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Multiple lenders and corporate distress: Evidence on debt restructuring*¤

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Abstract:
Multiple banking is a common characteristic of the corporate lending, particularly of mid-sized and large firms. However, if the firms are facing distress, multiple lenders may have serious coordination problems, as has been argued in the theoretical literature. In this paper we analyze the problems of multiple banking in borrower distress empirically. We rely on a unique panel data set that includes detailed credit-file information on distressed lending relationships in Germany. In particular, it includes information on bank pools, a legal institution aimed at coordinating lender interests in distress. We find that the existence of small pools increases the probability of workout success and that bargaining costs are positively related to pool size. We identify major determinants of pool formation, in particular the number of banks, the distribution of lending among banks, and the severity of the distress.

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1 Introduction

In 2001 during the aftermath of the sudden collapse of Swissair, at the time one of Europe's most prestigious airlines, Oliver Hart noted that the company could probably have been saved had there been coordinated action in the Swiss financial market among all lenders involved prior to the initiation of formal bankruptcy proceedings (see Hart (2001)).

Drawing on private information collected from major German banks, this paper analyzes a financial institution, the bank pool ('Bankenpool'), which is able to eliminate the risk of uncoordinated creditor action when corporate distress is imminent. We find bank pools to be a commonly used coordination device within the German financial system. Despite its importance for financial contracting and for the economics of relationship lending in distress, bank pools have rarely been taken into account by outside observers and academics. To the best of our knowledge, this is the first analysis of the pool institution, and its role in corporate distress.

Our data set comprises medium-sized, privately held non-financial companies in Germany, sampled from the credit files of the largest commercial banks. Most companies in the sample (91 out of 95) have multiple bank relationships, with a median of 5, and a maximum of 17 banks. Multiple banking is common in many countries around the world. For large public companies from 22 countries, Ongena and Smith (2000) find the average number of bank relationships to vary from 2.9 in Norway to 15.2 in Italy. They attribute the cross-country differences to the concentration of the banking system and to the strength of creditor rights. Weaker concentration in the local banking market and stronger creditor rights tend to go hand in hand with more bank relationships.

Rajan (1992) states multiple banking may well be beneficial in normal times because it eliminates the hold-up risk inherent in single-source bank financing. Multiple banking also protects the debtor against a sudden deterioration of the liquidity position of the bank, as argued by Detragiache et al. (2000). However, if the borrower himself is in distress, multiple banking is likely to be a disadvantage. In such a situation coordination between creditors is required, but may be difficult to achieve. There is a large body of literature that focuses on the difficulties experienced by multiple lenders attempting to coordinate their actions. For example, Gertner and Scharfstein (1991) analyze the free-rider problem in corporate distress, and Morris and Shin (2004) emphasize the associated welfare loss of a creditor run.

We find no evidence of creditor runs before or during the distress episodes experienced by the companies in our sample. Loan terminations typically occur after a prolonged distress episode only. However, we observe an extensive involvement of banks in debt restructuring and workout activities. The involvement in distress episodes covers, among other things, the allocation of fresh money to the troubled borrower, the hiring of experts to provide management consultancy and, in some cases, the pressing for management dismissal. The active involvement of the banks is often, but not always, accompanied by explicit coordination among the lenders. In 46% of all cases in our sample, the

group of bank lenders concludes a formal contractual agreement that effectively aligns investment incentives. This agreement is called a pool arrangement. The pool is set up around the onset of a distress episode, and it will be disbanded when the company has been successfully worked out, has been sold, or when it is liquidated. The rules and regulations governing the life of the pool are a result of private contracting. The pool institution, together with its internal decision rules, is an arrangement that is strictly based on incentive compatibility and reputation effects.

Our paper thus analyzes how, in distress episodes, lender coordination is achieved through private contracting. We also evaluate to what extent coordination facilitates workouts. Our major findings can be summarized as follows. First, multiple lending is widespread among distressed medium-sized companies in Germany. Second, and contrary to common belief among many observers[1], we find that banks engage regularly and intensively in the workout of distressed borrowers. This fact has escaped the notice of many political and academic observers as well as government statisticians because private workout activities usually commence well before formal bankruptcy proceedings are initiated. Third, at the onset of financial distress for a borrower, explicit coordination among its lenders is common, leading to the formation of bank pools. These pools initially aim at the revitalization of the distressed company. Bank pools with few members (small pools) significantly shorten the length of the workout period, and they increase the likelihood of a successful turnaround during a reorganization process. In contrast, pools with many member banks experience longer workout duration, and a smaller turnaround probability even by comparison to distressed companies without a pool, which calls the ex post efficiency of the pool into question. Fourth, the formation of the pool itself depends on the severity of the workout task at hand. Thus, pools are more likely to emerge when the ex-ante default probability is high, the number of bank relationships is large, and when, among all bank lenders of a given borrower, the outstanding debt does not differ considerably.

The results reported in this paper suggest that even under a creditor-friendly bankruptcy code, like the one in Germany, there need not be a bias towards liquidation. For the purpose of this study, it is necessary to consider two major characteristics of the German insolvency code[2] that stand in contrast to the rules of the US legislation (Chapter 11). First, debt seniority is respected by the courts throughout the proceedings. This renders collateral rights and additional, privately negotiated arrangements highly dependable and, thus, valuable[3]. Second, the old German code does not stipulate an automatic stay against

[1] See Drukarczyk (2002) for a summary of the discussions in Germany throughout the eighties, eventually leading to the 1999 reform of the German insolvency code.

[2] Throughout the paper we focus on the German pre-1999 insolvency code, which existed until January 1999. It is therefore relevant for the data used in this study. Court-supervised proceedings could take one of two routes, compulsory liquidation (Konkursordnung), or settlement (Vergleichsordnung), although the latter was only rarely chosen. In both cases, control shifted from the owner-manager to a trustee empowered and supervised by the court.

[3] A recent study by Davydenko and Franks (2005) reports an average recovery rate of 67%,

secured creditors, i.e. a period in which creditors are barred from liquidating their secured claims and management has the freedom of action to reorganize the company. Both aspects have profound implications for the relationship between borrowers and lenders. The strict validity of collateral rights creates a motive for creditors to enter into a private contract that stipulates the pooling of the non-collateralized parts of the claims, with no fear of unilateral creditor action. Thus, it effectively substitutes for an automatic stay. This feature of the insolvency code offers an explanation of why bank pools are able to reach stable arrangements among all members, despite the fact that some lenders have less collateral than others and therefore stand to loose more if liquidation is inefficiently postponed. Furthermore, the legal force of debt seniority rules in a future court ruling explains why lenders are willing to invest fresh money for a workout into an otherwise distressed company. Given the widespread existence of pre-bankruptcy bank pool arrangements, workouts are so exhaustive that bankruptcies almost always lead to piecemeal liquidations. The reason is that serious workout attempts that receive support from the lenders are carried out well before the initiation of formal bankruptcy proceedings. If this interpretation is correct, a common criticism of the German Konkursordnung, namely its poor workout performance, is in fact misplaced. A more reasonable view emphasizes the strong pre-bankruptcy workout incentives embedded in the old code. As suggested by our findings, the code supports timely lender coordination and pool formation activities that would probably not be supported in a more debtor-friendly legal environment.

A cursory view to France and Italy confirms the relevance of the bankruptcy code for pool arrangements. Relying on interviews and the literature[4], there is no pool-like arrangement in France with its debtor-oriented regime, following the classification by LaPorta et al. (1998). In contrast, there are informal pool-like institutions in Italy, which is said to have a creditor-friendly bankruptcy regime.

Our findings also have implications for theory. Most importantly, the formation of pools in a multi-banking environment questions the existence of a simple tradeoff between the number of banks and the ability of lenders to enter into debt renegotiation with their borrower. Our findings underline the relevance of the bankruptcy code's *de lege ferenda*, i.e. its legal practice. Above all, this latter characteristic refers to the extent to which collateral rights are effectively recognized throughout the bankruptcy proceedings. The strong legal position of creditor rights in countries like Germany, therefore, may well help to overcome the free-rider problem inherent in multiple banking. As will be shown later, the pooling refers to the non-collateralized portion of outstanding debt, which is most exposed to inefficient liquidation decisions by other banks. A second implication for financial theory concerns the modeling of a bankruptcy code. Our findings suggest that it is important to consider the ex-ante effects of a code,

while Grunert and Weber (2005) find 72%.

[4]For France, see Bloch et al. (1995) and Pochet (2002) as well as Proust and Cadillat (1996). For Italy, see Brogi and Santella (2004).

rather than modeling its *de lege lata*, i.e. its formal rules. As we demonstrate in this paper with respect to the workout behavior of banks, these ex-ante effects can be very different from the explicit rules laid down in the code itself. For example, while the German bankruptcy code is clearly liquidation-oriented ex-post, we nevertheless find clear evidence of ex-ante lender coordination. Therefore, a bias toward liquidation is not a necessary implication of strong creditor rights because cooperative private contracting arrangements arise to supplement bankruptcy law.

We will proceed as follows. Section 2 gives a brief account of the relevant theoretical and empirical literature and states our major hypotheses. Section 3 lays out the institutional details of the bank pool and describes the data set in some detail, including the clients' debt structure, the workout proceedings, and the occurrence and the structure of bank pools. Section 4 presents the testing methodology and discusses the main results. Section 5 concludes.

2 Literature review and derivation of main hypotheses

Much of the recent literature on the pricing of debt, on the design of debt contracts and, more broadly, on the properties of the banking system focuses on the borrower-lender bargaining process when there are several lenders. The case of multiple lending is interesting from a modeling perspective, and it is relevant from an empirical perspective. In the models of Bergman and Callen (1991), Rajan (1992), Bolton and Scharfstein (1996), and Berglof et al. (2000), multiple lending solves the moral hazard problem underlying the basic borrower-lender relationship. The incentive for the borrower to default strategically can be overcome by establishing several lending relationships since multiple debt is harder to renegotiate, or is even non-renegotiable. In Rajan's model, multiple banking achieves the first best if (and only if) all banks are equally close monitors.

All the papers enumerated so far recognize that the benefits of multiple lending have to be traded off against the costs. The common source of the costs in all models is a state of low return realization in which the company is not able to meet its contractual repayment obligations. In this state, inefficiencies arise from the inability to renegotiate multiple debt, from the higher cost of renegotiation, or from reduced expected liquidation values. Rajan (1992) and Bergman and Callen (1991) argue that inefficiencies in liquidity default stem from free-rider problems. An increase in the number of lenders lowers the probability that a single lender is pivotal in renegotiation. Hence, small lenders in particular have an incentive to free ride.

In a second group of papers, it is argued that the major problem associated with multiple lending arises from bargaining among lenders rather than between lenders and a common borrower. The common pool or collective action problem addresses the risk of coordination failure. Although renegotiation is in the collective interest of all creditors, individually they may find pre-emptive debt

collection favorable. They will tend to foreclose on their loans in fear of similar actions by other lenders, although the company's prospects may in fact be sound. Underinvestment will be the consequence. Multiple self-fulfilling equilibria arise, which resemble a bank run as modeled by Diamond and Dybvig (1983). The idea of coordination risk is applied to the pricing of corporate debt by Morris and Shin (2004). In our study we find, nevertheless, that lenders coordinate among themselves quite often. We observe pool arrangements in almost half of all cases.

The available empirical literature on workout processes and results is based almost exclusively on data from large US companies, whereby formal procedures under Chapter 11 of the US Bankruptcy Reform Act are compared with informal, private reorganizations of distressed companies. Gilson et al. (1990), for example, study the characteristics of 169 financially distressed US companies. About half of these companies have restructured their outstanding debt privately, while the other half sought protection under Chapter 11. Their findings suggest that companies are more likely to be successfully restructured when the number of lenders is small and the share of bank debt is high. Franks and Torous (1994) compare private restructuring, organized as an exchange offer, with Chapter 11 reorganizations. Their analysis shows that in private restructuring recovery rates are on average higher and deviation from absolute priority is more likely. James (1996) adds to this by showing that exchange offers are more likely when the debt structure of the distressed companies involves bank loans. There are only few papers dealing with non-US data of which we are aware. Franks and Sussman (2005), who investigate a sample of non-financial SMEs in the UK, report a predominance of single bank relationships. There is no indication of either debt forgiveness or creditor runs, which the authors relate to the specificity of the British insolvency code. Davydenko and Franks (2005) study recovery rates within the UK, France, and Germany. They find that national bankruptcy codes affect recovery rates substantially although differences across the three countries are not fully reflected in pricing.

2.1 Determinants of pool formation

As an initial test we will try to identify the determinants of the formation of pools. We start with the assumption that in distress there are monitoring costs for each bank, yielding economies of pool formation that are positively related to the number of banks included in the pool. These monitoring costs refer to both, monitoring of the borrower and monitoring of other lenders, in fear of their preemptive actions. The formation of a bank pool allows to avoid duplicated monitoring of the borrower and to delegate it to the pool leader. The pool leader is compensated for his tasks with a fixed annual fee specified in the pool contract. The fee varies with total exposure, but is not directly related to the number of pool banks.[5] The cost of monitoring other lenders can

[5] The fixed annual fee varies roughly between 50,000 € for large exposures and 10,000 € for smaller ones as corroborated by interview evidence. See Section 3.1 for further details on

be diminished as well since pool formation commits pool banks to coordinated behavior. Due to the fact that coordination risk can only be eliminated when all banks participate in the pool, the formation of the pool is an "all-or-nothing" decision, i.e. either all banks join or there will be no pool. Credibility ensues from the repeated interaction of a limited group of banks in distress situations of their clients which makes the pool attractive even for well collateralized banks. Recapitulating we argue, since pool formation allows monitoring to be delegated or makes it redundant, it leads under the assumption of Coasian contracting to a decrease of aggregate monitoring costs. Clearly, the economies of pool formation have to be traded off against the bargaining costs within the pool that presumably also rise with pool size. With prior evidence on the relative magnitudes of these effects we suggest

Hypothesis 1: *The formation of pools becomes more likely when the number of bank relationships is increasing.*

The second hypothesis relates to the size distribution of oustanding loan amounts across lenders. We postulate that free-riding incentives are small when lending shares are equal among all lenders, and they rise when shares become uneven.

Hypothesis 2: *The more heterogeneous the distribution of lending shares, the lower is the probability of pool formation.*

The third hypothesis refers to the severity of the distress event. Not all distress shocks require workout action. If shocks to a borrower's credit quality are transitional, perhaps caused by a temporary downturn of the market, company-specific workout activity by the lenders is not warranted. Instead, lenders will wait for the upturn, which is likely to allow the recovery of the company's credit quality. These instances may be labeled ambulant, or out-patient cases, and we compare them to the more severe, company-specific distress shocks requiring lender action. The latter can be labeled in-patient cases, again alluding to the hospital analogue. As a consequence, there are at least two reasons for not forming a pool in distress, i.e. the inability to reach coordination among all lenders and the non-necessity to coordinate workout efforts among lenders.

Hypothesis 3: *The probability of pool formation is positively related to the severity of the distress shock.*

Note that in order to form a pool, eventually all the banks will have to agree that the prospects of the borrower are such that unified action is warranted. Therefore, substantial shocks to credit quality are more likely to be interpreted unambiguously as signals of distress by all lenders.

Additionally, the decision to form a pool may be affected by the size of the company, the quality of the bank relationship, the individual strategies of the banks involved, the general economic conditions prevailing at the time of the distress event, and the industry to which the distressed company belongs.

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the pool contract.

Borrower size. Given that a bank pool involves coordination costs, the banks' decision on pool formation also depends on the size of the borrower. We measure size by the company's total assets. Size should have an impact on expected future revenues out of which banks' costs will have to be covered. We therefore hypothesize that company size is positively related to the probability of pool formation.

Housebank and collateralization. The housebank typically has superior information and a senior position in terms of collateral, as was shown by Elsas and Krahnen (1999). It may thus take a leading role in the formation of a bank pool. Higher collateralization itself yields higher expected recovery and therefore lowers the incentive to participate in workouts and bank pools.

Bank i*dentity.* There may well be systematic differences between banks with respect to their willingness to engage in a bank pool. Recall that the banks in our sample comprise the biggest banks from all three German banking sectors, namely private banks, savings banks (mostly owned by communities), and cooperative banks.

Economic conditions and industry. The willingness to engage in pool operations may also be influenced by the general economic conditions prevailing at the onset of distress, and the company's business focus.

2.2 Determinants of workout success

We consider the effect of pool formation on the workout success of a distressed borrower first. Pool formation helps to avoid the costs resulting from inefficient liquidations and prolonged workouts. Hypothesis 4 therefore relates to the economic costs of free-riding that is caused by multiple banking, and that is central to the models of Rajan (1992) and Bergman and Callen (1991).

Hypothesis 4: *The presence of a pool arrangement increases the probability of workout success, and reduces the length of time needed to conclude a workout process.*

A second explanatory variable that is expected to influence the probability of workout success is the number of bank relationships. It refers to the marginal effect of coordination. If the number of lenders is large, lenders are more likely to see themselves as non-pivotal for the ultimate survival of the company, and are therefore more inclined to walk away without contributing to a workout financing, or without coordinating with other lenders of a distressed borrower. The definition of 'large' with respect to the number of lenders is, of course, an empirical question.

Hypothesis 5: *The probability of recovery from a distress situation is negatively related to the number of lenders.*

Third, given that a bank pool has been formed, we expect bargaining costs to be directly proportional to the number of banks in a pool. The main reason for this hypothesis rests on the incentive of small creditors in large pools to deny concessions, or in general to be less actively involved in a restructuring

process and, therefore, to be less committed to timely action. In contrast, 'large' pools are expected to need more time for decision-making, thereby stretching a workout over time. This may be costly in terms of opportunity costs as well as in terms of options foregone. Furthermore, since 'large' pools are less prepared to act flexibly, they are likely to liquidate distressed companies more frequently than 'small' pools. Taken together, we expect debtors with small pools to recover faster from distress, and therefore to have a shorter duration in the distress mode.

Hypothesis 6: *Small pools are more likely to be associated with successful reorganizations than large pools.*

Finally, the probability of recovery is conditional on the severity of the distress shock. The distinction between ambulant and in-patient cases is expected to affect recovery probability. Thus, ambulant cases will have experienced a rather light and temporary distress shock, which renders recovery likely even if there is no workout activity from the banks. In contrast, in-patient cases are characterized by a rather severe and more permanent distress shock, and recovery typically depends upon active workout involvement by the banks concerned.

Hypothesis 7: *The probability of workout success is negatively related to the severity of the distress shock.*

In addition, the economic condition prevailing at the onset of distress may well have an impact on the probability of workout success.

3 Distressed loans and bank pools: Descriptive statistics and institutional design

Almost half of the distressed companies analyzed in this paper involve so-called bank pools as part of the restructuring. These pools have a sophisticated institutional structure, with potentially important implications for the behavior of banks when their corporate client is in trouble. The contractual features of bank pools are outlined in the next subsection, followed by detailed description of the data set and some descriptive statistics.

3.1 Bank pools: Contract features

The institution of a 'bank pool' is a formal contractual arrangement in which lenders pool their individual claims vis-à-vis a particular borrower in distress in order to coordinate their decision-making. Typically, when a company with multiple bank relationships becomes distressed, its banks summon a so-called 'bank meeting'. This meeting serves the purpose of discussing how to deal with the company currently in distress, and deciding in particular whether or not a formal pool among the banks should be set up. In case this latter decision is affirmative, the contract is concluded without delay.

The standard pool contract has been used throughout the last thirty years. Its special format is adapted to the needs of distress situations. An abbreviated English version of the standard pool contract is in the appendix (see also Scholz and Lwowski (1994) and Hellner and Steuer (2001) for a complete German text). Core elements of the standard pool contract are as follows:

- a list of contracting parties and outstanding loans;
- a description of pool leader responsibilities, including the administration of collateral;
- an agreement about the joint and mutual settlement of credit account balances between participating banks;
- an agreement about the distribution of revenues from liquidation, sale, or ongoing client business;
- a sharing rule concerning the costs of running the pool;
- a sharing arrangement concerning relevant default information, and
- an agreement about the duration of the contract, and exit rules.

From interviews we know that typically a bank pool comprises all active bank lenders. The contract specifies in particular how proceeds from outstanding loans, as well as costs related to the workout, are to be shared among pool members. Failure to reach a consensus on these issues usually prevents the establishment of the pool. The existence of a pool arrangement is revealed to the participating institutions, and to the distressed company. The latter also co-signs the pool contract as he will be charged the pool leader's costs of running the pool. In liquidation, these costs are guaranteed by all pool members. Pool costs are an annual fee, which is agreed on in the pool arrangement dependent on exposure size. This claim is senior to all other claims held by the creditor pool.

Third parties are not necessarily informed about the establishment of a pool, if the company's distress hasn't been disclosed yet. In our field interviews, this disclosure policy was justified as follows. If the distress is public information, the existence of a pool is a positive signal that lenders are willing to engage in a workout. However, if the distress is not publicly known, the establishment of a pool is a negative signal, indicating a distress situation. The liquidity situation of a troubled company will be adversely affected by that signal.

When does a pool start, and when does it end? The initiation of a pool is subject to a group decision involving all designated pool members. This decision process may require some time. For this reason, the actual date of the establishment of the pool will, in most cases, not coincide exactly with the date of the distress event, i.e. the date of the loan downgrading to highly speculative or even default grade. Rather, pool formation occurs in the vast majority of cases shortly before, at, or shortly after the distress event. The duration of

the pool arrangement is unlimited, a priori. Once established, it will last until the reorganization is completed, i.e. until the company is able to attract new lenders, or else until it is liquidated. In either case, the pool contract is phased out rather than formally dissolved.

From field interviews, supported by our data, we know that only non-collateralized junior loans are pooled. (Partially) collateralized creditors' participation in the pool corresponds to the non-collateralized portion of their debt. Thus, junior lenders, or more precisely, lenders in proportion to their non-collateralized debt will raise the fresh money needed for the workout in accordance with pre-specified pool quotas. This scenario has been observed throughout the decades since bank pools were first established. It is important to mention that this scenario does not in any way imply that senior banks, notably highly collateralized housebanks, are left out of pool negotiations altogether. The reason is that even housebanks typically have part of their loans unsecured. Furthermore, banks have an informal standstill agreement regarding the collateralized (non-pooled portion) of their debt, which, although not contractually binding, is apparently sufficient to prevent pre-emptive action by these parties. Once a pool exists, attempts are made to collateralize the hitherto non-collateralized junior pool loans, i.e. to obtain additional collateral from the borrower. This explains the existence of pool collateral, which refers to collateral obtained after the pool was established. This must not be confused with individual ('inherited') collateral agreements already in existence before pool formation occurs. Of course, collateralized banks are not willing to share their inherited collateral assets with other banks. Thus, workout investments are subordinate to this collateralized portion of debt and leave seniority unaffected.

The pool contract establishes a binding commitment for every bank to coordinate its client-related actions with all other pool banks. Most importantly, each bank commits itself to keeping her credit line open. This is believed to be in the interests of every pool member, since it reduces uncertainty and stabilizes the liquidity position of the company. Thus, the seizure of collateral or any forced repayment is ruled out, unless the pool members decide unanimously to the contrary. In general, revenues from the client's ongoing business, or from the realization of collateral are shared among pool banks in proportion to their relevant credit balances. If banks learn individually about circumstances that would endanger the repayment of debt, the information has to be shared among all pool banks and, therefore, the otherwise rigid rule of bank secrecy is relaxed. If a pool bank breaches the contract, e.g. by unilaterally reducing her credit line, it becomes liable vis-à-vis the remaining pool banks to restore the agreed pool quotas.

A priori, there is no reason why trade creditors should not join the pool. Trade credit insurers are typically asked to join the pool, as they are representing the interest of their clients. In the present study, however, we have no information about whether or not trade credit insurers were part of the pool. Our empirical analysis, therefore, does not explicitly address the role of trade credit in the restructuring process.

3.2 The data set and descriptive statistics

3.2.1 Sampling

The study relies on the CFS Loan Data Set, collected under the Center for Financial Studies' field research project on Credit Management (see Elsas et al. (1998) for further details). The data underlying our analysis include distressed corporate debtors of six major German banks; four of them are private listed companies, one is a public sector institution, and one is a cooperative bank. The unit of observation is a particular borrowing company or, more specifically, a particular bank-borrower relationship, using all the information regarding the borrowing company contained in the credit files[6] of a bank. The data set contains in particular

- general characteristics of the company (e.g. legal form, industry);
- the company's balance sheet data;
- an assessment of borrower risk, according to the bank's internal risk rating;
- a complete account of the bank's outstanding loans vis-à-vis the particular borrower, taken from its loan book; this includes information on loan terms, e.g. volume, maturity, collateral, spread;
- general information concerning other bank relationships of the company, including the existence of a bank pool;
- measures taken by the bank in order to reorganize or liquidate the company, or its assets.

This information was collected directly from the banks' credit files. Observations range from 1991 to 1999. The sample was drawn randomly from a population of all those corporate customers who fulfilled the following set of conditions at least once during 1992-1997.[7]

- First, companies had to be medium-sized, i.e. with an annual turnover between €25 − 250m. Owing to the absence of surveillance by rating agencies and the lack of rigorous disclosure requirements, we expected this company size segment to be subject to a significant degree of asymmetric information between lenders and borrowers, thus constituting a prime population for the analysis of issues related to relationship lending, loan contract design, and renegotiation.

[6] The complete electronic and hardcopy documentation of the bank's relationship with the borrowing company.

[7] Random sampling was ensured in the following manner. The participating banks each compiled electronically a list of account numbers of all clients who met the selection criteria listed below. Based on these (anonymized) lists, we then drew a random sample for each bank without bank intervention.

- Second, to ensure a minimum level of information with regard to the client's total bank debt and the number of bank relationships, a minimum total loan size of about €1.5m (DM 3m) was imposed. All loans surpassing this level are subject to the regulatory notification requirement of Article 14 of the KWG (German Banking Act), and have to be communicated to the federal banking supervisory agency BAFin (formerly BAKred). Thus, mid-sized firms that had exclusively small loans would be excluded from our sample.

- Third, clients with registered offices in the former GDR (East Germany) were excluded.

- Fourth, to generate a sample of distressed borrowers, companies had to exhibit a poor internal rating at least once within the 1992-1997 period. A poor rating is defined as a rating of 5 or 6 on a standardized rating scale applied to all banks in the sample ranging from 1 (highest grade) to 6 (lowest grade).

The resulting sample included 124 borrowers and a total number of 597 year-end observations[8]. The incidence that a company entered distress in the last period of our observation window occurred for 23 companies. We dropped these observations since, for these companies, we have no information about distress behavior or reorganisation outcome. For an additional 6 companies the relevant balance sheet and loan information to be included in the regression analysis were missing. We therefore eliminated these 6 cases too, which left us with a sample of 95 companies and a total of 480 year-end observations.

Panel A of Table 1 shows the number of cases per bank, ranging from 8 to 22. Among the 95 companies in the sample there are 44 credit relationships involving pool arrangements as part of the workout process.

{insert Table 1 here}

As mentioned above, the onset of distress is documented by a downgrading of the client's bank-internal rating to category 5 or 6 between 1992 and 1997, during which time the so-called distress event occurred. The frequency distribution of distress events throughout the years of the observation window is shown in Panel B of Table 1. The number of distress events occurring in 1997 is considerably smaller than in previous years due to the fact that at least one year after the distress event needs to be observed.

Grouped according to industry sectors, Panel C of Table 1 shows that the majority of companies come from the manufacturing (23) and machinery (25) sectors. The third largest sector is trade, including both retail and wholesale, with a total of 12 companies. Other sectors are far less frequently observed in this sample.

[8] When there was more than one observation per year we only considered the last observation. However, we cumulated the information on distress measures taken by the bank over all observations in the respective year.

3.2.2 Internal ratings and distress event

Internal ratings provided by bank lenders are a crucial characteristic of our data set as the above description of the sampling procedure demonstrated. The rating reflects the expected default probability of the company, as seen by the bank, before collateralization is taken into account. We have no evidence of external ratings, i.e. agency ratings, for any of the companies in our sample which is reasonable given the fact that we are dealing with medium-sized companies.

The rating information has been collected on every borrower and for each observation recorded in the files. Each bank in the sample uses its own rating system in order to assess the probability of default by its borrowers. Ratings are reviewed at regular intervals, typically every second year for high-rated companies and at least once a year for companies of medium and low quality. Commonly, low-quality companies are rated even more frequently, especially if information touching upon the company's creditworthiness is revealed.

The standard methodology of the rating process relies on a scoring system with up to five different main criteria, including quantitative and qualitative information about company performance and prospects, and a linear weighting system with both fixed and varying weighting factors depending on the bank in question (see Brunner et al. (2000) for details). We treat ratings as unbiased and efficient estimates of expected default probabilities, as judged by the individual bank. As long as internal ratings remain the private information of the bank, i.e. as long as rating information is not communicated to either the management of the rated company, or to some supervisory body, there is no inherent incentive for the bank to systematically misrepresent the information available. Internal ratings are thus expected to be informationally efficient (see Krahnen and Weber (2001)).

The ratings of six different banks based on different rating scales have been standardized in a transformed rating scale with six rating categories, in which grades 5 and 6 describe borrowers that are distressed or even have defaulted on their obligations. The standardization process is based on the banks' rating manuals that instruct credit officers about how to assign a company to a certain rating category. Using these manuals, each category of a bank-individual rating system was assigned to one of the six new categories of the standardized system documented in Table 2. Table 2 also relates the bank-individual rating categories as well as the standardized version to the rating scales of Moody's and S&P based on bank-internal translation rules.

{insert Table 2 here}

A distress event is thus defined as the point in time when, for the first time in our observation window, a bank assigns its borrower a distress rating notch, i.e. 5 or, more severely, 6. We interpret the distress event as the onset of financial distress, which may or may not coincide with the date of default according to the Basle II definition. In our sample, we find 79 downgradings to rating 5 and 16 downgradings to rating 6 with the pool subsample comprising a higher fraction of more severe downgradings (see Panel B of Table 1).

3.2.3 Company size and debt structure

One of the major sample selection criteria refers to company size, proxied by annual turnover, representing medium-sized companies. Annual turnover had to be larger than €25m and smaller than €250m. In the sample of 95 distressed companies, the average annual turnover is €61.6m. Companies with pool arrangements are significantly larger than those without pool both in terms of mean (€76.6m vs. €48.7m) and median (€62.1m vs. €35.6m) as shown in Panel A of Table 3.

{insert Table 3 here}

In this size class, German companies typically do not issue public debt instruments. With regard to the companies' debt structure, the average debt-to-assets ratio is 70.1%. Bank loans constitute the main component of a company's debt with 74.3% alongside other forms of debt, e.g. trade credit and pension liabilities. The fraction of bank debt in a company's total debt is considerably larger in the distressed sample than in a comparable representative sample of medium-sized German companies. For the latter, Elsas and Krahnen (1998) found an average bank-debt to total-debt ratio of about 50%.

3.2.4 Relationship characteristics: Banks, loans and collateral

At the onset of distress, the number of bank relationships of the companies in our sample averages 5.7, with median 5, ranging from single banking to as many as 17 bank relationships. These values are close to the numbers for a representative sample of German companies in the same size class, as reported by Elsas et al. (1998). However, companies with pool arrangements tend to have one more bank relationship on average than companies without pools; the medians of the two subsamples differ by 2 with weak significance. The frequency distributions of the number of banks for the pool subsample vs. the non-pool subsample is presented in Figure 1.

{insert Figure 1 here}

In addition, we analyzed whether larger borrowers tend to have more bank relationships and/or higher amounts of debt outstanding per bank. The bivariate correlation analysis in Panel B of Table 3 suggests that for both subsamples, the number of banks is only weakly increasing in company size, if at all, where size is measured by both annual turnover or total assets. However, the average debt per bank increases significantly with company size, although only weakly in the non-pool subsample. In other words, within our sample, banking relationships of larger companies are characterized by higher exposures per bank, and not necessarily by a larger number of banks.

The average duration of bank relationships by the time of the distress event is over 18 years with almost no difference between the pool and non-pool subsample shown in Table 4. The sample exhibits an average overall credit line of

€8.0m, about 79% of which is utilized at the onset of distress. The average fraction of short-term loans in the total credit line is 42.6%, with short-term loans possessing a lower average utilization rate of 63.3% and an average spread of 3.8%. All itemized relationship characteristics of pool and non-pool companies do not differ significantly.

{insert Table 4 here}

If collateral rights are part of the lending agreement, we expect to see an effect on the expected recovery rate, on lender decision-making, and in particular on the willingness to engage in pool formation. In our sample, the average share of collateralized loans in total loan volume at the time of the distress event amounts to 45.2% exhibited in Table 5, which is one third higher than in a representative sample[9]. Note that the pool and the non-pool subsample differ only slightly. A fraction of 14.7% of all bank-client relationships in the sample is not collateralized at all, with 11.4% in the pool subsample and 17.6% for the remaining non-pool companies as shown in Table 5.

{insert Table 5 here}

With respect to the type of collateral items involved, real estate is found to be the major component of the total collateral value with an average of 53.7% followed by stock, plant and machinery comprising a further 14.8% (see Table 5). Again, differences between the two subsamples are quite minor.

3.2.5 Workout

The onset of financial distress, as measured by the initial distress rating, is accompanied by an adjustment in bank behavior vis-à-vis the company. The impact of bank activities on the borrower's financing constraint will take one of two directions:

- *Loosening* the borrower's financial constraints by postponing due repayments and interest payments, or even providing additional funds (fresh money) to help the company overcome a liquidity shortage.
- *Tightening* the borrower's financial constraints by reducing credit lines, terminating individual loans or requiring additional collateral in order to discipline the company's management.

However, loosening and tightening are not necessarily mutually exclusive. The bank may, for example, provide fresh money whilst at the same time requiring additional collateral. Additionally, the bank reacts to declining borrower quality in ways not directly related to the size and structure of loan agreements, for instance by increasing its monitoring. The term 'workout' is commonly used

[9] In 1996, the average collateralization of loans in a representative sample of 98 medium-sized companies was 31.5%. See Elsas and Krahnen (1999) for further details.

to describe a bank's efforts to continue the lending relationship with a distressed borrower. For some of the banks in our sample, the distress event corresponds to the moment when competence for the respective client is transferred from the local credit manager to a workout group on a senior level with specific expertise regarding reorganization as well as liquidation (not all banks had such workout groups at the time of data collection, however).

At the onset of distress ($t = 0$), one third of all companies in the sample face a credit line reduction, on average by 5.7% of their pre-distress total credit line (see Table 4, column (viii), and Panel A of Table 6). After one year of distress ($t = 1$), 20% of companies face another reduction (including second-time reductions). Repayments are postponed for 8.4% of all companies at the distress event, and for 10.5% one year later; numbers are considerably higher for the pool subsample and lower for the non-pool subsample.

{insert Table 6 here}

Bank workout policy also involves consultancy services. Typically the distressed borrower is persuaded to hire an outside consultant to enhance management capabilities, and also to improve the bank's monitoring ability. According to Panel A of Table 6, consultancy services were observed in 20 out of 95 cases, two thirds of which belong to the pool subsample.

Bank loss provisions are observed in 21.1% of all cases at the distress onset (Table 6, Panel A). This number increases to 29.5% one year later. Provisioning is more often observed in pool cases than in non-pool cases.

Panel B of Table 6 describes the workout outcome at the end of our observation window. Almost half of all cases, 49.5%, are still in distress by the time our window closes; rating improvements to rating notch 4 or better are recorded for one third of all cases. A final rating of 4 accounted for the majority of the 31 rating improvements (24) whereas the rating migrated to rating notch 3 only four times and to rating notch 2 thrice. In 3.2% of all cases, banks were able to close their books by rebanking their client, i.e. transferring the client to other banks as part of a going-concern company sale. Formal bankruptcy occurred in 11 cases, and banks conducted an informal winding-up in 3 cases. In comparison to pool cases, non-pool cases are more likely to emerge from distress (39.2% vs. 25.0%) by either a turnaround, i.e. a rating upgrade, or by rebanking.

The discrepancies between pool and non-pool subsample with respect to workout measures and workout outcome can be related to the distinction between out-patient and in-patient cases introduced earlier suggesting that the non-pool subsample comprises relatively more ambulant cases.

4 Estimation methodology and results

This section starts with an outline of the steps taken to test hypotheses 1 to 7. The first subsection deals with pool formation, while the second addresses pool performance and workout success. All specifications use cross-sectional data and

rely on the sample of 95 companies described above. We estimate the probability of pool formation as a standard probit. Then we estimate how pool formation affects the probability of workout success. Since both, the probability of pool formation and the probability of workout success may be related to the same variables, the possibility of an endogeneity problem is apparent in this context.[10] We will thus also run a model where the pool variable is instrumented. The workout is defined to be successful if a client company's rating emerges from the distress rating categories or when the company is successfully rebanked. In addition, we use the length of the distress episode as an alternative measure of workout success using a duration model. Essentially, this is an extension to the probit analysis by a time dimension. It allows a prediction about the average length of a workout for a distressed company with given characteristics.

4.1 Determinants of pool formation

The first regression analysis will help us to understand the determinants of pool formation. We relate the incidence of pool formation to the company's banking characteristics in order to test the hypotheses discussed in Section 2. In brief, we hypothesized that the probability of pool formation is positively related to the number of bank relationships, negatively related to the heterogeneity of banks' lending shares, and positively related to the severity of distress shock experienced by the borrower. Companies with single bank relationships are included in the regression, since there is a positive probability of observing pools comprising the single bank as well as one, or several, non-bank creditors.

The independent variables, observed at the distress event, comprise the log of the number of bank relationships (#BANKS), the absolute difference between the bank's actual share in total bank lending and a hypothetical uniform share (SKEWNESS), and a dummy reflecting the poorest credit quality (RATING6). While there is no direct evidence on the difference between ambulant and in-patient cases, we interpret RATING6 to be an approximation of in-patient rather than ambulant cases[11]. Bank identity (B1,B2,...,B6) serves as the constant term of the regression. Taking (i) as the base case of the regression in Table 7, specifications (ii)-(iv) address robustness by including different control variables: the business condition (IFO index), the housebank status[12] (HB), the fraction of

[10] According to the literature on treatment effects (see Heckman (1990, 1997) and Angrist and Imbens (1991)), the average treatment effect on the treated is measured by the extent to which companies gain from pool formation in terms of workout success. An endogeneity problem emerges if the decision to form a bank pool is related to the idiosyncratic component of the workout success probability.

[11] The pooling of ambulant and in-patient cases in one data set creates an inference problem. For ambulant cases, the simple passage of time alone may generate a rating recovery, not requiring the formation of bank pools. On the other hand, for in-patient cases, the success probability is expected to rise when a pool is established. An initial distress rating of 6 is our best proxy for an in-patient company in need of serious restructuring. However, distressed companies with initial distress rating of 5 are not necessarily ambulant.

[12] It describes whether or not the observed bank is the housebank. It should be kept in

exposure that is collateralized (COLLATERAL), the size of the company using the balance sheet total assets (ASSETS), industry classifications (MACHIN, MANUF), and the length of time between the distress event and the end of our observation window (TIME2END). Equation (1) summarizes the set of explanatory factors with respect to the probability of pool formation.

$$pool = f \left(\begin{array}{l} \#banks, skewness, rating6, b1...6, ifo, \\ assets, hb, collateral, industry, time2end \end{array} \right) \qquad (1)$$

We find pool formation to depend positively on (the log of) the number of bank relationships[13], thus supporting Hypothesis 1. The coefficient of the SKEWNESS variable is negative and significant in all specifications (i)-(iv), indicating that uneven lending shares lower the probability of pool formation as claimed in Hypothesis 2. Next, we find that the severity of the distress shock (RATING6) has a positive and significant effect on pool formation, in line with Hypothesis 3. Thus, a shock to the borrower's credit quality that lowers the rating to the poorest rating notch is a strong predictor of lender coordination. The remaining other control variables are insignificant except for the manufacturing sector which has a weakly positive impact on pool formation ($p < 10\%$).

{insert Table 7 here}

In specification (iv) of Table 7, we test whether the relationship between pool formation and the number of banks is monotonic by substituting different size classes for the number of banks; the middle tertile group ($5 - 7$ bank relationships) serves as a reference group. A small number of banks renders pool formation less likely, while the group of many banks (> 8) is not significantly different from the reference group. The results are suggestive of a monotonic relationship between the number of banks and pool formation.

4.2 Determinants of workout success

When analyzing the determinants of workout success, we employ three different estimation procedures. First, we estimate the probability of workout success using a standard probit assuming the pool variable to be independent of the error term. We then relax this assumption and estimate the probability of workout success in a two-stage estimation with an instrumented pool variable thereby controlling for endogeneity. Furthermore, we estimate a duration model, where the length of time needed to recover from the distress shock is used as the success indicator.

According to the hyptheses in Section 2, we test whether the probability of workout success is positively related to the existence of a bank pool, negatively

mind that the housebank variable does not describe the full dimension of the housebank status from the client's perspective, since it does not allow for any other bank taking the role of a housebank.

[13] Significant at the 5%- and 10%-level in specifications (i) and (ii) respectively, with the same sign, and insignificant in specification (iii).

related to the number of bank lenders, negatively related to the size of the bank pool, and negatively related to the severity of the distress shock. In the duration model, coefficients are expected to have opposite signs compared to the probit analysis since a longer distress episode indicates a less successful workout.

The dependent variable captures the recovery from distress. One way to operationalize workout success relies on bank-internal corporate ratings. As explained earlier, these ratings are expected to represent an unbiased estimate of borrower default probability. The estimates are based on the information acquired by the bank throughout its relationship with the borrower. Although it might be preferable to use other performance data as well in determination of success, e.g. the company's balance sheet data, these are hardly available during distress, or are published with a substantial time lag. This is evident from our data, where the number of balance sheet items that are missing or are stale, rises dramatically after the initial distress event. Since banks do not stop evaluating the borrower quality once the borrower is in distress, although accounting data are poor, we are confident that internal ratings provide the best information available for indicating business success or business failure.

4.2.1 Ordinary probit

First, we estimate the probability of workout success as an ordinary probit on the full sample of 95 companies employing two different specifications as described in equations (2) and (3). We define a workout to be successful whenever, by the end of our observation window, the internal rating migrates upwards, thereby overcoming distress by means of its rating classification. On our calibrated 1 to 6 rating scale (best to worst), notches 5 and 6 are reserved for distress, or highly speculative and default cases, while notches $1-4$ are categorized as investment to speculative grades (see Table 2 for details). A workout is also termed successful when rebanking occurs, i.e. debt is fully discharged after a change in ownership of the company, which happens in 3 cases (see Panel B of Table 6)[14]. The dependent variable will be labeled SUCCESS, and is set equal to one if rating 4 or better has been achieved subsequent to a distress rating of 5 or 6, or if the client has rebanked; the dependent variable is otherwise zero. A dummy value of zero does not imply that the workout has failed, and corporate assets are liquidated. It may simply reflect the fact that the case has not yet been resolved at the end of our observation window. Independent variables in Equations (2) and (3) include the existence of a bank pool, the number of bank relationships, the severity of the distress shock, and several control variables.

$$success_i = f_i \left(\begin{array}{c} pool, \#banks, rating6, ifo, assets, \\ hb, collateral, industry, time2end \end{array} \right) \qquad (2)$$

[14] In this sample we observe rebanking only following a change in ownership and with no discount. We are not aware of any case in which banks, ceteris paribus, sell off their loans to new lenders. Therefore we treat rebanking as representing success for the respective banks.

$$success_{ii} = f_{ii}\left(\begin{array}{c} poolsma, poolbig, \#banks, rating6, ifo, \\ assets, hb, collateral, industry, time2end \end{array}\right) \qquad (3)$$

We cannot account for the size of the pool per se. However, from conversations with bankers we know that under normal circumstances a bank pool comprises all relevant lending institutions. In order to estimate the effect of pool size on workout success, Equation (2) comprises a POOL dummy, the log of number of banks (#BANKS), and an interaction term of both. In (3) we differentiate between small pools (POOLSMA) and large pools (POOLBIG). The dummy variable POOLSMA equals one whenever there is a pool and the number of active bank relationships is at most 4, the lower tertile of the distribution. Analogously, POOLBIG equals one if a pool exists and the number of banks potentially involved is 5 or higher. The reference group consists of all relationships without a pool. Thus, the number of existing bank relationships during the distress event is used as a proxy for the size of the pool in Equations (2) and (3). Additional explanatory variables include the severity of the distress shock (RATING6), the IFO index, the size of the company (ASSETS), the HB-dummy, COLLATERALization, two industry dummies (MACHIN, MANUF), and the time between the distress event and the end of the observation period (TIME2END). Estimation results are documented in specifications (i-iv) of Table 8.

{insert Table 8 here}

Starting with columns (i) and (ii), which are two specifications of Equation (2) we find the existence of a pool to have a positive and significant impact on workout success ($p < 1\%$), supporting Hypothesis 4. Furthermore, a large number of bank relationships reduces the positive effect of the pool variable on workout success. The interaction term (POOL $\times \log(\#\text{BANKS})$) has a negative coefficient, which is significant ($p < 1\%$), supporting Hypothesis 6. Note that the unconditional effect of the number of banks on the probability of workout success turns out to be insignificant in all specifications, rejecting Hypothesis 5.

Other than in Equation (2), the distinction between small and large pools, as addressed in Hypothesis 6, is explicitly realized in Equation (3) where the workout effect of the pool is conditional on its size. The results are reported in columns (iii) and (iv) of Table 8. For small pools, the impact on workout success is found to be positive ($p < 5\%$), while it is negative for large pools, comprising 5 or more banks ($p < 1\%$). The finding that large pools actually lower the success probability of workouts is striking; thus Hypothesis 4 cannot be confirmed when a distinction is made between small and large pools. It raises the question why, given that there are many bank relationships, bank pools are formed in the first place? It may partially be explained by the fact that our measure of severity does not differentiate very well between ambulant and in-patient cases, i.e. the non-pool subsample comprises a higher fraction of ambulant cases, supported by our descriptive statistics (see Table 6). However, a comprehensive answer to this question has to look beyond the role of pools as a workout coordination device. We take up this question in the concluding section. Apart from these key

observations, the coefficient of RATING6, measuring distress severity, and those of other control variables in specifications (i) to (iv) of Table 8 are insignificant. Thus, Hypothesis 7 cannot be supported.

4.2.2 Two-stage estimation

A two-stage estimation is carried out as a robustness check, controlling for the possible endogeneity of pool formation with respect to workout success. For this purpose we instrument the pool variable in Equations (2) and (3), following Maddala (1983). As an instrument for the pool, we take the probability of pool formation from the base case regression (i) in Table 7, which therefore constitutes the first stage regression. The instruments replacing POOLSMA and POOLBIG are also calculated from the base case regression (i) in Table 7. In stage two we then re-estimate specifications (i) and (iii) of Table 8. The results of the second stage are reported in columns (v) and (vi) of Table 8. It shows that controlling for endogeneity of the POOL variable has an effect on the level of significance in some cases, but it leaves the qualitative results unchanged throughout. In (v), the existence of a pool increases workout performance, while the significance levels of both the POOL variable and the interaction term are lower than before. In (vi), small and large pools have again opposing effects on pool performance. Here, the significance level of the large pool coefficient decreases from 1% to 10%.

4.2.3 Duration analysis

In determining the probability of workout success, we have so far used TIME2END-dummy variables as controls for the length of the observation window after the distress event. To look more closely into the time dependence of workout success, we employ a duration model with monthly data. Workout success is now measured as length of the distress episode, i.e. the time in months between the distress event and the rating upgrade or rebanking. Both measures of workout success are related, since we have a restricted observation window. The set of explanatory variables coincides with those of the preceding base-case probit regressions (i) and (iii) of Table 8. The coefficients are expected to have opposite signs compared to the probits, since the dependent variable, i.e. the length of the workout period, is an inverse measure of workout success. Workout performance is higher, when recovery is reached after a shorter time period. Thus, the duration model uses the full set of information that we have on the time dimension of workout success. For the specification of the duration model we use a log-linear survival function, assuming an underlying Weibull distribution.

Specifications (vii) and (viii) of Table 8 report the two specifications of the duration model corresponding to the base-case probit regressions (i) and (iii). The results and significance levels are in line with those of the probit estimation, where workout success instead of workout duration served as the dependent variable. Thus, the existence of a pool reduces the time needed to achieve success, while an increasing number of banks, conditional on a pool being formed,

lengthens the time required to terminate a workout successfully (specification (vii) of Table 8). The two key variables, pool and the interaction term, turn out to be significant at the 5% level in (vii). Furthermore, the severity of the distress shock lengthens the time of the distress episode, and it delays an eventual success, with a 5% level of significance, supporting Hypothesis 7. If we differentiate between small and large pools, as in specification (viii) of Table 8, we find that small pools decrease ($p < 10\%$) and large pools increase ($p < 5\%$) workout duration, respectively. In terms of explicit workout duration, the model predicts that 95% of all cases spend at least 10 months in distress and the median spell is about 50 months. These estimates are broadly in line with what bankers have told us in conversations, namely that workout episodes in Germany tend to be quite extended, typically lasting for several years.

Overall, the duration analysis supports our earlier findings. The distinction between small and large pools reveals that large pools need more time to achieve rating recovery. This result is in line with Hypothesis 6, while it refutes Hypothesis 4: large pools' distress duration is not only longer than that of small pools, it is also longer than the time companies without a pool need to recover from distress. This again raises the question as to the reasons for the formation of pools when there are many rather than few banks.

5 Conclusion

In this paper, we analyze empirically how banks cope with distressed corporate borrowers in a multiple banking environment. In particular, the paper sheds light on how coordination among lenders is achieved, and what implications successful coordination has for the survival of the borrower. We have access to a unique data set that contains detailed credit-file information on distressed medium-sized companies sampled from six German banks.

While the distress of corporate borrowers has always been an important topic in financial economics, the more specific question of how the debt structure, in particular multiple lending, affects the performance of distressed companies has not yet received much attention. The major contribution of our study concerns the identification of bank pools as viable and relevant contractual arrangements. The occurrence of bank pools as a common instrument in German corporate lending demonstrates that lender coordination can be reached outside court supervision. We show that bank pools affect the probability of workout success. The sign of this impact depends on pool size. Small pools significantly increase the probability of workout success, while large pools reduce the likelihood of success. This finding supports the view that the benefit of pool formation, and thus the prevention of a run on company assets, has to be traded off against the bargaining costs among pool members. These costs tend to increase with pool size. The shape of the workout success function squares well with reports from practitioners who claim that large pools are a nightmare, while small pools tend to operate more smoothly. A duration analysis of the length of time needed for a workout to be successful finds that large pools increase the required workout

spell significantly.

The formation of a bank pool is an important decision, requiring an initial attempt to coordinate the interests of several lenders. In particular, lenders have to be convinced that they will benefit individually from continuing the relationship with the borrower right away. We have modeled the decision to form a bank pool and find that it is more likely to emerge when the number of banks is large, individual banks' lending shares are heterogenous, and borrower quality is hit by a substantial shock, according to the initial distress rating.

The economic rationale for the emergence of pools is more difficult to explain for large pools, and it cannot be attributed to workout success in these cases. One possible explanation is based on the redistributive motives of bank lenders vis-à-vis other lenders of the company, e.g. trade creditors, and the pool formation in view of bargaining costs in liquidation along the lines of Bolton and Scharfstein (1996). It will be through the use of historical recovery rates that one may evaluate the merit of this interpretation. Another possibility is that the distinction between out-patient and in-patient distressed borrowers may not be perfectly captured by the severity variable, and the pool, comprising fewer out-patient cases, therefore covers part of the effect.

Getting beyond the current level of understanding bank pool formation may require a cross-country perspective, where elements of the legal infrastructure, especially the bankruptcy code, can be used as additional explanatory variables. Reviewing the multiple banking environment in France and Italy and their different legal backgrounds, i.e. the French Napoleonic Code and the Latin tradition, creditor coordination prior to formal bankruptcy proceedings exists in the more creditor-friendly Italy, while it is absent in rather debtor-friendly France. Combining the view on bank coordination in these countries with the detailed evidence on bank pools in Germany, presented in this paper, we conclude that the fundamental orientation of the bankruptcy code has important ex-ante effects on the way companies and banks interact. A strong creditor-orientation, in particular the stringency with which privately agreed collateral rights are honored in any subsequent formal court proceeding, is conducive to the formation of pool agreements.

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Appendix

A Standard pool contract - Abbreviated English version

The Creditor Pool contract is to be agreed upon as a non-trading partnership between the Pool leader (Bank A),
Bank B,
Bank C,
...
and the company (borrower), as well as third party debtors.

§1 Credit Facilities
· Listing of credit lines granted by the contact for each bank and type of credit concerned.
· The banks agree to uphold the credit lines for the duration of the contract. Reductions or deletions shall only occur by mutual consent. This does not hold for credit commitments granted outside the pool.

§2 Collateral
· Listing of
1a) collateral furnished by the company to the banks and collateral to be furnished per bank.
1b) collateral to be furnished by the company in favor of the pool leader and each individual bank simultaneously and with equal ranking.
2a) collateral furnished by third party debtors to the banks and collateral to be furnished per bank.
2b) collateral to be furnished by third party debtors in favor of the pool leader and of each bank simultaneously and with equal ranking.
· In the event that a specific bank in the future is to be is furnished with collateral with regard to one of the credit lines cited in §1, then this shall considered to be part of the pool contract.
· In the event that a bank extends additional credit, then the collateral furnished in this context shall also be included in the pool contract but shall serve primarily to repay these additional credit facilities.
· The company can furnish collateral to third parties only after having instructed the banks of its intention.

§3 Collateral Purpose
· Company collateral as well as that of third party debtors serves to secure existing and future bank claims arising from the granting of credits cited in §1.

§4 Retransfer/Collateral Release

· When all claims have been satisfied in accordance with §3, then the banks are required to retransfer to the company and third party debtors collateral against which no claims have been made.
· Pool collateral must be partially or wholly released if its realizable value more than temporarily exceeds __% of the secured claims.

§5 Trust Relationship/Collateral Administration

· The Pool leader administers in a fiduciary capacity for the other banks the collateral collected within this contract.
· The release of collateral requires the consent of all the banks.

§6 Realization

· The Pool leader realizes in its own name the collateral cited in §2 for the banks' account.
· When and whether collateral is to be realized is decided by the banks in mutual consent.

§7 Balance Settlement

· As far as possible the company is to draw upon the credit lines cited in §1 equally.
· The banks are committed in the event of realization and as requested at any time by a specific bank to bring into line via transfer entries that part of their credit utilization which does not exceed the credit lines cited in §1, such that it corresponds to that of the credit lines.

§8 Revenue Distribution

· Revenue deriving from the realization of collateral is to be utilized according to the following order of priorities:
a) costs, taxes and other expenses incurred during the administration and realization of collateral, Pool leader remuneration,
b) repayment of the banks' credit demands in accordance with §1 in equal proportion to the utilization after the balance settlement,
c) repayment of those claims exceeding the credit lines in equal ranking with the excesses,
d) repayment of the bank's additional credits in equal ranking to the utilization as long as this has not been ascribed to the utilization of separately furnished collateral,
e) the satisfying of other bank claims in equal ranking with the ratio of these claims.
· The banks are entitled to alter the distribution key.
· Any revenue ensuing, which is not needed, is to be paid over to the company or the third party creditors respectively.

§9 Costs, Taxes, Remuneration

· All costs and taxes deriving from this Pool contract, particularly those from

the administration or any realization, are to be borne by the company.
· In the event that these costs and taxes are not paid by the company, then they shall be borne by the banks in keeping with the credit lines cited in §1.

§10 Briefing
· The banks are to inform each other reciprocally when circumstances become known, which may persistently endanger a repayment of the credit lines cited in §1.
· The banks are required to provide one another on request with information about both debts outstanding to the company and collateral. The banks are exempted from banking secrecy.

§11 Deadlines and Notice of Termination
· The Pool contract is to be drawn up for an unspecified duration.
· Each bank is entitled to terminate the contract with three months notice at the end of a calendar quarter. The Pool contract will continue with the remaining banks.
· In the event of notice being served, the banks are reserved the right of distribution with respect to collateral relating to special agreements.
· At the request of any bank a settlement of balance must be undertaken when the bank which has served notice quits.
· The company and third party creditors may only quit this contract after all obligations from §1 have been met.

§12 Place of Fulfillment and Jurisdiction, and Applicable Law

§13 Contract Amendments and Supplements

§14 Escape Clause

B Tables and Figures

Table 1. Sampling

The table reports basic frequency statistics on the structure of the data set. Panel A describes the frequencies of cases originated from each bank in the sample. Panel B reports the year of the distress event together with the respective ratings at that time. Panel C divides the sample by industry sectors.

Panel A. Bank identity

	N	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6
TOTAL	95	10	21	8	15	22	19
POOL	44	5	11	7	7	4	10
NO POOL	51	5	10	1	8	18	9

Panel B. Year of distress event and rating at distress event

	N	1992	1993	1994	1995	1996	1997
TOTAL							
Rating 5	79	12	20	16	15	11	5
Rating 6	16	3	5	2	3	3	0
POOL							
Rating 5	32	5	8	6	6	4	3
Rating 6	12	3	2	2	3	2	0
NO POOL							
Rating 5	47	7	12	10	9	7	2
Rating 6	4	0	3	0	0	1	0

Panel C. Industry sectors

	N	Manufact.	Machinery	Energy	Constr.	Trade	Services	Transport.	Others
TOTAL	95	23	25	3	6	12	4	3	19
POOL	44	14	12	0	2	6	1	2	7
NO POOL	51	9	13	3	4	6	3	1	12

Table 2. Rating standardization

	Bank-Internal Rating Categories						Agencies' Rating Categories		
Standardized bank rating	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	S&P	Moody	
1 outstanding quality	1 very good risk	1 outstanding quality	1.0 - 1.2 outstanding quality, low risk	1 outstanding performance, lowest risk	1.00 - 1.49 outstanding quality	A+, A minimum risk,	AAA AA+ AA AA-	Aaa Aa1 Aa2 Aa3	Highest to High Investment Grade
2 good quality, above average	2 good risk	2 good quality	1.3 - 2.7 good quality, above average	2 high quality, above average	1.50 - 2.49 good quality	A-, B+ low risk	A1 A2 A3 Baa1 Baa2	A+ A A- BBB+ BBB BBB-	Upper Medium to Medium Investment Grade
3 average quality, increased risk	3 - 3/4 satisfactory/ adequate risk	3 satisfactory quality with weaknesses	2.8 - 3.7 average quality/risk	3 average performance	2.50 - 2.99 satisfactory quality	B, B- satisfactory risk	Ba1 Ba2 Ba3	BB+ BB BB-	Speculative Grade
4 speculative grade, below average quality	4 sufficient risk	4 sufficient quality, intensive care	3.8 - 4.2 speculative grade, intensive care	4 - 5 sufficient quality, increased risk	3.00 - 3.49 sufficient quality	C+, C high risk, problematic	B1 B2 B3	B+ B B-	
5 problematic, intensive care, reorg.	4/5 - 5 just sufficient / insufficient risk	5 deficient quality, substantial problems	4.3 - 5.7 default imminent, intensive care/reorg.	6 - 7 intensive care, weak/neg. prospects	3.50 - 4.49 low quality	C- very high risk, insufficient quality	Caa1 Caa2 Caa3 Ca C	CCC+ CCC CCC- CC C	Highly Speculative Grade
6 default, reorg./ liquidation	6 extremely bad risk	6 - 7 inadequate quality, default	5.8 - 6.5 default, reorg./ liquidation	8 default, operating loss, neg. prospects	4.50 - 5.00 default or imminent default	D extremely high risk / default, neg. prospect	D	D	Default

Table 3. Company size and debt structure

Panel A of the table reports some summary statistics with respect to the size and the debt structure of the company, taken from the latest balance sheet available to the bank at the onset of distress. Equality test statistics are Anova F-statistic (mean) and Kruskal-Wallis (median). Panel B contains Pearson correlation coefficients, where 'Debt per bank' is total bank debt divided by the number of banks. Levels of significance are indicated as follows: 10%(*), 5%(**), and 1%(***).

Panel A: General company characteristics

	Annual turnover in Million €	Total assets in Million €	Debt-to-assets ratio in %	Bank debt-to-total debt ratio in %	Number of banks
TOTAL					
Mean	61,6	55,8	70,1	74,3	5,7
Median	49,4	32,1	70,1	78,6	5,0
Std Dev.	53,7	77,0	23,6	25,6	3,4
N	95	95	95	95	95
POOL					
Mean	76,6	61,7	68,6	76,0	6,2
Median	62,1	43,7	69,7	83,6	6,0
Std Dev.	61,2	58,0	17,6	25,7	3,2
N	44	44	44	41	44
NO POOL					
Mean	48,7	50,8	71,4	72,7	5,3
Median	35,6	26,6	70,7	74,7	4,0
Std. Dev.	42,9	90,4	27,9	25,7	3,5
N	51	51	51	44	51
Mean equality test	6.717**	0,472	0,310	0,352	1,892
Median equality test	8.603***	6.177**	0,080	0,356	3.595*

Panel B. Bivariate correlation

	Ann. turnover	Total assets	Debt per bank
TOTAL			
No. of banks	0.142	0.185*	-0.066
Debt per bank	0.665***	0.429***	.
POOL			
No. of banks	0.034	0.140	-0.087
Debt per bank	0.823***	0.849***	.
NO POOL			
No. of banks	0.195	0.199	-0.137
Debt per bank	0.265*	0.120	.

Figure 1. Frequency distribution of the number of bank relationships (N=95)

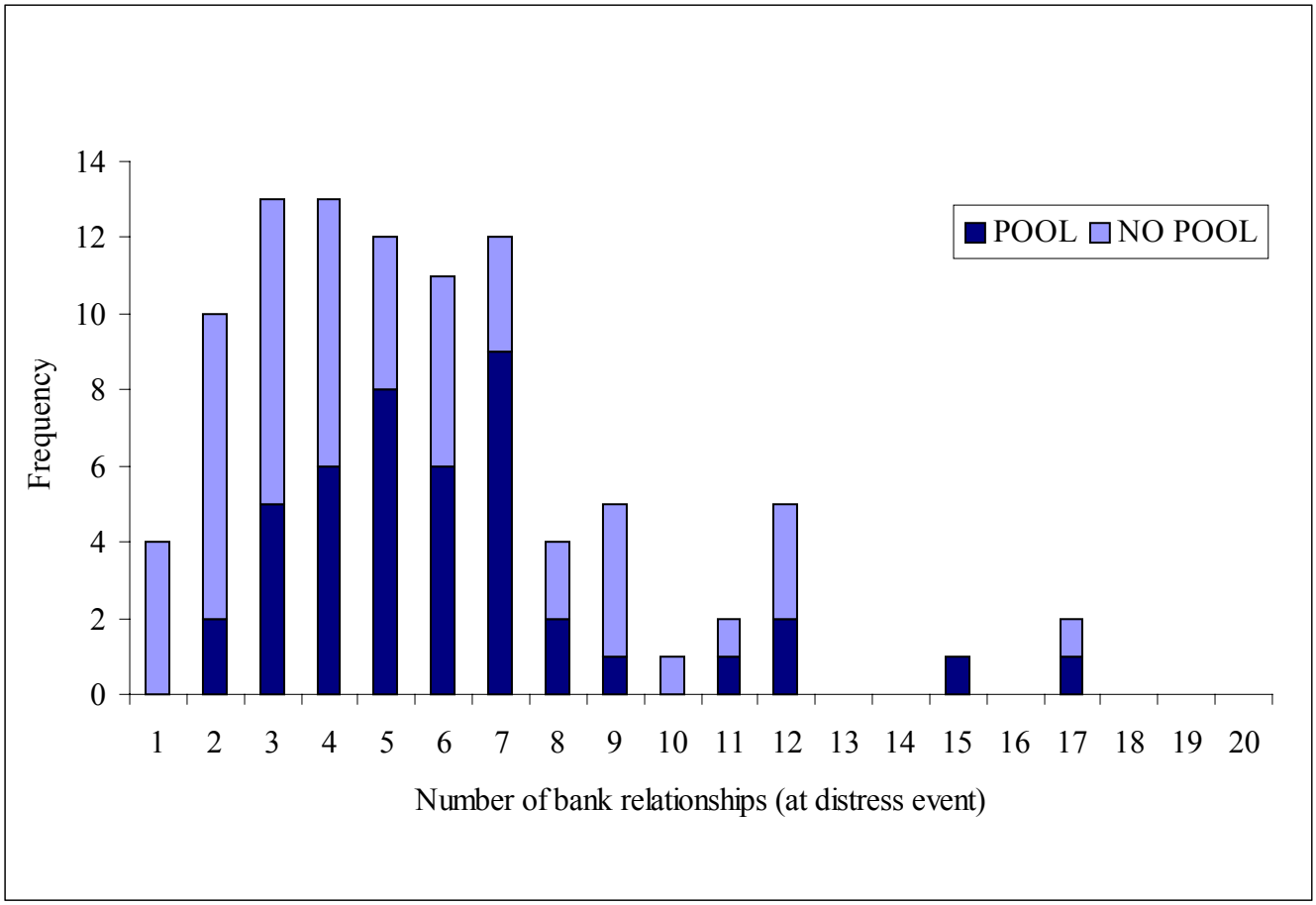

Table 4. Relationship characteristics

The table reports aspects of the lending relationship between the company and the observed bank at the distress event ((i)-(vii)) and the change between the distress event [t=0] and the previous observation [t=-1] (viii) where (iii): utilized credit line / overall credit line; (iv): short-term / overall credit line; (v): utilized short-term / short-term credit line; (vi): interest rate on short-term minus FIBOR; (vii): collateral valuation / overall credit line; (viii): %-change in overall credit line. Summary statistics are presented for the total sample (N=95), the pool subsample (N=44) and the non-pool subsample (N=51). Equality test statistics are Anova F-statistic (mean) and Kruskal-Wallis (median). Levels of significance are indicated as follows: 10%(*), 5%(**), and 1%(***)

	(i) Relationship duration in years	(ii) Overall credit line in Million €	(iii) Credit line utilization in %	(iv) Short-term loans in %	(v) Utilization of short-term in %	(vi) Spread on short-term in %	(vii) Collateralized exposure in %	(viii) Provision of fresh money in %
TOTAL								
Mean	18,6	8,0	79,0	42,6	63,3	3,8	45,2	-5,7
Median	17,0	5,4	85,0	32,5	63,1	4,0	43,5	-4,5
Std. Dev.	13,4	7,5	35,1	30,0	48,3	1,9	32,4	30,5
N	87	95	84	87	77	68	95	71
POOL								
Mean	18,3	8,9	81,8	45,3	60,5	3,9	44,3	-6,4
Median	15,0	5,8	86,8	38,1	60,0	4,1	39,7	-3,4
Std. Dev.	14,8	8,3	20,0	28,5	34,0	1,2	32,1	27,0
N	39	44	40	41	38	33	44	33
NO POOL								
Mean	18,9	7,2	76,5	40,1	66,1	3,8	45,9	-5,1
Median	18,0	5,1	78,9	29,7	65,7	3,9	46,5	-4,7
Std. Dev.	12,3	6,7	44,7	31,3	59,4	2,4	32,9	33,6
N	48	51	44	46	39	35	51	38
Mean equality test	0,048	1,223	0,483	1,299	0,261	0,088	0,059	0,032
Median equality test	0,638	0,822	1,072	2,683	0,120	0,032	0,036	0,083

Table 5. Collateralization

The table reports details on collateralization at the onset of distress. Column (i) contains loan information (identical with column (ii) of Table 4) in order to visualize the relative importance of collateral. Summary statistics on total collateral value, on collateralized exposure (collateral value / overall credit line), and the fraction of companies (N=95) with no collateral or collateral valuation of zero are reported in columns (ii)-(iv). Columns (v)-(ix) state the relative importance of different types of collateral by their contributions to the total collateral valuation. Equality test statistics are Anova F-statistic (mean) and Kruskal-Wallis (median). Equality tests of (iv) use a dummy variable equal to 1 if collateral value is 0. Levels of significance are indicated as follows: 10%(*), 5%(**), and 1%(***).

	Collateralization of exposure				Collateral structure				
	(i) Overall credit line	(ii) Collateral value	(iii) Collateralized exposure	(iv) Fraction of non-collateralized exposures	(v) Real estate	(vi) Stock, plant & machinery	(vii) Pledged claims	(viii) Guarantees	(ix) Others
	in Million €	in Million €	in %	in %	in %	in %	in %	in %	in %
TOTAL									
Mean	8,0	3,7	45,2	14,7	53,7	14,8	6,8	5,3	4,7
Median	5,4	2,2	43,5		60,0	0,0	0,0	0,0	0,0
Std. Dev.	7,5	4,2	32,4		41,3	25,1	20,4	15,8	14,4
N	95	95	95	95	95	95	95	95	95
POOL									
Mean	8,9	4,0	44,3	11,4	50,6	19,0	6,6	6,0	6,5
Median	5,8	2,4	39,7		50,4	0,0	0,0	0,0	0,0
Std. Dev.	8,3	4,6	32,1		40,2	28,8	13,4	15,6	15,3
N	44	44	44	44	44	44	44	44	44
NO POOL									
Mean	7,2	3,3	45,9	17,6	56,3	11,2	7,1	4,6	3,1
Median	5,1	2,2	46,5		69,6	0,0	0,0	0,0	0,0
Std. Dev.	6,7	3,8	32,9		42,4	20,9	25,0	16,1	13,6
N	51	51	51	51	51	51	51	51	51
Mean equality test	1,223	0,704	0,059	0,732	0,459	2,316	0,017	0,190	1,301
Median equality test	0,822	0,559	0,036	0,734	0,498	1,363	5.902**	0,418	5.000**

Table 6. Workout information

The table summarizes the relative importance of workout measures, taken by the bank at the time of the distress event (t=0) and one year later (t=1), and workout outcomes as observed by the end of the observation window. Panel A and Panel B report relative frequency statistics with respect to the total sample (N=95), the pool subsample (N=44), and the non-pool subsample (N=51).

Panel A. Workout measures at the distress event (t=0) and one year after (t=1)

	N	Credit line reduction in % of N	Postponed payments in % of N	Consultancy services in % of N	Loss provisioning in % of N
TOTAL					
t = 0	95	33.7	8.4	21.1	21.1
t = 1	95	20.0	10.5	20.0	29.5
POOL					
t = 0	44	36.4	15.9	31.8	34.1
t = 1	44	25.0	15.9	27.3	40.9
NO POOL					
t = 0	51	31.4	2.0	11.8	9.8
t = 1	51	15.7	5.9	13.7	19.6

Panel B. Workout outcome

	N	Rating improvement in % of N	Completed rebanking in % of N	Formal bankruptcy in % of N	Informal winding up in % of N	Ongoing distress in % of N
TOTAL	95	32.6	3.2	11.6	3.2	49.5
POOL	44	25.0	2.3	11.4	4.6	56.8
NO POOL	51	39.2	3.9	11.8	2.0	43.1

Table 7. Determinants of pool formation

The table reports regression coefficients of pool formation. The probability of pool formation is estimated as a binary probit, the dependent variable POOL is a dummy equal to 1 if a pool is formed during our observation period, and 0 otherwise. B1, B2, ..., B6 are (1,0)-dummies for the identity of the observed bank. #BANKS is the number of bank relationships of the company at the distress event. BANKSSMA is a dummy equal to 1 if the number of bank relationships at the distress event is at most 4, and 0 otherwise. BANKSBIG is a dummy equal to 1 if the number of bank relationships at the distress event is larger than 4, and 0 otherwise. SKEWNESS=|(BANKDEBT/TOTALBANKDEBT)-(1/#BANKS)| measures the heterogeneity of bank lending. RATING6 is a dummy equal to 1 if the rating at the distress event is 6, and 0 otherwise. IFO is the IFO business climate index. ASSET is the value of company's total assets taken from the latest balance sheet available at the distress event measured in Million €. HB is a dummy equal to 1 if the observed bank is housebank, and 0 otherwise. COLLATERAL is the collateralized portion of loan exposure measured in per cent. MACHIN (MANUF) are dummies equal to 1 if the company belongs to the industry sector machinery (manufacturing), and 0 otherwise. TIME2END1-2 (TIME2END3) are dummies equal to 1 if the observation window ends 1-2 years (3 years) after the distress event, and 0 otherwise. Standard errors are in parentheses, and levels of significance are indicated as follows: 10%(*), 5%(**), and 1%(***).

Variable	(i)	(ii)	(iii)	(iv)
B1	-6.504**	-6.057*	-7.700**	-4.696
	(3.096)	(3.194)	(3.274)	(3.151)
B2	-5.702*	-5.174*	-6.894**	-3.853
	(3.008)	(3.136)	(3.182)	(3.126)
B3	-4.904	-4.417	-6.286*	-2.959
	(3.000)	(3.113)	(3.210)	(3.128)
B4	-6.104**	-5.617*	-7.530**	-4.205
	(3.023)	(3.127)	(3.247)	(3.133)
B5	-7.494**	-7.055**	-8.755***	-5.628*
	(3.058)	(3.149)	(3.247)	(3.161)
B6	-6.127**	-5.590*	-7.356**	-4.507
	(3.058)	(3.188)	(3.248)	(3.154)
log(#BANKS)	.649**	.585*	.538	-
	(.322)	(.341)	(.330)	
BANKSSMA	-	-	-	-.878**
				(.383)
BANKSXXL	-	-	-	-.479
				(.442)
SKEWNESS	-2.173**	-2.137**	-2.148**	-2.027*
	(1.037)	(1.049)	(1.067)	(1.048)
RATING6	1.133**	1.194**	1.271**	.995**
	(.481)	(.512)	(.510)	(.467)
IFO	.047	.045	.060*	.043
	(.034)	(.035)	(.036)	(.034)
log(ASSET)	.289	.291	.284	.298
	(.179)	(.179)	(.182)	(.179)*
HB	-	-.212	-	-
		(.385)		
COLLATERAL	-	-.205	-	-
		(.527)		
MACHIN	-	-	.597	-
			(.454)	
MANUF	-	-	.687*	-
			(.407)	
TIME2END1-2	.179	.162	.277	.215
	(.416)	(.422)	(.430)	(.421)
TIME2END3	-.040	-.013	-.176	-.112
	(.495)	(.500)	(.517)	(.488)
McFadden	.310	.314	.335	.319
N	95	95	95	95

Table 8. Determinants of workout success

The table reports regressions on the determinants of workout success. Regressions (i)-(iv) estimate the probability of workout success as an ordinary probit, the dependent variable is a dummy equal to 1 if the company is upgraded to rating 4 or rebanked during our observation period, and 0 otherwise. POOL is a dummy equal to 1 if pool formation is observed, and 0 otherwise. #BANKS is the number of bank relationships of the company at the distress event. POOLSMA is a dummy equal to 1 if pool formation is observed and the number of bank relationships at the distress event is 4 or lower, and 0 otherwise. POOLBIG is a dummy equal to 1 if pool formation is observed and the number of bank relationships at the distress event is higher than 4, and 0 otherwise. RATING6 is a dummy equal to 1 if the rating at the distress event is 6, and 0 otherwise. IFO is the IFO business climate index. ASSET is the value of company's total assets taken from the latest balance sheet available at the distress event measured in Million €. HB is a dummy equal to 1 if the observed bank is housebank, and 0 otherwise. COLLATERAL is the collateralized portion of loan exposure measured in per cent. MACHIN (MANUF) are dummies equal to 1 if the company belongs to the industry sector machinery (manufacturing), and 0 otherwise. TIME2END1-2 (TIME2END3) are dummies equal to 1 if the observation window ends 1-2 years (3 years) after the distress event, and 0 otherwise. Regressions (v)-(vi) represent the second stage of a two-stage analysis using the estimates of pool formation regression (7.i) as an instrument for POOL and, accordingly, for POOLSMA and POOLBIG. Regressions (vii)-(viii) represent a duration model using Weibull distribution where the dependent variable is the length of time between the distress event and a rating upgrade to 4 or better or until rebanking, measured in months. Standard errors are in parentheses, levels of significance are indicated as follows: 10%(*), 5%(**), and 1%(***).

Variable	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)[1)]	(viii)[2)]
CONSTANT	1.185	.186	.799	.666	1.902	1.348	4.967***	4.873**
	(2.856)	(3.109)	(2.890)	(3.137)	(2.668)	(2.711)	(1.906)	(1.943)
POOL	4.819***	4.685***	-	-	1.714*	-	-2.671**	-
	(1.362)	(1.401)			(.961)		(1.159)	
POOLSMA	-	-	1.206**	1.138**	-	1.001**	-	-.484*
			(.469)	(.497)		(.465)		(.286)
POOLBIG	-	-	-1.411***	-1.425***	-	-.649*	-	.988**
			(.434)	(.448)		(.371)		(.478)
log(#BANKS)	.401	.541	.309	.399	.119	.154	-.215	-.153
	(.279)	(.348)	(.264)	(.324)	(.281)	(.259)	(.238)	(.221)
(POOL)x(#BANKS)	-3.255***	-3.215***	-	-	-1.049*	-	1.843**	-
	(.859)	(.885)			(.545)		(.772)	
RATING6	-.796	-.776	-.546	-.543	-.719	-.719	1.002**	.554
	(.552)	(.623)	(.518)	(.574)	(.459)	(.475)	(.489)	(.408)
IFO	-.022	-.010	-.016	-.012	-.027	-.021	-.010	-.009
	(.033)	(.035)	(.033)	(.035)	(.031)	(.031)	(.021)	(.021)
log(ASSET)	-	-.178	-	-.152	-	-	-	-
		(.174)		(.168)				
HB	-	.142	-	-.005	-	-	-	-
		(.345)		(.346)				
COLLATERAL	-	.252	-	.237	-	-	-	-
		(.541)		(.522)				
MACHIN	-	.171	-	.052	-	-	-	-
		(.419)		(.414)				
MANUF	-	.561	-	.326	-	-	-	-
		(.408)		(.412)				
TIME2END1-2	-.107	-.176	-.326	-.364	-.096	-.062	-	-
	(.391)	(.401)	(.400)	(.405)	(.364)	(.374)		
TIME2END3	.514	.394	.381	.345	.554	.518	-	-
	(.450)	(.465)	(.453)	(.467)	(.433)	(.436)		
Sigma	-	-	-	-	-	-	.599***	.600***
							(.113)	(.122)
McFadden	.230	.258	.252	.267	.082	.134	-	-
N	95	95	95	95	95	95	95	95

[1)] Percentiles of the survival distribution are 77 (.25), 51 (.50), 30 (.75), and 10 (.95) months

[2)] Percentiles of the survival distribution are 74 (.25), 49 (.50), 29 (.75), and 10 (.95) months