0.28
F: Large trade creditors	45	0.88	1.00	0.30	0.21	53	0.90	1.00	0.27	0.24
G: Arrears of interest payments	52	0.92	1.00	0.27	0.06	56	0.95	1.00	0.21	0.17

Table VI. The Determinants of Total Costs in Bankruptcy

The dependent variable in column (1) is the type of trustee: State versus private. The regression is a probit regression. The instrument is a party dummy that takes 3 possible values: -1 if the political leaning of the mayor is to the left, 1 if it is to the right, and 0 if it is independent. (z-values in parentheses). The dependent variable in column (2)-(4) is total bankruptcy costs (including both direct and indirect costs) as a percentage of pre-filing assets. The sample includes both immediate closures and going concerns. Regression (2) is simple OLS regression; Regressions (3)-(4) are instrumental variable regressions. The explanatory variables include a dummy for the outcome of bankruptcy that takes 1 for going concerns and 0, otherwise; a trustee dummy: 1 if it is a State trustee, and 0 otherwise; size as the log of pre-filing total assets in regressions (1)-(3) and as a log of pre-bankruptcy debt in regression (4); percentage of tangible assets to total assets as proxy for asset specificity; percentage of secured debt and leverage as a proxy firm quality; 90s is a time dummy taking 1 if the bankruptcy is initiated in the 90s; period spent in bankruptcy measures the time the firm spends in bankruptcy; real GDP growth capture macroeconomic effects; . T-values are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)
Dependent variable:	Trustee	Total Bankruptcy Costs/Total Assets		
Party	-1.442***			
	(-3.15)			
Trustee		-0.195	-0.254**	-0.236**
		(-1.35)	(-2.03)	(-2.15)
Size	0.588**	-0.122***	-0.0194	
	(2.56)	(-2.80)	(-0.33)	
Industry distress dummy	0.899***	0.185*	0.271**	0.261*
	(2.90)	(1.69)	(2.05)	(1.93)
Leverage	-0.120*	-0.00171	-0.000656	-0.00255
	(-1.66)	(-0.30)	(0.00)	(-0.47)
% of specific assets	1.540	-0.148	-0.0413	-0.0303
	(1.55)	(-0.86)	(-0.17)	(-0.12)
% of secured debt	-1.117*	0.500*	0.292	0.403
	(-1.95)	(1.90)	(0.88)	(1.22)
90s dummy	5.403***	-0.0160	0.162	0.179
	(4.32)	(-0.10)	(1.57)	(1.61)
Regional unemployment	2.027	0.112	1.601	1.854
	(0.43)	(0.08)	(0.66)	(0.74)
Going concern		0.334***	0.20	
		(3.12)	(1.22)	
Period spent			0.0502*	0.0646*
			(1.67)	(1.74)
Pre-bankruptcy debt				-0.0662*
				(-1.82)
Real GDP	-5.015*			-0.582
	(-1.79)			(-0.21)
Constant	-1.06*	2.332***	0.340	1.132
	(-1.90)	(2.87)	(0.28)	(0.87)
Number of observations	98	98	98	98
Pseudo R^2 /R^2	0.694	0.13	0.17	0.27

Table VII. The Determinants of LGDs for Pre-bankruptcy Creditors

The dependent variable is Loss Given Default defined as 1 minus the undiscounted amount recovered by pre-bankruptcy creditors divided by the face value of the claim at the start of bankruptcy. Regression (1) is a simple OLS regression. Regression (2) is an instrumental variable regression. The explanatory variables include a trustee dummy taking 1 if the trustee is a State one, and 0 otherwise; a dummy for the outcome in bankruptcy that takes 1 for going concerns and 0, otherwise; size measured as the log of pre-filing total assets; percentage of tangible assets to total assets is used as proxy for asset specificity; percentage of secured debt and leverage are used as a proxy firm quality; a distress dummy taking 1 if the industry in which the firm operates is in distress; a Budapest dummy that takes 1 if the firm is located in Budapest, and 0 otherwise; industry dummies (agriculture, services and industry); 90s is a time dummy taking 1 if the bankruptcy is initiated in the 90s and 0 otherwise; the real GDP growth captures macroeconomic effects; regional unemployment measures the absolute level of unemployment in the region the firm is located in the year of bankruptcy. *T*-statistics are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)
Dependent variable:	LGD	
Trustee	-0.0728	-0.215**
	(-0.86)	(-2.07)
Going concern	-0.0201	-0.0434
	(-0.31)	(-0.53)
Size	-0.0387*	-0.00372
	(-1.72)	(-0.14)
Industry dummy	0.0814	0.0913
	(1.18)	(1.20)
Services dummy	-0.119	-0.0627
	(-0.67)	(-0.29)
% of specific asset	-0.1402	0.0198
	(-1.54)	(0.16)
% of secured debt	0.147	0.056
	(1.50)	(1.00)
Leverage	0.0511	0.0604*
	(1.62)	(1.92)
Period spent	0.03*	0.01
	(1.73)	(1.36)
Industry distress dummy	0.0186*	0.1418**
	(1.72)	(2.02)
Budapest dummy	-0.0459	
	(-0.59)	
90s dummy	-0.0551	0.204*
	(-0.59)	(1.88)
Real GDP growth	-0.594	-0.910
	(-0.64)	(-0.86)
Regional unemployment	0.178	0.504*
	(1.29)	(1.73)
Constant	1.489***	0.739
	(3.57)	(1.45)
Number of observations	98	98
R^2	0.25	0.32

Table VIII. Does the Initiator of Bankruptcy Affect the Size of the Costs and LGDs in Bankruptcy?

In regressions (1)-(2) the dependent variable is total bankruptcy costs as a percentage of pre-filing assets for both immediate closures and going concerns. In regression (3) and (4) it is LGD for pre-bankruptcy creditors. Regressions (1) and (3) are OLS regressions; regressions (2) and (4) are instrumental variable regressions. The explanatory variables include an initiator dummy taking 1 if the initiator is a trade creditor/owner, and 0 otherwise; a trustee dummy taking 1 if the trustee is a State one, and 0 otherwise; a dummy for the outcome of bankruptcy taking 1 for going concerns and 0, otherwise; size measured as the log of pre-filing total assets; percentage of tangible assets to total assets is used as proxy for asset specificity; percentage of secured debt and leverage are used as a proxy firm quality; a distress dummy taking 1 if the industry in which the firm operates is in distress; time spent in bankruptcy; 90s is a time dummy taking 1 if the bankruptcy is initiated in the 90s and 0 otherwise; the real GDP growth capturing macroeconomic effects. T-statistics are in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% level, respectively.

	(1)	(2)	(3)	(4)
Dependent variable:	Total Bankruptcy Cost/Total Assets		LGD	
Initiator	0.125^{*}	0.138^{**}	0.111^{*}	0.173^{*}
	(1.65)	(2.07)	(1.71)	(1.81)
Trustee	-0.139	$-.0209^{**}$	-0.0617	-0.164^{**}
	(-0.67)	(-2.03)	(-0.71)	(-2.16)
Size	-0.123^{***}	-0.0768	-0.0211	-0.00759
	(-2.75)	(-0.11)	(-1.46)	(-0.21)
Industry distress dummy	0.201^{*}	0.312^{**}	0.0079	0.106^{*}
	(1.76)	(2.22)	(1.45)	(1.87)
Leverage	-0.00350	-0.00417	0.0409	0.0532^{*}
	(-0.67)	(-0.95)	(1.42)	(1.78)
% of specific assets	-0.248	-0.145	-0.203^{*}	-0.163
	(-1.24)	(-0.56)	(-1.76)	(-0.99)
% of secured debt	0.538^{**}	0.155	0.247^{*}	0.169
	(2.01)	(0.48)	(1.69)	(0.78)
90s dummy	0.0621	0.226^{*}	-0.055	0.187^{*}
	(0.28)	(1.86)	(-0.65)	(1.81)
Regional unemployment	0.302	2.156	0.156	0.681^{**}
	(0.22)	(0.94)	(1.23)	(2.31)
Going concern	0.334^{***}	0.18	0.0141	0.180
	(2.93)	(1.01)	(0.19)	(1.33)
Period spent		0.0702^{*}	0.0629^{**}	0.0150
		(1.85)	(2.06)	(1.41)
Constant	2.247^{**}	-0.241	1.005^{**}	0.634
	(2.57)	(-0.15)	(2.41)	(1.23)
Number of observations:	90	90	90	90
R^2	0.15	0.20	0.30	0.38

Table IX. Cross-Country Comparison of Bankruptcy Costs and LGDs in Hungary, Sweden, the UK, and the US

Table 9 compares direct and indirect costs in bankruptcy, LGDs for selected creditor classes and by the type of reorganization (IC=immediate closure, GC=going concern), and time spent in bankruptcy across 4 countries: Hungary, Sweden, UK and US. Directs costs are defined as the sum of administrative costs, liquidation costs and fees to trustees. Indirect costs are proxied by the operating losses/profits of firms kept as going concerns. Direct and indirect costs are compared by type of reorganization where data are available. LGDs for a given creditor class are defined as 1 minus the undiscounted amount recovered by the given creditor class divided by the face value of the claims at the start of bankruptcy. LGDs by type of reorganization are calculated as 1 minus the undiscounted amount recovered by pre-bankruptcy creditors divided by the face value of the claims at the start of bankruptcy.

		Hungary			Sweden Thorburn (2000)			UK Franks and Sussman (2005)			US Bris et al. (2006)	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median
Direct costs/ pre-filing assets	IC	0.42	0.25		0.064	0.045		0.25	0.18	Chap. 7	0.081	0.025
	GC	0.36	0.22							Chap. 11	0.169	0.019
Indirect costs/ pre-filing assets	GC	0.24	0.18		-	-		-	-	Chap. 11	0	0.14
	IC				-	-		-	-	Chap. 7	0.2	0.62
LGD by creditor class	Cat B	0.57	0.76	Secured debt	0.31	0.17	Main bank	0.23 - 0.26	0 - 0.12			
	Cat C + E	0.75	1.00	Priority claims	0.73	0.81	Pref. creditors	0.66	0.97			
	Cat D + F	0.87	1.00	Junior debt	0.98	1	Trade creditors	-	1			
LGD by type of reorganization	IC	0.82	0.94		-	-		-	-	Chap. 7	0.73	0.94
	GC	0.77	0.94							Chap. 11	0.31	0.21
Time spent in bankruptcy (years)	IC	3.16	2.63		0.17			0.64	-	Chap. 7	1.94	1.84
	GC	4.70	3.73							Chap. 11	2.27	2.37

APPENDIX

Table X. Definition of Variables and Data Sources

Variable name	Description	Data Source
Size	Natural logarithm of the book value of assets at inception to bankruptcy	Liquidation Report
% of specific assets	Plant and machinery over total assets	
% of secured debt	Category B exposure over total pre-bankruptcy debt	Liquidation Report
Pre-bankruptcy debt	Sum of cat B-G exposure	Liquidation Report
Leverage	Book value of total pre-bankruptcy liabilities over the book value of assets at inception to bankruptcy	Liquidation Report
Industry distress dummy	Dummy variable that equals one if the industry the firm belongs to is in distress in the year of bankruptcy	Hungarian Statistical Office
Industry dummy	Dummy variable that equals one if the bankrupt firm is an industrial firm	Liquidation Report
Services dummy	Dummy variable that equals one if the bankrupt firm is in services	Liquidation Report
Period spent	Time spent in bankruptcy	Liquidation Report
Regional unemployment	Fraction of unemployed in the region where the bankrupt firm is located	Hungarian Statistical Office
Trustee	Dummy variable that equals one if the trustee is a state one and 0, otherwise.	Liquidation Report
90's dummy	Time dummy that takes value one if the bankruptcy is initiated in the 90s	Liquidation Report
Party	A variable that takes 1 if the mayor is right-wing; 0 if independent; -1 if left-wing	National Election Office
Budapest dummy	Dummy variable that is equal to one if the firm is located in Budapest	Liquidation Report
Initiator	Dummy variable that is equal to one if the bankruptcy is triggered by a trade creditor/owner, 0 for bank/tax authority	Liquidation Report
Going concern	Dummy variable that is equal to one if the firm is operated as a going concern	Liquidation Report
Real GDP	Percentage change in real GDP between year of the bankruptcy and its value one year later	Hungarian Statistical Office
Business Confidence Index	Survey based measure of business confidence	Kopint Datorg