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Journal of Economics and Business 56 (2004) 315–330

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Journal of  
Economics  
& Business

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## Relationship lending: a survey of the literature

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Received in revised form 16 January 2004; accepted 5 March 2004

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### Abstract

This paper reviews the recent literature on relationship lending. First, the effect of relationship lending on firm value is examined in the context of the event studies investigating the impact of announcement of bank loans on stocks of the borrowing firms. Second, the effects on funds availability, loan rates, and collateral requirements are appraised. Third, the evidence on the impact of the length of the relationship, multiple bank relationships, and distance from the lender are assessed. Fourth, the effect of bank consolidation on relationship banking and the role of de novo banks are discussed. Finally, the effects of deregulation and technology on community banks are examined. The evidence indicates that relationships increase funds availability and reduce loan rates. The evidence on the direction and magnitude of the length of relationships is mixed and multiple relationships reduce the value of any single borrower lender relationship. Small banks can maintain the advantages of relationship banking in spite of technological changes.

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*JEL classification:* G21

*Keywords:* Relationship; Lending; Banking

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Relationship lending has increasingly become an area of great interest for financial institutions (FI), and particularly for smaller entities. It is important for prudent lenders to gather information about the credit worthiness of the borrowers. There are several ways to obtain this information, but one method that is especially well suited for opaque firms is the development of long-term relationships between lender and borrower. This allows

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the lender to gather relevant information about the prospects and the creditworthiness of the borrower over a considerable time period. The continuous contact between borrower and lender in the provision of various financial services can produce valuable input for the lender in making decisions on whether to extend credit, how to price loans, and whether to require collateral or attach other conditions to the loan. This paper reviews the recent literature dealing with relationship banking and assesses the impact of relationship banking on the lending process.

Lenders have several alternatives for gathering information about borrowers. They can require potential borrowers to submit applications for loans and to provide specific financial information. Alternatively, lenders may rely more heavily on their personal relationship with the potential borrower. This relationship may have developed because the lender has provided various types of financial services to the borrower in the past and learned important information related to the probability that the potential loan will be repaid. Personal contacts with the borrower and his family and friends outside of the financial realm might also provide useful input into the loan decision. The relationship method of obtaining information that is not readily available from financial statements would be more appropriate in some circumstances. Usually large firms are more transparent than small firms. As a result, relationship banking has developed as a method of gathering the necessary information from the smaller customers. Much of the interest in relationship banking revolves around small business lending since small businesses are relatively opaque with respect to providing the necessary information in the loan process. As we shall see below, small banks and large banks behave differently in the process of deciding on whether to grant small business loans.

The recent consolidation of banks might affect the provision of loans to small business and the use of relationship banking. If small banks mostly use relationship banking and these banks are disappearing through merger, the advantages gained by the use of relationship banking may disappear. On the other hand, the market might adjust to these developments with the creation of new small banks and relationship lending will continue to be an important factor. In order to analyze these issues it is important to first understand what relationship banking is and what effects it has had. This paper surveys the existing literature on relationship lending and discusses theoretical justifications for it and the empirical effects of using it.

The Federal Reserve System and the Small Business Administration have conducted three surveys of small business lending, the National Survey of Small Business Finance (NSSBF). These surveys provide the data for many of the papers about relationship lending and small business loans that we discuss below. Berger and Udell (1998)<sup>2</sup> use the 1993 NSSBF to indicate that commercial banks are the primary source of small business credit. They point out that, of the firms in the survey, 40.57% borrow from commercial banks, far larger than the number borrowing from any other type of financial institution. They also report that banks serve as the primary financial institution for 86.95% of the surveyed firms. The average length of relationship between small business firms and commercial banks is 7.77 years, which is longer than the length of relationship with other financial institutions.

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<sup>2</sup> See Table 2 on page 637.

If the bank is the primary institution for the firm, then the length of relationship is 9.37 years. More than 56% of the loans from commercial banks involve credit lines. The share of debt from commercial banks that is secured is 91.34% and the share of debt from banks that is guaranteed is 51.08%.

Using the same survey data, Cole, Goldberg, and White (2004) find for their sample of 1102 firms that applied for a bank loan, 81% had a deposit account with the bank. Only 42% of the firms had another loan from the bank, and 31% obtained financial management services from the bank. The average length of relationship with the bank to which the firm applied for credit was 7.80 years. The average number of other institutional sources for financial services was 1.42. Again as in Berger and Udell (1998), the most frequent type of credit requested was a line of credit (57% of the total). Cole et al. (2004) also show that there are significant differences for many of these statistics between large and small banks.

The financial environment is evolving rapidly. Innovations and changes in technology, transportation, and communication are forcing alterations in the delivery of financial services. This has and will affect relationship lending. In addition, regulation of commercial banking has been dramatically changed, and much of this has been forced upon legislators and regulators by competitive developments in the market place, which have occurred because of technological change. For example, barriers to geographic expansion of banks have been relaxed both at the intrastate and the interstate levels. Much bank consolidation has transpired as a consequence of changed economics and changed regulations. This has inspired the chartering of a larger number of new banks to fill the gaps left by the consolidation.

We discuss many of these issues by reviewing the relevant literature.<sup>3</sup> In Section 1, we examine the effect of the existence of relationship lending on firm value by examining the evidence from the stock market in the form of event studies. Section 2 looks at the effects of relationship lending on funds availability, loan rates, and collateral requirements. Section 3 examines the conflicting evidence on the impact of the length of the relationship, the impact of firms having multiple relationships, and the impact of distance from the lender. In Section 4 market structure issues are analyzed. This includes a discussion of consolidation and the role of de novo banks. Section 5 evaluates the effects of deregulation and technology. The final Section concludes with a prognosis of the future of relationship lending.

## 1. Evidence from the stock market (event studies)

At the heart of the debate on relationship intermediation is the question of whether the existence of relationship banking between a borrower and a financial institution increases firm value. Fama (1985) examines this issue in the context of the uniqueness of banks. He observes that bank customers are willing to pay a price to maintain a banking relationship. More specifically, Fama notes that certificates of deposit (CD), commercial paper (CP), and bankers acceptances (BA) serve as competitive instruments and pay similar returns, in spite of the fact that only CDs, and not the other two instruments, are subject to reserve requirements. He argues that, given that CDs are in effect costlier than CP and BA, banks

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<sup>3</sup> For earlier reviews of the relationship banking literature, see Berger and Udell (1998), Boot (2000), and Berger and Udell (2002). This paper takes a different approach than the previous reviews.

must be charging their borrowers a higher rate than the borrowers can get through direct financing in the CP and BA markets. Fama concludes that there must be something special (unique) about banks that motivates the borrowers to pay these higher rates. Fama provides additional support for his position by noting that if banks were not unique, non-banks FI not subject to reserve requirements, such as finance companies (FC) and insurance companies, would be able to charge a lower rate on loans and attract away the bank customers.

One major question is what makes banks unique. Why does a relationship with the bank add value to the borrowing firms? In response to this question, Fama argues that banks are inside lenders and as insiders they have access to some proprietary information about the borrowers that is not available to outside lenders who purchase publicly traded debt. The latter includes instruments such as bonds traded based on publicly available information, as well as CD, CP, and BA. The insider position may be membership on the board of directors of the borrowing companies, and supervision of the borrower in its decision process. The proprietary information may include historical data about loan and deposit patterns of the borrowing firm, its balance sheet and income statements, and familiarity with its plans and projects. Access to such information provides the bank with a comparative cost advantage for information collection about the borrowing firm, which is useful for screening the loans and making risk assessments before the loan is approved, and also for monitoring the loan afterwards.

Fama offers another reason why firms are willing to pay a higher rate on bank loans. He points out that given that bank loans are close to last in terms of priority of the claim on the borrower's assets in cases of borrower bankruptcy, the approval of a bank loan sends a signal to the market that all claims of higher priority are safe. This in turn creates a certification effect, reducing the cost of information collection about the borrower to other suppliers of funds, and hence, the cost of funds to the borrower. Along the same lines, [Diamond \(1984\)](#), has also argued that FI have an advantage over outside lenders because they know more about the borrowers' prospects than the latter, and also because they enjoy cost complementarities from multiple output production. The insider position allows the bank to overcome the information asymmetry prevailing between the firms and outside lenders and to have a comparative advantage over the latter. In brief, a bank's assessment of the borrowing firm is of value because it has an inside position and thereby has detailed special (inside) information about its decision process and concurrent projects.

[James \(1987\)](#) provides a test of the issues raised by [Fama \(1985\)](#). James argues that if banks have some special (unique) information about the borrowing firms, announcement of loans by banks should increase the market value of the borrowing firms. James employs the event study methodology to carry out a test of this proposition. His data include the announcements of bank loans to non-financial firms reported in the *Wall Street Journal* during the 1973–1984 period, except for the observations coinciding with other announcements. The findings of the James' study are twofold. First, announcement of bank loans do generate a positive and significant effect on the stock values of the borrowing firms, while announcements of private placements produce negative and insignificant effects, and those of public debt offerings produce negative and significant effects. Second, announcements of private placement and public debt offerings used to pay off bank loans produce a negative impact on the stock values of the borrowing firms. These findings indicate that the supply of funds through bank loans and through private placements and public offerings differ, with bank loans containing more information value.

Lummer and Mc Connell (1989) challenged the approach followed by James arguing that if banks have a comparative advantage in lending over other lenders, it is crucial to determine at what point in time they acquire it. Two possibilities exist. First, banks may have an advantage at the outset before having made any loans. In this case, the comparative advantage of banks must be due to their inside position. Second, banks may acquire their comparative advantage over time through multiple ongoing interactions with the borrowing firms. In this latter case, banks will have an advantage only at loan renewal time, not at the outset.

To distinguish these two possibilities, Lummer and McConnell separate new loans and loan renewals. They claim that if banks have an advantage because they are insiders (they have more expertise in evaluation of risky loans due to access to insider information), then *all* loan announcements should generate a positive effect on firm value. However, if their advantage is the result of a continuing relationship and it is acquired over time, only announcement of loan *renewals* will result in a positive value effect. Empirical event studies conducted by the authors show that it is indeed only the loan renewals that generate positive stock effects, the announcements of new loans demonstrate no significant effect. Further, when the authors decompose the loan renewals into those whose terms improve for the borrowers and those whose terms deteriorate, the effect of the former is positive and significant while the effect of the latter is negative and significant. Favorable loan term revisions considered include a lengthening of the maturity, a reduction in the interest rate or restrictive covenants, and an increase in denomination.

The conclusion based on the findings of Lummer and McConnell is that when banks enter new credit agreements, they have no advantage over outside lenders. In other words, they are not insiders. However, over time, they invest in production of information not available to outsiders, and base their loan revision decisions on this new information. Hence, it is in this kind of loans that banks have a key role in transmittal of information about the borrowing firms and it is the relationship lending that gives the banks an advantage, not the insider position.

Carey, Post, and Sharpe (CPS, 1998) pose the question of whether relationship lending is limited to banks, or do non-bank intermediaries such as finance companies also display similar behavior. Given that relationship banking is a way to tackle the information-problematic cases, another question of interest is whether non-bank intermediaries also engage in such lending. Carey et al. (1998) investigate this matter. These authors draw three main conclusions from their findings. First, lending by banks and FC are effectively identical in terms of dealing with information asymmetry; their borrowers do not differ along asymmetric information lines. Second, the borrowers of banks and FC do differ in terms of risk (leverage), with the latter having a niche in riskier borrowers. In other words, banks and FC specialize by risk. The authors explain this observed pattern of specialization in risk levels in terms of two factors; reputation and regulation. Specifically, banks are known to specialize in lower risk borrowers, while FC have a reputation for concentrating on the more highly leveraged customers. As for the second factor, regulation tends to drive the specialization between banks and FC as it, in effect, limits banks in their choice of borrowers and directs them toward safer firms. Finally, the third conclusion offered by CPS is that FC are as much of a relationship lender as banks are. This conclusion is based on the findings that the two types of intermediaries are equally likely to finance info-problematic borrowers.

Specialization along risk lines is found also to hold by Denis and Mihov (2003). These authors find that the primary determinant of the choice between bank debt, private non-bank debt, and public debt is the credit quality of the issuer. While the safest borrowers borrow in the public debt market, those with medium credit rating borrow from banks and the riskiest borrowers borrow from non-bank private lenders.

## 2. The effects of relationship banking

### 2.1. Fund availability and quantity

The first question to be asked about the direct effects of relationship banking is whether the existence of a relationship between the bank and the customer increases the availability and quantity of credit. The area of greatest concern is credit availability to small business. There is little concern for the availability of credit to large businesses or to wealthy individuals, since these entities have a wide variety of potential credit sources. Small business borrowing is generally confined to local areas where monitoring can be done effectively and thus there is a more limited group of potential lenders.

The issue of fund availability is intertwined with two other issues, the difference between lending by large and small banks to small business borrowers and the consolidation of the banking system. The first of these areas is discussed in this section while the second is discussed later in the paper.

Information about borrowers is vitally important to the lending process. Equilibrium models of bank lending include adverse selection and moral hazard problems that apply to small firms in particular because they are frequently opaque with respect to information flow (see Stiglitz & Weiss, 1981). Large lending institutions can produce substantial bodies of information about borrowing firms that can be very helpful in the credit decision process (see e.g., Diamond, 1984, 1991; Leland & Pyle, 1977). Because of scale economies and durability of information, a firm having a longer and a stronger pre-existing relationship with its bank should have greater availability of funds and/or lower cost of funds.

There is a substantial theoretical literature that claims that financial intermediaries have a comparative advantage in the production of information about borrowers (see e.g., Boyd & Prescott, 1986; Diamond, 1984, 1991; Ramakrishnan & Thakor, 1984). Moreover, the model of Boot and Thakor (1994) predicts that, as a relationship matures, interest rates decrease and collateral requirements decline. Other models predict that interest rates will increase as the relationship lengthens since lenders subsidize the borrowers initially but will be reimbursed with higher rates later (see e.g., Greenbaum, Kanatas, & Venezia, 1989; Rajan, 1992; Sharpe, 1990; Wilson, 1993).

Empirical evidence on the effects of relationship banking is rather extensive. Recent evidence indicates that small banks lend proportionately more to small enterprises than do large banks (Berger, Goldberg, & White, 2001; Berger, Kashyap, & Scalise, 1995; Berger & Udell, 1996; Levonian & Soller, 1995; Keeton, 1995; Nakamura, 1993; Peek & Rosengren, 1996; Strahan & Weston, 1996, 1998). Consequently, there is much interest in the behavior of small banks with respect to small business loans.

In order to study the availability effects of relationship banking, recent studies have used the three surveys of small business lending co-sponsored and co-funded by the Federal Reserve Board and the US Small Business Administration, the National Survey of Small Business Finances. [Petersen and Rajan \(1994\)](#) examine the value of lending relationships using the 1987 NSSBF, the earliest survey. They find that a relationship with an institutional lender increases the availability of financing to a small business. In a second paper using these data, [Petersen and Rajan \(1995\)](#) explore the effect of credit market competition on lending relationships. Because a lender is more assured of a continuing relationship with a small business borrower located in a more concentrated banking market, lenders tend to provide more credit in more concentrated markets.

[Berger and Udell \(1995\)](#) use the same data and analyze the importance of relationships between banks and borrowers in the extension of credit to small businesses. [Berger and Udell \(1996\)](#) use loan data drawn primarily from the Federal Reserve's Survey of the Terms of Bank Lending to Business. They test several hypotheses concerning the effect of relationship lending on the availability of credit to small businesses. They find that large banks issue fewer loans to small businesses than do small banks. Their empirical results support the hypothesis that large banks supply relatively less credit to small "relationship borrowers" but do not reduce credit to small "ratio borrowers" whose creditworthiness can be judged by examining their financial ratios. [Cole \(1998\)](#) examines the effect of relationships on the availability of credit by looking more carefully at the nature of the relationship. Using data from the 1993 NSSBF, he finds that lenders are more likely to extend credit if they have a pre-existing relationship with a borrower, consistent with the generation of private information from such relationships.

The operational differences between large and small banks can be explained by the theory of hierarchical control developed by [Williamson \(1967\)](#). At small banks the lending officers are either the owners of the bank or are in close contact with the owners of the bank. Large banks, however, have many branches so that the lending officers are far removed from ownership. Moreover, the lending officers generally have incentives to make more loans to increase their personal returns and this may be in conflict with the welfare of the owners of the bank. Since large banks face agency problems in granting loans, they must standardize their approval process to avoid these problems.

[Cole et al. \(2004\)](#) analyze the differences between large and small banks in the loan approval process. This study tests whether the anecdotal evidence, suggesting that large banks use standard quantitative criteria in their decision process to approve or deny small business loan applications, while small banks rely more heavily on personal interactions with loan applications, can be substantiated by the data. The Cole, Goldberg, and White study uses the 1993 NSSBF to show that the large banks (US\$ 1 billion or more in assets) are more likely to approve a loan when the applicant keeps formal financial records, has a larger enterprise, has an enterprise of greater age, has greater cash reserves, and is not minority-owned (a proxy for the owner's wealth, income, and credit history). Small banks use a more discretionary approach and rely more heavily upon pre-existing relationships that provide information into the character of the borrower. The small banks assign less weight to the formal financial variables.

[Berger, Miller, Petersen, Rajan, and Stein \(2002\)](#) find some evidence consistent with Cole, Goldberg, and White. They find that small banks are better than large banks in processing

soft information and acting on it for loans to small firms. Large banks are more reluctant to lend to firms that are more opaque and that do not keep formal financial records. Large banks interact more impersonally with borrowers.

In summary, in the loan approval process and availability of funds, relationships appear to be most important for small banks. Empirical evidence on the effects of relationships on other aspects of the loan process will be examined below.

## *2.2. Prices and collateral*

Lenders charge higher rates to borrowers who are less likely to repay loans. Requiring collateral or guarantees can improve the terms of the loan for the borrower. [Berger and Udell \(1998\)](#) review the theoretical literature on collateral and guarantees and the empirical literature that was done prior to the availability of data on small business firms. Much of the literature deals with the use of collateral in mitigating information problems, the effects of collateral on the costs of other types of funding, the risk levels of borrowers pledging collateral, and the extent to which the pledging of collateral reduces risk. Instead of reviewing this extensive literature, we concentrate on the recent empirical studies relating to small business lending.

Several of the studies discussed above dealing with credit availability also examine the terms of the loans such as prices and collateral. [Petersen and Rajan \(1994\)](#) find that relationships reduce the cost of borrowing slightly but this effect is statistically insignificant. [Petersen and Rajan \(1995\)](#) find that the increased probability of a continuing relationship in a more concentrated market leads to lower rates on small business loans. [Berger and Udell \(1995\)](#) show that lenders offer firms with longer relationships lower rates and are less likely to require collateral. [Berger and Udell \(1996\)](#) is the first study to examine the differences in lending practices between large and small banks explicitly. They find that large banks charge lower loan rates and require less collateral than do small banks in general. [Cole et al. \(2004\)](#) find that collateralization has a positive effect on loan availability for both large and small banks, but that the effects are both statistically insignificant. Specifically, the effect of collateral on availability for large banks is twice as large as the effect for small banks, but the difference in magnitude of the effect for the two groups of banks is not statistically significant.

## **3. Other characteristics of relationship lending**

### *3.1. Length of relationship*

It is reasonable to expect that the longer a relationship exists between a borrower and a lender the greater the information flow between the two parties and the more important the relationship becomes. The empirical evidence addressing this issue, however, is mixed. The earliest studies find that the longer the duration of the relationship the greater the availability of credit ([Berger & Udell, 1995](#); [Petersen & Rajan, 1994](#)). [Boot \(2000\)](#) asserts that contract terms improve over the length of the relationship with interest rates and collateral requirements falling. [Degryse and van Cayseele \(2000\)](#) find the opposite in a European



context, with the terms of the contract deteriorating with the duration of the relationship. Blackwell and Winters (1997) analyze two US bank holding companies and find no effect of the duration of the relationship on the interest rates charged on the loans.

Even though Cole (1998) finds that lenders are more likely to extend credit if they have a pre-existing relationship with a borrower, he reports that there is no incremental effect from pre-existing relationships of longer duration than 1 year. Hence, his results suggest that banks generate the valuable private information about its customers quickly, and that this information can be regenerated by other banks, if it is lost because of the merger or failure of the original bank. Cole et al. (2004) also find no significant relationship between length of relationship and the probability of loan approval for all banks, large banks, and small banks.

Akhavein, Goldberg, and White (2004) examine lending by small banks to small farms. Tenure of farm operators is used as a proxy for the length and strength of lending relationships. Longer tenure of farm operators encourages more bank lending. However, the tendency for de novo banks to lend more to small firms (here small farms) is reversed when existing relationships are stronger, because it is more difficult to take customers from their incumbent lenders.

### 3.2. Multiple relationships

Thakor (1996) has introduced a model to examine the effect of multiple relationships. According to the model, the existence of multiple relationships reduces the value of information acquisition by any one bank. The existence of multiple lenders increases price and reduces the availability of credit (Petersen & Rajan, 1994). The use of multiple lenders may be desirable for borrowers because the removal of credit from the firm's only lender may provide a negative signal to the market (Berger & Udell, 1998). Detragiache, Garella, and Guiso (1997) show that this may be a more serious problem in economies with high bankruptcy costs and where banks rarely have liquidity problems so that withholding of credit is likely to be interpreted as a problem with the borrowing firm. This applies to Italy as opposed to the United States and helps explain the greater number of relationships with banks that firms have in Italy as compared to the United States.

Cole et al. (2004) examine the effect of multiple relationships on the likelihood of loan approval. The effect of multiple relationships is negative and significant for all banks and for large banks. It is negative but not statistically significant for small banks. The difference between large and small banks is significant in one analysis and not in another. The results are consistent with the hypothesis that banks prefer to be the sole source of financial services, and that this is more important for large banks that can provide more services.

### 3.3. Distance

Because of the informational opacity of small firms, distance can be an important factor in small business lending. The collection of soft information usually requires contact between lender and borrower and this is facilitated by geographic proximity. Since geographically close lenders would incur lower costs in gathering the required information, borrowers would likely receive better terms on loans when they are in close proximity to the bank.

Several studies examine whether distance between lender and borrower has been changing over time. [Cyrnak and Hannan \(2000\)](#), [Petersen and Rajan \(2002\)](#), and [Wolken and Rohde \(2000\)](#) all find that distance has increased. However, in a study of a large Belgian bank, [Degryse and Ongena \(2003\)](#) find that distance did not increase from 1975 to 1997. In contrast to the other studies involving US banks, [Brevoort and Hannan \(2003\)](#) find for local borrowers in the US that there has been no discernable increase in distance between lenders and borrowers. The changes in technology that could give rise to increasing distances appear to have been adopted only by a small group of banks.

[Berger et al. \(2002\)](#) explain their finding that older firms are located closer to their banks by saying that firm age is a proxy for when the relationship was started. Older firms are located closer to their banks because when they started their relationship little hard public information was available about them.

[Cole et al. \(2004\)](#) find that distance is not related to the loan approval decision. However, [Degryse and Ongena \(2003\)](#) uncover some important effects of distance in Belgium. According to these authors, loan rates decrease as distance between lender and borrower increases. This effect of spatial competition is greater for transactional (single product), short-term, un-collateralized, term (not line of credit), and non capital expenditure loans. Loan rates increase as the distance between the firm and competing banks increases. Even though Belgium is a small country and was probably over-branched, spatial competition seemed to have an effect. Whether these results can be generalized to other countries remains to be seen as further research is completed.

#### **4. Market structure: bank consolidation and de novo banking**

The United States has witnessed rapid consolidation of the banking system in recent years, with the number of banks going from nearly 15,000 in the 1980s to less than 8000 currently. As discussed above, different types of banks concentrate on different types of customers. Consolidation, and more specifically acquisition of small banks, can affect the amount of relationship banking available. In turn, the remaining banks could react to try to meet the needs of the market, or de novo banks may enter to fill the void.

The recent wave of bank consolidation has been stimulated by the removal of the restrictive branching laws in the US, in the form of both intrastate and interstate restrictions. In particular, this has permitted larger banks to acquire smaller banks within and outside the state. It is well documented that large banks make proportionately fewer small business loans than do small banks. Moreover, small banks concentrate more on relationship bank lending than do large banks (see [Cole et al., 2004](#)). Thus acquisitions by large banks would tend to reduce the availability of small business credit. There are two primary ways in which these small relationship customers can satisfy their loan demand: expansion of small business loans by existing banks, and creation of new banks that provide relationship lending to small business.

Several studies have documented an external (actions taken by other institutions) effect of bank consolidation on small business lending. Part of the decrease in lending to small businesses as a result of bank consolidation has been offset by increased lending to small business by other banks in the same local market ([Avery & Samolyk, 2000](#); [Berger,](#)

Saunders, Scalise, & Udell, 1998; Berger et al., 2001). When one bank acquires another bank, the principals and the lending officers of the acquired bank may be unhappy with the management of the combined operation. Frequently, acquisitions by large organizations have resulted in massive terminations and resignations at the acquired banks. A substantial number of these former employees either find employment at rival institutions or start their own banks. In either case, they bring their small business clients with them. Many small businesses are unhappy when their prior relationships are terminated by an acquisition. The larger acquiring bank can alter the entire lending process and the customers may be dissatisfied with the new lending regime. This provides lending opportunities both for existing competitors and for new banks.

De novo banks concentrate on small business loans (Goldberg & White, 1998). As the bank ages, it decreases its proportion of small business loans, until at about age 20 it looks just like a mature bank (DeYoung, Goldberg, & White, 1999). There is both anecdotal and empirical evidence that new banks are formed to fill the gaps in small business lending created by the disappearance of smaller banks through merger. Berger, Bonime, Goldberg, and White (2004) study the dynamics of market entry following mergers and acquisitions. They trace the effects of over 10,000 mergers and acquisitions in over 2700 local banking markets during a 19-year period. Markets with more merger activity have significantly more de novo entry, both in terms of numbers and size. Thus the reduction in relationship lending resulting from consolidation can be partially mitigated by entry. This evidence has important policy implications since it supports a role for prospective entry in antitrust analysis.

## **5. Deregulation and technology**

DeYoung, Hunter, and Udell (2004) (DHU) review the change in the status and health of the community banks in the last three decades in response to deregulation and technological change. They also develop a model to examine how these forces have affected the competitive viability of community banks and the choice of their product mix. In addition, DHU present a picture for the future of the community banks. The empirical findings of this paper contain two main points. First, regulatory and technological changes have intensified competition and presented some community banks with a challenge to their survival. Second, these changes have left the well-managed community banks with a potentially exploitable strategic position in the industry.

One major question posed by DHU concerning the viability of the community banks is whether the comparative advantages enjoyed by these banks in the last decades have a chance to persist. These advantages include their key roles as providers of products such as small business loans, payment services, consumer financing, and consumer investment channels. The authors argue that these advantages have been largely eroded. The reasons for the erosion include relaxation of the branching and product mix regulations which gives large banks a freer hand to compete against small banks, new technologies rendering small scale operations inefficient in many areas of bank production, revolution in payment technology that renders distance unimportant, proliferation of investment options that make consumers less dependent on banks, deeper and broader financial markets that largely facilitate direct financing, and commoditization of financial assets. These changes have

resulted in an increase in the share of the 10 largest banks from 28% of total banking assets in 1986 to 76% in 2001 and a commensurate reduction in the share of the smaller community banks (DHU, 2004).

DHU point out, however, that in one particular area, relationship lending to small businesses, community banks may be able to preserve their superiority. They present several arguments why this area may remain secure from penetration of the large banks. First, the advantage of the community banks in making small business loans is acquired over time through the breadth and depth of the relationship (contract renewals, frequent renegotiation, intense monitoring, relationship variety) and is beyond the information based on public sources, such as financial statements, that can be easily transferred to other agents. Second, relationship lending is based on personal contact between the bank and opaque businesses and hence, is affected little by technology. Third, the negotiation process and the terms (parameters) used to manage the loan risk (covenants, collateral, guarantees, and subordination) are identical to those used in previous decades. Fourth, some theoretical studies, supported by empirical data, have shown that there are organizational advantages to small-scale banks for extending relationship-based loans (Berger & Udell, 1996; Cole et al., 2004; Stein, 2002). Fifth, small business loans have not been, and are not likely to be, commoditized. Sixth, small banks can advance their position by being innovative, e.g., expanding their scale to benefit from scale economies through outsourcing, engaging in product differentiation (contract customization, personalized banking, service quality), and pursuing new strategic opportunities. As a result of these factors, the small bank advantage can be, at least partially, maintained.

Empirically, the authors find that there is a wide performance disparity, in terms of both return on asset and return on equity, between best-practice and worst-practice community banks, while both groups maintain high levels of core deposits and small business loans. From their findings, they infer that the community bank model is viable, but only for those community banks, which are shrewd and well-managed. It follows that many community banks, specifically, those that fail to adopt optimal strategies and/or operate effectively, will be driven out of the business, while their efficient and strategically astute counterparts will have ample opportunities to survive and to thrive.

In their assessment of the future of the community banks, DHU (2004) propose that deregulation and advancement in technology will result in a division within the banking industry by size. On the one side of this divide will be a group of large banks that will specialize in standardized loans based on “hard” information, while the other side will include the small banks, which focus on non-standardized relationship-based loans using “soft” information. Hard information is defined to include quantifiable and available data, and is used in credit-scoring models of credit risk determination as the basis of standardized loans made by the large banks. These loans will not involve personal relationship with the clients. Soft information is based on ongoing relationships and cannot be reliably communicated from one bank to another. Soft information is the basis of small business loans made by the small banks to their clients.

Carter, McNulty, and Verbrugge (in press) attempt to test the propositions put forward by DHU (2004) concerning the effects of technology and deregulation. Specifically, they test the following hypotheses, using a time index to proxy deregulation and technological change:

**H1.** The net return on business loans has remained unchanged over time. This hypothesis is formulated in terms of the derivative of returns with respect to the time index. A negative sign for this derivative would be consistent with the proposition that technological change and deregulation have lowered the cost of loans to borrowers.

**H2.** The net return on business (or credit card) loans is the same for the small and large banks so that no size advantage exists. This hypothesis is formulated in terms of the derivative of net returns with respect to size of the bank (total assets). A negative sign would be consistent with the proposition that the net return of a particular type of loan declines as the bank expands in size, indicating an advantage in making this particular type of loan for the small banks. A positive sign would be an indication of an advantage on the side of the large banks.

**H3.** The relationship between the net return to small business loans and the bank size has remained unchanged over time. This hypothesis is formulated in terms of the cross derivative of the net returns with respect to size (total asset) and the time index. If small banks have an advantage in making small loans, a positive sign for the cross derivative would indicate that the effect of bank size on return falls in magnitude over time, gradually closing the performance gap between the small and large banks. In other words, as deregulation and technological advancement persist, large banks will improve their performance, relative to the small banks, leading to the disappearance, or at least weakening over time, of the small bank advantage. This result is in accord with Berger, Frame, and Miller (2002) who report increased availability of small loans through the large bank channels as these banks take advantage of “credit-scoring” in making small loan decisions. A similar point can be made about credit card loans. If the net return increases with size, giving large banks an advantage in performance, a positive sign for the cross derivative term with respect to size and the time index would denote a widening of the performance disparity with the advancement of technology and deregulation, while a negative sign would indicate a narrowing of the gap in favor of the small banks.

**H4.** The relationship between the net return on business loans and bank size is linear, so that as the bank expands in size, the effect of size on returns remains unaltered. In other words, the second derivative of net returns with respect to size is zero.

The findings of the paper indicate that for the small loan data the null hypotheses H1, H2, and H3 are rejected while the result for H4 is inconclusive. The signs for the test statistics for the first three hypotheses are negative, negative, and positive, respectively. The result on H1 is consistent with the idea that deregulation and technological change intensify competition and reduce costs in the small loan market. The result for H2 supports the proposition that small banks have an advantage in making small business loans and the finding on H3 denotes that large banks have improved their performance in the small loan market over time and may be able to gradually close the gap between them and their smaller size counterparts.

A few interesting points can be made about the empirical findings of this paper. First, the finding that small banks do have an advantage in processing credit information concerning small loans, characterized by relationship banking and soft information, is important because

in this case, small banks will be able to preserve their niche and thereby survive in a competitive environment, despite the fact that increased consolidation in the market has given the large banks considerable dominance. Second, the finding that large banks are closing the gap in performance between themselves and the small banks may be an indication that the latter can preserve their niche only in the short-run. In this case, in the face of intensified deregulation and technological progress, small banks will need to come up with some more essential solutions, than their small loan niche, for their long-run survival. Third, the finding that large banks have an advantage in the credit card market, where standardized loans, impersonal relationships, low unit costs, and the use of hard data are the norm, closes this market to the small banks. The latter will have to use outsourcing to satisfy the needs of their clients in this area. Fourth, these results are in accord with the DHU (2004) proposition that banks will diverge in direction with the growth of technology and deregulation, engendering a strategic wedge between the small and large entities.

## 6. Conclusion

Relationship banking is a growing area of research. Recent studies have produced significant insights into lending behavior. Relationships are important for many borrowers. Some banks, particularly small banks, emphasize relationships in lending. Evidence indicates that relationships do have value; they increase the availability of credit in some cases and reduce interest rates on loans. There is mixed evidence on the direction of the effect and importance of the length of relationships. Multiple relationships reduce the value of any single borrower lender relationship. Relationship banking must be taken into account when analyzing the effects of merger activities as new banks are formed to fill the gaps left by the firms disappearing in mergers. With deregulation and technological change much in the banking system is changing. However, small banks may be able to maintain the advantages they gain from relationship banking in the wake of these changes.

Much research is still needed in the area of relationship banking. There are many unanswered questions and there are contradictory answers to many of the questions already addressed. Most of the studies have looked at American banking, but some have examined other countries. There is still much to be done in the evaluation of banking relationships both in the US and around the world.

## References

- Akhavein, J., Goldberg, L. G., & White, L. J. (2004). *Small banks, small business, and relationships: An empirical study of lending to small farms*. Mimeo.
- Avery, R., & Samolyk, K. (2000). *Bank consolidation and the provision of banking services: The case of small commercial loans*. Federal Deposit Insurance Corporation Working Paper.
- Berger, A. N., Bonime, S., Goldberg, L. G., & White, L. J. (2004). The dynamics of market entry: The effects of mergers and acquisitions on entry in the banking industry. *Journal of Business*, in press.
- Berger, A. N., Frame, W. S., & Miller, N. H. (2002). *Credit scoring and the availability, price, and risk of small business credit*. Working Paper.
- Berger, A. N., Goldberg, L. G., & White, L. J. (2001). The effects of dynamic changes in bank competition on the supply of small business credit. *European Finance Review*, 5(1–2), 115–139.

- Berger, A. N., Kashyap, A., & Scalise, J. (1995). The transformation of the U.S. banking industry: What a long strange trip it's been. *Brookings Papers on Economic Activity*, 2, 55–218.
- Berger, A. N., Miller, N. H., Petersen, M. A., Rajan, R. G., & Stein, J. C. (2002). *Does function follow organizational form? Evidence from the lending practices of large and small banks*. NBER Working Paper No. W8752.
- Berger, A. N., Saunders, A., Scalise, J. M., & Udell, G. F. (1998). The effects of bank mergers and acquisitions on small business lending. *Journal of Financial Economics*, 50, 187–229.
- Berger, A. N., & Udell, G. F. (1995). Relationship lending and lines of credit in small firm finance. *Journal of Business*, 68, 351–382.
- Berger, A. N., & Udell, G. F. (1996). Universal banking and the future of small business lending. In A. Saunders & I. Walter (Eds.), *Financial system design: The case for universal banking* (pp. 559–627). Burr Ridge, IL: Irwin Publishing.
- Berger, A. N., & Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking and Finance*, 22, 613–673.
- Berger, & Udell, G. F. (2002). Small business credit availability and relationship lending: The importance of bank organisational structure. *The Economic Journal*, 112, F32–F53.
- Blackwell, D. W., & Winters, D. B. (1997). Banking relationships and the effect of monitoring on loan pricing. *Journal of Financial Research*, 20, 275–289.
- Boot, A. W. A. (2000). Relationship banking: What do we know? *Journal of Financial Intermediation*, 9, 7–25.
- Boot, A. W. A., & Thakor, A. V. (1994). Moral hazard and secured lending in an infinitely repeated credit market game. *International Economic Review*, 35, 899–920.
- Boyd, J., & Prescott, E. C. (1986). Financial intermediary coalitions. *Journal of Economic Theory*, 38, 211–232.
- Brevoort, K. P., & Hannan, T. H. (2003). *Small business lending and distance: Evidence from CRA data*. Mimeo.
- Carey, M., Post, M., & Sharpe, S. A. (1998). Does corporate lending by banks and finance companies differ? Evidence on specialization in private debt contracting. *Journal of Finance*, 53(3), 845–877.
- Carter, D. A., McNulty, J. & Verbrugge, J. (in press). Deregulation, technological change, and the business lending performance of large and small banks. *Journal of Banking and Finance*.
- Cole, R. A. (1998). The importance of relationships to the availability of credit. *Journal of Banking and Finance*, 22, 959–977.
- Cole, R. A., Goldberg, L. G., & White, L. J. (2004). Cookie-cutter versus character: The micro structure of small business lending by large and small banks. *Journal of Financial and Quantitative Analysis*, in press.
- Cyrnak, A. & Hannan, T. (2000). *Non-local lending to small businesses*. Board of Governors of the Federal Reserve System Working Paper.
- Degryse, H., & Ongena, S. (2003). *Distance, lending relationships, and competition*. Discussion Paper 02-16. Center for Economic Studies, KU Leuven.
- Degryse, H., & van Cayseele, P. (2000). Relationship lending within a bank-based system: Evidence from European small business data. *Journal of Financial Intermediation*, 9, 90–109.
- Denis, D. J., & Mihov, V. T. (2003). The choice among bank debt, non-bank private debt and public debt: Evidence from new corporate borrowings. *Journal of Financial Economics*, 70, 3–28.
- Detragiache, E., Garella, P. G., & Guiso, L. (1997). *Multiple versus single banking relationships*. Working Paper, Banca D'Italia, Rome.
- DeYoung, R., Goldberg, L. G., & White, L. J. (1999). Youth, adolescence, and maturity of banks: Credit availability to small business in an era of banking consolidation. *Journal of Banking and Finance*, 23, 463–492.
- DeYoung, R., Hunter, W. C., & Udell, G. F. (2004). The past, present, and probable future for community banks. *Journal of Financial Services Research*, 25 (2/3), in press.
- Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies*, 51, 393–414.
- Diamond, D. W. (1991). Monitoring and reputation: The choice between bank loans and directly placed debt. *Journal of Political Economy*, 99, 688–721.
- Fama, E. (1985). What's different about banks? *Journal of Monetary Economics*, 15, 29–39.
- Goldberg, L. G., & White, L. J. (1998). De novo banks and lending to small business: An empirical analysis. *Journal of Banking and Finance*, 22, 851–867.
- Greenbaum, S. I., Kanatas, G., & Venezia, I. (1989). Equilibrium loan pricing under the bank–client relationship. *Journal of Banking and Finance*, 13, 221–235.
- James, C. (1987). Some evidence on the uniqueness of bank loans. *Journal of Financial Economics*, 19, 217–235.

- Keeton, W. R. (1995). Multi-office bank lending to small business: Some new evidence. *Economic review* (pp. 45–57). Federal Reserve Bank of Kansas City, 80, second quarter.
- Leland, H., & Pyle, D. (1977). Information asymmetries, financial structure, and financial intermediaries. *Journal of Finance*, 32, 371–387.
- Levonian, M. E., & Soller, J. (1995). *Small banks, small loans, small business*. Working Paper, Federal Reserve Bank of San Francisco.
- Lummer, S. L., & Mc Connell, J. J. (1989). Further evidence on the bank lending process and the capital market response to bank loan agreements. *Journal of Financial Economics*, 25, 99–122.
- Nakamura, L. I. (1993). Commercial bank information: Implications for the structure of banking. In M. D. Klausner & L. J. White (Eds.), *Structural change in banking*. Homewood, IL: Business One Irwin.
- Peek, J., & Rosengren, E. S. (1996). Small business credit availability: How important is size of lender? In A. Saunders & I. Walter (Eds.), *Universal banking: Financial system design reconsidered* (pp. 628–655). Chicago, IL: Irwin.
- Petersen, M. A., & Rajan, R. G. (1994). The benefits of lending relationships: Evidence from small business data. *Journal of Finance*, 49, 1367–1400.
- Petersen, M. A., & Rajan, R. G. (1995). The effect of credit card competition on lending relationships. *Quarterly Journal of Economics*, 110, 406–443.
- Petersen, M. A., & Rajan, R. G. (2002). Does distance still matter? The information revolution in small business lending. *Journal of Finance*, 57, 2533–2570.
- Rajan, R. G. (1992). Insiders and outsiders: The choice between informed and arms length debt. *Journal of Finance*, 47, 1367–1400.
- Ramakrishnan, R. T. S., & Thakor, A. V. (1984). Information reliability and a theory of financial intermediation. *Review of Economic Studies*, 45, 415–432.
- Sharpe, S. A. (1990). Asymmetric information, bank lending and implicit contracts: A stylized model of customer relationships. *Journal of Finance*, 45, 1069–1087.
- Stein, J. C. (2002). Information production and capital allocation: Decentralized versus hierarchical firms. *Journal of Finance*, 57, 1891–1921.
- Stiglitz, J., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71, 393–410.
- Strahan, P. E., & Weston, J. (1996). Small business lending and bank consolidation: Is there cause for concern? *Federal Reserve Bank of New York Current Issues in Economics and Finance*, March, 1–6.
- Strahan, P. E., & Weston, J. (1998). Small business lending and the changing structure of the banking industry. *Journal of Banking and Finance*, 22, 821–845.
- Thakor, A. V. (1996). Capital requirements, monetary policy and aggregate bank lending. *Journal of Finance*, 51, 279–324.
- Williamson, O. E. (1967). Hierarchical control and optimum firm size. *Journal of Political Economy*, 75, 123–138.
- Wilson, P. F. (1993). *The pricing of loans in a bank-borrower relationship*. Working Paper, Indiana University.
- Wolken, J., & Rohde, D. (2002). *Changes in the location of small businesses' financial suppliers between 1993 and 1998*. Federal Reserve Board Memo.