Do bankruptcy codes matter? A study of defaults in France, Germany and the UK

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ABSTRACT

Using a large sample of small-to-medium size firms that defaulted on their bank debt in France, Germany, and the UK, we find that large differences in creditors' rights across countries lead banks to adjust their lending and reorganization practices to mitigate the expected creditor-unfriendly aspects of the bankruptcy law. In particular, French banks respond to a creditor-unfriendly code by requiring more collateral than lenders elsewhere, and by relying on particular collateral forms that minimize the statutory dilution of their claims in bankruptcy. Despite such adjustments, bank recovery rates in default remain sharply different across the three countries, reflecting different levels of creditor protection. Notwithstanding the high level of creditor protection and low expected losses from default, pre-distress loan spreads in the UK are not lower than elsewhere. We conclude that, despite significant adjustments in lending practices, bankruptcy codes still sharply affect default outcomes.

Keywords: Recovery rate; Default; Reorganization; Bankruptcy code.

JEL Classification Numbers: G21, G30, G33

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Introduction

How do bankruptcy codes affect distressed reorganizations, and can lenders overcome the lack of creditor protection by adjusting their lending practices at loan origination? We use a large sample of defaulted small-to-medium size firms from ten banks in France, Germany, and the UK to address these questions, and find country bankruptcy codes to be important determinants of outcomes of distress, despite significant adjustments in banks' practices in response to particular provisions of their respective codes.

With flexibility in writing and renegotiating debt contracts, the effect of State-imposed bankruptcy law on lending and distress is an empirical question. On the one hand, one might expect different outcomes of default, depending on the level of creditor protection provided by the bankruptcy code. For example, in debtor-friendly countries, where creditors have little control in bankruptcy, their recovery rates may be lower than in creditor-friendly jurisdictions. On the other hand, lenders may anticipate this and adjust the terms of the loan contract by, for example, requiring more collateral or increasing the loan interest rate. This paper studies empirically the nature of such adjustments and the extent to which they mitigate the effect of the bankruptcy code on the outcome of default.

We focus on three European countries that have very different levels of creditor protection: France, Germany, and the UK. In the creditor-unfriendly code of France, the State imposes court-administered procedures in bankruptcy with the explicit objective of preserving the firm as a going concern and maintaining employment. To achieve these goals, French bankruptcy courts are given control of the bankruptcy process and are not mandated to sell the assets to the highest bidder. The role of creditors is reduced to an advisory function, and their approval is not required by the court in selecting a reorganization plan. By contrast, in the UK, although the State provides court-administered bankruptcy procedures, secured creditors can veto them and enforce the default provisions as specified in the debt contract. In the principal bankruptcy procedure used for small firms in the UK at the time of our study, known as administrative receivership, secured lenders have full discretion to realize the defaulted firm's assets as they choose in order to ensure repayment of their claims, without much interference by the courts. Germany provides an intermediate level of creditor protection, where collective court-administered procedures are imposed on the parties in bankruptcy, but creditors retain significant control over the restructuring process, and their agreement is required to approve any reorganization plan. These differences across the three countries are reflected in the creditors' rights scores of La Porta, Lopez-De-Silanes, Shleifer and Vishny (1998, LLSV), which range from a minimum of 0 for France, to 3 for Germany, and to a maximum of 4 for the UK.

To study the effects of these differences in bankruptcy codes, we construct a unique dataset of 2280 small-to-medium-size firms in France, Germany, and the UK, almost all of them privately owned, that have defaulted on their bank debt. Under the initiative of Standard and Poor's Risk Solutions, the data have been collected specifically for this study from the private records of ten commercial banks, each with a significant market share in its country. The data include detailed information on the terms of the loan contracts, the event of default and its resolution (either bankruptcy or workout), collateral values and the proceeds from asset sales, and banks' recovery rates.

Our main findings can be summarized as follows. First, we find that banks significantly adjust their lending and reorganization practices in response to the country's bankruptcy code. In particular, collateral requirements at loan origination directly reflect the bank's ability to realize assets upon default. Thus, because the proceeds from collateral sales are lower in France, at loan origination French banks demand higher levels of collateral per dollar of debt. Moreover, the composition of different types of collateral reflects their expected value in default: While real estate collateral is the most important source of banks' recovery in Germany and the UK, it is far less valuable in France, because sales proceeds are diluted by preferential creditors, such as employee wages and bankruptcy fees, and because French bankruptcy courts tend to sell assets below their potential market prices in order to preserve employment. By contrast, accounts receivable and personal guarantees can be realized by French banks directly, and the proceeds are not subject to dilution by preferential creditors. As a result, these collateral types are used more often than real estate at loan origination in France.

Second, the observed adjustments mitigate but do not eliminate the effect of bankruptcy codes on outcomes of default. Banks' losses in default remain sharply different, with the median undiscounted recovery rates of 92% in the UK, 67% in Germany, and 56% in France. Notwithstanding these differences, they would have been even larger in the absence of endogenous adjustments. The differences in recoveries are due to very different outcomes of bankruptcy, where the influence of the bankruptcy code is greatest. By contrast, recovery rates in workouts are very similar across the three countries.

Third, differences in practices across countries do not always conform to expectations. For example, it is often argued that defaulted firms are less likely to survive as going concerns in creditor-friendly countries such as the UK, where secured creditors have wide discretion to sell their collateral (Hart, 2000; Acharya, Sundaram, and John, 2004). Contrary to this prediction, we find that the proportion of going-concern reorganizations is actually higher in the UK than in France, where the primary stated objective of insolvency is to ensure the survival of the troubled firm. The explicit preference of UK banks toward going-concern

reorganizations and their willingness to go to great length to turn around the ailing firm (Franks and Sussman, 2005) is consistent with the fact that they are often residual claimants in default, and therefore have strong incentives to maximize the total recovery. Moreover, in response to large losses in the early 1990s, most UK banks have switched to managing distressed firms through centralized 'business support units' in order to improve coordination and avoid over-supply of bankrupt firm assets in the resale market (Armour, Cheffins, and Skeel, 2002; Franks and Sussman, 2005). By contrast, the de-privatized nature of bankruptcy in France provides few economic incentives to reorganize the firm in an efficient manner.

Finally, our findings underscore the importance of understanding broader institutional considerations in discerning the effects of bankruptcy legislation. For example, we find that loan spreads charged by UK banks are similar to those in France, notwithstanding higher UK loan recovery rates combined with similar default probabilities in the two countries. The ability of UK banks to charge high interest rates can be attributed to the relatively low levels of competition in the UK banking sector compared with Germany and France, manifested in high industry concentration and high bank profitability.

Our paper contributes to the strand of the literature studying the influence of creditors' rights on debt contracts and distressed reorganizations. Claessens and Klapper (2005) analyze how legal origins and creditor protection affect the incidence of formal bankruptcy procedures at a country level, Qian and Strahan (2006) examine their influence on the terms and pricing of bank loans, and Bae and Goyal (2004) focus on the effect of property rights on loan spreads across countries. These papers find that differences in creditors' rights, particularly relating to the treatment of collateral, significantly influence the terms of loan contracts.[1] Unlike these papers, we conduct a detailed study of bankruptcy laws at the firm level in a small number of countries, instead of a limited number of metrics of creditors' rights in a wider cross-section of countries. This approach allows us to relate differences in debt contracts and outcomes directly to particular provisions of a code and bankruptcy procedures, such as the dilution of collateral sale proceeds by preferential creditors in France. It also allows us to take into account institutional differences across countries that may attenuate the effects of bankruptcy law.

We know of no other paper providing a comparative study of defaults in different countries while strictly controlling for data comparability. Most available evidence on financial distress comes from large US corporations.[2] Studies of other jurisdictions include papers on bankruptcy auctions in Finland by Ravid and Sundgren (1998), and in Sweden by Strömberg (2000) and Thorburn (2000). Data limitations usually re-

[1] Several papers, including La Porta *et al.* (1998) and Djankov, McLiesh and Shleifer (2004), study at the country level the link between the development of debt markets and investor protection and the country's legal origin.

[2] See Asquith, Gertner and Scharfstein (1994), Bris, Welch, and Zhu (2006), Franks and Torous (1994), and Gilson, John and Lang (1990), among others.

strict available evidence on distress to formal bankruptcies. An exception is Franks and Sussman (2005), who study how small firms are reorganized in the UK, although the lack of country comparisons makes it more difficult for them to study the impact of bankruptcy rules on the outcome of default and bankruptcy.

The remainder of the paper is organized as follows. The next section briefly outlines the main features of the bankruptcy codes in France, Germany, and the UK, and provides a discussion of our hypotheses concerning the effects of bankruptcy codes on debt contracts and outcomes of default. Section II describes how our dataset was collected, and reports firm characteristics, recovery rates, and statistics on levels and types of collateral. Section III provides regression results concerning cross-country comparisons of default outcomes, recovery rates, and interest spreads at loan origination. Section IV concludes. Further details on the bankruptcy codes in the three countries are provided in the Appendix.

I. Bankruptcy codes and testable hypotheses

A. Bankruptcy codes in the three countries

Bankruptcy laws and procedures in France, Germany, and the UK are significantly different. The French and German codes require both collective procedures and court supervision, while that in the UK requires neither. The French code emphasizes the preservation of the going concern and employment, while the UK leaves the contracting parties to the debt contract largely free to implement the procedure stipulated in the contract. These differences are reflected in very different scores for creditors' rights constructed by LLSV (1998), cited earlier.

INSERT TABLE I HERE

Table I summarizes the main features of the principal bankruptcy procedures of the three countries, and those of the US for comparison; more information is provided in the Appendix.[3] In the UK, in the event of bankruptcy, control rights pass to the creditors. In the principal procedure used for SMEs at the time of our study, administrative receivership, a secured creditor (designated in the debt contract) appoints a registered insolvency practitioner (called 'an administrative receiver') to assume all the powers of the company's board of directors, with the sole purpose of realizing sufficient funds to repay the debts owing to the secured creditor. The receiver does not need to consider the interests of other creditors, in particular unsecured lenders, and has full discretion over whether to sell the firm as a going concern, or close it and liquidate its

[3]Our description pertains to the codes that were in effect in the three countries at the time when our data set was collected. Some changes to the French and UK codes have been enacted since then, but they do not affect our sample firms.

assets piecemeal. He, however, must respect the security rights of other lenders and the order of priority of their claims, as provided for in the loan contracts.

In French bankruptcy, called *redressement judiciare*, the court appoints an administrator who takes control of the company. The objectives of the administrator, as specified by statute, are to maintain the firm as a going concern, preserve employment, and satisfy creditors' claims, in that order. The court decides whether the firm should be liquidated or preserved as a going concern, and in the event of firm sale the court can choose a low-value bid if it provides for better prospects of employment preservation.[4] Creditors cannot veto the decision of the administrator, and can only communicate their concerns through non-binding recommendations of a court-appointed creditor representative.

In Germany, the current bankruptcy code took effect in 1999, although it was passed in 1994. Under the current code, a court-appointed administrator supervises the bankrupt company and devises a plan of reorganization. The current code introduced for the first time an automatic stay of three months on creditors' claims, the potential for supra-priority finance, and majority voting rules for approving the reorganization plan. A majority of secured creditors is required for the plan to be approved; otherwise the firm must be sold. The principal pre-1999 procedure subjected the bankrupt firm to a compulsory auction, where the priority of claims and collateral rights were strictly respected. We are informed by German banks that because the 1999 rules were passed in 1994, they influenced procedures prior to being enacted into law. As a result, for practical purposes the degree of creditor protection allowed in the German pre- and post-1999 codes is likely to be very similar.

The differences in the three bankruptcy codes are best seen from the perspective of a secured creditor. In the UK, upon default secured creditors are firmly in control of the company. There is no automatic stay against creditors' claims or provisions for supra-priority finance. Unsecured creditors have few control rights and do not participate in the sale of the firm's assets. They do not, as a matter of contract and practice, obtain any payout unless secured creditors' claims have been completely satisfied. As a result, there are no deviations from strict absolute priority, and recovery rates for junior creditors are negligible (Franks and Sussman, 2005).

In Germany, the position of secured creditors is a little weaker, since a collective procedure is imposed on the parties, with a three-month automatic stay on all claims. Although voting procedures can dilute the rights of dissenting creditors, the approval of a majority of secured creditors is required for any plan to be passed by the court.

[4]Blazy and Combier (1997) provide evidence that French bankruptcy courts do indeed often fail to sell assets to the highest bidder.

In France, the rights of secured creditors are most at risk, as their approval is required neither for the sale of their collateral, nor for confirmation of a reorganization plan. In addition, the State places its own claims and those of employees first in priority when collateral is sold in bankruptcy. An exception occurs in the case of some types of 'cash' collateral, such as guarantees and debtors (accounts receivable), which can be realized directly by the secured creditor, and are not diluted by preferential creditors. The administrator in bankruptcy can raise supra-priority financing without the approval of creditors, thereby further reducing the priority of their claims on the firm's assets. Supra-priority financing is also available in Germany, but creditors' approval is required. It is not available in receivership in the UK.

The LLSV creditors' rights score for Chapter 11 of the US code is only slightly above that of France (1 vs. 0). However, the two codes are fundamentally different. Whereas in the US the bankruptcy court performs the role of a referee between different creditors and the debtor while they agree on a reorganization plan, the French court both supervises and controls the bankruptcy process, and determines the outcome. By statute the French court can choose a plan that reduces the value and redistributes the proceeds of bankruptcy, in the name of employment preservation, without any requirement for creditors' approval. Such a process is equally 'unfriendly' to both the debtor and the creditors.

B. Testable hypotheses

Coase's theorem suggests that private contracts will adjust to minimize costs and inefficiencies of any bankruptcy code. In creditor-unfriendly jurisdictions such adjustments should help market participants, at least partially, to overcome constraints on lending. Djankov, McLiesh, and Shleifer (2004) argue that banks may respond to poor creditor protection by screening and monitoring borrowers more carefully at loan origination. Below, we provide some evidence on the quality of loan books in our three countries by comparing default rates in the different countries and overall levels of banks' loan losses. Qian and Strahan (2006) study how creditor protection affects loan characteristics at origination, while Bae and Goyal (2004) focus on loan pricing. Acharya, Sundaram, and John (2004) predict that the allocation of control rights in bankruptcy should affect the firm's choice of optimal capital structure.

In this paper, we use a sample of defaulted firms to study how lending and reorganization practices are modified depending on the country's bankruptcy code, and the extent to which such adjustments allow banks to mitigate creditor-unfriendly provisions of the code and reduce their losses in default. Our first hypothesis predicts that for similar firms across the three countries, banks' recovery rates in formal bankruptcy will increase with the level of creditors' rights, implying the lowest recovery rates in France and the highest in the

UK. Since French bankruptcy courts are not obliged to sell bankrupt concerns to the highest bidder, the value of the firm's assets will on average be reduced even in the absence of direct bankruptcy costs. These lower sales proceeds will be further diluted by preferential creditors, which should result in lower recovery rates for secured creditors. By contrast, German banks retain significant control over the bankruptcy process, while UK banks have virtually all the control rights to recover their claims, and therefore are likely to achieve higher recovery rates.

It is important to stress that it is only for *similar* firms in formal bankruptcies that this hypothesis is expected to hold. In general, recovery rates will be affected by the endogenous adjustment of the characteristics of firms in default. One such adjustment could be through the levels of collateral and other contractual loan characteristics. Also, firms typically have latitude in the timing of default, in that they can declare default earlier or later in distress. Cross-country differences in the timing of the default decision may affect default outcomes. For example, the 'alert' procedure specified in the French code subjects managers to criminal penalties for failing to report liquidity problems promptly to the Banque de France. If in response to the bankruptcy code firms default early in distress, this may allow lenders to take remedial action and increase their recovery rates.[5]

Our second hypothesis concerns how bankruptcy codes affect the relative incidence of formal versus informal procedures.[6] Since banks in France have limited control rights in bankruptcy, resulting (as we show) in low recovery rates, they should have a stronger incentive to restructure in workouts and avoid bankruptcy. However, other factors may also affect the incidence of workouts. For example, the much greater control rights that UK banks enjoy in bankruptcy procedures may potentially increase their bargaining power outside bankruptcy, making workouts easier to negotiate with firm owners. Also, borrowing from multiple banks is much more common in France and Germany than in the UK, increasing renegotiation costs and making workouts more difficult. It is an empirical question which of these effects dominates.

While the above two hypotheses are related to default outcomes and preferred reorganization procedures, the third concerns the effect that bankruptcy codes have on the terms of the debt contract at origination, in particular those related to collateral. If, as we expect, the lack of control rights of secured creditors over the sale of assets and the dilution of their claims decreases the value of collateral for French banks, then banks may respond by demanding more collateral per dollar of debt to ensure the same level of security

[5]Because of data limitations, we do not study whether firms in different countries default at different stages of economic distress, implying differences in firm market values on entering default. See Davydenko (2005) for US evidence on the determinants of the timing of default.

[6]Claessens and Klapper (2005) study how the proportion of firms that file for bankruptcy each year depends on creditors' rights. However, since they have no data on workouts, it is unclear whether the differences they report across countries are due to different default rates, or to the relative incidence of workouts conditional on default.

protection. Moreover, we expect French banks to rely more on particular types of 'cash' collateral specified in the bankruptcy code, which are not subject to dilution by preferential creditors.

Finally, we hypothesize that loan interest rates will reflect banks' expected losses from default in each country. In particular, if low recovery rates for banks in France result in greater overall expected losses from SME portfolios, then loan spreads there should be higher than in other countries. This, of course, need not be the case if higher losses conditional on default in France are offset by lower default rates. Indeed, if the overall loan portfolio quality is better in France due to more efficient screening and monitoring, then for new loans expected default losses may actually be lower than in other countries, despite high loss rates for firms that do default (and end up in our sample). To estimate banks' expected losses, we look at recovery rates in conjunction with default rates, and also at the banks' aggregate loss provisions reported on their balance sheets. We then investigate whether loan spreads across countries reflect the ranking of expected losses.

II. The data

A. Data sources and sampling procedures

Ten banks participated in this study: three in France, three in Germany, and four in the UK. Each observation in the sample corresponds to a particular firm that defaulted during the sample period. In the large majority of cases our bank was the borrower's main bank. For each firm, we collect detailed data on loan terms at origination, the default event and its resolution, recovery rates for creditors, the different types of collateral at default, and the proceeds from collateral sales. Where the banks provided us with names of the companies, we use public data sources to supplement bank records on balance sheet and P&L account information and details of reorganization proceedings.

We focus on small-to-medium-size enterprizes (SMEs), applying the following selection criteria: (1) We include in our sample firms with annual sales turnover below 75 million Euros and total debt outstanding with the participating bank in excess of 100,000 Euros. (2) We use the Basel II definition of default as a criterion for including a particular firm in our sample. According to this definition, a company is considered in default if any of the following conditions are present: the bank's loan is more than 90 days past due on a scheduled debt payment, formal insolvency proceedings have been initiated against the borrower, a specific loss provision has been raised by the bank against the exposure, or the bank's officers have indicated that a material loss was likely, using an internal rating.[7]

[7]Our conversations with banks' officers indicate that in practice, in the great majority of cases it is the last three criteria

To monitor the quality of data collection, particularly in light of differences of language and institutions, in each of the three countries we employed scholars and practitioners who had local knowledge of the bankruptcy code and familiarity with data collection for distressed firms. For each country, a template was designed to collect data on a company-by-company basis. A similar template was used for all banks within a country to ensure data comparability. We conducted numerous interviews with authorities in the banks responsible for managing distressed firms, and in many cases we were allowed unrestricted access to the banks' original files. We also held extensive conversations with insolvency practitioners and judicial authorities in the three countries in order to improve our understanding of bankruptcy laws, procedures, and practices.

B. Summary statistics

Panels A and B of Table II reports the number of companies in our sample by year of default and by broad industry group. The UK and German samples are concentrated in the years 1996-2003, while the French sample is spread over the period 1993–2003. In each of the three countries, the defaulted SMEs are most frequently found in wholesale/retail trading and less frequently in the construction business. There are very few utility or financial firms of this size.

Since our sample is conditional on default, we do not have independent data that would allow us to estimate default rates for SMEs in the three countries. Instead, we report default probabilities for private companies provided by rating agencies Moody's and Standard and Poor's.[8] Similar to our sample selection criteria, both agencies use the Basel II definition of default, including workouts as well as formal bankruptcies. Both agencies focus on private companies with annual sales turnover in excess of €500 thousand, but do not filter out large private firms.[9] Standard and Poor's estimates for the UK and France are based on historical default frequencies between 1998 and 2004 obtained from private bank records; they do not report statistics for Germany. Moody's arrive at their estimates using several different approaches, including the use of private bank data. The default probability statistics are reported in Panel C of Table II. For France and the UK the estimates by the two agencies are similar, between 2.0 and 2.2% per year. For Germany, Moody's reports the baseline default probability of 1.6% per year, but stresses that it corresponds to a boom period with relatively few defaults.

INSERT TABLE II HERE

that were important for the selection of the sample, but that it was unlikely that an officer would downgrade a borrower to default unless a scheduled payment was more than 90 days overdue or the loan limit had been persistently exceeded.

[8]Estimates by Moody's are obtained from technical reports *Moody's RiskCalc^{TM} for Private Companies* for the UK, France, and Germany, available at www.mkmv.com. Standard & Poor's estimates are from *Credit Risk Tracker Technical Documentation* reports for the UK and France, downloadable from www.creditrisktracker.com.

[9]In addition, Moody's excludes start-up firms, financial firms, subsidiaries, and public sector firms, while S&P excludes firms with fewer than 10 employees.

Company characteristics are summarized in Table III. Accounting data are taken from the last accounts statement (audited or managerial) available prior to default. Average sales turnover before default is €17.4 million in the UK, €18.6 million in France, and €23.8 million in Germany. Median book leverage at default is 66% in the UK, 63% in France and 79% in Germany. These numbers are high compared with those for non-distressed listed firms reported by Rajan and Zingales (1995), which are, respectively, 18%, 25%, and 16%. A second measure of distress, the current ratio (current assets/current liabilities), suggests higher liquidity for French firms at 1.35, compared with only 1.05 in the UK; both are well below the benchmark level of 2 generally considered the minimum level for healthy firms. The higher ratio for French companies may be affected by the legal provision that compels French managers to inform the officials of difficulties in paying suppliers, and subjects them to criminal penalties in the event of non-compliance. Overall, high leverage and low current ratios confirm that firms in all countries are seriously distressed.

Defaulted SMEs in the sample are rarely start-up firms, with the median age at default varying from 7 years in the UK to more than 15 years in Germany. They have long-standing relationships with the main bank, with medians ranging from 3.8 to 4.9 years. Table III shows that the proportion of defaulting firms reorganized in a formal bankruptcy, as opposed to a workout, is similar in the UK and France, at 75.4% and 78.0%, but higher in Germany at 86.9%. Thus, contrary to our expectations, we do not find a lower incidence of bankruptcies in France, even though French banks do not control the bankruptcy process and therefore should have a strong incentive to reorganize in a workout. Also contrary to expectations, the proportion of piecemeal liquidations (where the firm is closed and assets are sold, either in bankruptcy or in a private sale), reported in the last column, is not lowest in France, despite the explicit commitment in the bankruptcy code toward preserving the troubled firm as a going concern. In fact, the incidence of liquidations is much lower in the UK, at 42.9%, than in France (62.0%) or Germany (56.9%). These results may be surprising in the light of Hart's (2000) view that, because senior secured creditors are in control of the UK bankruptcy process, they will have less interest in the going concern value, and as a result there will be more (inefficient) piecemeal liquidations. However, this argument assumes that the senior creditor is not impaired in default and therefore is not the residual claimant. By contrast, our evidence and that reported in Franks and Sussman (2005) imply that in fact upon default UK banks are often residual claimants, and therefore have a strong incentive to maximize the total recovery. We analyze the determinants of the incidence of bankruptcies and liquidations in Subsection III.A, and discuss factors that may be affecting our cross-country comparisons.

INSERT TABLE III HERE

The incidence of formal bankruptcy conditional on Basel II default in the SME sector that we document is relatively high. For the UK, it is significantly higher than the 31.5% reported in Franks and Sussman (2005). However, their firms are considerably smaller (sales turnover of €1.2 million vs. €5.5 million in our sample), and their sample consists of firms that banks place in their 'intensive-care' units. Those firms have not necessarily defaulted, but they give the bank cause for concern.[10] By contrast, firms in our sample have all defaulted, and therefore are likely to be considerably more distressed on average. We know of no reliable statistics on the incidence of formal bankruptcies in default for small unlisted firms in France or Germany. In the US, for a sample of large publicly listed firms, Gilson, John and Lang (1990) report that about 53% of distressed US firms end up in a Chapter 11 bankruptcy, while 47% successfully restructure out-of-court. Baird, Bris and Zhu (2006) find that the large majority of Chapter 11 cases are small companies that do not survive as going concerns.

C. Debt contract characteristics

For each firm in the sample, we analyze all loans and overdrafts (credit lines) that were outstanding at the time of default with the bank that provided data for this study.[11] For 96% of firms in the UK sample, our bank is the main bank lending to the firm. For the French sample the equivalent figure is only 56%, reflecting the fact that multiple bank lending to an individual firm is more frequent than in the UK. For a small sample of German firms for which this data is available, our bank is the main bank in about 62% of cases. In a majority of our tests, we aggregate all loans and overdrafts, calculating the firm's total debt outstanding and total losses, and report the bank's overall recovery rate for the firm.[12] This approach allows us to avoid the issue of the arbitrary allocation by banks of recovery proceeds to different loans of the same firm, and to focus on the bank's total losses.

Table IV summarizes the characteristics of bank debt at default. It shows that the mean total debt outstanding at default with the participating bank, which we refer to as Exposure at Default (EAD), is €960,000 in the UK, €600,000 in France, and €2.41 million in Germany. The medians are smaller, at €244,000, €269,000, and €1.23 million, respectively. These statistics confirm that German firms in the sample are larger than those in the UK and France, on the basis of debt exposure as well as sales turnover.

[10] Franks and Sussman (2005) report that UK banks may transfer a firm to their intensive-care unit because they do not approve of the management's strategy and therefore require specialized monitoring, rather than because they expect the firm to default in the foreseeable future.

[11] Although some firms may have banking relationships with several banks, we only have information from participating banks on their own debt facilities.

[12] In addition to loans and overdrafts, banks may provide firms with 'non-cash' facilities, including performance bonds, bank guarantees, and interest rate swaps. We exclude such facilities from the study, since our analysis suggests that banks' losses on them are typically quite low, even in formal bankruptcy.

In the analysis below we use EAD as a measure of the company's size.

INSERT TABLE IV HERE

The second column in Table IV reports the proportion of outstanding debt that is secured (collateralized) at the time of default. This is the ratio of the last available pre-default estimate of the value of collateral, divided by the EAD. The table shows substantial differences in the levels of collateral across the three countries. While the median value of collateral is only 41% of the total debt outstanding in Germany, it is 62% in the UK, and as high as 104% in France. Thus, German firms are able to borrow without posting as much collateral as UK or French firms. This ordering of countries is consistent with Qian and Strahan (2006), who find that the proportion of (mostly large and syndicated) loans that are secured by collateral is 53% for Germany, 57% for the UK, and 67% for France. Since, as we show below, collateral has a major impact on creditors' recovery rates, high levels of collateral in France may provide a means to allow banks to mitigate the effects of creditor-unfriendly provisions of the French bankruptcy code. The differences in levels of collateral may also reflect differences in valuation methods, such as the degree of conservatism shown by the banks in valuation, and the timing of revaluations. For example, UK banks tend to update formally their collateral value estimates for distressed companies, whereas French banks do not. We also find that our German banks are often conservative in their valuations, in particular often placing zero value on personal and company guarantees. Finally, some banks use the original cost or (written down) book values, rather than open market values, for particular types of collateral. These differences in practices may have important implications. For example, more frequent revaluations of collateral may lead banks to demand more collateral in distress if there is a decline in asset values, and this practice may improve recovery rates. We later investigate whether the frequency of collateral revaluations affects collateral recovery.

Table IV also provides statistics on the average number of loans per distressed company, the proportion of loans that are long-term (defined as more than one year to maturity at origination), and the proportion of overdrafts (credit lines), which are typically subject to repayment on demand. Long-term financing is more common for defaulted firms in France (43%), and least common in Germany (19%). Much of the lending in France (52% of the total) is at fixed interest rates, while as much as 94% of UK lending is contracted at variable rates. These comparisons are consistent with the fact that the median defaulted firm is 100% overdraft-financed in both Germany and the UK, while in France almost two-thirds of debt is in term loans, which are more likely to be long-term fixed-rate facilities. The average maturity of long-term loans calculated at loan origination is between 6.5 and 8.8 years, depending on the country. Overall, debt characteristics in

the three countries differ significantly along a number of dimensions.

The last column of the table reports statistics on the interest rate spread stipulated in the loan contract at its origination. For floating-rate loans, this is the loan spread specified in the loan contract, adjusted for the difference between the reference rate (such as the Bank of England base rate) and the applicable LIBOR rate. For fixed-rate loans, it is the difference between the loan rate and the level of the reference rate in the respective country on the date of loan origination, adjusted by the applicable fixed-to-LIBOR swap spread. Table IV shows that interest spreads for our sample firms are very similar in France and the UK, and highest in Germany. The mean spread is 224 basis points in France, 223 in the UK, and 290 in Germany, whereas the median is the lowest in France at 202 basis points, compared with 217 in the UK, and as much as 321 in Germany. This ranking is not consistent with the levels of creditor protection in the three countries, nor with the evidence we report below regarding expected losses on bank loans in different countries. We discuss these issues in detail in Subsection III.C.

D. Banks' recovery rates

We calculate the bank's recovery rate for the firm as one minus the ratio of the total final loss (write-off)[13] to 'Exposure at Default' (EAD), which is the total debt amount on all loans outstanding with the bank at the date of default. We focus on nominal (undiscounted) recovery rates, because information on the timing of cash flows is only rarely available. The median total length of reorganization proceedings between default and case closure for sample firms is 1.45 years in the UK, 3.05 years in France, and 3.82 years in Germany.[14] However, in many cases most of the bank's cash flows are received shortly after default. For a subsample of firms for which the data are available, the median *duration* of cash flows from the date of default is 0.78 years in the UK, 1.81 years in France, and 3.58 years in Germany. Looking at discounted recoveries for these firms, we find that for discount rates of around 15%, longer reorganization periods in Germany make economic recovery rates closer to those in France, but for lower discount rates the ordering of countries is the same as that for nominal recoveries, which we focus on below.

Table V summarizes undiscounted recovery rates for defaulted firms in the three countries. Consistent with the LLSV ranking of creditors' rights, median recovery rates for all firms, reported in Panel A, are lowest in France (56%) and highest in the UK (92%), with Germany in between (67%). The differences across countries are significant, both economically and statistically, despite possible adjustments in banks'

[13]Less than ten percent of the cases were still open when we collected the data, and final write-offs were not yet available. In those cases we use the latest available provisions as an estimate of future losses on resolution.

[14]For comparison, for middle-market firms in the US, Araten, Jacobs, and Varshney (2004) report mean recovery periods of 2.15 years.

their lending and reorganization practices in mitigation of particular creditor-unfriendly provisions of their country's bankruptcy code. Using regression analysis, we show in Subsection III.B that in the absence of such adjustment the differences that we document would have been even larger.

INSERT TABLE V HERE

It is interesting to compare these recovery rates with those in the US, where the bankruptcy code is usually considered to be relatively creditor-unfriendly. For large US corporations, Gupton, Gates and Carty (2000) estimate average recovery rates on traded senior secured bank loans of 70%; this number falls to 52% for senior unsecured loans. For the middle-market segment in the US, Araten, Jacobs, and Varshney (2004) document bank recovery rates of 70%, while for all loans in their sample the average is slightly higher at 73%. These recovery rates are higher than what one might expect given that the LLSV index of creditors' rights for Chapter 11 of the US code is 1, compared with 0 for France, 3 for Germany and 4 for the UK. The small difference in the scores between France and the US fails to reflect the substantive differences in bankruptcy procedures in the two countries. The former provides for explicit court intervention that reduces the value of secured creditors' claims by subordinating them to preferential claims and by the courts' ability to sell the firm below the market price to preserve employment. By contrast, creditors have significantly more power to influence reorganization in the US, and the role of the bankruptcy court there is to administer the reorganization process solely to obtain agreement by different creditors and the debtor for a reorganization plan. The extent of the control that senior creditors are now able to exercise in bankruptcy leads Baird, Bris, and Zhu (2006) to argue that "changes in Chapter 11 practice over the last 15 years close the gap between Chapter 11 and other regimes that make explicit use of the market and grant senior creditors greater control" (p. 8). Thus, notwithstanding the low LLSV creditor protection score, recoveries for secured creditors in the US may be expected to be closer to those in the UK and Germany than in France.

It may also be the case that Chapter 11 and its associated provisions are more widely used for larger companies (the subject of most existing studies of recovery rates) than for the small-to-medium size unlisted companies, which comprise our sample. Baird, Bris and Zhu (2006) state that, while two-thirds of all corporate Chapter 11 filings are either converted to Chapter 7 liquidations or dismissed altogether, these outcomes are far more likely for very small firms. To the extent that firms can also file for Chapter 7 directly, it, rather than Chapter 11, may provide an important benchmark procedure for SMEs in the US.

Figure I shows the distributions of recovery rates by country. In Germany and the UK, the most common outcome is full recovery for the bank. By contrast, a distinct feature of the French distribution is its bimodal

shape, with zero recovery being the second most-common outcome.[15] To understand the reasons for this bimodal distribution, we have looked at all individual zero-recovery cases in our sample for which verbal case descriptions were provided. In France, in 20% of zero-recovery cases the bank's debt was secured, but collateral realization proceeds were fully diluted by preferential creditors or other banks ranking higher in priority. In a further 64% of the cases the bank either had no collateral, or its security could not be realized (for example, when the owner of the firm disappeared). In these cases the bank either made no attempt to pursue its claims, or received nothing due to its low ranking relative to other claimants. Thus, the large number of zero-recovery cases in France appears attributable to the banks' low priority in many defaults, coupled with generally low values of assets in bankruptcy, which may not be enough to satisfy the claims of preferential and other senior creditors. In the UK, the incidence of multibanking in the SME sector is much smaller, and preferential creditors cause little dilution of senior creditors' claims (Franks and Sussman, 2005); as a result, zero-recovery cases are rare.

INSERT FIGURE I HERE

The impact of the bankruptcy code on default outcomes should be most pronounced in formal bankruptcy and when assets are liquidated. Panel B of Table V reports recovery rates by the type of reorganization procedure (bankruptcy or workout) and by outcome (piecemeal liquidation or going concern). As expected, recovery rates are lower and cross-country differences are more pronounced for formal bankruptcies and for piecemeal liquidations, compared with workouts and going-concern reorganizations. The median recovery rate in bankruptcy is 82% in the UK, 61% in Germany, and only 39% in France. This country ranking coincides with that for all defaulted firms in Panel A, and reflects differences in creditor protection in the three countries.

In contrast to formal bankruptcies, average recovery rates in workouts are between 76% and 83%, and are not statistically different across countries. Thus, large differences in bankruptcy outcomes do not translate into similar differences in workouts. Our case-by-case analysis of workouts for which case descriptions were available suggests that in all three countries banks are willing to renegotiate outside of bankruptcy only when little or no loss is likely. For example, when the personal guarantee of the owner/manager is valuable, a mere threat of enforcement of that guarantee is often enough to ensure full repayment of the firm's loan. Non-bankruptcy defaults may also involve sales of 'cash' collateral directly by the bank, repayments from

[15] This bimodal shape of the distribution of recovery rates is not exclusive to France. Araten, Jacobs, and Varshney (2004) report a similar distribution of loan recoveries in the US, albeit with a more pronounced tilt toward full recovery, and less toward full loss. Hu (2006) finds that "in bankruptcy settlements, obligors tend to either suffer complete loss or are able to obtain total recovery" (p. 43).

asset sales and friendly liquidations, or cases where the firm is simply allowed to trade out of trouble or re-bank. Cases where high recovery in a workout is unlikely are usually transferred to bankruptcy. In this sense, asking why recovery rates in workouts are similar in the three countries is equivalent to asking why higher expected losses from bankruptcy in France do not make banks more willing to accept write-downs in renegotiations. A similar question arises in Franks and Sussman (2005), who find that UK banks almost never forgive debt, even though forcing bankruptcy may result in even larger losses. They argue that, by consistently refusing to forgive debt, UK banks effectively commit to being tough in renegotiations, which in turn ensures that borrowers do not default strategically in order to secure debt concessions. Our finding that write-downs in workouts are rare not only in the UK but also in France and Germany provides additional support to this hypothesis.

Panel B of Table V also compares recovery rates for firms reorganized as going concerns with those liquidated piecemeal. In all countries going-concern recovery rates are significantly higher than those in liquidation. The difference between the two varies across countries, reflecting the degree of creditor protection. In France, median recovery rates for liquidated firms are less than one-third of those for going concerns (31% vs. 96%), while in the UK the difference is much smaller, at 22%. Still, this difference is economically important, providing UK banks with an incentive to preserve the firm as a going concern. This contrasts with the common wisdom that banks with strong control rights will have incentives to sell the firm's assets piecemeal quickly. Table V further shows that banks' recovery rates in liquidations in Germany are only slightly higher than in France, and that both realize only about half of what UK banks are able to recover.

Panel C of Table V reports recovery rates by industry. In the UK, they are very similar across industries, with medians all between 81 and 94 percent. In France and Germany some cross-industry differences are economically large, but typically statistically insignificant. Recovery rates in construction and light manufacturing are higher than average, and in retail/wholesale they are smaller. However, collateral accounts for much of the difference in recoveries. For example, in Germany levels of collateral in the construction industry are at 95% of the loan, while in wholesale/retail they are at only 53%. Regression analysis, reported below, shows that the industry is insignificant in explaining recovery rates once the levels of collateral are controlled for. This raises the interesting question as to whether differences in levels of collateral across industries are due to constraints on supply, related to asset characteristics in a particular industry. Studies of recovery rates in the US typically also find cross-industry differences to be insignificant, except for utility firms, which recover significantly more (Acharya, Bharath, and Srinivasan, 2006; Araten, Jacobs, and Varshney, 2004; Gupton, Gates, and Carty, 2000). For small-to-medium-size private firms the importance of the

firm's industry for recovery rates is likely to be reduced by the common use of industry-insensitive types of collateral, such as personal guarantees and real estate.

Our data on recovery rates in default can be used in conjunction with default probabilities in the three countries to estimate banks' expected losses from their SME loan portfolios. Since differences in recovery rates are much higher than potential differences in default rates (see Panel C of Table II), the ranking of total losses across countries mirrors that of recovery rates, reflecting differences in creditor protection in the three countries. We discuss this question in more detail in Subsection III.C.

E. The use of collateral

Panel D of Table V reports recovery rates by the fraction of debt that is secured by collateral at default. For all three countries, recovery rates increase (almost) monotonically with the percentage of the loans secured. In the UK, the large majority of the sample firms have collateral in excess of 80% of the loans outstanding. There are few companies with collateral below 40%, and even for these, recovery rates are almost 60% or more of the loan's face value. This suggests that the few firms that are able to obtain loans without providing signifcant collateral are of high quality, implying effective screening of unsecured borrowers by the bank. In France, the proportion of defaulted firms with high levels of collateral is also quite high. However, for defaulted firms with collateral below 40%, median recovery rates are below 20%, contributing to the spike at zero on the distribution of recovery rates presented in Figure I. In Germany, unsecured lending is relatively more common, and there are few firms with collateralization levels above 80%, in part reflecting more conservative valuation policies. For comparison, in the US Araten, Jacobs, and Varshney (2004) report recovery rates of about 72% for secured loans, and close to 60% for unsecured loans, once again suggesting that, despite the low LLSV creditor protection score, recovery rates in the US are among the highest of the four countries.

In response to particular provisions of the bankruptcy code, banks may adjust not only the total amount of collateral, but also the *composition* of collateral they require. Table VI presents statistics on the importance of different collateral types at default (Panel A), and on the net proceeds that banks receive when the collateral is sold (Panel B). Columns (1)–(3) of Panel A show the composition of collateral by type (for secured borrowers only), whereas columns (4)–(6) report the ratio of the value of each type of collateral to debt outstanding at default (including both secured and unsecured borrowers). In both the UK and Germany collateral is dominated by commercial and residential real estate, whose value exceeds that of all other types combined. By contrast, real estate is far less important in France, where it amounts to only 11% of total

collateral in default. The most often used collateral types in France are guarantees and debtors (accounts receivable), which in default can be realized directly by the bank without suffering dilution by preferential claimants even when the company is in formal bankruptcy.

INSERT TABLE VI HERE

Panel B of Table VI illustrates that banks' collateral requirements at loan origination, documented in Panel A, reflect differences in expected proceeds in the event of default. Columns (1)–(3) of Panel B show the ratio of the bank's proceeds (net of costs) from the realization of collateral expressed as a proportion of its estimated value recorded at default. With the exception of personal and firm guarantees, which on average recover between one-quarter and one-third in all three countries,[16] in the UK almost all collateral types are very effective, recovering for all secured loans on average 76.3% of the estimated collateral value. Collateral recovery is also similar in Germany, at 72.9% of the estimated value. By contrast, in France secured lenders in default may expect to recover only 34.5% of the value of their collateral. This makes collateral much less valuable in France, and explains why French firms need to provide more collateral per dollar of debt to obtain lending.

Comparisons of different collateral types are also revealing. Sales of real estate provide 72% of its estimated value in Germany, and as much as 97% in the UK. Columns (4)–(6) of Panel B, which report the contribution of different collateral types to the bank's total secured and unsecured proceeds, show that real estate sales are the most important source of recovery from collateral in those two countries. In France, only 4% of the total recovery comes from real estate, and sales proceeds for the bank amount to only 30% of the value pledged.

In untabulated tests, we explore the effectiveness of collateral in France using a sample of 243 collateral items for which we know both the gross realization of collateral, and the net proceeds received by the bank. We find that for collateral types not subject to dilution by preferential creditors, such as guarantees and debtors, the bank receives almost all of the proceeds. In contrast, for real estate only 59% of the total sales' proceeds accrue to the bank. Thus, as much as 41% of proceeds either cover the costs of sale or are diluted by preferential creditors. Moreover, *gross* proceeds from 'non-cash' collateral, such as real estate, inventories, and plant and machinery, are also lower in France than in other countries, consistent with the tendency of French bankruptcy courts in asset sales to favor buyers who promise to preserve employment, rather than

[16]The statistics on the effectiveness of guarantees on realization are likely to be biased downwards because of their 'residual' nature in high-recovery cases, as banks will not enforce them if the loan is already fully repayed from other sources. Similar considerations also apply to other collateral types when banks obtain full recovery.

the highest bidder, (Blazy and Combier, 1997). As Table VI demonstrates, anticipating the lack of ex-post efficiency of these collateral types, French banks tend to require relatively less of them at loan origination.

Comparisons of collateral are affected by a number of different factors. For example, German banks are not allowed to accept real estate collateral in excess of the value of the loan, and are generally conservative in valuing many collateral types, such as personal guarantees. Also, once the loan has been extended, French banks appear to update their estimates of the value of collateral less frequently than UK or German banks. Due to such factors, data on collateral values and realizations are inherently noisy. This caveat notwithstanding, Table VI clearly shows that the amount and the composition of collateral required by banks in France is different from those in the UK and Germany, consistent with banks making endogenous adjustments to their lending practices in direct response to particular provisions of the bankruptcy code. Nevertheless, these adjustments are not sufficient to produce recovery rates in France close to those in the UK or Germany.[17]

III. Regression analysis

In this section we study factors that affect the choice of the reorganization procedure in default, recovery rates, and interest spreads at loan origination. Due to data limitations, we do not attempt to build comprehensive models explaining the variation of the dependent variables *within* each country, as our focus is on international comparisons.[18] Our tests on a subsample of firms for which accounting data are available suggest that our conclusions regarding the significance of *country dummies* in reported regressions are not altered by the presence of additional controls.

Our firm-specific control variables include the amount of debt outstanding at default with the participating bank (EAD) as a proxy for firm size,[19] characteristics of debt and collateral, and industry dummy variables. We also use the age of the firm at default (from incorporation) as a proxy for the possible effects of relationship banking and information asymmetry. To capture variations in the general level of economic activity across different stages of the business cycle, we include the country's GDP in the year of default.

[17] Given the importance of collateral for recovery rates, we investigate whether the 'staleness' of collateral values in France might potentially affect our results, by comparing realizations of collateral with recent versus stale value estimates. We find that staleness of estimates rarely affects the effectiveness of collateral significantly. The only exception is receivables in France, for which items valued more than 18 months prior to default realize 24% less of their estimated value. However, in our sample only 15% of receivables in France have such stale valuations. Overall, stale collateral valuations appear unimportant.

[18] For (mostly large) US firms, a number of papers study the choice of formal bankruptcy vs. workouts, the determinants of recovery rates, and interest rate spreads on bank loans. See, for example, Gilson, John, and Lang (1990), Asquith, Gertner, and Scharfstein (1994), and Yost (2002) on the choice of the reorganization procedure in default, and Altman, Resti, and Sironi (2001), and Acharya, Bharath, and Srinivasan (2006) on recovery rates.

[19] Where the firm has accounts with several banks (more typical of France and Germany than the UK), EAD may understate the firm's total debt and thus its size. Nevertheless, we prefer EAD to accounting-based measures of size, as using the latter would dramatically reduce our sample.

We normalize the country's levels of GDP by its value in 1991, and also subtract the exponential time trend, estimated for each country between years 1991 and 2003.

A. Bankruptcy and liquidation

Univariate statistics reported in Table III suggest that the percentage of workouts is the lowest in Germany, and the percentage of piecemeal liquidations is the lowest in the UK. Using regression analysis, we now re-examine this result, and study the factors that affect whether the defaulted firm is reorganized in a formal bankruptcy procedure or a workout, and whether the outcome is a sale as a going concern or a piecemeal liquidation. Country bankruptcy codes provide different incentives to choose a particular form of reorganization. For example, French banks may have incentives to rely more on informal procedures than banks elsewhere, because they have no control over the bankruptcy process. In the UK, the concentration of control rights in the hands of the most senior creditor may result in more piecemeal liquidations, as predicted by Hart (2000) and Acharya, Sundaram, and John (2004). In France, we could expect fewer liquidation, since the proclaimed objective of bankruptcy is to preserve the firm as a going concern.

These questions are addressed in logit regressions reported in Table VII. In regressions (1)–(2), the dependent variable equals one if the defaulted firm is reorganized in a formal bankruptcy, and zero if there is a successful workout. The dependent variable in regressions (3)–(4) equals one if the firm is eventually closed and liquidated piecemeal (which may or may not be in formal bankruptcy), and zero if it is preserved as a going concern. Consistent with the univariate analysis, these regressions show that it is the UK that has both the lowest proportion of formal bankruptcies and the lowest proportion of piecemeal liquidations (although few of the differences are statistically significant).

INSERT TABLE VII HERE

The control variables have the expected effects. Larger firms are more likely to be reorganized out-of-court and preserved as going concerns, although the effect is statistically insignificant when we control for collateral levels. Higher levels of collateral imply a significantly higher incidence of bankruptcies and a somewhat higher probability of liquidation, suggesting that banks use formal procedures to force a sale of collateral. We do not find that the stage of the economic cycle, as proxied by the GDP, affects reorganizations. This may reflect the importance of specific forms of collateral, whose value may have low correlation with general levels of economic activity as captured by GDP. There are few discernible industry patterns of reorganization for firms of this size.

Of particular interest is the strong correlation of the choice of the reorganization procedure with the age of the firm. We hypothesize that for older firms the uncertainty about the asset value is smaller due to the bank's knowledge of management and the firm, making the bank more willing to make concessions in an informal renegotiation rather than seek repayment through formal bankruptcy. Consistent with this hypothesis, regressions in Table VII show that banks are more willing to engage in workouts with older firms, which are also less likely to be liquidated piecemeal. These findings are consistent with Giammarino (1989), who argues that information asymmetry is an important factor for the bankruptcy decision, and with evidence in Chen (2003) that in the US information asymmetry is higher for Chapter 11 firms than for those in workouts. The importance of firm age in regressions (1)–(2) allows us to use it in subsequent analysis as an instrument for the decision to reorganize in bankruptcy.

Why does the UK have the highest percentage of workouts and the lowest percentage of piecemeal liquidations, particularly given its high level of creditors' control rights? There are several potential factors that might increase bankruptcy rates in France and decrease them in the UK. First, borrowing from multiple banks is much more common in France and Germany than in the UK, potentially increasing renegotiation frictions and making workouts more difficult.[20] Second, the greater control rights that UK banks enjoy in bankruptcy procedures may increase their bargaining power outside bankruptcy, making workouts easier to negotiate with firm owners on terms acceptable for the bank; these agreements will be made easier by the prevalence of single-bank relationships. Third, the structure of the banking industry may play a role. The recession of the early 1990s in the UK resulted in large loan losses and precipitated a switch by UK banks towards centralized management of distressed firms, improving coordination between different branches of the same bank (Armour, Cheffins, and Skeel, 2002; Franks and Sussman, 2005). Previous lack of coordination within banks was perceived to have resulted in an over-supply of assets of bankrupt firms in the resale market. Because a few large banks dominate the UK market, centralization of the management of distressed firms may have allowed them to reduce any excess supply of bankrupt assets. By contrast, such 'oligopolistic' behavior may not be feasible in France or Germany, where coordination failures between *banks* are more likely, due to their greater number and the decentralized process of managing distressed companies.[21]

The smaller incidence of multi-banking in the UK may also be contributing to the higher fraction of defaulted firms that survive as a going concern. More importantly, Hart's (2000) argument that secured creditors in control of bankruptcy will quickly sell their collateral, resulting in a large number of liquidations,

[20] Brunner and Krahnen (2002) study credit pools in Germany for unsecured bank creditors, which are often provided for in loan contracts. These help to resolve some of the coordination problems arising from multiple lending in Germany.

[21] For the UK, Franks and Sussman (2005) provide a detailed description of these centralized 'business support units'. Our own data collection experience suggests that French and German banks usually manage distressed firms on a regional rather than centralized basis.

assumes that they are not the residual claimants who bear the costs of such actions. Contrary to this assumption, Franks and Sussman (2005) show that unsecured and preferential creditors in the UK receive virtually nothing in formal procedures, implying that banks are in fact residual claimants in many cases. Our own evidence in Table V suggests that recovery rates in UK liquidations are on average 22 percentage points lower than in going-concern reorganizations, explaining the banks' strong preference for going concerns. By contrast, the de-privatized nature of bankruptcy in France provides few economic incentives to reorganize the firm in an efficient manner.

B. Recovery rate regressions

Under what conditions are cross-country differences in recovery rates most pronounced? Table VIII addresses this questions using regressions of recovery rate across countries. Regressions (1) through (4), estimated using OLS for all defaulted firms, introduce progressively more controls for collateral, which can be adjusted endogenously in response to the bankruptcy code. They show that, as we increase the number of controls for collateral, the difference between France and other countries generally widens (with the exception of regression (4)), while that between Germany and the UK remains roughly constant. Regressions (1)–(4) confirm the univariate results that for the overall sample, recovery rates are the highest in the UK and the lowest in France. In particular, recoveries for similar firms are 6% to 8.8% higher in the UK than in Germany, and 11.5% to 16.4% lower in France than in Germany, and the differences across countries are statistically significant. This ordering of recovery rates across countries is consistent with differences in creditor protection. The regressions confirm that, despite any adjustments the banks make to mitigate the effects of country codes, the differences in outcomes documented in our univariate analysis remain, and are both statistically significant and economically large.

Regressions (3) and (4) allow for varying contributions in the three countries of the two principal collateral types, debtors (accounts receivable) and real estate. Regression (3) controls only for debtors, which is the most important collateral type in France. The difference in recovery rates between France and Germany increases from 14.1% to 16.4%, and between France and the UK, from 20.1% to 24.1%. This illustrates that by requiring more receivables as collateral French banks are able to reduce the differences in recoveries. Conversely, regression (4), which controls for real estate (important in the UK and Germany but less so in France), shows that the gap between France and other countries increases once we account for the fact that German and UK banks take more real estate as collateral, which produces much higher realizations there than in France.

The overall recovery rate in Germany is depressed by the lowest level of collateral of the three countries, coupled with the highest incidence of bankruptcies. When we control for collateral characteristics in regressions (2)–(4), the differences between Germany and the UK do not change much, while those with France, where the levels of collateral are the highest, generally increase.

Regressions (5) and (6) are for bankruptcies and workouts, respectively. These address the question of how different recovery rates are across countries, given a particular choice of the reorganization procedure. It is for similar firms in bankruptcy that we expect the impact of the bankruptcy code to be most pronounced. Since firms are assigned to the subsamples of bankruptcies and workouts endogenously, we employ the Heckman (1979) two-step procedure to control for self-selection in these regressions, with firm age as an instrument for the choice of the procedure. Specifically, the first-stage regression uses specification (2) of Table VII to predict whether the firm will file for bankruptcy.

Regression (5) demonstrates that, controlling for the endogeneity of bankruptcy and for differences in collateral, recovery rates in Germany and the UK are virtually identical. In contrast, recoveries in bankruptcy are as much as 22% lower in France than in Germany, compared with only 11.5% for the overall sample in regression (1). Thus, by increasing collateral levels, relying on appropriate collateral types, and using informal bankruptcy procedures, French banks are able to limit the damage caused by the creditor-unfriendly code, and mitigate the differences in outcomes with other countries. Furthermore, regression (6) confirms the univariate result that, in contrast with bankruptcies, recovery rates in workouts are similar in all three countries.

INSERT TABLE VIII HERE

The effect of control variables in Table VIII is consistent with expectations. The level of collateral is one of the most important determinants of recovery rates, retaining its significance in all specifications and subsamples. It is the only significant variable in workouts (regression (6)). A detailed look at the importance of particular collateral types in regression (4) confirms our earlier finding that real estate is a significant contributor to recovery rates in the UK and Germany, but not in France. Conversely, the coefficient for debtors is significant in France but not in Germany, and is negative and significant in the UK.[22] Recovery rates are higher for older firms, in particular because they complete workouts more frequently. Firm size (proxied by the amount of debt outstanding) and industry are unimportant on our sample.

The stage of the economic cycle, measured by the level of GDP at default, is not a significant determinant

[22]The negative coefficient sign in the UK may reflect the fact that when debtors are part of the 'floating charge' (rather than part of a 'fixed charge', which is typical for real estate) preferential creditors such as the tax authorities rank ahead of the bank. More details on the difference between fixed and floating charges are given in the Appendix.

of recovery rates for our sample. In untabulated tests, we investigate this issue further by studying the influence of GDP within country subsamples. We conjecture that the level of economic activity is less important at default than when assets are sold. For the UK, where reorganization periods are short and asset sales quickly follow the default event, we find that the level of GDP does indeed significantly influence recovery rates. By contrast, GDP at default appears to be negatively, if insignificantly, correlated with recoveries in Germany and France, where realizations take several years and default and recovery may occur at different stages of the economic cycle. To examine the determinants of proceeds from collateral sales, we use a sample of collateral items with known realization dates. We find that collateral realizations are strongly related to GDP at the time of collateral sale (rather than at the time of default) in all three countries. Thus, while collateral realizations depend on the business cycle, the same cannot be said about recovery rates, due to differences in timing.

Finally, to check the robustness of our results, we explore whether the observed differences in recovery rates are driven by differences across our sample banks within the same country rather than by differences across countries. We investigate this issue by performing pairwise comparisons of recoveries on individual banks' subsamples in different countries. Specifically, we use data for the largest seven banks (2 UK, 3 French, 2 German), re-estimate regression specification (4) from Table VIII for different pairs of individual banks in different countries (16 regressions in total), and focus on bank dummies. The results of these tests can be summarized as follows. Recovery rates in France and Germany, but not in the UK, vary significantly with the bank. Nevertheless, both UK banks recover more than each of the three French banks, suggesting that UK–France comparisons are insensitive to the particular banks studied. Comparisons with Germany may be more bank-specific: While one of the German banks has recovery rates quite similar to those in the UK and significantly higher than in France, another is similar to the three French banks, and significantly below UK banks. Apart from this one German bank, the conclusion that recovery rates are similar in the UK and Germany and significantly lower in France appears to be robust.

C. Interest spreads

Credit spreads in different countries should reflect the banks' expected losses from default, which depend on the probability of default and on the expected recovery rate. For our three countries, recovery rates are the lowest in France and the highest in the UK. Estimates of default rates for private companies provided by rating agencies are generally similar for France and the UK (see Panel C of Table II). Ignoring the correlation between the two, the average expected loss can be roughly estimated by multiplying the probability of default by the loss in default. Using mean recovery rates of 74% in the UK, 54% in France, and 61% in Germany,

this amounts to expected losses of 0.52%–0.56% per year for the UK, 0.91%–1.01% for France, and 0.62% for Germany.

An alternative way to estimate expected losses is to rely on banks' total provisions for bad loans. Using OECD (2004) data on bank profitability in different countries, the average ratio of total net provisions to total loans between 1994 and 2003 is 0.46% for the UK, 0.82% for France, and 0.78% for Germany. In the long run, actual losses should converge to cumulative aggregate provisions. Using both metrics, expected losses are the lowest in the UK and the highest in France, with Germany in between, reflecting the ordering of recovery rates and creditor protection scores. We would therefore expect loan spreads in France to be considerably higher than in the UK and at least as high as those in Germany. Univariate statistics presented earlier suggest that this is not the case. We now examine whether the comparisons of interest rate spreads across the three countries are robust to controls for loan characteristics.

Table IX reports regression results for interest rate spreads on individual loans within each country and across countries. The dependent variable is the pre-default interest rate spread (margin) on the loan over the country's 3-month LIBOR rate. For floating-rate loans, this is the loan spread reported in the loan contract, adjusted for the difference between the loan contract's reference rate (such as the Bank of England base rate) and the applicable LIBOR rate. For fixed-rate loans, it is the difference between the loan rate and the level of the reference risk-free rate in the respective country at the time of spread measurement, adjusted by the applicable fixed-to-LIBOR swap spread.[23]

We regress the interest rate spread on loan characteristics and on proxies for the default risk of the firm at the time when the loan contract was signed. Unfortunately, we do not have very good controls for the riskiness of the loan at origination, since the accounting information we observe is for a small subsample of firms and only at the time of default.[24] To proxy for credit risk, we use 'time to default', which is the time period between loan origination and subsequent default. The rationale for this variable is that if the firm defaults soon after loan origination, then it probably was distressed when the loan contract was signed, and the spread is likely to reflect that higher risk. Our other variable, firm age at loan origination, is used as an indicator of the uncertainty regarding the firm's quality. We control for size using the outstanding loan balance at default. We also include dummy variables to control for whether the loan is secured,[25] and

[23]When converting the interest rate on a risky fixed-rate loan into an equivalent floating-rate loan, the swap rate in theory should be adjusted to reflect the firm's default risk. However, Duffie and Liu (2001) show that this adjustment is likely to be quantitatively inconsequential.

[24]In unreported regressions on the subsample for which the data is available, we find that at-default leverage is a significant predictor of spreads, while at-default liquidity ratios are not. Including these controls does not influence our conclusions regarding cross-country differences.

[25]Since this analysis is at the loan rather than firm level, we cannot use the amount of collateral per dollar of debt, as this would in many cases require arbitrary allocation of collateral to individual loans of the same firm.

whether it is an overdraft (credit line) as opposed to a term loan. We obtain similar results if, instead of the overdraft dummy, we use a dummy variable for short-term loans, defined as a loan with a maturity of one year or less. Finally, we control for the level of interest rates, which credit-risk studies show to be an important determinant of corporate bond spreads (see Duffee, 1998).

Regressions (1)–(6) of Table IX report the determinants of loan spreads for individual country subsamples, while regressions (7) and (8) are for all loans. Specifications (1)–(3) and (7) control for loan size, firm risk, and the risk-free rate. In addition, regressions (4)–(6) and (8) include controls for whether the facility is an overdraft and whether it is secured. Controlling for these two loan characteristics (which can be chosen endogenously) allows us to compare spreads on *similar* loans, as opposed to *all* loans, whose mix may depend on the country's bankruptcy code.

The regressions show that, for the UK and, especially, Germany, spreads are lower for firms with greater 'time to default', implying that banks require higher spreads for firms that are closer to default. The high significance of the time-to-default variable for Germany suggests that German banks may be more active in monitoring and re-pricing distressed loans, facilitated by wider use of short-term borrowing by distressed German SMEs documented in Table IV. In both Germany and the UK, spreads are lower for larger loans and also when interest rates are high. Firm age is unimportant.

INSERT TABLE IX HERE

Regressions (4)–(6) show that secured loans usually have higher spreads, although the difference is not statistically significant. It is likely that firms that are able to borrow without posting collateral are considered safe by the bank and therefore have somewhat lower spreads.[26] The most robust explanatory variable in these regressions is the overdraft dummy in Germany. Overdraft spreads in Germany are as much as 315 basis points higher than those for term loans. The corresponding difference for the UK is 12 basis points, and for France, 55 basis points. Conversations with German bankers suggest that firms that use overdrafts are perceived to have exhausted other means of financing and are likely to be of higher risk. This result is also consistent with the high significance of the time-to-default variable in Germany.

Regressions (7) and (8) allow us to compare spreads across countries. Comparisons of Gemany with other countries are affected by whether we control for debt characteristics. Regression (8) shows that spreads on similar loans in Germany are about 58 basis points lower than in France. However, in regression (7),

[26]Bradley and Roberts (2004) show that the positive relationship between loan yields and the presence of covenants, which they also find in single-equation models, disappears when they control for the simultaneity of loan pricing and contract structure.

which does not control for the loan type, average spreads are 35 basis points higher in Germany than in France, although the difference is not statistically significant. Thus, even though similar loans are cheaper in Germany, the mix of different loans for each country results in higher average spreads in Germany than in France. This reflects the more extensive use of expensive overdrafts by distressed German SMEs; the proportion of overdrafts in our sample is the highest in Germany at 75%, compared with only 55% in the UK and 47% in France (see Table IV).

The most surprising result in Table IX is that spreads are higher in the UK than in France, although the difference of 16 basis points is not economically large or statistically significant. Contrary to our expectations, lower expected losses in the creditor-friendly UK do not translate into lower loan spreads; in fact, UK spreads on average are similar to or slightly higher than those in France. Why does the raking of spreads fail to reflect that of expected losses across the three countries?

Our findings regarding loan spreads may potentially be biased due to the non-random nature of our sample, which consists of firms that have defaulted. Moreover, if the terms of loan agreements are renewed more frequently in the UK and Germany, then banks in these countries may be in a better position to identify a deterioration in the credit quality of firms that subsequently default (and end up being in our sample), and to adjust required interest spreads to compensate for the higher probability of default. To investigate the robustness of our conclusions, we compare spreads on loans included in the Loan Pricing Corporation's *DealScan* database for the three countries (these results are available upon request). *DealScan* is comprised of loans at origination, which are mostly large and syndicated.[27] For the sample of *DealScan* loans originating between 1992 and 2003, we find that the average all-in drawn spread in basis points is 159 in the UK, 160 in France, and 169 in Germany. However, these comparisons are affected by a bigger proportion of large loans in the UK, which usually have lower spreads. For loans smaller than $40 million (which roughly corresponds to the largest loans in our sample), average spreads are 232 basis points in the UK, 205 in France, and 225 in Germany, and the medians are 225, 200, and 225 basis points, respectively. Regression analysis suggests that, controlling for loan size and the level of interest rates, spreads in the UK are 44 basis points higher than in France (significant at the 1% level) and 12 basis points higher than in Germany (significant at the 10% level). Of note, our finding that spreads on overdrafts for defaulting SMEs in Germany are much higher than on term loans does not hold for the broad *DealScan* sample of loans at origination, which is consistent with overdraft repricing in Germany when the firm becomes distressed. Overall, *DealScan* tests provide an independent confirmation that the ranking of loan spreads across the three countries does not reflect the

[27] Bae and Goyal (2004) and Qian and Strahan (2006) study the cross-country determinants of loan spreads in the *DealScan* database for a broad panel of countries. In these tests, we use the same data, but focus on our three countries.

ranking of expected default losses.

What could explain these findings? One hypothesis is that banks in France and Germany derive more compensation from non-interest income, for example, from arrangement and renewal fees. However, this explanation cannot account for the results of our *DealScan* comparisons, since spreads in *DealScan* are inclusive of all fees. Moreover, OECD (2004) statistics suggest that fees contribute a higher, not lower, proportion of banks' total income in the UK than in France (29% vs. 22%).

Instead, other evidence suggests that the high level of spreads in the UK may be attributable to the lower level of competition in the UK banking sector. In a study of US firms, Berger and Hannan (1989) and Hannan (1991) find that loan rates are higher in areas where credit markets are concentrated and less competitive. Of our three countries, concentration in the banking sector is the highest in the UK and the lowest in Germany. Cetorelli and Gambera (2001) estimate that between 1989 and 1996 the market share (by total assets) of the three largest banks was 50% in the UK, 28% in France, and 27% in Germany, while for the top five banks it was 65%, 44%, and 39%, respectively. Consistent with lower levels of competition, UK banks are much more profitable than those in the other two countries. Using OECD (2004) data on bank profitability for the period 1994–2003, the average ratio of net total income to total assets is 0.79% in the UK, compared wtih 0.29% in France and only 0.19% in Germany. This evidence suggests that UK banks may be able to extract higher rents from their clients. In a recent UK government report, Cruickshank (2000) documents that the top four UK banks control 83% of SME lending in the UK, and cites low rates of bank switching by customers. He points out that bank shareholders' returns substantially exceed those on other comparable-risk investments, and concludes that UK banks "make substantial excess profits from services provided to SMEs" (p. 162).

Thus, viewed in isolation, levels of creditor protection and expected loan losses cannot explain differences in loan spreads for our three countries. These comparisons underscore the importance of considering a broad range of institutional factors in cross-country studies of the bankruptcy legislation.

IV. Summary and conclusions

The paper analyzes a database of 2280 SMEs that defaulted on their bank debt in France, Germany, and the UK. We find that, in response to the French bankruptcy code which limits creditor control rights and dilutes the value of collateral, banks in France require more collateral and rely on particular collateral types that avoid the dilution of their claims. Despite these endogenous adjustments to the bankruptcy law, recovery rates for banks in France remain significantly below those in the UK and Germany. We also find that the

differences in aggregate recovery rates for banks are confined to formal bankruptcies. By contrast, recovery rates in workouts are similar in all three countries. Finally, the ranking of loan spreads reflects the degree of competition in the banking sector, rather than the degree of creditor protection afforded by the country's bankruptcy code. Overall, our findings strongly suggest that bankruptcy codes matter, but also underscore the importance of considering other institutional factors in cross-country studies.

Our paper raises a number of interesting questions regarding the influence of bankruptcy codes on institutions. For example, there is a strong perception of significant country differences in the way banks manage distress. In the UK, in the wake of disastrous losses in the early 1990s, banks centralized the way they reorganize distressed firms to avoid uncoordinated 'dumping' of bankrupt assets on the market, which was perceived to have depressed asset prices and recovery rates (Armour, Cheffins, and Skeel, 2002; Franks and Sussman, 2005). Given that a few large banks control most of SME lending, such centralization may have allowed the banks to restrict the supply of bankrupt firms when asset markets are weak, increasing recovery rates. Other institutional differences may also be at work. Asset sales of bankrupt firms in France are arranged in the public domain by the bankruptcy court, whereas in the UK they are made by the private sector, under the direction of the main bank lender. The efficiency enhancement through the reliance on private markets may have led to the development of a wider market for distressed assets. Studying such institutional adjustments may contribute to the debate on the optimality of a particular bankruptcy code.

Appendix: Details of bankruptcy codes in the three countries

A. United Kingdom

The legal regime in the United Kingdom is generally regarded as very creditor-friendly. In many circumstances a secured creditor can sell the company and its assets without heeding the interests of other claimants, and his actions, unless negligent or fraudulent, cannot be challenged in the courts.

There are two types of security in the UK: fixed and floating charge. A fixed charge corresponds to collateral over fixed assets, whereas a floating charge is given over the whole pool of a company's assets, except those subject to fixed claims. While upon default creditors secured with either type of charge have wide-ranging powers in enforcing their claims by realizing the collateral, the floating charge allows the creditor to take control of the whole company. If the company defaults, the holder of the floating charge has the right to appoint an administrative receiver (henceforth a receiver), who assumes all the powers of the company's board of directors. The receiver exercises these powers for the sole purpose of realizing sufficient funds to repay the debt of the floating charge holder. His responsibility is limited to protecting the interests of the security-holder who appointed him. He has only a weak duty of care to consider the interests of other lenders, in particular the unsecured lenders. Specifically, the receiver has full discretion on whether to sell the firm as a going concern or liquidate it piecemeal. This discretion cannot be challenged in the courts on the grounds that the receiver has, for example, underestimated the firm's prospects of recovery.

The powers of the floating charge place the unsecured creditors in a weak position. Yet they do have some liquidation rights that can be used to enforce their claim against the company. In the event of non-payment, they can apply for a winding up order. Unlike receivership, a winding up is court-supervised and is undertaken by a liquidator. Although the liquidator operates on behalf of both the secured and unsecured creditors, he is obliged to pay the lenders in the order of their seniority. Crucially, the holder of a floating charge can always pre-empt a winding up order by appointing a receiver. After the secured lenders have been fully repaid, the unsecured lenders are paid on a pro rata basis according to the size of their loans.

Two rescue procedures have been introduced by the Insolvency Act of 1986: Administration and Company Voluntary Arrangement (CVA). Both of these procedures are court-administered and provide the company with temporary protection from creditors' actions. However, the holder of the floating charge has the power to veto both procedures and appoint a receiver instead. These procedures therefore do not put any restriction on the rights of the creditor with the floating charge.

The Enterprise Act 2002, which came into force shortly after our sample was collected, has abolished administrative receivership for loans made after 15 September 2003, and substituted it with Administration. Under the Act, the Administrator can be appointed by the holder of the floating charge, but his duty of care now extends to all creditors.

B. France

In France, the bankruptcy code in effect at the time of this study was enacted in 1985 and refined in 1994. The objectives of the insolvency proceedings stated in the law are, in the order of priority, to maintain firms in operation, preserve employment, and to satisfy creditors' claims. As a result of this emphasis on preserving operations and employment, creditors cannot influence the process of distressed restructuring other than through non-binding recommendations of a court-appointed creditor representative.

A firm is classified as distressed upon 'cessation of payments', defined as the inability to meet its outstanding liabilities with its current assets such as cash and cash equivalents. There is an 'alert' procedure, whereby the Banque de France must be informed about a cessation of payments. Failure to comply potentially subjects firm managers and other parties to criminal liabilities. This procedure is designed to help firms reorganize early in distress. The Code provides for several reorganization procedures.

*Amicable settlement(*réglement amiable*)*

Unique to France is the possibility to restructure liabilities in an amicable settlement (*réglement amiable*) under the court's supervision. This procedure is designed to facilitate workouts by providing an independent court-appointed conciliator with expertise in resolving such disputes. There is no automatic stay on claims, and the fact that this procedure is undertaken is kept confidential. Not all creditors may choose to participate in the amicable settlement. If the firm defaults during the settlement, the creditors can move it to an official bankruptcy procedure called judicial arrangement (*redressement judiciare*).

*Judicial arrangement (*redressement judiciare*)*

In the judicial arrangement, management of the firm is supervised by a court-appointed judicial administrator, whose duty is to assess the viability of the firm and propose a reorganization plan, and to replace or (more commonly) supervise the existing management before the firm is reorganized. Where the existing management is retained, the administrator's agreement is required concerning important decisions such as the disposal of assets. He also decides whether to continue or terminate existing contracts. The administrator does not represent the creditors, although his decisions may be challenged in the court.

Crucially, there is a stay on claims originated before the initiation of the insolvency procedure until resolution. Interest on most claims ceases to accrue when the procedure is initiated. Moreover, the only way for creditors to convey their concerns is through non-binding recommendations to a court-appointed creditor representative, who may make non-binding recommendations to the court. There is a possibility of super-priority financing after entree into the judicial arrangement, which will be senior to all secured and unsecured pre-filing claims except for uninsured employment salaries and court fees.

If the court does not perceive going concern to be a viable option, the company may be liquidated immediately in judicial liquidation (*liquidation judiciaire*). Alternatively, the judicial arrangement starts with an 'observation period' of several months, during which the administrator, working with the judge, assesses the viability of the firm and decides how it should be reorganized. After the observation period, the firm may be liquidated. If a continuation plan is adopted, the firm is kept as a legal entity, and a plan of debt repayment based on a reasonable financial forecast must be proposed. The court cannot force the creditors to write down their claims, but it can redefine the terms of the debt contract, including the maturity. In practice, then, creditors may either accept write-downs with a quick repayment, or opt for a long-delayed repayment in full.

If the court determines that the sale of the firm is the best available option, it must choose the offer that ensures best prospects for continuing employment and repayment of credit. The buyer of the business must assume all employment contracts, all secured debt collateralized by the purchased assets, and in addition all ongoing contracts the court deems necessary for the preservation of the business. The sale price does not necessarily have to be commensurate with the indebtedness of the company.

Even secured creditors in France have little confidence in recovering their debts. They usually cannot seize the security even when the firm is solvent. In bankruptcy, they do not control either the timing or the method of collateral realization, and the stay on claims introduces uncertainty with regards to the timing of possible repayments. Finally, preferential creditors, such as employee salaries and bankruptcy and administration fees, are ranked above the secured creditors at distribution. However, exceptions are provided for some 'movable' collateral types, such as the assignment of accounts receivable and cash and near-cash collateral, over which the secured creditor has priority, and which he may refuse to surrender before liquidation until his claims are paid in full.

Overall, bankruptcy procedures in France at the time of our study were regarded as very cumbersome and costly. For example, Fried *et al.* (2005) note that "[The French] system was widely criticized as overly rigid and time-consuming. Nine out of ten bankruptcies in France resulted in the liquidation of the debtor" (Fried, Frank, Harris, Shriver & Jacobson, 2005, Reform of French Bankruptcy Law Adoption of the Business Safeguard Act, Memorandum). In response to such criticisms, the Business Safeguard Act (*La loi de sauvegarde des enterprises*) was enacted and came into force in January 2006. This new bankruptcy code has introduces a number of changes to the existing bankruptcy procedures, and provided for a new 'safeguard' (*sauvegarde*) procedure, which is designed to facilitate going-concern reorganizations and resembles Chapter 11 bankruptcy in the US.

C. Germany

The current bankruptcy code in Germany, *Insolvenzordnung*, was made effective in 1999. It introduced important differences compared with the old code, *Konkursordnung*. Since a significant part of our sample of German firms were reorganized prior to 1999, it is important to understand both codes. In addition, as at the time of our study the new law has not been in effect for a sufficient time, practitioners generally agree that one could rely to a great extent on the earlier case law to determine how the courts will operate under the new regime.

Under the German bankruptcy code, a reorganization plan is worked out by a court-appointed receiver, possibly in cooperation with the creditors. The approval of the creditors' meeting is required for acceptance of the plan. The new code has, for the first time, limited the rights of the secured creditors by providing for an automatic stay on their claims for three months.

*The pre-1999 code (*Konkursordnung*)*

Two formal insolvency procedures existed under the old German bankruptcy code, court composition (*Vergleichsordnung*) and compulsory liquidation (*Konkursordnung*). Composition is a restructuring procedure designed to turn the company around by restructuring its unsecured debt.

The firm is classified as distressed when it either defaults, or its liabilities exceed the market value of its assets ('over-borrowing'), or when the firm considers that the inability to service its debt is imminent. In case of over-borrowing, the firm must file for bankruptcy within 15 days. If the debtor intends to request composition, it must propose a full restructuring plan together with the bankruptcy filing. The plan must provide for a minimal cash payment to unsecured creditors of between 35% and 40%, depending on maturity. There is no provision for replacing the debt with new claims. There is an automatic stay on unsecured claims in composition. Secured and preferred creditors are not affected by the composition proceedings, and may continue legal action to satisfy their claims.

In composition, the court appoints a receiver (*Regelinsolvenzverfahren*) who oversees the company's operations, approves important decisions, and assesses the viability of the composition. The receiver does not represent any one group of creditors, but is bound by the resolutions of the creditors' meeting, which he must implement. The receiver prepares a plan of reorganization in cooperation with a creditors' committee, if one is formed, which is more typical in larger cases. The plan is then voted in a creditors' meeting, where the simple majority of the voting creditors (three-quarters majority by value) is required to accept the plan. If the plan is accepted, it will normally be approved by the court.

In compulsory liquidation, the control over the assets is transferred to an insolvency administrator. Although the administrator's objective is selling the assets for cash, this can be a lengthy process if the economic conditions are deemed unfavorable for a sale. New senior financing can be raised during the proceedings. Unsecured claims are stayed until the assets are sold.

In reality, many filings for compulsory liquidation failed, because the assets remaining after secured creditors' collateral was seized were deemed insufficient to cover the costs of the proceedings. The use of the composition proceedings was even more difficult because it required submission of a complete plan within 15 days of learning about the company's insolvency, imposed a minimum cash payment requirement, and did not restrict in any way the ability of the secured and preferential creditors to realize their claims. Therefore, a private workout could be the only potential alternative to whole or piece-meal liquidation.

*The 1999 code (*Insolvenzordnung*)*

The new German code recognizes only one form of insolvency proceedings. Its introduction purported to increase the probability of the firm's survival by limiting the ability of the secured creditors to strip the firm of its essential assets. Firstly, there are no longer any preferred creditors. Secondly, upon entering reorganization an automatic stay on the secured creditors is imposed for up to three months. Thus, no creditor can now seek to satisfy his claim while the administrative receiver determines whether the firm should be turned around, and proposes a reorganization plan.

As before, the acceptance of the creditors' meeting is required to pass the plan. However, secured creditors now also have to vote in the meeting, and the decision of the meeting is binding, even if it prevents them from realizing their security. In situations where the proposed plan adversely affects the secured creditors, they must vote separately, with half of the votes in number (three quarters in value) required to accept the plan. Thus, a creditor holding more than 50% of secured claims can veto the reorganization plan that impedes the rights of the secured creditors. On the other hand, a secured creditor can find himself bound to accept concessions and forgive debt if he is outvoted by other secured creditors. Once approved by the court, the plan becomes effective.

All assets are subject to enforcement by the receiver, except movable assets in possession of the secured creditors. Thus, collateral only defines the priority of payments but not the right of realizing the value. The receiver's fees for realizing the collateral are paid out of the proceeds from the sale; it is common that the fees are as high as nine percent of the security value, which is the maximum normally allowed by law. Although the consent of a majority of secured creditors is needed to approve a reorganization plan, the security cannot be realized prior to the plan's approval, and the minority of creditors can be forced to accept concession in the vote.

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Table I. Bankruptcy procedures in France, Germany, the UK, and the US

The table lists principal bankruptcy procedures in the UK, France, Germany, and the US, and compares their main characteristics. The bottom row reports creditor protection scores given by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998).

	UK	France	Germany	US	
Main procedure	Administrative receivership	Redressement judiciare	Insolvenzordnung (the 1999 code)	Chapter 11	Chapter 7
Bankruptcy trigger	Default (covenant breach)	Cessation of payments (inability to meet current liabilities)	Cessation of payments or overborrowing	No objective test. Solvent firm may enter Chapter 11	No objective test
Control rights	Secured creditor	Court-appointed administrator	Creditors under court supervision (secured creditors have more power)	Debtor, creditors collectively, bankruptcy court supervision	Trustee
Automatic stay	None	Unlimited	3 months	Unlimited	None
Super-priority financing	None	Yes	Creditors' approval required	Yes	None
Dilution of secured claims	None	Significant	Limited	Limited	None
LLSV creditors' score (max=4)	4	0	3	1	N/A

Table II. Sample description and default probability estimates

Panel A reports the number of firms in the sample in each of the three countries by year of default. Panel B reports the number of firms in the sample by broad industry group. The sample consists of defaulted firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil. The default event is defined according to Basel II criteria as described in Section II. Panel C presents estimates of the probability of Basel II default in the three countries by rating agencies Moody's and Standard & Poor's. Estimates by Moody's are reported in technical reports *Moody's RiskCalc^{TM} for Private Companies*, for the UK, France, and Germany. Standard & Poor's estimates are reported in *Credit Risk Tracker Technical Documentation* reports for the UK and France.

Year	UK	France	Germany	Total
Panel A: Number of defaults in the sample				
1984-1992	1	64	2	67
1993	0	94	0	94
1994	4	88	3	95
1995	2	79	6	87
1996	18	80	25	123
1997	80	52	54	186
1998	102	31	68	201
1999	129	18	37	184
2000	332	29	8	369
2001	410	27	28	465
2002-2003	339	21	28	388
N/A	1	3	17	21
Total	1,418	586	276	2,280
Panel B: Industry classification of sample firms				
Construction	84	25	25	134
Heavy manufacturing	135	82	43	260
Light manufacturing	143	107	33	283
Services	155	47	11	213
Wholesale/retail trade	230	159	57	446
Other business activities	202	90	47	339
Total	949	510	216	1675
Panel C: Default probability estimates				
Moody's	2.0%	2.2%	1.6%	
Standard & Poor's	2.15%	1.97%	N/A	

Table III. Firm characteristics

The table reports sample statistics for the firms in the sample. *Turnover* is sales turnover before default. *Leverage* is the ratio of total debt to the sum of total debt and shareholders equity. *Current ratio* is the ratio of current assets to current liabilities. *Age* is the age of the company from incorporation to default. *Years with the bank* is the age of the relationship with the participating bank at default. *Formal bankruptcy* and *Piecemeal liquidation* are the proportions of defaulted firms in each country that were reorganized under formal bankruptcy and liquidated piecemeal (in or out of bankruptcy), respectively. *Turnover*, *Leverage* and *Current ratio* are as of the date of the last pre-default audited accounts dated no more than 12 months before default, if available, or management accounts otherwise. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.

		Turnover (€ Mil.)	Leverage	Current ratio	Age (years)	Years with the bank	Formal bankruptcy	Piecemeal liquidation
UK	Mean	17.37	0.61	1.05	14.0	7.3	75.4%	42.9%
	Median	5.460	0.66	0.85	7.3	4.3		
	St.Dev.	34.27	0.74	1.53	16.8	8.0		
	N	195	209	226	915	955	863	266
France	Mean	18.56	0.65	1.35	18.6	9.3	78.0%	62.0%
	Median	5.738	0.63	1.01	8.6	4.9		
	St.Dev.	48.95	0.36	1.29	23.9	14.2		
	N	209	57	60	218	504	533	347
Germany	Mean	23.81	0.87	N/A	24.8	7.7	86.9%	56.9%
	Median	11.72	0.79		15.4	3.8		
	St.Dev.	39.39	0.94		26.8	13.2		
	N	67	60		80	256	267	51

Table IV. Bank debt characteristics

The table reports sample statistics by company on loans, overdrafts, and other cash facilities outstanding with the bank at default date. *Exposure at Default (EAD)* is the total debt amount outstanding on cash facilities owed to the participating bank at the date of default. *Fraction secured* is the value of collateral and guarantees at default as a percentage of exposure. *No. of loans* is the number of cash facilities at default. *Long-term* is the value-weighted fraction of facilities with initial maturity more than 1 year. *Fixed-rate* is the value-weighted fraction of facilities with a fixed interest rate. *Overdrafts* is the value-weighted fraction of overdrafts among all facilities. *Maturity if long-term* is the average initial lending term for facilities with maturity exceeding one year. *Interest spread* is the equivalent floating-rate-loan spread over the 3-month LIBOR rate in each country at loan origination, measured in percentage points. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.

		EAD (€ Mil.)	Fraction secured	No. of loans	Long-term	Fixed-rate	Over-drafts	Maturity if long-term	Interest spread
UK	Mean	0.960	85%	3.51	31%	2.8%	55%	8.77	2.23
	Median	0.244	62%	3	0%	0%	100%	7.25	2.17
	St.Dev.	2.657	104%	2.80	39%	12%	37%	4.57	0.63
	N	1418	816	1386	275	291	315	183	568
France	Mean	0.600	124%	2.20	43%	52%	47%	6.48	2.24
	Median	0.269	104%	2	21%	75%	36%	5.01	2.02
	St.Dev.	1.382	108%	1.40	44%	48%	44%	3.48	1.53
	N	586	513	586	578	248	583	562	263
Germany	Mean	2.412	60%	1.88	19%	21%	75%	8.50	2.90
	Median	1.231	41%	1	0%	0%	100%	6.52	3.21
	St.Dev.	3.594	80%	1.34	34%	33%	35%	5.10	2.16
	N	276	259	72	67	70	67	44	93

Table V. Company recovery rates by country, type of reorganization, industry, and collateralization

The table reports global undiscounted recovery rates by firm, defined as one minus the ratio of the bank's total final loss to the total debt exposure at default, for the participating banks. Panel A reports the statistics for all firms. Panel B reports recovery rates for informal renegotiations, formal bankruptcies, and for firms eventually liquidated piecemeal (in or out of bankruptcy). Panel C reports recovery rates by broad industry group. Panel D reports recovery rates by *fraction secured*, the value of collateral and guarantees at default as a percentage of exposure. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.

	UK				France				Germany			
	Mean	Median	St.Dev.	N	Mean	Median	St.Dev.	N	Mean	Median	St.Dev.	N
Panel A: Recovery for all firms												
All firms	0.74	0.92	0.34	1405	0.54	0.56	0.40	575	0.61	0.67	0.34	226
Panel B: Recovery by type of procedure and outcome												
Informal renegotiation	0.78	1.00	0.34	199	0.83	1.00	0.28	115	0.76	0.79	0.26	26
Formal bankruptcy	0.69	0.82	0.35	645	0.47	0.39	0.39	460	0.59	0.61	0.35	198
Going concern	0.78	1.00	0.33	149	0.74	0.96	0.36	132	0.70	0.79	0.34	22
Piecemeal liquidation	0.68	0.78	0.34	110	0.40	0.31	0.37	245	0.40	0.41	0.37	27
Panel C: Recovery by industry												
Construction	0.70	0.90	0.38	84	0.62	0.70	0.38	25	0.68	0.75	0.28	22
Heavy manufacturing	0.73	0.89	0.35	130	0.56	0.57	0.36	81	0.55	0.50	0.34	37
Light manufacturing	0.76	0.94	0.31	142	0.56	0.61	0.41	106	0.64	0.75	0.33	29
Services	0.71	0.88	0.36	153	0.57	0.63	0.40	47	0.80	0.91	0.24	9
Wholesale/retail trade	0.66	0.83	0.38	227	0.50	0.44	0.41	153	0.49	0.46	0.38	53
Other business activities	0.69	0.81	0.35	200	0.56	0.55	0.40	87	0.69	0.74	0.32	41
Panel D: Recovery by fraction of debt secured												
0.0% (unsecured)	0.58	0.71	0.39	41	0.35	0.14	0.40	44	0.50	0.50	0.35	59
0–40%	0.58	0.59	0.36	61	0.36	0.19	0.36	50	0.58	0.54	0.32	31
40–80%	0.59	0.62	0.33	133	0.42	0.39	0.35	56	0.64	0.69	0.31	95
80–120%	0.78	0.93	0.31	191	0.62	0.76	0.38	111	0.79	0.86	0.29	18
120%+	0.86	1.00	0.27	465	0.58	0.63	0.38	232	0.74	0.80	0.29	18
All secured	0.76	0.94	0.32	1049	0.54	0.57	0.38	507	0.64	0.72	0.32	171

Table VI. Collateral value at default and on realization

The table summarizes the relative importance of different collateral types in the three countries. Panel A reports for each firm the value of collateral at default, expressed in columns (1)–(3) as a fraction of total collateral (only for firms that post collateral), and in columns (4)–(6) as a fraction of the total debt exposure at default (for all firms, both with and without collateral). Panel B shows the effectiveness of different collateral types on realization, by collateral item. It reports the bank's undiscounted net realized proceeds from collateral realization, expressed in columns (1)–(3) as a fraction of the item's estimated value at default, and in columns (4)–(6) as a fraction of the bank's total undiscounted recovery for the firm. All ratios are given in percentage points. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.

	UK	FR	GE	UK	FR	GE
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Estimated collateral value at default, by firm						
	As % of total collateral			As % of EAD		
Real estate	64	11	55	53	18	27
Guarantees (indiv. or firm)	17	35	4.4	13	44	12
State/bank guarantees	3.6	4.5	14	2.1	4.9	8.2
Debtors	8.6	19	7.9	8.7	18	3.8
Stock	2.9	1.7	6.2	2.8	1.8	2.4
Plant & machinery	2.7	8.9	7.0	3.4	13	4.5
Cash & marketables	0.5	2.3	2.0	0.6	2.4	1.7
Other	1.6	17	0	1.4	23	0
N	458	440	164	793	507	239
Panel B: Bank's realization of collateral, by collateral item						
	As % of estimated value			As % of total recovery		
Real estate	97	30	72	37	3.8	24
Guarantees (indiv. or firm)	25	25	32	7.1	10.4	1.7
State/bank guarantees	94	60	89	6.3	3.7	8.7
Debtors	92	66	50	5.3	23	3.6
Stock	121	47	9	2.4	0.8	1.0
Plant & machinery	125	14	49	1.9	2.8	2.8
Cash & marketables	79	82	88	0.7	1.5	0.4
Other	87	34	N/A	0.7	10.6	0.0
All types combined	76.3	34.5	72.9	60.9	56.4	42.3
N	387	364	120	1245	543	146

Table VII. Determinants of restructuring procedure and outcome

The table reports results of logit regression analysis of the determinants of the type of reorganization upon default and the eventual decision to liquidate the firm piecemeal. In regressions (1)–(2) the dependent variable is the dummy that equals one if a formal bankruptcy was initiated in the course of restructuring, and zero if the firm was reorganized in a workout. In regressions (3)–(4) the dependent variable is the dummy that equals one if the firm was eventually liquidated piecemeal, and zero if it was preserved as a going concern. *UK* and *GE* are country dummies. *EAD* is Exposure at Default, the total debt amount outstanding on cash facilities owed to the participating bank at the date of default, measured in million Euros. *Collateral* is the last available estimate of the value of collateral before default. *Firm age* is the age of the firm from incorporation to the default date. *GDP* is the de-trended normalized level of firm's country GDP in the year of default. Other variables are industry dummies. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria. Coefficients significant at 1%, 5% and 10% levels, are indicated by ***,** and *, respectively. Standard errors are reported in parentheses.

	Formal bankruptcy		Piecemeal liquidation	
	(1)	(2)	(3)	(4)
UK	-0.178	-0.228	-0.451**	-0.271
	(0.206)	(0.251)	(0.213)	(0.255)
GE	0.945***	0.979***	0.042	0.328
	(0.272)	(0.297)	(0.350)	(0.397)
EAD	-0.050**	-0.026	-0.054*	-0.057
	(0.021)	(0.034)	(0.029)	(0.051)
Collateral/EAD		0.282***		0.124
		(0.110)		(0.094)
Firm age	-0.009**	-0.013***	-0.010**	-0.006
	(0.004)	(0.005)	(0.005)	(0.006)
GDP	-0.090	2.95	3.84	1.65
	(7.403)	(8.36)	(7.66)	(8.30)
Industry: Construction	0.018	0.404	1.02**	1.05*
	(0.453)	(0.587)	(0.46)	(0.55)
Industry: Trading	-0.248	0.056	0.473	0.671*
	(0.326)	(0.385)	(0.316)	(0.367)
Industry: Light Manufact.	-0.058	0.075	0.054	0.389
	(0.342)	(0.402)	(0.333)	(0.385)
Industry: Heavy Manufact.	0.099	0.111	0.863**	0.912**
	(0.359)	(0.416)	(0.352)	(0.410)
Industry: Other	-1.01***	-0.824**	0.702*	0.829**
	(0.34)	(0.391)	(0.377)	(0.419)
const.	1.77***	1.40***	0.020	-0.347
	(0.31)	(0.38)	(0.300)	(0.372)
R^2	5.38%	6.44%	4.16%	2.77%
N	972	771	601	451

Table VIII. Determinants of company recovery rates

The table reports results of regression analysis of the bank's recovery rate by company. Regressions (1)–(4) are for all firms, while regressions (5) and (6) are restricted, respectively, to firms reorganized in formal bankruptcies and workouts. Regressions (1)–(3) are estimated using OLS. Regression (4) is estimated using *Firm age* as an instrument for *Formal bankruptcy*. Regressions (5) and (6) are estimated with the Heckman two-step estimation procedure to correct for self-selection, using all variables of regression (2) as predictors of *Formal bankruptcy*. The dependent variable is the undiscounted recovery rate, defined as one minus the ratio of the bank's final write-off to *EAD*, which is the total debt amount outstanding on cash facilities owed to the participating bank at default, measured in millions of Euros. *UK*, *FR*, and *GE* are country dummies. *Firm age* is the age of the firm from incorporation to the default date. *Collateral*, *Real estate*, and *Debtors* are the last available pre-default estimate of the value of all collateral and the two respective collateral types. *GDP* is the de-trended normalized level of firm's country GDP in the year of default. Other variables are industry dummies. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria. Coefficients significant at 1%, 5% and 10% levels, are indicated by ***,** and *, respectively. Standard errors are reported in parentheses.

	All firms				Bankruptcies	Workouts
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	OLS	OLS	OLS	Heckman	Heckman
UK	0.076**	0.060*	0.077**	0.088**	-0.005	0.050
	(0.036)	(0.035)	(0.036)	(0.041)	(0.066)	(0.111)
FR	-0.115***	-0.141***	-0.164***	-0.114***	-0.220***	0.057
	(0.036)	(0.036)	(0.037)	(0.041)	(0.055)	(0.103)
Firm age	0.002***	0.002***	0.002**	0.002***		
	(0.001)	(0.001)	(0.001)	(0.001)		
EAD	0.005	0.006	0.007	0.005	0.005	-0.007
	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.008)
Collateral/EAD		0.058***	0.066***	0.038***	0.063***	0.057*
		(0.011)	(0.012)	(0.015)	(0.019)	(0.031)
Debtors/EAD * UK			-0.123***	-0.084*	-0.062	-0.418
			(0.044)	(0.046)	(0.046)	(0.298)
Debtors/EAD * FR			0.081*	0.099**	0.163***	0.076
			(0.042)	(0.043)	(0.043)	(0.272)
Debtors/EAD * GE			-0.042	-0.006	-0.010	-1.18
			(0.129)	(0.128)	(0.129)	(1.31)
Real estate/EAD * UK				0.087***	0.083***	0.020
				(0.029)	(0.031)	(0.054)
Real estate/EAD * FR				0.040	0.003	-0.004
				(0.036)	(0.046)	(0.047)
Real estate/EAD * GE				0.173**	0.163**	0.115
				(0.069)	(0.074)	(0.166)
GDP	-0.902	-0.289	-0.265	-0.143	1.04	0.592
	(1.095)	(1.087)	(1.084)	(1.079)	(1.28)	(1.883)
Industry: Construction	-0.031	-0.012	-0.024	-0.024	0.003	0.063
	(0.059)	(0.059)	(0.059)	(0.058)	(0.069)	(0.134)
Industry: Trading	-0.083*	-0.068	-0.070*	-0.065	-0.099*	0.005
	(0.043)	(0.043)	(0.042)	(0.042)	(0.051)	(0.082)
Industry: Light Manuf.	-0.010	0.005	-0.001	-0.0001	-0.004	-0.009
	(0.046)	(0.046)	(0.046)	(0.0453)	(0.055)	(0.085)
Industry: Heavy Manuf.	-0.006	0.008	0.003	0.003	0.009	-0.024
	(0.048)	(0.047)	(0.047)	(0.047)	(0.055)	(0.099)
Industry: Other	-0.011	0.005	0.005	0.006	-0.097	-0.148
	(0.046)	(0.045)	(0.045)	(0.045)	(0.077)	(0.102)
const.	0.634***	0.581***	0.581***	0.554***	0.501***	0.908***
	(0.048)	(0.048)	(0.048)	(0.051)	(0.070)	(0.297)
Adj. R^2	6.20%	8.74%	9.61%	10.70%		
Wald χ^2					170.25	58.48
N	930	930	930	930	751/930	179/930

Table IX. Determinants of loan interest spreads

The table reports results of OLS regression analysis of loan interest spreads, by loan. The dependent variable is *Interest spread*, the equivalent floating-rate-loan spread over the 3-month LIBOR rate in each country at loan origination, measured in percentage points. *UK* and *Germany* are country dummies. *Loan size* is the outstanding amount at the date of default, measured in million Euros. *Firm age at origination* is the age of the company from incorporation on the date when the loan interest rate was negotiated. *Time to default* is the time period in years between the date when the loan rate was negotiated, and the date of subsequent default. *Risk-free rate* is the 3-month LIBOR rate in the respective country on the date when the loan rate was negotiated, measured in percentage points. *Overdraft* is a dummy variable that equals one if the facility is an overdraft (credit line), and zero otherwise. *Secured loan* is a dummy that equals one if there is specific or general collateral attached to the loan. The sample consists of loans of firms with total debt exposure at default to the participating bank greater than € 100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria. Coefficients significant at 1%, 5% and 10% levels, are indicated by ***,** and *, respectively. Standard errors are reported in parentheses.

	Regressions by country						Regressions for all countries	
	UK	France	Germany	UK	France	Germany		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
UK							0.158	0.163
							(0.155)	(0.147)
Germany							0.354	-0.576***
							(0.223)	(0.224)
Loan Size	-0.041***	0.096	-0.053	-0.041***	0.117	-0.236	-0.041	-0.035
	(0.013)	(0.136)	(0.230)	(0.013)	(0.137)	(0.157)	(0.027)	(0.025)
Firm age at origination	-0.004	0.001	0.012	-0.004	0.0001	-0.009	0.003	-0.0004
	(0.003)	(0.007)	(0.017)	(0.003)	(0.0073)	(0.012)	(0.004)	(0.0036)
Time to default	-0.043**	-0.076	-0.262*	-0.042**	-0.080	-0.250***	-0.107***	-0.097***
	(0.019)	(0.095)	(0.140)	(0.019)	(0.099)	(0.094)	(0.032)	(0.029)
Risk-free rate	-0.080**	0.009	-0.537***	-0.081**	0.002	-0.285**	-0.100***	-0.083***
	(0.033)	(0.055)	(0.174)	(0.033)	(0.055)	(0.121)	(0.035)	(0.032)
Overdraft				0.118	0.551	3.15***		2.05***
				(0.261)	(0.592)	(0.37)		(0.22)
Secured loan				0.362	0.450	0.714		0.425**
				(0.404)	(0.362)	(0.505)		(0.214)
const.	2.93***	2.12***	5.53***	2.57***	1.79***	2.55***	3.00***	2.42***
	(0.21)	(0.48)	(0.79)	(0.46)	(0.53)	(0.71)	(0.29)	(0.30)
Adj. R^2	6.99%	-2.77%	20.95%	6.71%	-2.56%	64.69%	6.89%	23.23%
N	224	106	63	223	106	63	393	392

Figure I. Distributions of company recovery rates by country

These graphs show by country the distributions of undiscounted recovery rates by firm, defined as one minus the ratio of the total final loss to the total debt exposure at default, for the participating banks. The distributions are truncated to be between 0 and 1. The sample consists of firms with loan exposure at default to the participating bank greater than €100K and with annual turnover less than €75 Mil., that defaulted on their bank debt according to Basel II criteria.