

DISCUSSION PAPER SERIES

No. 4224

UNIVERSAL BANKS AND RELATIONSHIPS WITH FIRMS

Ralf Elsas and Jan Pieter Krahn

FINANCIAL ECONOMICS



Centre for Economic Policy Research

www.cepr.org

Available online at:

www.cepr.org/pubs/dps/DP4224.asp

UNIVERSAL BANKS AND RELATIONSHIPS WITH FIRMS

Ralf Elsas, Goethe-Universität Frankfurt
Jan Pieter Krahenen, Goethe-Universität Frankfurt and CEPR

Discussion Paper No. 4224
February 2004

Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

This Discussion Paper is issued under the auspices of the Centre's research programme in **FINANCIAL ECONOMICS**. Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as a private educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. Institutional (core) finance for the Centre has been provided through major grants from the Economic and Social Research Council, under which an ESRC Resource Centre operates within CEPR; the Esmée Fairbairn Charitable Trust; and the Bank of England. These organizations do not give prior review to the Centre's publications, nor do they necessarily endorse the views expressed therein.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

Copyright: Ralf Elsas and Jan Pieter Krahenen

ABSTRACT

Universal Banks and Relationships with Firms

Some of the most widely expressed myths about the German financial system are concerned with the close ties and intensive interaction between banks and firms, often described as Hausbank relationships. Links between banks and firms include direct shareholdings, board representation, and proxy voting and are particularly significant for corporate governance. Allegedly, these relationships promote investment and improve the performance of firms. Furthermore, German universal banks are believed to play a special role as large and informed monitoring investors (shareholders). For the very same reasons, however, German universal banks are frequently accused of abusing their influence on firms by exploiting rents and sustaining the entrenchment of firms against efficient transfers of firm control.

In this Paper, we review recent empirical evidence regarding the special role of banks for the corporate governance of German firms. We differentiate between large exchange-listed firms and small and medium sized companies throughout. With respect to the role of banks as monitoring investors, the evidence does not unanimously support a special role of banks for large firms. Only one study finds that banks' control of management goes beyond what non-bank shareholders achieve. Proxy-voting rights apparently do not provide a significant means for banks to exert management control.

Most of the recent evidence regarding small firms suggests that a Hausbank relationship can indeed be beneficial. Hausbanks are more willing to sustain financing when borrower quality deteriorates, and they invest more often than arm's-length banks in workouts if borrowers face financial distress.

JEL Classification: G21 and G32

Keywords: corporate finance, corporate governance, Hausbank, relationship lending and universal banking

Ralf Elsas
Goethe-Universität Frankfurt
Lehrstuhl für Kreditwirtschaft und
Mertonstrasse 17-21
D 60054 Frankfurt am Main
GERMANY
Tel: (49 69) 7982 2283
Fax: (49 69) 7982 8951
Email: r.elsas@em.uni-frankfurt.de

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=150901

Jan Pieter Krahen
Goethe-Universität Frankfurt
Lehrstuhl für Kreditwirtschaft und
Mertonstrasse 17-21
D 60054 Frankfurt am Main
GERMANY
Tel: (49 69) 7982 2568
Fax: (49 69) 7982 8951
Email: krahen@wiwi.uni-frankfurt.de

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=118448

Submitted 05 December 2003

1 MYTH AND MOTIVATION

'[T]here are good reasons to choose the German rather than the British style of capital markets...In practice, the effectiveness of German banks as monitors of company performance ... makes the German system unambiguously superior.'

CRAFTS (1992): 409

'The commonly-held view of the merits of the German system of finance for investment, in terms of the supply of external finance to firms and corporate control, receives no support from the analysis of available evidence.'

EDWARDS/FISCHER (1994): 240

Some of the most widely expressed myths about the German financial system are concerned with the close ties and intensive interaction between banks and firms. Observers have stressed that bank-firm relationships in Germany are not only characterized by long-term debt financing commitments but also by a multitude of links. These include direct shareholdings, board representation, and proxy voting and are particularly significant for corporate governance. Specifically, it is often argued that bank involvement in the supply of capital and in corporate governance may be economically beneficial for two reasons. First, close ties between banks and borrowers are perceived to promote investment and improve the performance of firms. Second, owing to direct equity holdings, board representation, and proxy-voting rights, German universal banks are believed to play a special role as large and informed investors (shareholders). However, it is for the very same reasons that German universal banks are frequently accused of abusing their influence on firms, thereby exploiting rents and sustaining the entrenchment of firms against efficient transfers of firm control.

In order to understand the financial system in Germany properly, a distinction has to be made between the relatively small group of large, publicly traded corporations on the one hand, and the small and medium-sized companies on the other. The vast majority of corporate Germany, both in terms of numbers and sales, has no public equity. Banks play no role as shareholders, nor as proxy voters or board members, but usually just as lenders. However, for

these firms, bank debt is the single most important source of outside financing, which in turn implies a major role for banks.

In this paper we will discuss the role of banks for both groups of corporations, focusing on the information-intensive long-term relationships between banks and firms, often referred to as *Hausbank* financing. Within such *Hausbank* relationships, banks are said to be the primary financier, being equipped with more relevant, and more timely information than any other external investor (like, for example, an outside bank). Moreover, *Hausbanks* are deemed to accept a special responsibility in the event that borrowers should face financial distress. It is this *Hausbank* notion which implicitly underlies the supposed merits of bank-firm relationships mentioned above, and it is often used to describe the role of banks for all segments of firms. However, as indicated by the above statements of Crafts (1992) and Edwards and Fischer (1994), these merits are controversial.

The objective of this paper is to present and discuss recent evidence to provide a clearer picture of the economic role of *Hausbanks*. Section 2 will start to look at the role of German banks for large and exchange-listed firms, abstracting from lending for a moment. Banks are seen as investors, with a role in corporate control and governance. This section will discuss recent evidence on the effect of bank influence on firms (or firm management), focussing on financing constraints and corporate performance.

The implications of banks for corporate governance in section 2 apply to an exclusive circle of large, mostly public firms only, and they can by no means be generalized to apply to all of corporate Germany. Therefore, the subsequent sections turn to the lending business with regard to small and medium-sized firms. In section 3, a brief outline of the theoretical notion of relationship lending will be provided. The next sections present the available evidence. In section 4, the idea of intertemporal smoothing as an essential characteristic of implicit long-term contracts between firms and banks will be analysed. In section 5, the decision-making

process of banks when their borrowers face financial distress is addressed. We will briefly describe the present legal practice concerning financial distress in Germany, including a short description of the insolvency code. The role of *Hausbanks* and the institution of bank pools will be analysed by discussing recent studies using unique data on medium-sized corporate borrowers. Section 6 summarizes and concludes.

2 UNIVERSAL BANKS AS FINANCIERS OF LARGE COMPANIES: EQUITY STAKES AND PROXY VOTING

2.1 Overview

In early works by Hilferding (1909), and later Schumpeter (1939) and Gerschenkron (1962), the interaction between industrial firms and universal banks was presumed to have been of great importance for the industrialisation of Germany in the 19th century, and only recently the economics of financial system architecture have once more become an active field of research (see Tilly 1992; La Porta et al. 1997, 1998; Rajan and Zingales 2001). In this context a distinction is generally made between two polar cases of financial architecture, emphasizing market-based financial systems, such as the US or UK, on the one hand and bank-based systems, like Japan and Germany, on the other.

This section explores the benefits of banking relationships for large publicly-traded firms in Germany. The German financial system differs from US-type financial architecture in that German universal banks are allowed to take direct equity stakes, are often represented on the supervisory board of industrial firms and possess additional influence via proxy-voting rights. All of these characteristics are thought to be significant in terms of their potential to influence the decision making at the company level. Hence corporate governance in Germany is said to be bank-dominated (Emmons and Schmid 1998: 20), and the question whether this is beneficial or detrimental in terms of overall social welfare is subject to debate. Cable (1985:

130), for example, on the basis of his empirical analysis concludes: 'it is clear from the results, that the relationship between industrial banking and firm performance has more to it than the provision of credit alone; it is bank control as well as bank lending which raises profitability.' In contrast, Fohlin (1998: 1755) concludes as a result of her analysis that 'the results undermine widely held beliefs about the benefits of universal banking.'

The conflicting empirical evidence on the role of banks for large firms can be attributed to the two approaches taken. Both approaches address the core question of corporate finance: does the financing choice of firms affect investment and therefore real consequences? The first approach is concerned with bank influence and its impact on the performance of firms. In this class of studies, a measure of firm performance, e.g. the return on assets, is statistically related to a measure of bank dependence.

The second approach relates firm investment expenditures to a measure of internal and external financing (and future investment opportunities). The basic idea is that the existence of financing constraints leads firms to choose among financing sources according to a specific preference ranking. In particular, capital market imperfections lead to a preference for internal over external financing (see Fazzari et al. 1988 and Kaplan and Zingales 1997). Furthermore, it is postulated that firms subject to tighter financing constraints will exhibit greater cash-flow sensitivity with respect to investments. Under this hypothesis, a certain degree of bank dependence on the part of a firm should mitigate financing constraints, since, in theory, banks reduce information asymmetries and have proper incentives for management control (see e.g. Houston and James 2001).

We provide some descriptive evidence on the long-term relationship between large, listed firms and universal banks in Germany in the next sub-section.

2.2 Descriptive Evidence on Equity Holdings, Supervisory Board Representation, and the Proxy-Voting Rights of Banks

It is useful to start with a brief description of the governing bodies of a German listed corporation ('Aktiengesellschaft'—AG—). The listed corporation has three governing bodies: the annual general meeting ('Hauptversammlung'), a supervisory board ('Aufsichtsrat') and a managing board ('Vorstand'). The supervisory board and the managing board have no membership overlap. The supervisory board must have a pre-specified number of employee representatives as members (co-determination, 'Mitbestimmung'). It is quite common for boards of affiliated firms to share several members. Typically some managers of the parent company are also members of a subsidiary's supervisory board.¹ The supervisory board often includes representatives of one or more of the firm's banks, which then typically have been providing debt for a long time, and which even may have equity stakes in the firm. Shareholders elect half of the members of the supervisory board. Their control rights are effectively confined to the general meeting.

Unlike in the US, it is quite common in Germany for there to be significant blockholdings. Franks and Mayer (2001) and Boehmer (2001) provide evidence that for all listed firms over the period 1985 to 1997 roughly 85% of the firms had a blockholder with a stake above 25%, whilst 57% had one with a stake above 50%. In some cases these blockholders are from the financial sector, but more often they are firms from the same or related industries, and wealthy families.

It is also relevant in a discussion of bank-firm relationships to note that until quite recently deviations from share ownership and voting rights (i.e. control) occurred quite easily under German law. The German proxy-voting system allows shareholders to deposit their

¹ See Boehmer (1999) for a more detailed overview and references.

shares with banks, and grants them general power of attorney. The resulting additional voting power for the banks is presumed to be significant. For example, Baums and Fraune (1995) provide evidence on the situation regarding large German firms with a dispersed ownership structure in 1992. In their sample, banks held on average 13% of effective voting rights at the general meeting due to direct equity holdings, and 61% due to proxy-voting rights. Hence, if banks have mutual interest and coordinate their actions, their influence on management is potentially very strong. However, evidence on proxy-voting rights by banks is scarce since the data is not centrally (or even electronically) accessible.²

Table 1: Measures of bank influence rights

	Mean	=0%	≥25%	≥ 50%	Number of Observations
Share of bank debt in total firm financing	17.1%	n.a.	25.0%	n.a.	144
Supervisory board Representation by banks (dummy)	70.1%	29.9 %	---	---	144
Share of bank representatives in board members representing capital	---	29.9%	41.6%	9.7%	144
Firms with direct equity holdings by banks	24.3 %	75.7%	8.3%	2.1%	144
Proxy-voting rights of banks at general meetings	29.5%	n.a.	41.5%	20.0%	65
Total bank voting rights at general meetings	37.9%	n.a.	49.2%	35.4%	65

Notes: The underlying sample consists of 144 large, listed German firms from manufacturing industries. Information on proxy-votes were collected from mandatory minutes of general meetings in 1990 and were available for a sub-sample of 65 firms.

Source: Own calculations based on numbers reported by Seger (1997), Tables 25-39.

² Exercised proxy-voting rights are documented publicly. However, there does not exist a centralized register or

For the descriptive purposes of this subsection, table 1 presents statistics on bank influence rights reported by Seger (1997). However, some caution is due since it is widely believed that bank influence rights have decreased in importance since 1990.

The first point to note is that the numbers shown in table 1 are in line with the general pattern described above. Some interesting additional insights should be mentioned:

Supervisory Board: 70% of all sample firms have a bank representative as a member of the supervisory board, and in 41.6% of all cases, bank representatives constitute more than 25% of board members representing capital (i.e., excluding co-determination).³

Direct Equity Holdings: The numbers in Table 1 imply that to some extent the relevance of direct equity holdings is exaggerated in the public debate, since banks actually hold such stakes in approximately only 25% of all cases. Nevertheless, for 8% of the sample firms these stakes are equal to or higher than 25% of capital (i.e. a blocking minority, 'Sperrminorität'), enabling the respective bank to block all fundamental votes at the general meeting (i.e. those that change a firm's statutes).

Proxy-Voting Rights: The sample mean of proxy-votes at general meetings is in excess of a blocking minority with roughly 30%, and in 41.5% of all cases the (aggregate) proxy-votes of all banks exceed 25%. Adding proxy-votes and direct equity stakes shows that banks had a majority of votes at 35.4% of general meetings.

Although these numbers would appear to provide strong support for the idea of close ties between large industrial firms and banks in Germany, some words of caution are due. It has to be kept in mind that these numbers are aggregated over all banks for a given firm. However, to effectively block, for example, a change in a firm's statutes, all banks have to

an electronic database for assessing this information, see Boehmer (1999). To this end, one has to ask the district court at the registered seat of the firms to examine the mandatory minutes of the general meetings.

³ Note that German legislation requires a mandatory share of representatives of employees in the supervisory board ('Mitbestimmung'). Depending on firm size, this amounts to up to 50% of all members.

agree on a mutual strategy and coordinate their actions. It is very likely that coordination failures and free-rider problems will reduce the effective power of banks significantly. Thus, a qualitative comparison to a situation where just one bank (or investor) may exercise the same nominal magnitude of influence right is almost impossible. This appears to be particularly important for proxy-votes, where it is often the case that several banks are present at the general meeting.

2.3 Universal Banks and Firm Performance: Empirical Findings

Having established that German universal banks may exert significant influence on the management of large German firms, the question arises whether this is economically beneficial or detrimental. One way of addressing this issue is to test whether bank dependence of a firm systematically affects firm performance. Cable (1985) provided the first paper to report such a test with German company data. Since the results of Cable were based on a rather small cross-section of firms, subsequent studies have extended the analysis, using larger data sets, and more sophisticated methodologies (see Gorton and Schmid 2000 and Seger 1997).

There are at least two important issues which cause such an approach to be quite complex. First, the analysis of firm performance is a dynamic issue. However, company panel data covering a time-period of ten or more years are difficult to collect, especially if data on voting rights of banks are needed. Second, and more importantly, there is no unambiguous theoretical hypothesis relating bank influence rights to firm performance. On the one hand, bank dependence may simply be seen as synonymous for the bargaining power of banks, allowing them to extract rents. This would imply a negative impact on firm performance.⁴ On the other hand, bank dependence may be interpreted as resolving problems of informational

⁴ See e.g. Weinstein and Yafeh (1998) for a corresponding model and empirical analysis with respect to Japa-

asymmetries and incomplete contracting. This second view supports the hypothesis that firms which exhibit greater bank dependence will perform better (see Gorton and Schmid 2000).

Under both hypotheses, however, it is hard to explain why some firms rely on bank debt and some do not. If, for example, bank dependence is beneficial, why do some firms prefer not to have such close bank relationships? Following Demsetz and Lehn (1985), one answer to that question might be that firms choose that financing structure which is optimal to their individual needs. This would imply that firms in need of bank monitoring are bank dependent, and those that are not are independent. Hence, empirically, an equilibrium situation is observed where we do not expect to find any systematic differences in firm performance, since firms relying on banks are as profitable as those without bank dependence, just *because* they have already chosen to allow for bank monitoring.

Therefore, empirical analyses of the relation between bank dependence and firm performance suffer from problems of data availability and ambiguity in theoretical guidance. Nevertheless, an inductive approach may still be helpful in identifying any dominant patterns.

Table 2 summarizes a selection of recent studies addressing the relation between bank dependence and firm performance.⁵ The table provides information on the structure and size of the underlying firm sample of all studies. In addition, the measures used for bank dependence and firm performance are provided, as well as a summary of the results.

The table shows some heterogeneity in these studies in terms of the underlying firm samples and available information. Nevertheless, the results are broadly consistent across studies.

nese firms, where firms and (main) banks constitute a so-called *keiretsu*.

⁵ For ease of exposition, we refrain from giving a complete overview. Our selection comprises the most recent and comprehensive studies.

Table 2: Studies on bank dependence, firm investment and profitability for listed German firms

Study	Seger (1997)	Lehmann and Weigand (2000)	Gorton and Schmid (2000)	Elston (1998)	Fohlin (1998)
<i>Panel A: General characteristics</i>					
Observation period	1990-1992	1992-1996	1975 / 1986	1973-1984	1903-1913
Sample size	144	361	283 / 280	139	75
Industry affiliation	non-financial, manufacturing	manufacturing	manufacturing	manufacturing	non-financial
Performance-measure	ROA, ROE and others	ROA	market-to-book value of equity, ROE	(cash-flow sensitivity of investment)	(cash-flow sensitivity of investment)
Measure of bank dependence	debt share, equity stakes, supervisory board, proxy voting	equity stake	equity stakes, proxy voting,	direct bank equity stake	cross directorate membership
Information on proxy -votes	yes, sub-sample of firms	no	yes, sub-sample of firms	No	---
<i>Panel B: Impact of bank dependence measure on firm performance</i>					
Bank Debt Financing	<i>negative</i>	---	---	---	---
Equity Control Rights	<i>positive</i>	<i>positive</i>	<i>positive</i>	---	---
Supervisory Board Representation	<i>insignificant</i>	<i>insignificant</i>	---	---	---
<i>Panel C: Impact of bank dependence measure on investment / cash-flow correlation</i>					
Supervisory Board	---	---	---		<i>unstable / insignificant</i>
Equity Control Rights	---	---	---	<i>negative</i>	

Notes: ROE and ROA denote return on equity and return on assets, respectively.

We first turn to the relation between direct equity holdings by banks and firm performance. Gorton and Schmid (2000) consider two measures of bank influence: direct shareholdings, and proxy-voting rights. Their empirical model further tests for co-determination of employees, and overall shareholder concentration. Performance is measured either as the market-

to-book value of equity, or as the return on equity. It turns out that bank control has a positive impact on firm performance, similar to the effect of blockholdings by non-financial investors. By controlling for both issues simultaneously, the authors find that direct shareholdings by banks improve firm performance beyond the level achieved by non-bank blockholders. The authors suggest that this superior control effect of banks is owing to better information and superior expertise, and/or because of the additional threat to cut-off debt financing if the management refuses to comply with bank interests.

These results are consistent with the findings by Lehmann and Weigand (2000) and Seger (1997), who report superior firm performance for highly concentrated ownership structures, and for equity holdings by banks. Note that the data of Lehmann and Weigand (2000) are more recent.

With regard to the impact of proxy-voting rights on firm performance, Gorton and Schmid (2000) and Seger (1997) find no evidence that these are used to exert management control. Gorton and Schmid (2000) suggest this result to be due to the fact that proxy-voting rights merely reflect the degree of dispersion of shareholdings. That is, the lower the shareholder concentration, the higher will be the level of proxy-votes, since these arise from the delegation of voting rights to banks by small and non-pivotal investors. This characteristic feature of proxy-votes is consistent with high coordination costs associated with the exercising of such votes.

The relation between supervisory board representation by banks and firm performance is addressed in all three studies. Seger (1997) and Lehmann and Weigand (2000) consistently find no impact of board representation on firm performance. One possible explanation is provided by Gorton and Schmid (2000). They argue that membership of a supervisory board is derived from equity control rights. Their conjecture is supported by a regression analysis, indicating that board membership is systematically determined by equity holdings.

To summarize, recent studies suggest a beneficial role of direct equity stakes held by banks. Hence, there is some support for the conjecture that banks play a special role in the process of corporate governance in Germany. With respect to alternative means to exerting management control, i.e. proxy-voting rights and supervisory board representation, the evidence supports the irrelevance of these factors. This is somewhat surprising in view of the common perception that proxy votes provide banks with a significant and frequently criticized degree of influence (e.g., Jürgens et al. 2000). However, when the coordination problems inherent in a strategic exercise of proxy-votes are taken into account, the irrelevance result appears quite reasonable.

2.4 Banks, Liquidity, and Financing Constraints

The second approach to analysing the economic consequences of close ties between banks and large industrial firms is concerned with the ability of banks to mitigate firm financing constraints.

In a seminal study, Fazzari et al. (1988) argued that capital market imperfections lead to firm preferences for internal over external sources of financing, and that this can be analysed by regressing firm investment expenditures on a measure of internal financing and investment opportunities.⁶ In a perfect Modigliani/Miller world, all investment projects with positive net present value will be financed, thus rendering the choice of funding irrelevant. In such a world, firm expenditures should not depend on the availability of internally generated funds. Hence, a regression of investment expenditures on cash-flow should yield no systematic relation, having controlled for future investment opportunities. According to Fazzari et al. (1988), however, if capital market imperfections are present there should be a positive correlation

⁶ Usually, a proxy for Tobin's Q is used as the measure for future investment opportunities.

between firm investment and cash flow, which would indicate the severity of financing constraints.⁷

Under the assumption that banks are able to mitigate financing constraints because of their role as active monitors of firm management, a negative impact of firms' bank dependence on the cash-flow correlation of investments is to be expected (Fohlin 1998 and Houston and James 2001). This holds in particular for an analysis of German firms, as highlighted by the statement of Fohlin (1998: 1737): '[German universal banks] are thought to foster long-term relationships with industrial firms, promoting more efficient and stronger investment.'

International evidence consistently reports a strong (positive) correlation between cash-flow and investment. This also holds for Germany, as for example recently reported by Plötscher (2001). We are aware of two studies which take into account bank dependence of German firms.

The study by Elston (1998) investigates the impact of bank dependence on firm investment expenditures by analysing a sample of 139 German manufacturing firms (see table 2). She estimates cash-flow sensitivities over the period from 1973-1984 for two sub-samples: one consisting of 26 firms where banks had a high direct equity stake in the firms, and one where no equity stakes were reported.⁸ The estimation results indicate that bank dependence mitigates financing constraints. The reported coefficients of cash-flow sensitivities are positive and significant, and they are significantly lower for the sub-sample of firms classified as bank dependent.

⁷ Kaplan and Zingales (1997) show that observing a positive investment-cash flow correlation is not a sufficient condition for the existence of financing constraints. The same correlation pattern may be induced by managerial risk aversion or other types of agency problems in the spirit of Jensen's 'free cash-flow' problem. See also the more general discussion of financing constraint research in Hubbard (1998).

⁸ There were only weak disclosure rules regarding equity holdings by banks in place during this period, so that the classification of having no bank relationship is noisy.

The study by Fohlin (1998) analyses a sample of firms over the period 1903-1913, shifting the focus to Germany's late period of industrialization. The general characteristics of this study and its results are reported in table 2. Fohlin (1998) measures bank dependence by cross-directorates between firms and banks, i.e., cases where the bank is represented in either the executive or supervisory board of the firm, or the firm is represented in the bank's executive or supervisory board. The results from different model specifications suggest that bank dependence systematically affects neither firm investments in terms of its level, nor investment correlation with cash-flow.

This finding may be due to Fohlin's (1998) specific measure for bank dependence (cross-directorates), which questions its validity as a proxy for dependence. However, since the preceding section showed supervisory board representation revealed to be systematically correlated with direct equity stakes (and proxy-votes), Fohlin's results do indeed cast some doubt on a special role of banks for corporate governance in Germany. It could be expected that a mitigating effect of bank dependence on financial constraints would be most pronounced for the early stage of industrialization.

The empirical findings reported so far are inconclusive. Studies concerned with the impact of a firm's bank dependence on performance consistently find a positive impact of direct equity holdings by banks. In contrast, proxy-voting rights and supervisory board representation by banks appear to be irrelevant for management control.⁹ Studies on the ability of banks to mitigate financing constraints of firms yield conflicting results, which may be attributed to differences in the underlying observation periods, or the definition of bank dependence. All studies reported so far have focused on large, exchange-listed companies. Note that firms in this size segment differ considerably from the vast majority of firms in Germany's industrial

⁹This does not, of course, imply that supervisory board membership cannot provide valuable information for

sector. Small and medium-sized firms, representing the majority of companies in terms of number and GDP-contribution, are subject to less stringent disclosure rules, are not followed by financial analysts, and are less likely to possess a publicly observable track record. Therefore, for SME companies, problems of informational asymmetries and incomplete contracting tend to be more important, thus lending more weight to the effect of relationships between banks and firms. We will discuss the value of relationships in the remaining sections of this paper, emphasizing in particular the notions of the *Hausbank* and relationship lending.

3 BANKS AS FINANCIERS OF SMALL AND MEDIUM ENTERPRISES: LENDING RELATIONSHIPS

3.1 The *Hausbank* Concept and Relationship Lending

In turning to small and medium-sized firms there is a shift in focus to the key economic function of banks, i.e., their role as providers of external debt. Although largely ignored debt provision in the preceding section, it is a stylised fact that bank debt is the single most important source of external funding for corporations in Germany, as well as in many other countries (see Hackethal 2003 and Fischer and Pfeil 2003). When non-listed firms are taken into consideration, the relevance of bank debt as a financing source becomes even greater, whereas the role of bank debt as a means of bank influence via direct equity holdings, supervisory board representation, and proxy-voting rights can easily be ignored. The reason is that these latter aspects are irrelevant for small and medium-sized enterprises, given their legal form and the complete absence of public equity.¹⁰

banks. The argument is that all benefits are primarily *caused* by equity holdings.

¹⁰ Note that in terms of contribution to GDP, German firms predominantly have the legal form of a limited liability company ('GmbH') or a limited partnership ('KG'). For the latter, a GmbH is usually the limited partner ('GmbH & Co KG'), thereby resembling incorporation of the firm. Based on the German tax income report, incorporated enterprises and partnerships (including the GmbH & Co KG) constitute approximately one third of

As outlined above, the German notion of the *Hausbank* serves as a prime example of close ties between bank and firms, in particular if the lending function of banks is addressed. The *Hausbank* is regarded as the premier lender of a firm with more intensive and more timely information than a comparable arm's-length bank (see e.g. Edwards and Fischer 1994 and Elsas and Krahen 1998). The *Hausbank* is further said to bear a 'special responsibility' in the event that its borrowers face financial distress.

At first glance the economic rationale for 'a special responsibility' of a bank would appear unclear. The theoretical concept of relationship lending, however, provides such a rationale. Relationship lending is defined as a long-term implicit contract between a bank and its debtor.¹¹ Due to information acquisition and repeated interaction with the borrower over time, the *Hausbank* accumulates private information. This information privilege commits both parties to one another, establishing close ties between the bank and the borrower. The definition of Petersen and Rajan (1995) highlights the similarities between relationship lending and the *Hausbank* notion: 'by close and continued interaction, a firm may provide a lender with sufficient information about, and a voice in, a firm's affairs so as to lower the cost of and increase the availability of credit.'¹²

Following Boot (2000), three major potential benefits attributed to relationship lending can be distinguished:¹³

Information: A close relationship to its bank might induce a borrower to reveal more information than in arm's-length financing (see Bhattacharya and Chiesa 1995 and Yosha

all firms in terms of numbers, while two thirds are sole proprietorships. See Deutsche Bundesbank (2001).

¹¹ For recent surveys on the theoretical concept of relationship lending and the respective international evidence, see Ongena and Smith (2000) and Boot (2000).

¹² Petersen and Rajan (1995: 6).

¹³ Note that event studies based on US data confirm that established relationships are of value. James (1987), Lummer and McConnell (1989), and Billett et al. (1995) provide evidence on abnormal returns of bank loan announcements to firms. Slovin et al. (1993) complement this evidence showing that firm market value decreases if a lending bank goes bankrupt, i.e., when the accumulated information capital of the bank is destroyed.

1995). In turn, a relationship lender might have stronger incentives for information acquisition, and may learn from the repeated interaction with the borrower (see Caminal and Matutes 1997; Hackethal 2000; Greenbaum and Thakor 1995).

Renegotiation: Relationship lending is an implicit contract, allowing for contractual flexibility through the renegotiation of terms (see Boot, Greenbaum and Thakor 1993).

Intertemporal interaction: Commitment between the borrower and the bank allows for intertemporal transfers because it introduces a long-term perspective for the bank. If the borrower cannot switch to another financier easily, then the bank can expect to earn rents in future periods. These rents may in turn offset losses at other stages of the business (see e.g. Sharpe 1990, Petersen and Rajan 1995, Allen and Gale 1999).

All of these benefits have implications for two crucial issues: credit availability in general, and credit availability when borrowers face financial distress (i.e., credit availability in a narrow sense). As emphasized by Petersen and Rajan (1995) and Fischer (1990), the possibility of subsidizing firms in the beginning of a relationship can mitigate problems of moral hazard and adverse selection, which would have prohibited loan provision from arm's-length lenders.¹⁴ Hence relationship lending may increase credit availability.

Financial distress is related to credit availability and of particular importance for our analysis of German *Hausbanks*, since these are described as bearing 'a special responsibility' vis-a-vis their distressed borrowers. Financial distress characterizes a situation where firms are not able to meet current obligations and need liquidity at short notice. In a such a situation, the long-term perspective of the relationship lender, its information privilege and the switching cost of financing will positively decisions by banks with respect to the crucial question of denial (i.e. termination) or continuation of debt provision.

¹⁴ See Berlin and Mester (1999) for an analysis of intertemporal transfers in loan pricing.

If a bank has private and presumably better information on a borrower's current and future economic prospects, it will in general make different decisions in times when the borrower faces financial distress. In this situation, lenders have to decide whether to continue debt provision (or even increase their loan supply to bail the borrower out of the crises) or to terminate the credit relationship (which often terminates firm operations as well). To this end, lenders must assess whether the crisis is temporary or permanent, i.e., whether or not the underlying investment projects of the borrowing firm are efficient, and whether or not default is strategic (Bolton and Scharfstein 1996). If the borrower still has investments with a positive net present value, the efficient decision is a workout and, thus, a continuation of the relationship. If the borrower's projects are of poor quality, however, termination will be efficient. Of course, efficiency does not necessarily predict actual lender behaviour. But, if relationship lenders have better (e.g., in the sense of more precise) information on the borrowing firm, they will make efficient decisions more often, that is, be more likely to terminate if the borrower is bad and more likely to continue financing if the borrower is good. This can be interpreted as a kind of distress insurance, where the borrower chooses relationship lending ex ante as a form of financing that provides for more efficient bank decision-making in financial distress.

It is important to stress the point that such an insurance does not automatically lead to loan continuation. Rather, it can be expected that *Hausbanks* will more often decide in favour of the efficient alternative. In fact, economically, relationship lending can be interpreted as a commitment device for the borrower ensuring ex-ante that he will be liquidated if distress occurs. This comment is credible, because the ex-ante decision restricts his later actions in a desirable way (see Rajan 1992 who analyzes this point formally).

Our discussion of the empirical evidence on *Hausbank* relationships in Germany places special emphasis on such types of insurance provided by relationship lenders. But before turn-

ing to the evidence, the ‘down side’ of relationship lending (i.e. its costs) must be mentioned. First of all, relationship lending does not dominate other types of financing, since it is inevitably associated with costs. A potential source of costs for bank financing is related to monitoring (see e.g. Gale and Hellwig 1985 and Diamond 1991). There are also switching costs involved in relationship lending in the sense of Sharpe (1990) and Rajan (1992). In their models, the information privilege of banks induces bargaining power, giving rise to a hold-up problem. Hence (additional or exclusive) borrowing from arm's-length lenders may be used to limit rents which otherwise would be exploited by informed lenders. Finally, the possibility of contract renegotiation may lead to a kind of ‘soft-budget constraint’ for borrowers, where relationship lenders perform the insurance function inefficiently. This in turn may adversely affect the incentives of the borrower to avoid bad outcomes ex ante (see Dewatripont and Maskin 1995).

To conclude, our brief discussion of the theory of relationship lending illustrates the complexity of this financial arrangement. Using relationship lending, or *Hausbanks*, for corporate financing can benefit firms, but relationship lending has negative aspects as well. This highlights the necessity of looking at empirical evidence in order to learn more about universal banks in Germany and their relationship with firms. Evidence on the existence of *Hausbanks* also directly addresses the question whether or not the *Hausbank* institution exists in the first place. Only recently, Edwards and Fischer (1994) have argued that *Hausbanks* in Germany are a myth (see the quotation at the beginning of this paper). We will show in this subsection that their claim is mistaken, and we will show in the following sections that the existence of *Hausbanks* does in fact have real effects on firm financing patterns.

3.2 Characteristics of a *Hausbank*

Although the notion of the *Hausbank* is well known in Germany, the exact characteristics of this institution have remained vague. A recent study by Elsas (2003) can shed some light on this issue.

The author provides an empirical analysis of the determinants of the *Hausbank* status of five German universal banks with respect to a given sample of corporate borrowers. The analysis is based on an exogenous criterion for a bank's *Hausbank* status, sampled in 1997, that is the self-assessment of banks regarding their own status. For the underlying firm sample, relevant credit officers at the banks were asked to assess and comply with the following: i) *Is your bank the housebank of the given customer, yes or no?* and ii) *Please provide a written explanation of your assessment.* The firm sample itself consists of 200 borrowers randomly drawn from the population of all corporate borrowers of the banks, meeting specific selection criteria with respect to size, debt structure and the location of their headquarters.¹⁵ The banks from which the firm observations originate are Deutsche Bank, Dresdner Bank, Bayerische Vereinsbank (now HypoVereinsbank), DG Bank (now DZ-Bank), and WestLB. All of these banks are universal banks with corporate credit business and belong to the top ten banks in Germany with respect to size and market share. The first three banks are for-profit private banks, while DG-Bank is the apex institution of the cooperatives sector. WestLB is the largest apex bank of the public savings banks sector. Hence the sample of banks represents all relevant sectors of the German banking system.

Table 3 shows the major results of the analysis of written responses by the banks with respect to their *Hausbank* status. In column 1, the table contains a definition of categories

¹⁵ Note that the response rate of the survey was 97.5% (i.e. 195 observations), which is extremely high. This is due to the fact that the survey was conducted within a large-scale joint research project of the banks and five academic research teams, where an analysis of credit-management processes in Germany was conducted. See Elsas et al. (1998) for details.

used to classify the written responses. For example, the second category is attributed to all responses indicating that the bank has a share in the large payment transactions of its borrower. Judged by the frequency with which a given factor is mentioned, it turns out that banks explained the incidence (or absence) of their *Hausbank* status primarily using nine factors. If a bank i) has a high share in debt financing, ii) has a high share in payment transactions, iii), iv) has a high share in either long-term or short-term financing, v), vi), vii) undertakes special, exclusive or intense business with the firm, viii) the duration of the bank-borrower relationship is long, or ix) has influence on the firm's management, then a *Hausbank* relationship is more likely to be observed.

Table 3: Categories of responses on the *Hausbank* status of banks

Factor definition ('the bank has...')	Mentioning frequencies		
	if the bank viewed itself <i>not</i> as <i>Hausbank</i>	if the bank viewed itself as <i>Hausbank</i>	total (out of 195 observations)
High share debt financing	38	48	86
High share payment transactions	28	38	66
High share short-term financing	11	22	33
High share long-term financing	7	23	30
High business intensity	15	14	29
Exclusive business	11	18	29
Provides special services	11	14	25
Long duration	6	18	24
Influence on the management	1	21	22

Source: Elsas (2003), Table 1, p. 10.

By relating the banks' self-assessments to observed loan contract and borrower characteristics, the author further shows the following.

- (1) Relationship lending is systematically associated with a larger share of banks in total financing of the borrower.
- (2) Firms within a *Hausbank* relationship maintain a significantly lower number of bank relationships.
- (3) In keeping with the theoretical concept, relationship lending serves as a financing instrument intended to create bargaining power for the bank involved, thereby leading to a commitment between the two contracting parties.

The first two results can be illustrated by some descriptive statistics. Based on the same data set, Elsas and Krahn (1998) report descriptive statistics for *Hausbank* and arm's-length borrowers related to contractual and borrower characteristics. A selection is shown in table 4.

Table 4: Descriptive statistics of borrowers with and without a *Hausbank* relationship

Variable	<i>Hausbank</i>	not <i>Hausbank</i>
Number of bank relationships	4.8	8.5
Duration of bank-borrower relationship (years)	23.1	25.3
Share in debt financing held by reporting bank (%)	46.0	26.0
Bank internal rating	2.8	3.3
Limited liability (% of all borrowers)	84.0	78.0
Size (sales in million Euro)	84.5	104.5
Number of observations	32	23

Notes: Calculations are based on observations from 1996. The *Hausbank* attribution is based on the self-assessments of loan officers combined with evidence from the credit files. Bank internal ratings are measured on a scale of 1 to 6, where category 1 indicates highest loan quality (lowest default probability) and 6 indicates worst loan quality, typically in default.

Source: Elsas and Krahn (1998), p. 1296, Table 3.

To conclude, on the basis of the SME-sample used in Elsas and Krahn (1998) and Elsas (2003), the observed characteristics of *Hausbank* relationships are consistent with the theory of relationship lending.

4 BANKS AS FINANCIERS OF SMALL AND MEDIUM ENTERPRISES: INTERTEMPORAL SMOOTHING, LIQUIDITY INSURANCE, AND CREDIT AVAILABILITY

4.1 Overview

As outlined above, a commitment between two contracting parties introduces monopoly power into the credit relationship. The most obvious benefit is to facilitate intertemporal transfers. For example, if the borrower is tied to the bank, the bank may charge interest rates on loans below the competitive level at the beginning of the relationship, knowing that it will be able to extract rents at a later stage (i.e., the bank will then be able to charge interest rates higher than the competitive level).

This section discusses some evidence on three specific issues associated with intertemporal contracting by relationship lenders. The first is concerned with the actual adjustment of interest rates on lines of credit to those corporate borrowers who are classified as either a *Hausbank* or non-*Hausbank* customer. The second issue addresses the potential insurance function of relationship lenders by discussing liquidity insurance provided by *Hausbanks*. The third issue is concerned with Petersen and Rajan's (1995) conjecture that intertemporal contracting due to relationship lending may increase the availability of credit to borrowers.

4.2 Evidence on Loan Pricing

Using the same data as in the previous section, Elsas and Krahen (1998) and Elsas (2001) analyse the loan pricing of banks between *Hausbank* and arm's-length relationships. The authors postulate that there will be differences in pricing patterns for two reasons: firstly because relationship lenders conduct interest rate smoothing for their borrowers, as suggested by Berlin and Mester (1999), and secondly because of remuneration of *Hausbank*-specific ser-

vices (like information production, distress insurance etc.) or monopoly rents which increase observed prices.

Elsas and Krahen (1998) investigate the spreads charged by banks on lines of credit. Following the literature (see e.g. Berger and Udell 1995), it is appropriate to look at the pricing of lines of credit since in general banks have considerable freedom in price setting for these types of loan. Lines of credit serve as a means for providing firms with liquidity at short notice. Lines of credit (typically) do not have a fixed maturity or a linkage to some specific investment project.¹⁶ Moreover, in Germany, lines of credit provide banks with the possibility to set interest rates almost at their discretion. Most of the loans are not linked to a reference rate (like for example the LIBOR), and no fixed spread is contractually pre-specified. Hence the pricing of lines of credit seems particularly interesting with respect to learning about the price setting behaviour of banks.¹⁷

In terms of methodology, cross-sectional regressions of the interest rate spread on a set of explanatory variables are used.¹⁸ The empirical model consists of control variables (like firm size, legal status), and a dummy variable indicating whether or not the borrower is involved in a *Hausbank* relationship. The dummy variable proxying for the *Hausbank* status of a particular lender captures the extent to which the *Hausbank* status shifts the regression function for *Hausbank* borrowers. This shift is positive if *Hausbanks* charge on average a positive premium, and negative if they price on average below the competitive level relevant for the non-*Hausbank* borrowers.

¹⁶ In Germany, lines of credit are usually provided in conjunction with checking accounts and therefore resemble overdraft facilities.

¹⁷ This is the standard approach in the literature, see e.g. Petersen and Rajan (1994 and 1995), Berger and Udell (1995) for the US, Degryse and van Cayseele (2000) for Belgian and Harhoff and Körting (1998) for German firms (and a sample with small scale industry).

¹⁸ The spread on the amount outstanding is defined as the interest rate charged by the bank minus the 3-month FIBOR (Frankfurt Interbank Offered Rate).

Table 5: Determinants of interest rates charged on lines of credit

Regressors	Dependant: Interest rate spread on lines of credit 1996
Constant	6.96 (0.00)***
Firm size	-0.24 (0.01)***
Rating 3 (medium default risk)	0.40 (0.06)*
Rating 4	0.60 (0.01)***
Rating 5 (high default risk)	0.94 (0.06)*
HB	-0.28 (0.15)
No. of observations	83
adj. R ²	0.32

***/* indicates significance at the 1/10 %-level.

Notes: All observations are from 1996. HB is a dummy variable, taking the value of one if, according to the lender, it is a *Hausbank* relationship. Rating classes 1 and 2 are taken together and serve as the benchmark. P-values are in parentheses.

Source: Summary of results as reported in Elsas and Krahen (1998), p. 1302, Table 5

As can be seen from table 5, interest rates charged on lines of credit are significantly sensitive to borrower default risk. However, the magnitude of the risk premium is quite small. Evaluated at the sample mean, it amounts to 94 basis points (above the reference rate, FIBOR).¹⁹ The comparative spread on the market for corporate bonds in 1996 was probably considerably higher. Even more interestingly, the coefficient of the *Hausbank* dummy turns out to be insignificant. This suggests that on average there is no difference in price setting between *Hausbank* and arm's-length customers. This observation is at variance with some of the literature (see e.g. Berger and Udell 1995 and Degryse and van Cayseele 2000). There are

¹⁹ These numbers have to be interpreted with care. First, the corporate bond market in Germany 1996 was quite small, by American standards. Second, the calibration of internal ratings and external ratings is guess work here. We interpreted an internal rating of 1 and 2, the benchmark, as an A, and a rating of 5 as a B. This is a conservative estimate in the sense that it almost surely underestimates the differences in default probabilities among these internal rating classes. Even if we recall the small size of our sample, the observed price differential between

at least three rational explanations for this result: i) *Hausbanks* do not provide services any more valuable than those of arm's-length banks, ii) different patterns of intertemporal transfers cancel out in the cross-section of borrowers, and iii) adjusting interest rates is not the only way to remunerate *Hausbank* services, i.e. the analysis ignores the cross-selling issue and other non-spread income components. Unfortunately, it is a unifying feature (or caveat) of all existing empirical studies on relationship lending and loan pricing that lack of data prevents from differentiating empirically between these explanations.

Elsas (2001) augments this analysis by using the same data within a panel framework, including the interest rate level, and an interaction term between the interest rate level and the *Hausbank* dummy. The interest rate level is included because interest rate adjustments by banks are known to be sticky in general and dependent on the interest rate level (see e.g. Berger and Udell 1992 for the US and Deutsche Bundesbank 1996 for Germany). The interaction term is the actual measure of a different pattern of intertemporal smoothing by *Hausbanks*. It turns out that spreads on lines of credit systematically vary in magnitude with the aggregate level of interest rates. However, the coefficient for the interaction term is insignificant, suggesting that *Hausbanks* do not differ from arm's-length banks with respect to their degree of interest rate smoothing.

4.3 Liquidity Insurance

Elsas and Krahen (1998) also look at whether *Hausbanks* provide liquidity insurance for borrowers. They analyse loan contract adjustments as a function of changes in borrower quality. An insurance function of relationship lenders implies that the lending behaviour of *Haus-*

bond market and loan market is disturbing, as a spread of 94 basis points can hardly be reconciled with earning positive profits in the loan business.

banks will differ systematically from that of arm's-length lenders. This should be particularly apparent in the case of a quality deterioration.

The main hypothesis states that owing to the properties of relationship lending, *Hausbanks* will increase (or at least not reduce) their loan supply if borrower quality deteriorates. Arm's-length banks, in contrast, will reduce funding under these circumstances. The supporting role of *Hausbanks* in the event of a quality deterioration can be interpreted as a liquidity insurance. To test the hypothesis, Elsas and Krahn (1998) regress changes in credit volume on contemporaneous changes of internal ratings, i.e. the banks' assessment of borrower quality. The adjustment rate of loan supply is further differentiated by the *Hausbank* status. The results reported in Elsas and Krahn (1998) support the claim that the availability of credit to firms in financial trouble is improved by relationship lending. To be specific, given a one-rating-notch deterioration of borrower quality, *Hausbanks* increase their loan supply, while arm's-length lenders do not. Thus *Hausbanks* offer liquidity insurance to their clients. The insurance offered is not unconditional, however, as it is shown to depend on the magnitude of the change in quality. If the increase in default probability is large, implying a deterioration by two or more notches, all banks will decrease their financial commitment, irrespective of the *Hausbank* status. Elsas and Krahn (1998) argue that liquidity insurance is an important real effect of relationship lending because its anticipation by firms is likely to have an impact on the entire financing structure of these firms. We therefore believe that liquidity insurance is an important attribute of a *Hausbank* system. Furthermore, the identification of liquidity insurance as a common outcome of close bank-firm relations suggests that *Hausbanking* is indeed economically relevant and not merely a myth.

4.4 Credit Rationing

Credit rationing is an economic phenomenon typically associated with problems of information asymmetries or incomplete contracting in debt markets. According to Baltensperger (1978) and Keeton (1979), equilibrium credit rationing occurs if a borrower's demand for credit is denied, even though this borrower is willing to pay all the price and non-price elements of a loan contract (see also Freixas and Rochet 1997: 137). Obviously, this definition includes the interest rate charged on the loan, and contract features such as collateralisation or covenants.

Relationship lending may have an impact on credit rationing. Again, the basic idea is that relying on a relationship lender may enhance credit availability since this lender i) already has better (private) information, ii) may have better incentives to engage in costly information production, and iii) may expect to extract rents from the relationship with the borrower in the future.

Fischer's study (2000) provides empirical insights in the role of information accumulation by banks (the essential feature of relationship lending) and credit rationing. It is concerned with the incentives encouraging banks to engage in costly information production and the role played by competition among banks in this context. Relying on a questionnaire, Fischer (2000) analyses information flows from the borrowers to banks during a loan application process.²⁰

In a first step, the author analyses the impact of bank competition in local debt markets on the degree of information acquisition by banks. It turns out that banks in more concentrated local debt markets engage significantly more often in information acquisition than banks in more competitive environments. Since relationship lending can be interpreted as be-

²⁰ The data set was provided by the Ifo-Institute (Institute for Economic Research), a leading policy research

ing based on information accumulation and being rationally intended for the creation of monopoly power within credit relationships (see Elsas 2003), these results carry over directly to the *Hausbank* case.

The next step considers firm behaviour with respect to taking discounts offered by suppliers, in other words trade credit. The frequency of missing out on supplier discounts serves as a proxy for credit rationing since it is presumed to be the most expensive source of financing for firms.²¹ The effect of relationship lending on credit availability can be tested by the impact of bank concentration in local debt markets on the frequency of firms taking discounts. The underlying idea is that the exogenous monopoly power of banks in credit relationships (i.e., bank concentration) has a similar effect on firm financing restrictions as the endogenous monopoly power arising from relationship lending (see Petersen and Rajan 1995). Since Fisher's results imply that banks in more concentrated markets do indeed invest more in information production and monitoring, it can be expected that firms located in those markets will be less financially constrained.

The analysis is conducted in the following way. The ordinal variable 'frequency of taking discounts', indicating the ordered items 'never / rarely / frequently / always', is regressed on a set of explanatory variables. These consist of control variables for firm heterogeneity such as firm size, profitability, financial leverage, and so forth.

The coefficient of the main variable of interest, a Herfindahl-index of bank concentration in local debt markets,²² is positive and significantly different from zero. Hence, the higher the bank concentration in local debt markets, the more often firms will make use of discounts

institution in Germany. The Ifo Institute conducted a survey on Corporate Finance in 1997, by sending a questionnaire all firms that regularly participate in their yearly survey of firm investments.

²¹ It is argued that not taking discounts offered by suppliers indicates financial constraints because of the high implicit price of doing so (see e.g. Petersen and Rajan 1995).

²² The Herfindahl-index is a common measure of concentration and defined as the sum of squared market shares of each individual economic entity present in the market. It accounts for the number of market participants as

offered by suppliers. In other words, the higher (local) bank concentration, the less often will firms rely on expensive trade credit. Fischer's evidence is consistent with the notion of relationship lending as a means to increase credit availability. This finding is related to the results of Petersen and Rajan (1995) for US firms, albeit that Fischer (2000) offers a different explanation for this pattern, namely the value of accumulated private information.

However, it is questionable whether the frequency of taking supplier discounts is indeed a good proxy for the existence of credit rationing, since the opportunity costs decrease with the term of delayed settlement (see Petersen and Rajan 1997 for an extensive discussion of trade credit). However, a study by Plötscher (2001), using the same data underlying Fischer's results, finds that firms which use trade credit less frequently were indeed denied credit by their bank more often.²³

To conclude, the previous results constitute evidence that *Hausbank* relationships do in fact confer economic benefits consistent with the theoretical concept of relationship lending. Elsas' (2003) findings indicate that the building block of relationship lending (or *Hausbank* relations) is the deliberate creation of monopoly power in credit relationships. Fischer (2000) shows that monopoly power indeed affects incentives to engage in costly monitoring and information production, with intuitively plausible consequences for credit availability.

The analysis by Elsas and Krahen (1998) is closely related to intertemporal smoothing and the issue of credit availability. As already described in more detail, their findings suggests an important role for relationship lending in the provision of liquidity insurance. The follow-

wells as asymmetry between their individual market shares.

²³ Another caveat concerning trade credit goes back to Wilner (2000), who argues that customer relations between firms and suppliers exhibit characteristics similar to relationship lending if there is some commitment between the two (e.g. owing to the specificity of the suppliers products). Hence, if the remuneration of supply also reflects premia for insurance-like services, it is difficult to evaluate intertemporal smoothing just by looking at interest rates in the cross section.

ing section will discuss complementary evidence on the special role of *Hausbanks* when their client firms actually are in financial distress.

5. BANKS AS FINANCIERS OF SMALL AND MEDIUM ENTERPRISES: BORROWER DISTRESS, REORGANIZATION, AND LIQUIDATION

5.1 Introduction

So far we have seen that *Hausbanks* provide financial insurance in the case of single notch rating migrations, which are interpreted as a temporary, or mild deterioration of borrower quality. We will now turn to the case of migrations to junk ratings, that is a serious deterioration of borrower quality. In these cases borrowers are considered to be in financial distress, and banks prepare themselves for workout, liquidation, or court action. Administrative responsibilities within the banks typically shift to specialized workout departments.

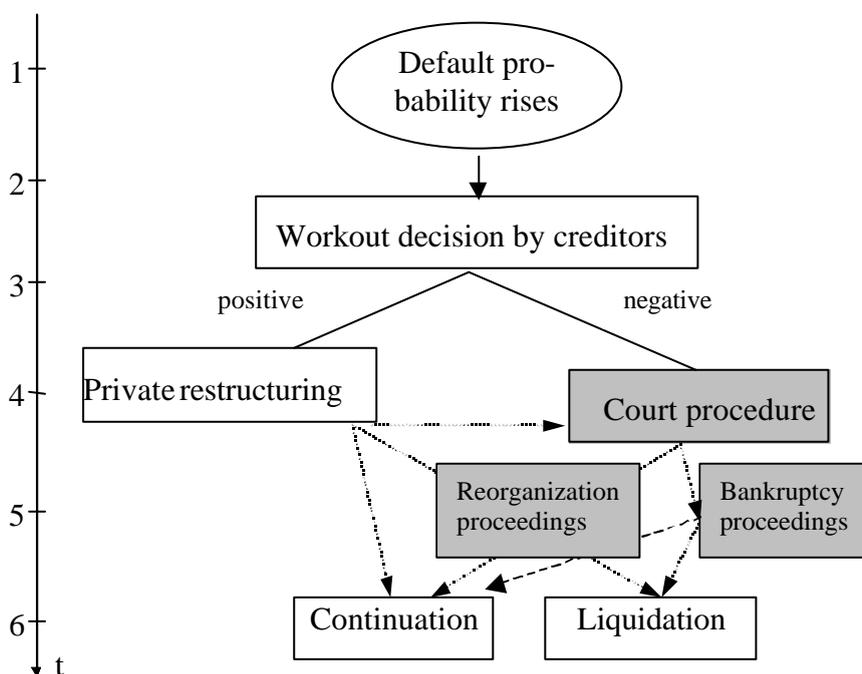
The involvement of banks in the reorganization of distressed borrowers is greatly facilitated by the structure of the German insolvency code. This is true for the old code, the *Konkurs- und Vergleichsordnung* which was effective between 1877 and 1999, and it is still true for the new code, the *Insolvenzordnung*, albeit to a lesser degree. The new code was motivated largely by an alleged liquidation bias of the old code. Despite this criticism, advocated mostly by legal scholars, there is little empirical evidence available to support this claim. The frequently cited 0.5% of all cases which enter the court-supervised reorganization proceedings ('Vergleichsverfahren'), while the remaining 99.5% enter into bankruptcy proceedings ('Konkursverfahren')²⁴, do not support the claim because these numbers abstract from all those instances in which an attempt is made to reorganize a distressed firm *prior* to court in-

²⁴ ('Konkursverfahren') is sometimes translated as *compulsory liquidation* even though liquidation is not mandatory. For reasons of clarity we will adhere to the following terminology: ('Vergleichsordnung') as *reorganization proceedings* and ('Konkursordnung') as *bankruptcy proceedings*.

tervention.²⁵ In a statistical sense, the analysis of all cases that enter the court-supervised process, be it for bankruptcy or reorganization proceedings, rather than all cases that reach a certain level of default probability, provokes a sampling bias. The bias stems from the exclusion of all firms that have a significant default probability, i.e. are near-insolvent, but are nevertheless privately restructured. Clearly, conclusions drawn from a biased sample cannot be generalized to the population.

Figure 1 is a sketch of the procedural logic of the former German insolvency code, the *Konkurs- und Vergleichsordnung* (in effect until 31 December 1998). The shaded area in figure 1 refers to those cases that enter court proceedings, defining the biased sample referred to above. Clearly, this area captures only a subset of all distress cases.²⁶

Figure 1: Procedural logic of the German insolvency code in force until end 1998



²⁵ See for these numbers Friderichs, Paraque and Sauvé (1999: 76). The same authors provide a survey of the old German insolvency code.

²⁶ Note further that 70% of all cases entering bankruptcy proceedings were dismissed for lack of assets, see Friderichs, Paraque and Sauvé (1999: 76).

To evaluate the merits of the old and the new German insolvency code it is instructive to recall the timing of decisions by firm management, creditors and the court in a typical distress situation. Figure 1 presents such a sequence, starting from an unexpected event that causes financial distress, followed by an upward adjustment of default expectation by the lender (T_1), and a decision by the lenders concerning a possible private reorganization ($T_{2,3}$). If this decision is negative, court proceedings will be started, leading either to reorganization proceedings or bankruptcy proceedings ($T_{4,5}$). If the decision is positive and if the private reorganization involving creditors is successful, the firm will reappear as a healthy business unit (continuation T_6). On the other hand, if the reorganization is not successful, the company will enter formal court proceedings (T_4).

The outcome of this consideration is that in order to measure the impact of a given insolvency code on the decision to liquidate or to reorganize a company, the corresponding efforts of creditors prior to court proceedings must also be taken into account. Working with a sample of 124 medium-sized German distressed borrowers, Brunner and Krahn (2002) report that of the 18 firms entering court proceedings, none emerged as a healthy entity, 50% were liquidated, and the remaining 50% were still pending. However, the vast majority of all cases, 85% (106 cases), were in fact reorganized. 16% (18 cases) were successfully reorganized, 88 cases were still pending due to the long duration of the workouts.²⁷ Attempts to reorganize distressed borrowers are therefore very common in German financial markets as far as medium sized industry is concerned.

In order to better understand why lending institutions are willing to become involved in out-of-court restructurings, we will delineate the German insolvency code in the next subsection 5.2, before presenting some evidence on the role of *Hausbanks* in workout decision-

²⁷ The underlying data set is an extension of the one used by Elsas and Krahn (1998) and Elsas (2003), see

making 5.3. Subsection 5.4 will deal with multiple lending and the inherent risk of inefficient and premature liquidations. We will ask how the risk of a run on firm assets is mitigated. Our analysis centres on an effective institution in the German banking world, the so-called bank pool. This institution appears to be fairly successful in organizing collaborative action between several banks at the onset of financial distress.

5.2 German Insolvency Code: Old and New

The current German insolvency code was enacted on January 1, 1999.²⁸ It was intended to improve the old code by allowing an early commencement of court proceedings and by providing incentives for timely reorganization. To this end, imminent illiquidity has been defined as a new bankruptcy trigger. The new code supplements the two provisions of the old code relating to factual illiquidity and overindebtedness (i.e., when asset value is smaller than debt value). Thus, the borrower can ask for protection under the new bankruptcy code if he expects illiquidity to materialize. For a period of three months there will be an automatic stay with respect to all secured claims. The borrower or the insolvency administrator must present an insolvency plan to the court. This plan must be supported by a majority of lenders (by heads and by amounts) in the creditors committee, and a distinction must be made for each class of claims (secured, unsecured, unsecured junior, employees, small/trade creditors).

Under specified circumstances, the court can overrule the voting of the creditor classes, in order to minimize the risk of strategic voting. Small creditors are protected by a Pareto principle, i.e., minority creditors must not receive less than they would if there were no insolvency plan in the first place. The law does not impose details on the restructuring effort, but rather invites innovations in the reorganization efforts. Pre-insolvency claims, in particular

collateral rights, are respected under the insolvency plan. In addition, secured creditors have special information rights during the insolvency proceedings, and they have a right of pre-emption for secured assets sold.

Table 6: Key characteristics of the old and new German insolvency code

Characteristics of code	New code (since Jan. 1, 1999)	Old code (until Dec. 31, 1998)
Bankruptcy commencement (court proceedings) due to	<ul style="list-style-type: none"> • Overindebtedness • Factual insolvency • Imminent insolvency (only debtor) 	<ul style="list-style-type: none"> • Overindebtedness • Factual insolvency
Insolvency plan?	Yes, consent by majority of all claimholder classes required	Not required outside formal bankruptcy proceedings
Automatic stay?	Yes, if protection under bankruptcy law is sought	No
Minority creditor protection?	Yes, insolvency plan must Pareto improve on current situation	No
Collateral rights?	Are respected throughout	Are respected throughout
Seniority of new funds provided within the scope of the insolvency procedure?	No fixed rule, negotiable within the limits of the insolvency plan	No

Overall, the new insolvency code is a blend between the old, creditor-friendly legislation and a US-style, debtor-oriented code. It allows for considerable flexibility with regard to possible arrangements among creditors. Until 1998, the old insolvency code allowed only factual illiquidity and overindebtedness as commencement facts for court-supervised bankruptcy proceedings. Again, these proceedings could take one of two routes: bankruptcy proceedings and reorganization proceedings. In both cases, control was shifted from the (owner-)

²⁸ See Kaiser (1996), Franks, Nyborg and Torous (1996), Drukarczyk 1999 and Schmidt (1980) for additional

manager to an official trustee who was empowered and supervised by the courts. There was no general automatic stay, since secured creditors were free to take legal action individually in order to secure their claim.²⁹ Table 6 summarizes the key characteristics of the old and the new codes.

5.2 Workout Involvement by *Hausbanks*

We now turn to the decision of creditors to support workout activities prior to any court supervised formal bankruptcy proceedings. We shall try to shed light on two aspects of bank behaviour, i.e. the involvement of lenders in pre-bankruptcy restructuring of distressed firms, and the role of *Hausbanks* in these situations.

The first question to be asked is whether banks get involved in the restructuring of firms to whom they have lent money and who they judge to be in distress? Using the credit-file data already introduced in section 4, Elsas and Krahn (2002) analyse a sample of 62 potentially distressed lending relationships, 21% of which involve *Hausbanks*, while the rest relate to arm's-length banks.³⁰

Remarkably, only 6.5% of all cases go straight into bankruptcy proceedings, either compulsory liquidation or composition proceedings. 37% of all cases report a serious attempt of reorganization with bank participation. If such a workout occurs, bank participation includes the provision of fresh money, the initiation of management consulting and, in some cases, direct management involvement. The remaining 56.5 % experience no special workout treatment. Thus, formal insolvency proceedings (the lower right hand section of Figure 1)

details on the institutional features presented in this section.

²⁹ The strong creditor position in bankruptcy proceedings under the old code was facilitated in particular by the secured lenders' rights of separation ('*Absonderung*') and in some cases, the right of sorting out of collateral ('*Aussonderung*').

³⁰ The firms in this sample are a random draw of medium-sized (West-) German companies with at least one negative (junk) internal rating during the observation window 1992-1996.

with respect to the sample of medium-sized German companies capture only a minor portion of all bank involvement in distressed firms. The prominence of lender involvement in pre-bankruptcy reorganization and restructuring is quite considerable by comparison with that of other countries, such as the UK (see Franks and Sussman 2000) or the US (see Gilson et al. 1990).

When attempting to predict the role of *Hausbanks* in a situation of borrower financial distress, it is useful to view the decision of a bank to participate in a workout as being a fundamental investment decision. In many cases restructuring will not be possible unless additional funds are provided. The outcome thus depends on whether an additional investment is seen as a positive net present value project. Each bank among the company's creditors will have to evaluate the present value of an extended financial commitment vis-à-vis the company. If this present value is positive, the required workout can be undertaken, otherwise the bank will not be willing to extend additional loans, or to take any other supportive action. Instead it will tend to pull back and, perhaps, trigger the liquidation of the company. However, strategic interaction between lenders as well as between lenders and the borrower may lead to violations of this NPV-based efficiency rule.

Ceteris paribus, supportive actions by a particular lender are more likely (i) the higher the seniority of his claims is over the claims of other creditors, (ii) the lower his bargaining costs are expected to be relative to other creditors, and (iii) the lower his uncertainty in the assessment of the real economic value of a debtor's assets. The first two conditions refer to the free-riding problem that emerges in a borrower distress situation with multiple lenders (Wruck 1990 and Gilson, John and Lang 1990). Relationship lending and the accumulation of collateral can be seen as being complementary in view of solving this free-riding problem. Relationship lending is associated with an instrumental role of the bank in total firm financing, which provides bargaining power against other lenders and against the borrower. Since

collateral affects the seniority of lenders,³¹ the allocation of collateral determines bargaining power within the group of all lenders as well. That collateral thereby reduces conflicts among lenders in distress situations, is a hypothesis developed by Longhofer and Santos (2000) and Welch (1997).³² Therefore, it is conclusive to note that according to Elsas and Krahnert (2002), *Hausbanks* are systematically more collateralised (more senior) than other banks.

The third condition regarding information on the borrower's business is especially true for those lenders with private information. Hence, all three conditions are met by relationship lenders, and it is therefore to be expected that these institutions will engage more frequently in workouts than normal lenders.

A closer look at the workout-decision-by-creditors node in Figure 1 is therefore justified in order to understand the determinants of bank involvement in corporate restructuring. To test this hypothesis Elsas and Krahnert (2002) run a probit regression where the binary dependent variable takes the value of one if any workout activity by a sample bank (such as providing fresh money, developing a restructuring plan, or pressing the board to replace management) is observed, and otherwise zero. The estimation identifies two primary significant explanatory variables which are robust across a variety of models. The first is the proportion of collateralised loans of total loans. The coefficient is positive, indicating that *ceteris paribus* more collateral (here: a higher seniority) increases the likelihood of active workout involvement by the banks.

The second significant variable is the *Hausbank* dummy variable, which takes the value of one if a particular bank is the *Hausbank* or the relationship lender of the company, and zero

³¹ According to the study by Elsas and Krahnert (2002), the majority of all collateral rights contractually agreed upon in the loan contracts of their sample correspond to inside collateral, i.e. collateral that reallocates the seniority of lenders claims rather than extending the aggregate adhesive wealth liable for all lenders (outside collateral).

³² In the German literature, this conflict reducing role of collateral has been discussed since 1980, see for example Schmidt (1980) and Rudolph (1984).

otherwise. The *Hausbank* dummy has a positive coefficient in the regression which is again robust across different model specifications. The interpretation here is that during a period of distress *Hausbanks* are more willing than arm's-length banks to engage in workout activities. Taken together, these results support the hypothesis that *Hausbanks* play an active role in pre-bankruptcy corporate reorganization.

The above findings suggest that relationship lenders are typically major and senior lenders, presumably equipped with information privileges and, therefore, bargaining power against other lenders and the borrower. This combination increases their willingness to engage in a costly workout.

Since multiple lending is common in Germany, workouts and out-of-court reorganizations face problems of coordination among lenders, and of free rider incentives. The next section reports how these problems can be overcome.

5.3 Multiple Lending and Pre-bankruptcy Workouts: How to Overcome Free-rider Incentives

The non-shaded area in Figure 1 describes an aspect of lending relationships that is frequently disregarded when corporate distress and the insolvency code are discussed. The pre-bankruptcy involvement of banks in corporate reorganizations seems to be a common phenomenon in Germany, however. *Hausbanks* in particular are prepared to take action in distress times, i.e. to provide fresh money, request the advice of outside consultants, increase pressure by frequent monitoring etc., in order to support firm workout activities. In light of the typical debt structure of firms in Germany, i.e., in most cases bank debt with multiple lenders, questions arise about how pre-bankruptcy involvement by banks can be sustained and the risk of a corporate run (a preemptive loan cancellation) be avoided.

Brunner and Krahnert (2002) have studied these issues. Their data set is an augmented version of the one used by Elsas and Krahnert (2002), containing detailed information on bank activities in corporate distress for 124 relationships over a 5-7 years period (observation period 1992-1999).

Their major finding relates to an institution that for a long time was overlooked by financial economists when studying the German financial system, namely the bank pool. These pools play an instrumental role in explaining both the success of bank involvement in pre-bankruptcy corporate workouts and the apparent absence of bank involvement in formal bankruptcy proceedings.

For the sample analysed by Brunner and Krahnert (2002), in 47% of all cases a bank pool was formed, typically at or shortly before the onset of borrower distress. The formation of a bank pool is more likely if the distress event is considered to be serious. For firms with a serious distress rating,³³ 70% will turn to a bank pool, while for the less serious distress rating this number is only 42%.

The institutional details of these pools follow a common contractual structure, which is intended to align the incentives of creditors and to hinder unilateral debt enforcement (which is always possible under the German law, particularly for secured creditors). Furthermore, bank pools coordinate lender involvement by nominating one pool leader as a trustee. Pools are typically formed when illiquidity of the borrower is expected by one lender. A formal pool agreement is signed that includes all banks and, in exceptional cases, trade creditors as well. The agreement covers the outstanding non-collateralized debt of each bank, for which the pool then seeks collateral coverage. Thus, most pool member banks have additional collateral outside the pool, which was signed before pool formation. A stand-still agreement between all

³³ Again, bank internal ratings are measured on a six category scale, where categories 5 and 6 (highest default

member banks guarantees that they will liquidate their collateral only with the consent of the pool. The shares of non-collateralized debt are the basis for determining individual pool quotas. The bank with the largest quota becomes the pool leader. Of course, this is not necessarily the bank with the largest loan outstanding. Future in- and outflows of cash are then shared among pool members according to their quotas. Decision-making within the pool must be unanimous; members can leave the pool, but the contract makes it unattractive to do so.

What effect has pool formation on the success probability of a workout? To answer this question Brunner and Krahn (2002) define workout success as a significant lowering of the default probability, proxied by an improvement of internal ratings from junk to investment grade. Workout success is then regressed on a number of explanatory variables. It turns out that the existence of a bank pool increases the probability of success (presumably because of its interest alignment function), while the number of bank relations, given that a pool exists, has a negative impact on this probability. The latter finding suggests that even bank pools are not able to completely resolve the coordination problems inherent in financial distress. These determinants of workout success are robust under various specifications of the basic model. A further test concerns the determinants of pool formation. The regression analysis reveals that for a particular firm in distress, pool formation is more likely when the number of banks involved is not too large, and when the loans outstanding have approximately the same size among all lenders (are not too unequal among lenders).

Referring once again to Figure 1, the evidence suggests that bank involvement in corporate restructuring in Germany is particularly strong in the periods preceding formal bankruptcy proceedings. *Hausbanks* play a special role in these times as they tend to accumulate collateral and emerge as the major monitor. They are typically not fully collateralised, so

proper monitoring and workout incentives are upheld. Bank pools are an effective workout device, much in use among medium-size distressed borrowers. As was argued above, this may be due to the fact that the German insolvency code (both the old and the new) respects creditor rights in its proceedings.

6. The *Hausbank*: Myth, Reality, and the Future

This paper has reviewed recent evidence on the role of relationship lending in Germany. As a first step, we analysed close ties between banks and large industrial firms. This involved all the features usually regarded as instruments used by banks for influencing the management decisions of firms, i.e. debt provision, direct equity stakes, proxy-voting rights and supervisory board representation. The evidence reviewed shows that there is some support for a role of banks in corporate control exercised via equity held in their own right. The evidence further indicates that supervisory board representation appears to be caused by equity holdings, rather than constituting a control mechanism on its own. Finally, contrary to the common presumption in the literature, the available evidence does not suggest that banks use proxy-voting rights in a systematic way to influence management decisions. This might be due to the fact that the exercise of proxy-voting rights is complex because of inherent free-rider and coordination problems.

We then turned to the major firm segment of small and medium-sized firms. Here, bank-firm relationships mainly result from the provision of debt, a structure analysed theoretically under the notion of relationship lending. In particular, we found support for the idea that *Hausbanks* develop an informationally intense relationship with their customers, and that these special relationships are common among mid-sized firms. *Hausbank* relationships have real consequences. They provide access to funds after rating downgrades, when normal banks tend to reduce their loans. Furthermore, in distress situations *Hausbanks* are more likely to

become involved in workout activities. Thus, in the light of the results reported on liquidity insurance and workout involvement, some earlier assessments in the literature (e.g. by Edwards and Fischer 1994) were not confirmed.

Typically, workouts are engineered prior to any court involvement, while hopeless cases are handed over to formal bankruptcy proceedings. This explains why court proceedings almost never lead to workout activities - a fact that some observers have erroneously interpreted as a sign of inefficiency of the insolvency code (see Kaiser 1996 or Frankset al. 1996: 86). In fact, pre-bankruptcy workout activities are common. In case of multiple banking, workouts are frequently made possible by forming a bank pool, which is an explicit contractual arrangement between all bank lenders. These pools align lender incentives and allow negotiations to be conducted in a coordinated manner.

Obviously, the available evidence is not sufficient to provide a comprehensive assessment of the pro and cons of bank-firm relationships in Germany. In our view, at least two avenues of future research are needed: First, it is still unclear whether the distinct behaviour observed for relationship lenders in borrower distress improves efficiency. To answer this question, more studies on bank behaviour in borrower distress are needed, using data which also cover the period after firm reorganization. Second, most of the theory on financial intermediation suggests that one bank lender is the optimal number of creditors. But then, why do we observe multiple bank relationships as a general pattern, in conjunction with relationship lending? What does this imply for the concept of relationship lending, which builds on information monopolies by banks? Currently, theory has not much to say about the sustainability of information monopolies under multiple banking. Further, it is unclear whether relationship lending may have some merits, *especially* in the context of multiple bank lending by firms. However, we believe that future investigation of German *Hausbank* relationships can provide interesting insights into these questions.

Thus, the overall evidence presented in this paper clearly supports the hypothesis that relationship lending in Germany is a fact rather than a myth and, more importantly, that it has real economic effects on the financing of corporations. From an economic perspective, the evidence corroborates the existence of long term relationship investments of banks and their customers. This may well be seen as a valuable asset, particularly in the SME-sector. What will happen to this asset in the future? The German financial system has entered a transformation phase, driven by growing competitive pressure from financial markets. This pressure threatens to undermine the acceptance and the viability of financial relationships, both in commercial and in investment banking. Therefore, in our opinion, the emerging central topic in the finance arena in Germany will be the confrontation between established private relationships and emerging public markets for financial services. Whatever the outcome of this encounter – one should reckon with considerable tenacity of the former.

References

- ALLEN, F., AND D. GALE. 1999. 'Innovations in financial services, relationships, and risk sharing.' *Financial Management* 45: 1239-53.
- BALTENSPERGER, E. 1978. 'Credit rationing: Issues and questions.' *Journal of Money, Credit, and Banking* 10: 170-83.
- BAUMS, T., AND C. FRAUNE. 1995. 'Institutionelle Anleger und Publikumsgesellschaften: Eine empirische Untersuchung.' *Die Aktiengesellschaft* 40: 97-112.
- BERGER, A.N., AND G.F. UDELL. 1995. 'Relationship lending and lines of credit in small firm finance.' *Journal of Business* 68: 351-81.
- BERGER, A.N., AND G.F. UDELL. 1992. 'Some evidence on the empirical significance of credit rationing.' *Journal of Political Economy* 100: 1047-77.
- BERLIN, M., AND L. MESTER. 1999. 'Deposits and relationship lending.' *Review of Financial Studies* 12: 579-607.
- BHATTACHARYA, S., AND G. CHIESA. 1995. 'Proprietary information, financial intermediation, and research incentives.' *Journal of Financial Intermediation* 4: 328-57.
- BILLETT, M.T., M.J. FLANNERY AND J.A. GARFINKEL. 1995. 'The effect of lender identity on a borrowing firm's equity return.' *Journal of Finance* 50: 699-718.
- BOEHMER, E. 1999. 'Corporate Governance in Germany. Institutional Background and Empirical Results.' Working Paper No. 78. Humboldt University Berlin, Berlin.
- BOEHMER, E. 2001. 'Business groups, large shareholders, and bank control: An analysis of German takeovers.' *Journal of Financial Intermediation* 9: 117-48.
- BOLTON, P., AND D. SCHARFSTEIN. 1996. 'Optimal debt structure and the number of creditors.' *Journal of Political Economy* 104: 1-25.
- BOOT, A. 2000. 'Relationship Banking: What do we know?' *Journal of Financial Intermediation* 9: 7-25.

- BOOT, A., S.I. GREENBAUM AND A.V. THAKOR. 1993. 'Reputation and discretion in financial contracting.' *American Economic Review* 83: 1165-83.
- BRUNNER, A., AND J.P. KRAHNEN. 2002. 'Corporate debt restructuring: Evidence on lender coordination in financial distress.' Goethe-Universität Frankfurt. Working Paper.
- CABLE, J. 1985. 'Capital market information and industrial performance: The role of West German banks.' *Economic Journal* 95: 118-32.
- CAMINAL, R., AND C. MATUTES. 1997. 'Can competition in the credit market be excessive?' CEPR Discussion Paper No 1725.
- CRAFTS, N. 1992. 'Productivity growth reconsidered.' *Economic Policy* 15: 387-414.
- DEGRYSE, H., AND P. VAN CAYSEELE. 2000. 'Relationship lending within a bank-based system: Evidence from European small business data.' *Journal of Financial Intermediation* 9: 90-109.
- DEMSETZ, H., AND K. LEHN. 1985. 'The structure of corporate ownership: causes and consequences.' *Journal of Political Economy* 93: 1155-77.
- DEUTSCHE BUNDESBANK. 2001. 'Erträge und Finanzierungsverhältnisse deutscher Unternehmen nach Rechtsformen.' *Monthly Report* (December): 45-77.
- DEUTSCHE BUNDESBANK. 1996. 'Reaktionen der Geldmarkt- und kurzfristigen Bankzinsen auf Änderungen der Notenbanksätze.' *Monthly Report* (October): 33-48.
- DEWATRIPONT, M., AND E. MASKIN. 1995. 'Credit and efficiency in centralized versus decentralized markets.' *Review of Economic Studies* 62: 541-56.
- DIAMOND, D.W. 1991. 'Monitoring and reputation: The choice between bank loans and privately placed debt.' *Journal of Political Economy* 99: 688-721.
- DRUKARCZYK, J. 1999. *Finanzierung*. 8th edition. Stuttgart: Lucius und Lucius.
- EDWARDS, J., AND K. FISCHER. 1994. *Banks, finance, and investment in Germany*. Cambridge. Cambridge University Press.

- ELSAS, R. 2001. *Die Bedeutung der Hausbank: Eine ökonomische Analyse*. Wiesbaden: Deutscher Universitätsverlag.
- ELSAS, R. 2003. 'Empirical determinants of relationship lending.' *Journal of Financial Intermediation*, forthcoming.
- ELSAS, R., AND J.P. KRAHNEN 1998. 'Is relationship lending special? Evidence from credit file data in Germany.' *Journal of Banking and Finance* 22: 1283-1316.
- ELSAS, R., AND J.P. KRAHNEN. 2002. 'Collateral, relationship lending, and financial distress: An empirical study on financial contracting.' Goethe-Universität Frankfurt. Working Paper.
- ELSAS, R., S. HENKE, A. MACHAUER, R. ROTT AND G. SCHENK. 1998. Empirical analysis of credit relationships in small firms financing: Sampling design and descriptive statistics.' Center for Financial Studies, Frankfurt. Working Paper 98/14.
- ELSTON, J.A. 1998. 'Investment, liquidity constraints, and bank relationships: Evidence from German manufacturing firms.' In *Competition and convergence in financial markets*, eds. S.W. Black and M. Moersch. Amsterdam: North-Holland / Elsevier Science.
- EMMONS, W.R. AND F.A. SCHMID. 1998. 'Universal banking, allocation of control rights, and corporate finance in Germany.' *Federal Reserve Bank of St. Louis Review*. July/August: 19-42.
- FAZZARI, S., R.G. HUBBARD AND B. PETERSON. 1988. 'Investment and finance reconsidered.' *Brookings Papers on Economic Activity*: 114-95.
- FISCHER, K.-H. 2000. 'Acquisition of information in loan markets and bank market power - An empirical investigation.' Goethe-Universität Frankfurt. Working Paper.
- FISCHER, K.-H. AND C. PFEIL. 2003. 'Regulation and Competition in German Banking: An Assessment.' In *The German Financial System*, eds. J.P. Krahnén and R.H. Schmidt. Oxford University Press, forthcoming.

- FISCHER, K. 1990. 'Hausbankbeziehungen als Instrument der Bindung zwischen Banken und Unternehmen: Eine theoretische und empirische Analyse.' Unpublished PhD thesis. University of Bonn.
- FOHLIN, C. 1998. 'Relationship Banking, Liquidity, and Investment in the German Industrialization.' *Journal of Finance* 53: 1737-58.
- FRANKS, J., AND C. MAYER 2001. 'The ownership and control of German corporations.' *Review of Financial Studies* 14: 943-77.
- FRANKS, J., K.G. NYBORG AND W.N. TOUROUS. 1996. 'A comparison of US, UK, and German insolvency codes.' *Financial Management* 25: 86-101.
- FREIXAS, X., AND J.-C. ROCHET. 1997. *Microeconomics of banking*. Cambridge, London: MIT Press.
- GALE, D., AND M. HELLWIG. 1985. 'Incentive compatible debt contracts: The one period problem.' *Review of Economic Studies* 52: 647-63.
- GERSCHENKRON, A. 1962. *Economic backwardness in historical perspective*. Harvard University Press.
- GILSON, S.C., K. JOHN AND L. LANG. 1990. 'Troubled debt restructurings – An empirical study of private reorganization of firms in default.' *Journal of Financial Economics* 27: 315-53.
- GORTON, G., AND F.A. SCHMID. 2000. 'Universal banking and the performance of German firms.' *Journal of Financial Economics* 58: 29-80.
- Greenbaum, S.I., and A.V. Thakor. 1995. *Contemporary financial intermediation*. Fort Worth: Dryden Press.
- HACKETHAL, A. 2000: *Banken, Unternehmensfinanzierung, und Finanzsystem*. Frankfurt: Peter Lang Verlag.

- HACKETHAL, A. 2003. 'German Banks and Banking Structure.' In *The German Financial System*, eds. J.P. Krahen and R.H. Schmidt. Oxford University Press, forthcoming.
- HILFERDING, R. 1909. *Das Finanzkapital*. Volume I. 1st edition reprinted in 1974. Frankfurt: Europäische Verlagsanstalt.
- HARHOFF, D., AND T. KÖRTING. 1998. 'Lending relationships in Germany – Empirical evidence from survey data.' *Journal of Banking and Finance* 22: 1317-53.
- HOUSTON, J.F., AND C. JAMES. 2001. 'Do relationships have limits? Banking relationships, financial constraints and investment.' *Journal of Business* 74: 347-74.
- HUBBARD, R.G. 1998. 'Capital-market imperfections and investment.' *Journal of Economic Literature* 36: 193-225.
- JAMES, C.M. 1987. 'Some evidence on the uniqueness of bank loans.' *Journal of Financial Economics* 19: 217-35.
- JÜRGENS, U., J. RUPP AND K. VITOLS. 2000. 'Corporate Governance and Shareholder Value in Deutschland.' Wissenschaftszentrum Berlin, Berlin. Discussionpaper FS II 00-202.
- KAISER, K. 1996. 'European bankruptcy laws: Implications for corporations facing financial distress.' *Financial Management* 25: 67-85.
- KAPLAN, S.N., AND L. ZINGALES. 1997. 'Do investment cash-flow sensitivities provide useful measures of financing constraints?.' *Quarterly Journal of Economics* 112: 168-215.
- KEETON, W. 1979. *Equilibrium credit rationing*. New York: Garland Press.
- LA PORTA, R., F. LOPEZ DE SILANES, A. SHLEIFER AND R. VISHNY. 1997. 'The legal determinants of external finance.' *Journal of Finance* 52: 1131-50.
- LA PORTA, R., F. LOPEZ DE SILANES, A. SHLEIFER AND R. VISHNY. 1998. 'Law and Finance.' *Journal of Political Economy* 106: 1113-55.

- LUMMER, S.L., AND J.J. MCCONNELL. 1989. 'Further evidence on the bank lending process and capital market response to bank loan agreements.' *Journal of Financial Economics* 25: 99-122.
- LEHMANN, E., AND J. WEIGAND. 2000. 'Does the governed corporation perform better? Governance structures and corporate performance in Germany.' *European Finance Review* 4: 157-95.
- ONGENA, S., AND D.C. SMITH. 2000. 'Bank relationships: A review.' In *The performance of financial institutions*, eds. P. Harker and A. Zenios. Cambridge University Press.
- PETERSEN, M.A., AND R.G. RAJAN. 1994. 'The benefits of lending relationships: Evidence from small business data.' *Journal of Finance* 49: 3-37.
- PETERSEN, M.A., AND R.G. RAJAN. 1995. 'The effect of credit market competition on lending relationships.' *Quarterly Journal of Economics* 110: 407-43.
- PETERSEN, M.A., AND R.G. RAJAN. 1997. 'Trade credit: Some theories and evidence.' *Review of Financial Studies* 10: 661-92.
- PLÖTSCHER, C. 2001. *Finanzierungsrestriktionen bei Unternehmen*. Wiesbaden: Deutscher Universitätsverlag.
- RAJAN, R.G. 1992. 'Insiders and outsiders: The choice between informed and arm's-length debt.' *Journal of Finance* 47: 1367-1400.
- RAJAN, R.G., AND L. ZINGALES. 2001. 'The great reversals: The politics of financial development in the 20th century.' Forthcoming in *Journal of Financial Economics*.
- RUDOLPH, B. 1984. 'Kreditsicherheiten als Instrument zur Umverteilung und Begrenzung von Kreditrisiken.' *Zeitschrift für Betriebswirtschaftliche Forschung* 36: 16-43.
- SEGER, F. 1997. *Banken, Erfolg und Finanzierung*. Wiesbaden: Deutscher Universitätsverlag.
- SCHMIDT, R.H. 1980. *Ökonomische Analyse des Insolvenzrechts*. Wiesbaden: Gabler-Verlag.

- SCHMIDT, R.H., A. HACKETHAL AND M. TYRELL. 1999. 'Disintermediation and the role of banks in Europe: An international comparison.' *Journal of Financial Intermediation* 9: 36-69.
- SHARPE, S.A. 1990. 'Asymmetric information, bank lending, and implicit contracts: A stylized model of customer relationships.' *Journal of Finance* 45: 1069-87.
- SHEARD, P. 1994. 'Main banks and the governance of financial distress.' In *The Japanese main bank system*, eds. M. Aoki and P. Hugh. Oxford.
- SLOVIN, M.B., M.E. SUSHKA AND J.A. POLONCHEK. 1993. 'The value of bank durability: Borrowers as bank stakeholders.' *Journal of Finance* 48: 247-66.
- WEINSTEIN, D.E., AND Y. YAFEH. 1998. 'On the costs of a bank-centered financial system: Evidence from the changing main bank relations in Japan.' *Journal of Finance* 53: 635-672.
- WELCH, I. 1997. 'Why is bank debt senior? A theory of asymmetry and claim priority based on influence costs.' *Review of Financial Studies* 10 (4): 1203-36.
- WILNER, B.S. 2000. 'The exploitation of relationships in financial distress: The case of trade credit.' *Journal of Finance* 55: 153-78.
- WRUCK, K. 1990. 'Financial distress, reorganization, and organizational efficiency.' *Journal of Financial Economics* 27: 419-44.
- YOSHA, O. 1995. 'Information disclosure costs and the choice of financing source.' *Journal of Financial Intermediation* 4: 3-20.