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Does Distance Still Matter? The Information Revolution in Small Business Lending*

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Abstract

The distance between small firms and their lenders in the United States is increasing. Not only are firms choosing more distant lenders, they are also communicating with them in more impersonal ways. After documenting these systematic changes, we demonstrate that they are not a simple result of changes in the location of small firms, consolidation in the banking industry, or of biases in the sample. Instead, they seem correlated with improvements in bank productivity. We conjecture that greater, and more timely, availability of borrower credit records, as well as the greater ease of processing these may explain the greater amount of lending at a distance. Consistent with such an explanation, unlike in the past, distant firms no longer have to be observably the highest quality credits, suggesting that a wider cross-section of firms can now obtain funding from a particular lender. If, as implied, the size of credit markets faced by even small firms has gone up as a result of improvements in information technology, our results indicate that some consolidation of banking services may not raise substantial anti-trust concerns.

Small business lending has historically been very costly, because of the paucity of information about small firms and the high costs in terms of the personnel required to build the relationships required to get even that information. There has, however, been an interesting trend in small business lending; small businesses have been growing steadily more distant from their lenders. This demonstrates itself in two ways.

First, borrowers are becoming physically more distant from lenders. The distance between small firms and their lenders has grown from an average of 51 miles for lending relationships that began in the seventies to 161 miles for relationships that began in the nineties. The same pattern can be seen in the medians and seventy-fifth percentiles and across different kinds of lenders (see Table I). While banks are indeed closer to their clients – reflecting the greater transactions and information intensive nature of bank lending – even banks have been moving away; from an average of 16 miles for lending relationships that began in the seventies to 68 miles for relationships that began in the nineties.

A second trend is that the method of transacting business has moved increasingly from personal contact to using the phone or the mail. This trend is partly a result of the first one, but even correcting for physical distance, there seems to be a change in the manner of doing business.

What accounts for this trend? We show that changes in the location of small businesses, consolidation in the banking industry, and sample selection biases, are unlikely explanations. One possible explanation of the result is that a variety of infomediaries such as credit bureaus now exist. They collect information on payment history and defaults that hitherto used to be available to a lender only after a long relationship. Advances in storage technology and computing allow these data to be easily retrieved and processed, and also communicated quickly. As a result, even distant

lenders have timely information that hitherto used to be soft and unavailable at arm's length. This may enables them to react quickly to unanticipated contingencies, minimizing the loss from delay, and reducing the necessity to incur monitoring costs. Consistent with this conjecture, we show that the increase in distance is strongly positively correlated with measures of bank productivity, suggesting that reductions in the cost of gathering and analyzing information may indeed explain the results.

If greater, and timely, availability of information about credit history is indeed part of the explanation for why loans can now be made at a distance, we should find that distance is no longer such a strong predictor of credit quality as in the past. Intuitively, in the past only unimpeachable borrowers would have obtained credit at a distance because the costs of detecting potential borrower distress and resolving it would have been prohibitively high for a distant lender. But if these costs have fallen, then riskier credits should now be obtaining finance at a distance.

We do find that even though lender distance is a good indicator of creditworthiness, it is less important a measure than in the past. This suggests weaker credits are obtaining loans at a distance. Consistent with our argument that lenders are better able to monitor and control these credits, we do not find a commensurate increase in lender loan losses over our sample period. We therefore conclude the evidence is consistent with greater information availability being responsible for the increasing distance between lender and borrower.

Our evidence has a number of implications. There has been a debate about whether institutional lending, especially bank lending, is in a state of permanent decline because of the greater availability of information to arm's length financial markets today (see Boyd and Gertler (1994) and Gorton and Rosen (1995) for two views). Our evidence suggests that institutional lending also

seems to have benefitted from the greater availability of information. This has enabled institutions to lend to riskier clients whom they would have shunned in the past. Thus instead of driving financial institutions out, technological change may also create new sources of comparative advantage for them, as suggested by Merton (1995).

Our evidence may also better establish the sources of comparative advantage among different types of institutional lender. The theoretical literature in banking (e.g., Diamond (1984)) has emphasized the role of banks as "close" lenders serving informationally opaque credits. Empirical work has typically focused on firm characteristics such as firm age and size as measures of opaqueness, and found that banks do indeed lend proportionately more to such firms (see, for example, Petersen and Rajan (1994) and Berger and Udell (1995)). But evidence that banks are close has been more anecdotal than systematic. Our metrics of closeness, physical distance and the method of interaction, provide confirmation that banks are close, even after we account for natural reasons for closeness such as the greater frequency of transactions implied by the existence of deposit accounts. Moreover, the firms that on average stay closest to lenders seem to be informationally opaque ones. Thus the new metrics we focus on are consistent with the theoretical conjecture of the role of banks, and could be useful in further empirical work (also see Covals and Moskowitz (1999) and Garmaise and Moskowitz (1999), and Grinblatt and Keloharju (1999) for distance as a measure of asymmetric information).

Our evidence that the credit markets borrowers face are expanding has policy implications. A significant focus of anti-trust policy in banking has been on the consequences of bank mergers on local competition, and hence on small business lending. While our evidence indicates that small businesses continue to use their local banks for deposit transactions, the effective size of the credit

markets faced by small firms is continuously expanding. This supports Kroszner and Strahan (1999) who argue that technological innovation reduced the value of geographical restrictions on banking to their traditional beneficiaries (the small banks, for example), and permitted the deregulation that started in the 1970s. Anti-trust policy should optimally take into account the expansion in competition as a result of changes in technology while defining the size of the relevant market.

Finally, there is an ongoing debate about whether the effects of the improvements in information technology result in improvements in productivity (see Gordon (1999), for example). Our evidence, while not directly addressing this issue, suggests that at least in the financial sector, the nature of transactions is changing in a direction consistent with greater information availability and reduced costs of processing it. When combined with evidence that these changes are correlated with improvements in bank productivity, this should strengthen our belief that information technology does indeed increase productivity.

The rest of the paper is as follows. After a brief discussion of the issues, we document the growing distance between borrowers and lenders in section III. In section IV, we examine possible causes of the changes we document. In section V, we examine the consequences of these changes by asking if these changes had differential effects on the price of capital or access to capital. We conclude in section VI.

II. The Kinds of Information Available in Small Business Lending.

A. The Market.

Unlike for large firms, the information available about small and private firms has historically been limited and difficult to access. With the exception of some in high growth industries – which are a very small portion of our sample – analysts do not follow these firms. Since these firms do not

raise capital in public markets, they are not required to disclose much information. The firm's lenders clearly know about the firms, but these lenders are few in number and did not readily share information in the past. Since information about the firm was not compiled, stored, and distributed by a central bureau, but instead resided in the minds of the firm's bankers, much of it tended to be soft – whether the firm generally maintained adequate balances, for example, rather than hard information specifying when and to whom it had, or had not, made payments in the past.

B. Information Technology and Small Business Lending.

The use of information and communications technology, by which we mean everything from hardware like computers and phones to software like credit scoring and client profitability programs, has grown dramatically over the last two decades. It is an understatement to say the financial sector has been transformed by these changes (Strahan and Mishkin, 1999). Three aspects are particularly significant to us. First, the ability to collect, store, process, and communicate large amounts of information has expanded tremendously. Second, this has resulted in the expansion of the activities of infomediaries whose sole purpose is to collect, organize, and make available this information to paying customers. Third, the availability of hard, processed information lends itself to cost effective credit appraisal and monitoring techniques. Since the first aspect is fairly uncontroversial, let us examine the latter two in more detail.

1. Expansion of the Activities of Infomediaries.

Technological change has resulted in the expansion of the activities of infomediaries such as rating agencies and credit bureaus. Consider, for example, Dun and Bradstreet. It was founded in 1841, to establish a network of correspondents that would function as a source of reliable, consistent

and objective credit information.[1] Among its early reporters were four U.S. presidents: Abraham Lincoln, Ulysses S. Grant, Grover Cleveland, and William McKinley.

But big changes in its procedures came in the 1960s and the 1970s. In 1963, the introduction of the Data Universal Numbering System used to identify businesses numerically for data-processing purposes revolutionized the collation and distribution of business information. In the 1970s, a new "Advanced Office System" fully computerized D&B's data-collection operations, giving them the ability to link and analyze categories of information in entirely new ways, and to deliver information to customers faster and more economically. The pace of these changes have accelerated with the coming of the Internet (an era that post-dates our sample).

D&B updates over 11 million business records on an annual basis. Over our sample period, the number of firms on which they have records have grown 6.3 percent per year or over two and a half times the real growth of the economy (2.4 percent). Hundreds of millions of pieces of data, ranging from trade experiences to financial statements, are integrated every day into one file. D&B collects information from millions of on-site and telephone contacts with business owners and managers, as also from all federal bankruptcy filing locations, millions of trade and bank experiences, public utilities, over 2,500 state filing locations, and daily newspapers, publications and electronic news services. The data that is entered is automatically checked, and also subject to random verification. Finally, D&B alerts its customers to increases in a business's risk profile so as to prevent unnecessary losses.

The point is that specialized infomediaries like D&B can save on duplication, and amortize the costs of information collection over a larger number of customers than could lenders in the past.

[1]The information on Dun and Bradstreet in this section is obtained from their web site.

As a result, they can distribute more information than ever available to lenders in the past.

2. More Efficient Appraisal and Monitoring.

The greater availability of information at a distance could certainly make more distant lending feasible. But information technology, partly through the above channel, and partly by directly reducing the fixed costs of lending, could also expand the potential size of the market a small business can borrow from.

The increased availability of systematic reliable information has allowed loan officers to not only cut down on their own monitoring, but also automated many tedious and costly processes. For example, Automatic Loan Machines (ALM) now offer loans on the spot to individuals who have a reasonable credit history, regardless of who they banked with in the past (see Rajan (1996)). In an ALM, the process of taking the client's information, checking records, evaluating the expected profitability of the loan, and then making the actual loan has been completely automated.

Credit scoring – a process by which a loan applicant's credit history and characteristics are summarized in a credit score which forms the basis for approval or rejection of most applications – is increasingly used by large banks such as Wells Fargo to make lending decisions even for small businesses (Mishkin and Strahan, 1999). By using financial histories, credit reports, and scoring methods, the banks can dramatically lower the time their loan officers spend on a given application and thus the cost (Padhi, Srinivasan, and Woosley, 1999, Mester, 1997).

Small firms could gain substantially by a lowering of the fixed costs in lending (Frame, Srinivasan, and Woosley, 1999). The median loan in our sample is for $18,000. Firms in our sample were asked the total fee (not including interest) that they paid to obtain their loan. The level of the fee is uncorrelated with the size of the loan across the sample (correlation = 0.001). Thus, fees as a

fraction of the loan size declined with the size of the loan. Every ten percent increase in the loan size, lowered the fees as a percent of the loan amount by 4.8 percent (t=13.4). Given that they are largely fixed, reductions in the cost of loan origination and information collection could therefore produce the largest gain for smallest firms. Additionally, if transactions costs drop sufficiently, the number of lenders that are willing to lend may expand. This has the possibility of not only expanding the supply of capital to small firms, but also reducing the cost of capital to the extent that geographically larger markets are more competitive. We explore this issue in Section V.

There is a potential downside, however, to information technology. The literature on small firms has stressed the importance of relationship lending for small firms (see the survey by Berger et al. (1998) for references). Historically, part of the incentive for a lender to develop a relationship with a borrower, even if initial loans were not cost effective, was the knowledge that, if successful, the firm would be locked in to a long term relationship because the lender would have monopoly access to information about the borrower. The cost of the initial loan could be amortized over the longer relationship (see Greenbaum, Kanatas and Venezias (1989)). However, when information is widely shared, the credit market becomes more competitive, which could reduce the availability of credit (see Petersen and Rajan (1995) for theory and evidence). Another potential problem is that soft information is difficult if not impossible to incorporate when credit decisions are made by computer models and credit reports. Thus a concern is that small firms who are truly good credit risks – but on paper look like bad credit risks – will find capital more difficult to obtain. As the relative costs of funding such firms rise with advances in information technology, lenders may simply ignore them,

preferring to focus attention on the transparent.[2] We will attempt to sort out these explanations in the rest of the paper.

III. Changes in the Small Business Lending Market: Empirical Results.

A. Description of the Data.

Our data sample is drawn from the 1993 National Survey of Small Business Finance (NSSBF). This is a stratified random sample of small firms which was collected by the Board of Governors of the Federal Reserve System and the Small Business Administration. In addition to financial information about the firm (balance sheet and income statement information for 1992), the data contains a thorough documentation of the firm's relationship with financial institutions. To be in the sample, the firm must be a for-profit firm with fewer than 500 employees. Consequently the firms in our sample are small. The firms have a mean 1992 sales revenue of $3.6M (median $ 400,000) and a mean book value of asset of $1.7M (median $ 153,000). For a more complete description of the data see Cole and Wolken (1996).

Firms in the survey were asked for an exhaustive list of the financial institutions with which they have a business relationship. The relationship can be a credit relationship (they borrow from the institution), a service relationship (they purchase financial services from the lender), or a deposit relationship (they have a checking or savings account with the institution). From this information, we can build a picture of how the lending relationship or environment for small firms has changed

[2] "(W)e should not lose sight of the exceptional economic value of ...old-fashioned face-to-face interpersonal banking. The newer technologies may be awesome but human nature does not change – we still appreciate a face across the desk more than a computer screen." Alan Greenspan, "Challenges Facing Community Banks," speech before the Independent Community Bankers of America, March 8, 2000.

over time. For each institution with which the firm has a relationship, the firm is asked how long they have been doing business with the institution. From this we calculate the calendar year in which the business relationship between the firm and the lender began.

To examine the change in the small business lending market, we focus on two measures of how close firms are to their lenders. The firms are asked how far the lending institution is from the firm. This is the distance from the main office of the firm to the office or branch of the lender that the firm uses most frequently. We also know the predominant way in which the firm and the lender conduct business (in person, by phone, or by mail). These variables will be the focus of our analysis.

From the National Survey of Small Business Finance (1993), we generate a data set of lender borrower pairs. The firms in our data set may borrow from multiple lenders or they may borrow from a given lender in multiple ways (an uncollateralized line of credit and a collateralized mortgage). Since the nature of the loan and the lender may affect the nature of the relationship (physical distance and method of communication), we generate a data set where each observation represents a single lender-borrower pair. There are, on average, just over two lender-borrower pairs per firm.

B. Distance from Lender.

The distance to a firm's lender is, not surprisingly, a skewed distribution (see Table I). Thus we use the log of one plus the distance between a firm and its lending institution as our favored measure. The average log distance to the lender is 2.6 (13.5 miles) with a standard deviation of 1.9 (6.7 miles).[3] By taking logs, the distribution moves closer to a symmetric distribution. The median of the distribution is 2.3. Since distance is related to the cost of collecting and transmitting

[3] The mean distance between firm and lender is 115 miles if we do not take logs first. The median distance is 9 miles (see Table I).

information about a potential borrower, we want to examine the factors which determine how far a firm is from its lender. In particular, firms that are informationally transparent will be cheaper and easier to evaluate from a distance and thus can borrow from further away. By examining the correlates of distance, we can explore the factors that might make small firms more or less informationally transparent.

1. Loan sources and lender characteristics.

One of the primary functions of banks is their role as a monitor (see Diamond (1984), Fama (1985), James (1987)). This role includes an initial evaluation of the borrower's type as well as continuous monitoring of the actions of the borrower. Given the limited publicly available data on small/private firms, the role of monitor can be particularly valuable.

Consistent with this intuition, small firms rely more on banks than on other kinds of lenders. The lenders in our sample can be classified into five basic categories – two internal and three external sources. Internal sources include loans from the owners (16 percent of debt) and loans from family and friends (6 percent of debt).[4] The remaining 78 percent of debt comes from what we call external sources. These sources can be divided into banks (69 percent of external debt), non-bank financial lenders (25 percent) and non-financial lenders such as other firms (5 percent).

The identity of the firm's lender has a strong effect on how far away the lender is. Non-banks are significantly further from the firm than banks – 118% further, on average (see Table II, column I). This is consistent with banks being more active monitors and monitoring being difficult across greater distances. Thus firms that want or need monitoring choose close banks. The distance to non-

[4] Government loans comprise a very small fraction of the firms' borrowing (less than 1 percent). Although this is external debt, we do not include it the following analysis as we want to focus on the firm's development of relationships with private for profit lenders.

financial firms in our sample lies in between that of the banks and non-banks.

The frequency with which a firm has to transact with a lender can also determine how close that lender is. Checking accounts presumably imply more frequent transactions and possibly more frequent monitoring. Banks that also provide their borrowers with a checking account must be significantly closer. They are! Based on the results in Table II, the distance doubles with each step as a firm moves from a bank where it has a checking account, to a bank without a checking account, and finally to a non-bank.[5] Interestingly, not all lenders that provide services are closer. Lenders that provide services other than checking or savings accounts are in fact further.[6] This suggests transactions costs cannot be the entire story. A possible explanation is that checking accounts are special. Fluctuations in the firm's balance in the account can provide the bank with additional information (Nakamura (1989), Mester, Nakamura, and Renault, 1998)) and seems to increase the availability of credit (Petersen and Rajan (1994)). So the existence of a checking account may reflect, in part, the need for monitoring, which may also explain the closeness. This is also consistent with our finding that having a saving account (that is a less efficient way of monitoring but may involve transactions costs in use) moves the firm closer to its lender, but by only 16% (regression not reported).

Lender type is not independent of other characteristics of the firm's borrowing. The loans in

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[5] In our sample, over ninety-nine percent of checking accounts are provided by banks.

[6] We also examined the effect on distance of other services the firm may obtain from the lender. Firms which obtain additional financial services are further from their lenders on average. The magnitude of the effect depends upon the type of service: transaction services (such as making change, processing credit cards, and executing wire transfers) are 11% further (t=1.7), cash management services are 43% further away (t=5.3), and credit related services (such as bankers acceptance and sales financing) are 26% further away (t=3.1).

our sample are divided into six loan types and these are not distributed evenly across banks and non-banks.[7] However, even when we include controls for loan type and whether the loan is collateralized, the coefficients in Table II change only slightly (regression not reported).

2. Systematic changes in the lending market.

Over time the environment in which our firms borrow has changed. To examine the systematic changes in the borrowing market, we included the year the firm began borrowing from a given lender. This variable measures systematic changes in the small business lending market independent of the characteristics of the firms. We find that the distance between the firm and their lenders is growing at 3.4% per year (t=7.4). Thus holding the firm characteristics constant, a firm that began borrowing from its bank in 1993 is 34% further away from the bank than an otherwise identical firm that first borrowed from its bank in 1983 (Table II, column I and Figure I).

The conditional growth rate in the distance between firms reported in Table II, understates the unconditional growth in distance. If we do not control for lender type and the presence of a checking account, the estimated growth in distance rises from 3.4 percent per year to 6.9 percent per year (t=13.3 – regression not reported). Over time, new lending relationships are moving from banks with checking accounts (which are close) to non-banks without checking accounts (which are farther away). Although banks are closer to their borrowers on average, both banks and non-banks have been moving away from their lenders. The distance is growing slightly faster for non-banks than banks (4.4% versus 3.0% per year), but the difference is not statistically significant (regression not reported). Thus the factors that are driving this change are affecting all lenders.

[7] The firms in our sample borrow through lines of credit, leases, motor vehicle loans, mortgages, equipment loans, and other loans. Leases, motor vehicle loans, and equipment loans are collateralized by definition. The other three loan types may or may not be collateralized.

3. Alternative Explanations For the Increase in Distance.

a. Changing distribution of firms.

The growing distance between firms and their lenders that we document could arise from several sources. One possibility is there has been a systematic change in the type of firms that are beginning a relationship with a lender over time. As a first test of this we included a set of control variables. Specifically, we include controls for the firm's industry (two digit SIC) or the census region in which the firm is located. This does increase the explanatory power of the model. The industry controls ($F(58,5916)=3.0$, $p<0.01$) and the census region control ($F=8,5966)=3.1$ $p<0.01$) are both statistically significant. However, our estimate of the rate at which firms are moving away from their lenders does not change when we add these controls (see Table II, columns II-III). We also exploit the panel structure of our data by including a control for each firm. This dramatically raises the explanatory power of the model (the R^2 rises from 0.307 to 0.711). This implies that firm characteristics are an important determinant of distance which we explore below. Adding firm controls to the regression actually raises the coefficient on the year the relationship began slightly from 3.4 percent per year to 4.0 percent per year. Whether we estimate the growth in distance based on within firm variation (variables are defined as deviations from firm means) or based on between firm variation (variables are defines as the mean for each firm), the estimated coefficient is essentially the same (see Table II, column IV and V).

It is also possible that the location of firms is changing over time. For example, firms may now be moving from urban areas to predominantly rural areas where distances between businesses are larger. Such a change could in theory explain our findings. We know whether the firm is in a Standard Metropolitan Statistical Area (urban) or not (rural) and rural firms are 13 percent further

from their lenders. We estimate the year coefficient separately for firms located in rural or urban areas. The coefficient is not statistically different across the two samples (p=0.23) suggesting that the possibly changing location of firms cannot explain the findings.

b. Sample selection bias.

The data set we use is a synthetic panel. Data on the year a firm began a relationship with a given lender helps us describe a firm's borrowing patterns over time. However, the data set is conditioned on the firm existing in 1993. Firms that do not survive will obviously not be included in our sample. If the selection mechanism is correlated with distance, then our estimated coefficient would be biased. In addition, to requiring that the firm surviving, observations appear in our sample only if the firm-lender pairs also survive. If the type of pairs that die is correlated with distance, this will also bias our coefficient.

We first describe each of the possible selection processes that must be at work for a survival bias to generate our results and then examine the empirical evidence to determine their validity. We examine firm survival first. The literature on relationship lending suggests that close lenders (often banks) are good at looking into informationally opaque firms and determining which are truly good firms. They may also be more able and more willing to bail out their good borrowers when they experience temporary financial difficulties. As lenders migrate further away from firms, bailouts may become more costly and less common. If firms whose lenders are further away are less likely to be rescued, they will be less likely to survive. This would imply that surviving firms will be closer on average than the full sample of firms that begin relationships with lenders. This may be a problem for our results since the firms that start a relationship in 1991 need survive only 2 years to be in our sample, however, firms that begin a relationship in 1981 must survive 12. Thus, sample selection

will induce a positive coefficient on the calendar time variable even if there is no change in the distribution of how far firms go to borrow from their lender.[8]

To test for the importance of these sample selection biases we supplemented our sample with data from the 1988 NSSBF. This allows us to directly examine how firm survival affects our estimates. In the expanded data set, we can examine two firms that both began borrowing from their first lender in 1985, for example, when they were both five years old. The one from the 1993 sample had to survive 8 years to be included in the sample while the one in the 1988 sample needed to survive only 3 years to be included in the sample. If the selection mechanism we described is working, we will see that controlling for the year the relationship started, observations in the 1993 sample are closer – as they have had to survive longer to remain in the sample. The results are displayed in column VI of Table II. Firms in the 1993 sample are 10 percent closer and the coefficient is statistically significant (t=2.0). This is consistent with the sample selection hypothesis, but also with any other difference between the two samples. Nevertheless, if sample selection is truly responsible for our results, once we control for it the coefficient on calendar year should fall. Instead, we find the distance between lenders and borrowers is growing faster over time – 3.8 percent per year (Table II, column I). Our initial estimate was biased downward.

The second potential selection bias arises if the firms in our sample drop their original lenders as they age. If firms become more well known as they age and grow, they might expand the geographic market in which they can borrow. We see this in Table II where subsequent lenders are further away than the firm's first lender. A selection problem may arise, however, since we only

[8] If instead, firms that are closer to their lenders are more likely to die, then the coefficient on the calendar year variable is understated and firms are moving away from their lenders faster than our estimates suggest.

know which of the firm's lenders is first among the ones they have retained. [9] If they drop the early (and close lenders), this could bias our calendar year coefficient upwards. However, once we include the firm's age in the regression, the firm's age and not calendar year should measure this effect. That the coefficient on calendar year is still important after including firm age suggests this source of bias is not significant.

We can also directly test the importance of this bias. First relationships are likely to start soon after a firm is founded. So if we include only firms whose first relationship begins soon after the firm was born, we will have a sample that is less subject to the alleged selection bias. When we cut the sample down to firms whose first observed lending relationship starts during their first five years of life, we lose a third of the observations. Truncating the sample in this way, however, raises, rather than lowers, the coefficient on calendar year. For the firms for whom we are less likely to miss the first lending relationship, the distance between firms and their lenders grows at 3.9% per year (Table II, column VII).

4. Firm characteristics.

In addition to systematic changes in the lending environment for small firms we are also interested in the cross sectional variation in the distance between a firm and its lender. Different firms have different needs to be monitored and they have different degrees of informational transparency. Both of these effects may help explain the cross sectional variation in how far firms are from their lenders. Additionally, by controlling for firm characteristics, we have an additional

[9] We define the firm's first lender as the lender with whom the firm has been conducting business the longest. If the firm began its relationship with multiple institutions in that year, we classify all such lenders as the 'first' lender. Financial institutions with which the firm has no interaction (credit, deposit, or service) would be lost in our sample although they may have been the firm's first lender.

robustness test of our finding that there has been a systematic increase in distance between lender and borrower.

Information about a firm accumulates over time. The longer it has operated, the greater the firm's track record, and the more the market may know about the firm. To measure this effect we include in the regression both the firm's age as well as whether this is the firm's first lender. Firm age is measured as of the date the relationship with the institution began. Thus if the firm began business in 1975 but began a relationship with the lender in 1980, we code firm age as five. Firms that are older when they start borrowing from an institution do borrow further from home, but the coefficient is effectively zero (0.001). We do find that as the firm expands its circle of lenders it also increases the distance to its lender. A firm's first lender is about 16 percent closer than its subsequent lenders (see Table II, column I). This coefficient should be interpreted with caution. If we estimate this coefficient using only within firm variation (comparing a firm's first to later lenders), the coefficient is zero (Table II, column IV). If we estimate the coefficient using between firm variation (comparing firms with only a first lender to firms with multiple lenders), we find that the coefficient is significantly larger (Table II, column V). Thus the firms that have expanded to multiple lenders are further from their lenders (both first and later) on average than firms who have only a single lender.

Informational transparency, or the ability to evaluate the firm's credit quality at low cost, will lower the cost of lending to a firm. To the extent that this has a differential effect on creditors that are physically further from the firm it will raise the average distance between firms and lenders. We measure information transparency four ways. First, we identify firms that have a business credit card. Since these are usually granted based on a credit report, this implies the external market knows a

sufficient amount about the firm to grant it credit based on information in computer files. Thirty-two percent of the firms in the sample have a business credit card.[10] The survey also asks whether the person answering the income statement and balance sheet questions had records such as tax forms and/or financial statements to help in answering these questions. The existence of such records suggests greater transparency to outside investors. The final measures of record keeping we use are from the governance structure of the firm. We use the fraction of the equity owned by the largest shareholder as an (inverse) measure of shareholder dispersion. The more dispersed the shareholders, the greater the need for the firm to systematize their reporting function and make information easily accessible to outside investors (alternatively, the firm attracts dispersed shareholders only when reporting is systematic). We also include an indicator of whether the firm is a franchise – a franchise is likely to have a more systematized reporting structure in order to measure franchise fees.

The expanded regressions with the additional firm characteristics are reported in Table III. The results on record keeping are mixed. The presence of a credit card has no effect on the distance to the firm's lenders. Firms that have financial records detailing their financials do borrow further from their lenders. The difference is 9 percent and is statistically significant (see Table III, column II).[11] The ownership structure has a large and statistically significant impact on distance. Expanding the largest shareholder's stake from zero (a completely diffuse ownership structure) to one hundred

[10] The survey also asks if the owner uses a personal credit card for business expenses. Fifty-four percent of the firms have either a business credit card or a personal credit card that the owner uses for business expenses.

[11] If we allow the slope on calendar year to vary by whether the firm had records, we find that firms with records are not only further away on average, but this distance is growing faster. The coefficient on calendar year is 2.9 percent per year for firms without records and 3.9 percent per year for firms with records. The difference is not statistically significant (p=0.25).

percent, lowers the distance to a firm's lender by twenty-six percent (t=3.4). We also find firms that are franchises – and are thus expected to be more transparent – also borrow 29 percent further away (t=3.2).

We examine the characteristics of the manager to determine whether older and more experienced managers borrow from institutions that are further from the firm. Both the age and years of business experience are measured in the year the relationship started. Neither variable has a significant effect on the distance between borrower and lender. Also, whether the firm is managed by a non-owner does not appear to matter.

The final set of firm characteristics we examine is the sales region of the firm. The larger the firm's sales region the more likely distant lenders will know about the firm. In the survey, the firms are asked if their sales region is local, regional, or national. As the firm's sales region expands, so does the distance between the firm's headquarters and their lender. Most of the increase, however, occurs when the firm shifts from a regional sales region to a national sales region. The distance to the lender increases by 29% in this case (t=4.9).

C. Method of Communicating with Lender.

Distance can be related to the costs of transmitting information. How this information is transmitted provides more evidence about the type of information being exchanged. In addition to knowing how far a lender is from a firm, we also know the most frequent method by which the firm and the lender conduct business. Firms conduct business with their lender in person (46% of the firm-lender pairs), by phone (19%), or by mail (35%). Relationship lending – which is based on the collection and processing of soft information – is more likely to be based on personal contact. Thus we would expect that the use of written communication (mail) instead of personal contact to be

correlated with more informationally transparent firms. These firms do not need to rely on personal contact to provide the lender with the soft information they require. They are more likely to have their lender rely on the type of hard information that is easily transmitted using technology across greater distances and at lower cost. As with distance, we find that personal communication between lenders has declined from 68% in the seventies to 34% in the nineties (Table I – Panel B).

We examine the determinants of the communication method chosen by estimating an ordered logit model with "in person" being the lowest category and "by mail" being the highest category. Therefore, positive coefficients indicate variables that raise the probability of communicating by mail and lower the probability of communicating in person. We expect higher values to be correlated with more informationally transparent firms. The variables we use to explain the method of communication are the same as we used in the distance regression.

1. Firm Characteristics: Informational Transparency

The role of banks as a monitor and the use of checking accounts to monitor the firm can be seen in the estimates (see Table IV). Firms that borrow from a bank are more likely to communicate in person. If they have a checking account at the bank, this increases the probability of communicating in person even more. Comparing a firm that borrows from a bank where it has a checking account to one that borrows from a non-bank where it does not have a checking account, the probability of communicating in person drops from 74 to 14 percent.[12]

We also find that firms that we expect to be more informationally transparent, are more likely to use arm's length communication (phone and mail) rather than communicating in person. The probability of communicating in person drops for firms that used records to answer the financial

[12] All other variables are set equal to their sample means, when probabilities are calculated.

statement questions in the survey, have diffuse ownership structures, and have a national sales region. The last finding is particularly interesting. It suggests that firms with a national reach do not borrow from lenders remote from the head office simply because the firm has local branches near the lender (see Table III). In fact, lenders do indeed appear far from such firms because the method of communication is by phone or mail (see Table IV). Rather, a national sales region seems to expand the pool of lenders the firm can borrow from because the firm has a national image and is therefore more transparent.

Firms are more likely to use personal communication with their first lender and then move away from personal communication with later lenders. Thus as firms become better known, they rely less on personal communication. Such firms are more likely to have a documented track record – just the type of hard information which makes personal communication less necessary. Unlike our distance regressions, we find an independent role for firm age. Firms that are older when they begin a relationship with a lender are less likely to communicate in person, although the magnitude of the effect is small. A firm that is five years old when it begins borrowing from its lender, is one percent less likely to communicate in person than a start up.

2. Changes in the Lending Market.

The distance between firms and their lenders have grown systematically over the last two decades. We would expect the form of communication to mirror these changes. Holding the firm characteristics constant, relationships that started more recently are less likely to communicate in person with their lender and more likely to communicate by mail (See Table IV, column I and Figure II). The probability that a firm will communicate with its lender in person drops from 59 percent for relationships that started in 1973 to 36 percent for relationships that started in 1993. This coefficient

is statistically significant (t=7.3).

Although the shift from communicating in person to communicating by the mail is related to the shift to more distant lenders, the two effects are not exactly the same. To test this hypothesis, we include the distance to a firm's lender as an explanatory variable in our estimated multinomial logit. As expected, firms whose lenders are further away are less likely to communicate in person (see Table IV, column II) because, not surprisingly, distance raises the cost of personal communication. Raising the log distance from the 25th percentile (1.1) to the 75th percentile (3.8) lowers the probability of communicating in person from 58 percent to 30 percent (t=23.3). Including distance in our model, reduces the coefficient on calendar year from the 0.047 to 0.032. The fact that the coefficient on the year the relationship started is still positive and statistically significant (t=4.7) implies that the systematic change in how firms communicate with their lenders is more than just the effect of increased physical distance. Holding the distance to a firm's lender constant, there has still been a change in the way firm's communicate – away from face to face communication and toward communication through the phone or mail. The probability of communicating in person now drops from 52 percent for a relationship started in 1973 to 37 percent for a relationship started in 1993. Although this fall is only 67 percent of the above estimates, it is still quite large.

To summarize, we find that the distance between firms and lenders is increasing over time. Firms and lenders appear to be using more impersonal ways of transacting over time, even accounting for the increase in distance. These changes does not seem to be because of any systematic change in the characteristics of firms. Could they be because the environment – and not necessarily technology – has changed? This is what we examine in the next section.

IV. Systematic Changes in the Lending Environment.

By including a time trend we have been able to characterize the changing environment in which small firms and their lenders operate. However, we have not directly identified the source of this change – other than by showing it is not simply a change in the distribution of firm characteristics. In this section, we explore several changes in the small business lending environment that may explain our results.

A. Bank Consolidation.

One of the major trends in banking has been the consolidation of the industry. The number of banks in the U.S. has declined by about 30 percent in the last decade (Berger, Demsetz, and Strahan, 1999). Much of this decline has been in the form of mergers (Berger, Saunders, Scalise, and Udell, 1997). The existence of fewer banks could explain the trend we find toward greater distance between firms and their lenders.

To control for differences in bank density across regions and across time we include a measure of bank density in our model. We don't know the exact location of each firm. We only know which of nine census regions the firm resides in. Thus our bank density variable (log of banks per 1000 square miles) varies across time (the year a relationship started) and area (the nine census regions). We also calculate branch density (log of branches per 1000 square miles) since it is the number of physical locations which most directly affect where and how firms build their lending relationships.

Bank density is correlated with the average distance between firm and lender (see Table V, column II). Every ten percent increase in the density of banks lowers the average distance by 0.8 percent (t=3.7). The coefficient on branch density is smaller economically and less statistically

significant (t=1.9). Each ten percent increase in branch density lowers distance by 0.4% (regression not reported). Based on the magnitude of these coefficients, changes in bank or branch density do not explain the growing distance between firms and their lenders. The increase in distance attributable to changes in density over time is only 2 percent – a small fraction of the actual increase.

Although there has been a significant loss of banks, the effect on the distance from lender and method of communication has been minimal. A simple explanation of this finding can be found in Figure III. The decline in banks has been dramatic, but only starts in the mid eighties. The effects we find begin much earlier (see Figure I and II). This is why the inclusion of bank density does not change the coefficient on calendar year (see Table V). More importantly, the number of branches – the physical locations that firms use to conduct their business and the primary determinant of distance – have not fallen (see Figure III). The number of bank branches has risen about 4 percent per year. Much of this growth in the last decade has come from banks acquiring savings and loans. Thus counting both sources, the total number of branches has remained static since the mid eighties (see Figure III and Berger, Demsetz, and Strahan, 1999). Finally, recall that we even find non-banks are moving away from firms. Since it is not clear that non-banks are consolidating to the same extent as banks, we have to find an explanation that has a more systematic base.

B. Growing Use of Information Technology.

If computers and information technology allow lenders to do their job more efficiently, we should see greater use of the technology as well as a transformation in the way lending is conducted (Gorton, 1996). As discussed above, computers are very good at processing information using predefined rules. Our finding that the physical distance between lender and borrower has expanded and that the interaction between the two has become less personal is consistent with the intuition that

information technology is replacing the traditional role of the loan officer. In this section we try to connect our results to measures of information technology use.

The use of credit scoring models is an example of the classic substitution of capital for labor. Previously, loan officers would read the application material from the borrower, talk with the borrower, maybe interview references and then make a decision – a very labor intensive process – but the nature of the information upon which the decision was being made demanded such time (Mester, 1997). Credit decisions based on credit reports (computerized data) and analytic decision rules, however, require less of the loan officer's time. It is not that personal intervention has been eliminated – it has just been focused on the most marginal decisions. Loan originations involve fewer people and more computers.

To see if this is what explains our findings, we collected data on bank employment. The ideal measure would be the number of loan originations per loan officer, as this is a measure of labor productivity and should rise systematically as information technology supplements the efforts of the loan officers. In the absence of this data, the empirical challenge is to find the correct standardization. Bank employment has grown over the last two decades. However, when standardized by either total lending or the size of the economy, bank employment is shrinking (see Figures IV-A and IV-B).

To test the hypothesis that changes we find in the lending market are due to the greater use of information technology, we include in our regressions the log of bank employees standardized by total loan volume or by the size of the economy (total regional output). The results are reported in Table V. In both cases, fewer employees are associated with a greater distance between lender and borrower. However, only when we standardize number of employees by the total output, is the

coefficient statistically significant (t=3.5 – see Table V, column III). In this case, every ten percent decrease in the number of employees to gross regional product raises the distance to a firm's lender by 5.4 percent.[13] This explains a large fraction of the increase in distance over the last two decades. The average ratio of bank employees to gross regional product (in employees per million dollars) falls from 0.77 to 0.26. Based on the coefficient estimate in Table V (column III), this implies that distance should have risen by 58 percent.When we include employees standardized by gross regional product, the coefficient on year the relationship originated drops significantly and is no longer statistically different from zero (t=-0.5, see Table V, column III). Thus increases in bank productivity correlate strongly with growing distance.

The results for method of communication are qualitatively similar (see Table VI, column III). As the number of employees standardized by total loan volume or gross regional product has declined distance has increased. In this model, both variables are statistically significant (t=-4.8 and -2.8). As with distance, these variables explain a large fraction of shift away from personal communication. The coefficient on year the relationship originated is now only marginally significant (p = 0.21). The explanatory power of the time trend represented by this variable has been absorbed by the new variable. The small business lending market has changed. It has become a larger market geographically and a market characterized by less personal interaction.[14]

Given the regression results and Figures I and II there may be concern that any trending

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[13] Using total loans and total output in real dollars does not alter our results significantly. For example, the coefficient on the log of the number of employees to gross regional product in real dollars is -0.475 opposed to -0.537 when nominal dollars are used. The t-statistic is -3.2.

[14] This is consistent with Jayaratne and Strahan (1996), who argue that the liberalization of banking markets in various states over the 1980s did improve the quality and efficiency of lending.

variable will explain the shift in distance and method of communication that we document. This is not correct, as the results in Table V and VI demonstrate. The data are able to distinguish between a simple time trend (the year variable) and the standardized bank employees variable, with only the latter being statistically significant. However, to demonstrate our point more strongly, we ran an additional test. We created a new variable which is the log of bank employees standardized by total loans and by total output, not for the region in which the firm is located, but for the United States as a whole. This variable has time series variation, but no cross regional variation, by construction. It is correlated with the regional variable, but not perfectly (ρ=0.79). When we include both the region specific employee variables and the aggregate (US) employee variables, the national variables are statistically insignificant both singly and jointly (see Table V, column IV). The distance between a firm and its lender depends upon the use of more productive techniques by banks in the firm's region, not in the country at large.

V. Does More Timely Information Explain the Growing Distance.

Lenders may be willing to go further because they expect to get information for the purposes of monitoring and controlling firms more easily and quickly at a distance than in the past. Credit reports from centralized bureaus may be one source of this additional information. If new technologies permit better monitoring and control at a distance, we should see that the ability to borrow at a distance is no longer such a strong signal of the intrinsic credit quality of the firm. In other words, in the past only unimpeachable credits could borrow at a distance because there was no way for a distant lender to anticipate when a weaker borrower would get into trouble, and very costly to resolve distress at a distance when the borrower was in trouble. More recently, however,

lower quality borrowers should be able to get credit at the same distance because information costs are lower and timely intervention is now possible.

We have two immediate problems in implementing this test. First, we do not have a measure of the credit quality of the borrower when the relationship started. However, we do know the rate on the last loan the firm obtained, as well as whether the firm's last loan application was approved or rejected. This gives us two measures of recent credit quality.

A second problem is that lender distance is, by itself, not a perfect measure of a firm's intrinsic ability to tap into a wider pool of lenders. Lenders can be at a distance because information about the firm's quality is widespread (i.e., it is informationally transparent). But a firm can also be at a distance from its lenders simply because there are no nearby lenders (firms in rural areas are 13% further from their lenders – see Table III), or no nearby lender will lend. We can, however, determine the ability to borrow at a distance that is correlated with public information. This is the estimated distance based on the regression coefficients in Table III and is a measure of the transparency of the firm.[15]

If poorer credits can borrow at a distance now, while they could not in the past, predicted distance from lending relationships which were established in recent years should be a weaker signal of credit quality than distance from relationships set up in the distant past. In other words, if a firm could establish a relationship at a distance in the early 1980s, it must have been really high quality,

[15]We use the coefficient estimates from Table III column II. However, when we predict distance, we use only those variables which we think measure the firm's informational transparency. These include whether the firm uses records, whether the firm has a business credit card, the ownership share of the largest shareholder, whether the firm is a corporation, whether the firm is a franchise, whether the firm is owner managed, the age and experience of the owner, and the sales region of the firm.

while if it could establish a relationship at a distance in the early 1990s this may be a positive but a weaker signal of quality. We examine the effect of predicted distance on the price and availability of credit in Tables VII and VIII, both by itself and when interacted with time. This allows us to see the effect on informational transparency on the cost and availability of finance and how this relationship has changed over our sample period.

In Table VII, we regress the rate a firm obtains on its most recent loan against predicted distance as well as other controls from Petersen and Rajan (1995). Predicted distance has a negative and significant effect on the rate (see column I). Raising predicted distance by fifty percent lowers the cost of borrowing by 25 basis points. This is twice the effect of a fifty percent increase in the size of the firm. Thus the ability to borrow at a distance, predicted by measures of the firm's informational transparency, seems to be a good signal about the credit quality of the firm. When coupled with our finding that banks are physically much closer to clients, this supports the theoretical intuition that banks focus on informationally opaque clients.

When we include an interaction between the year the relationship started and distance, however, the coefficient for the interaction is not significantly different from zero (see column II). Although predicted distance has a large effect on the cost of capital, this effect does not appear to have changed over time. In column III we estimate standard errors by bootstrapping, and this does not significantly change the statistical power of our results.[16]

[16] The reported standard errors in column II are OLS standard errors. This is a problem since predicted distance and predicted distance interacted with the year the relationship started are predicted regressors. We estimated standard errors by bootstrapping the model. A sample with replacement was drawn. We then estimated the first stage, created the predicted distance variables given those estimates and then estimated the second stage (the model in Table VII column II). This gave us a single estimate of the coefficients. This was done 1000 times and the standard error of this distribution of estimates is reported in column III (Table VII).

Instead of predicted distance as a measure of transparency, we can use the predicted method of dealing with the lender (in person or not). A lender who is willing to deal with a borrower by phone or mail, rather than in person, should be signaling the credit quality of a borrower. It turns out that predicted method has exactly the same qualitative effect as predicted distance. If a lender is willing to accept dealing with the firm by mail or phone, the firm gets a lower rate on its most recent loan suggesting the firm is lower risk. Again, the coefficient of the interaction between predicted method and the year the relationship started is insignificant.

The absence of time effects may reflect the fact that the rate for small loans is often determined by standard boilerplates, based on standard information such as firm size and industry. Petersen and Rajan (1994) find that while the rate charged on a loan is not sensitive to measures of the soft information that is generated about a borrower (such as the duration of the relationship with the lender) the availability of credit is. So if soft information is more widely available over time, the reduced effectiveness of distance as a signal of credit quality over time will not be seen in the rate but in the availability of credit. As we will now argue, this is indeed the case.

A direct measure of whether credit is available for a firm is whether the firm's last application for a loan is approved. Of course, a loan can be approved only if it was applied for. The firm will apply for credit if it needs funds and it thinks approval is sufficiently likely, and not otherwise. However, those who need funds but do not apply because they think their application will be refused should also be thought of as rationed. Therefore, a firm is included in the regression below if it either applied for a loan, or needed financing but did not apply for a loan because it felt

it would be denied.[17] Firms whose loan application was approved are coded as one, the rest of the sample is coded as zero. Those who needed funds but did not apply are considered equivalent to those who needed funds and were rejected.

Together with controls for availability taken from Petersen and Rajan (1995), we include predicted distance as an explanatory variable in Table VIII. Predicted distance is indeed a measure of intrinsic credit quality of the firm. Higher predicted distance is strongly positively correlated with greater availability of funding (column I). Increasing predicted distance from the 25 to the 75 percentile raises the probability a loan will be approved by 21 percentage points. Unlike the results for the interest rate (Table VII), the inclusion of an interaction between the year the relationship was started and predicted distance has a significant negative coefficient (column II) which persists even after we compute boot strapped standard errors (column III). This suggests that the distance a firm is able to borrow at has become less significant in distinguishing the credit quality of a firm in recent times. The coefficient estimates imply that role of predicted distance on the firms' access to capital is approximately 25 percent less in 1993 as compared with 1973. As before, the results are similar when we use predicted method of transacting instead of predicted distance.

We determine the robustness of these results we estimated several alternative specifications. We do not have a firm's characteristics at the time the relationship started, but only at the time of the survey. These characteristics may be very noisy proxies of firm transparency for relationships that started very early – the longer the lag, the more characteristics have changed. To see how important this problem is, we include only relationships started after 1983. In the regression

[17] The survey asks firms if there was a time during the last three years that the firm needed funds but did not apply for a loan because the firm felt they would be turned down.

explaining whether the loan is approved, the estimated coefficient of predicted distance is now larger in magnitude (β=1.001 and t=3.2), as is the coefficient of the calender year times predicted distance interaction (β=-0.025 and t=-2.6, regression not reported). The standard errors go up, but the estimates are still statistically significant. So it does not appear that noise in firm characteristics biases coefficients in a way to produce our results. We also tried including predicted distance if the relationship started before 1983 and predicted distance if the relationship started after. Predicted distance for relationships that started after 1983 is less important in determining whether a loan is approved.

In summary, firms that are informationally more transparent (have greater predicted distance and lower probability of personal communication) face less credit rationing and are charged lower interest rates. However, the relation between predicted distance and credit availability is weakening over time. If predicted distance is no longer such a strong signal of credit quality, the implication is that riskier credits are being financed at a greater distance. These are the ones that have a greater propensity to get into trouble and face reduced availability later. But this means that lenders are willing to make bolder credit decisions at a distance now. One explanation is simply that the credit standards of lenders have been steadily deteriorating over the last twenty years, and that they are less interested in monitoring. This does not square with the fact that loan losses have not steadily risen over this period, and have no strong correlation with distance (see Table V, column V). We are left to conclude that a more distant, and less creditworthy, set of borrowers have become viable to lenders because improvements in technology allow cheaper screening, monitoring, and control, at a distance – our results are consistent with the information and communications revolution making distance less important.

VI. Conclusions.

We have documented a trend in the distance between small firms and their lenders in the United States. Firms are choosing further lenders and are also communicating in more impersonal ways with them. The trend correlates well with the increase in loans per bank employee or total regional output per bank employee over time, suggesting that the advances in computing and communications have reduced the human component in lending decisions, allowing more impersonal and distant lending decisions to be made. Moreover, distant firms are no longer only the highest credit qualities, suggesting that a wider, and more distant, cross-section of firms can now obtain funding from a particular lender. By implication, economy wide credit availability, and competition in credit markets, has increased.

The paper makes a number of contributions. For one, it focuses on new metrics for informational closeness – physical distance and method of communication. Others have used distance as a proxy for informational asymmetry as, for example, in the literature on home bias in fund managers' portfolios (for example, see Covals and Moskowitz (1999)). To the best of our knowledge, however, we have not seen this correlated with the nature of the institution or with credit availability and price. Our findings that informationally opaque firms have closer lenders, and that banks are closer than other lenders, are consistent with the theoretical view that banks are informationally close lenders making loans to opaque borrowers.

We establish the fact that firms are borrowing at a greater distance today. While there have been many anecdotes, and much casual empiricism, about the consequences of the information technology revolution, there has been little hard data demonstrating its effects. As this paper suggests, the reduced importance of distance seems to be one.

Finally, these findings have policy implications. If information technology can increase the services provided to, and competition in, the sector that has historically been viewed as the most informationally sensitive and thus most local, i.e., small business lending, then the relevant size of the market for anti-trust policy will have to be revised upwards over time. While our paper does not provide a ready metric for how this should be done, it highlights this as an issue that deserves more research.

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Table I: Firm's Lending Relationship
Panel A: Distance to a Firm's Lender by Lender Type and Time

Lender Type	Year Lending Relationship Began			
	1973-79	1980-89	1990-93	Total
Banks	15.8 2.0 6.0	34.0 4.0 12.0	67.8 5.0 20.0	42.5 4.0 14.0
Non-Banks	235.9 15.5 71.0	222.1 42.0 215.5	280.5 54.0 332.0	251.6 45.0 255.0
Non-Financial Firms	117.3 17.5 60.0	165.9 29.0 141.5	209.2 32.0 235.0	182.5 30.5 164.0
Total	51.2 3.0 10.0	92.6 7.0 33.0	161.3 15.0 91.5	114.7 9.0 42.0

Panel B: Method of Communication to a Firm's Lender by Lender Type and Time

Lender Type	Year Lending Relationship Began			
	1973-79	1980-89	1990-93	Total
Banks	0.77 1.3	0.67 1.5	0.54 1.7	0.64 1.5
Non-Banks	0.27 2.2	0.12 2.5	0.09 2.6	0.11 2.6
Non-Financial Firms	0.35 2.2	0.20 2.4	0.18 2.4	0.20 2.4
Total	0.68 1.5	0.49 1.8	0.34 2.1	0.45 1.9

Note:

Panel A contains the average distance between a firm and its lender classified by lender type and the year the relationship began. Non-banks include finance companies, insurance companies, brokerage firms, leasing companies, mortgage banks, and venture capitalists. The first entry in each cell is the mean distance, the second entry is the median distance, and the third entry is the 75 percentile distance. The far right column contains the sample average for lender types, and the bottom row contains the sample average for each decade. The sample contains 5981 firm lender pairs which were begun between 1973 and 1993.

Panel B contains data on the predominant method of communication between the firm and its lender. The communication can be in person (1), by phone (2) or by mail (3). The first number is the fraction of firm-lender pairs that communicate predominantly in person. The second number is the average value of the method variable. Higher values are associated with less personal communication and more communication by mail.

Table II: Determinants of Distance to the Firm's Lenders

Independent Variables	Models						
	I	II	III	IV	V	VI	VII
Firm's age	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)		0.000 (0.002)	0.003[10] (0.001)	-0.011[10] (0.006)
Year relation started	0.034[1] (0.005)	0.033[1] (0.005)	0.033[1] (0.005)	0.040[1] (0.011)	0.035[1] (0.006)	0.038[1] (0.004)	0.039[1] (0.006)
Lender is bank	-1.178[1] (0.062)	-1.166[1] (0.062)	-1.173[1] (0.062)	-1.122[1] (0.085)	-1.103[1] (0.088)	-1.186[1] (0.050)	-1.199[1] (0.076)
Lender is a non-financial firm	-0.376[1] (0.096)	-0.332[1] (0.096)	-0.373[1] (0.096)	-0.125[1] (0.132)	-0.475[1] (0.139)	-0.369[1] (0.077)	-0.416[1] (0.113)
Lender provides a checking account	-1.069[1] (0.059)	-1.081[1] (0.059)	-1.064[1] (0.059)	-1.064[1] (0.082)	-1.119[1] (0.080)	-1.002[1] (0.047)	-1.115[1] (0.074)
Lender is firm's first lender	-0.164[1] (0.049)	-0.143[1] (0.048)	-0.161[1] (0.048)	-0.026 (0.077)	-0.259[1] (0.085)	-0.204[1] (0.039)	-0.159[5] (0.072)
Observation from 1993 sample						-0.098[5] (0.039)	
Industry controls (59) F-statistics (p-value)		3.02 (0.000)					
Region controls (9)			3.09 (0.002)				
Firm controls (2878)				1.50 (0.000)			
R^2	0.307	0.327	0.310	0.711	0.297	0.296	0.316
Number of Observations	5981	5981	5981	5981	2878	9385	4094

Note:

The table contains regressions of the log of one plus the distance to the firm's lender. The sample includes only relationships beginning since 1973. Dummy variables are included for whether the lender is a bank or a non-financial firm. The missing category is non-bank financial lenders. Each observation represents a firm-lender pair. In some cases, firms began borrowing from more than one lender at the same time. In these cases, there is more than one observation for each firm.

Model Description:

II: Industry controls. The regression includes dummy variables to control for differences across the 59 two digit industries in the sample.

III: Census region controls. The regression includes dummy variables to control for differences across the 9 two census regions in which the firms are located.

IV: Within estimates. A dummy variable is included for every firm. Thus the coefficients are estimated based on variation from firm specific means. The R^2 includes the firm controls. Without including the explanatory power of the firm effects, the R^2 would be 0.302.

V: Between estimates. The coefficients are estimated based on variation between firm specific means. Each observation represents the mean value for a given firm.

VI: Sample includes observations from the 1993 and the 1987 National Survey of Small Business Finance.

VII: Sample includes observations where the first reported lending relationship is within five years of the firm's founding.

Table III: Determinants of Distance to the Firm's Lenders

Independent Variables	Models	
	I	II
Firm's age	0.001 (0.002)	0.000 (0.002)
Year relation started	0.033[1] (0.005)	0.037[1] (0.005)
Lender is bank	-1.178[1] (0.062)	-1.156[1] (0.062)
Lender is a non-financial firm	-0.376[1] (0.096)	-0.378[1] (0.096)
Lender provides a checking acct	-1.069[1] (0.059)	-1.111[1] (0.059)
Lender is firm's first lender	-0.164[1] (0.049)	-0.134[1] (0.049)
Firm had records for filling out survey		0.091[5] (0.042)
Firm has credit card		-0.003 (0.043)
Ownership share of largest owner (%)		-0.255[1] (0.076)
Corporation (1=yes)		0.069 (0.052)
Franchise (1=yes)		0.292[1] (0.091)
Owner managed		-0.044 (0.050)
Owner's age when relation began		0.000 (0.003)
Owner's experience when relation began		-0.003 (0.003)

Sales area regional (1=yes)		0.073 (0.047)
Sales area national (1=yes)		0.360[1] (0.060)
Firm in MSA (1=yes)		-0.129[5] (0.055)
Herfindahl Index > 1800		0.046 (0.045)
R^2	0.307	0.318
Number of Observations	5981	5974

Note:

The table contains regressions of the log of one plus the distance to the firm's lender. The sample includes only relationships beginning since 1973. Dummy variables are included for whether the lender is a bank or a non-financial firm. The missing category is non-bank financial lenders. Each observation represents a firm-lender pair. In some cases, firms began borrowing from more than one lender at the same time. In these cases, there is more than one observation for each firm.

Model Description:

III: This is the regression from Table II, column I. It is reported here for comparison.

IV: This model includes additional controls for information about the firm.

Table IV: Determinants of the Method Used to Communicate with Lender
In Person, By Phone, or By Mail

Independent Variables	Models		
	I	II	III
Firm's age	0.005[5] (0.002)	0.005[5] (0.002)	0.006[5] (0.003)
Year relation started	0.047[1] (0.007)	0.032[1] (0.007)	0.044[1] (0.007)
Lender is bank	-1.243[1] (0.079)	-0.893[1] (0.082)	-1.600[1] (0.098)
Lender is a non-financial firm	-0.459[1] (0.121)	-0.331[1] (0.126)	-0.652[1] (0.160)
Lender provides a checking acct	-1.660[1] (0.077)	-1.265[1] (0.080)	-1.426[1] (0.082)
Lender is firm's first lender	-0.218[1] (0.064)	-0.188[1] (0.066)	-0.293[1] (0.075)
Firm had records for filling out survey	0.087 (0.057)	0.051 (0.059)	0.115[10] (0.066)
Firm has credit card	0.048 (0.057)	0.033 (0.059)	0.127[10] (0.066)
Ownership share of largest owner (%)	-0.215[5] (0.101)	-0.108 (0.105)	-0.507[1] (0.119)
Corporation (1=yes)	0.109 (0.071)	0.094 (0.074)	0.188[5] (0.081)
Franchise (1=yes)	-0.017 (0.120)	-0.178 (0.127)	0.088 (0.142)
Owner managed	-0.017 (0.067)	0.007 (0.069)	-0.133[10] (0.079)
Owner's age when relation began	0.004 (0.004)	0.005 (0.004)	0.005 (0.004)
Owner's experience when relation began	-0.003 (0.004)	-0.003 (0.004)	-0.005 (0.004)

Sales area regional (1=yes)	-0.023 (0.064)	-0.061 (0.066)	0.090 (0.073)
Sales area national (1=yes)	0.385[1] (0.079)	0.206[1] (0.082)	0.743[1] (0.094)
Firm in MSA (1=yes)	0.296[1] (0.076)	0.433[1] (0.080)	0.310[1] (0.086)
Herfindahl index > 1800	-0.077 (0.060)	-0.097 (0.062)	-0.163[5] (0.070)
Log (1 + Distance from lender)		0.436[1] (0.019)	
α_1	92.944[1] (12.956)	63.163 (13.357)	85.676[1] (14.448)
α_2	93.945[1] (12.958)	64.479 (13.358)	
Pseudo R^2	0.215	0.263	0.283
Number of Observations	5945	5945	5945

Note:

The dependent variable denotes the predominant method for communicating with lender (1 = in person, 2 = by phone, 3 = by mail). The coefficients are estimated as an ordered logit model. The sample includes only relationships beginning since 1973. Dummy variables are included for whether the lender is a bank or a non-financial firm. The missing category is non-bank financial lenders. Each observation represents a firm-lender pair. In some cases, firms began borrowing from more than one lender at the same time. In these cases, there is more than one observation for each firm.

Table V: Determinants of Distance to the Firm's Lenders
Includes Changes in the Lending Environment

Independent Variables	Models				
	I	II	III	IV	V
Log(Banks/1000 Square Miles)		-0.083[1] (0.023)			
Log(Bank Employees/Loans)			-0.157 (0.115)	-0.171 (0.122)	
Log(Bank Employees/GDP)			-0.537[1] (0.153)	-0.538[1] (0.157)	
Log(Bank Employees)					
Log(Total Loans)					
Log(GDP)					
Log(Bank Employees/Total Loans) (based on national numbers)				0.408 (0.470)	
Log(Bank Employees/GDP) (based on national numbers)				-1.383 (1.608)	
Log(Loan Losses/Total Loans)					0.011 (0.050)
Firm's age	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	-0.001 (0.002)	0.000 (0.002)
Year relation started	0.037[1] (0.005)	0.036[1] (0.005)	-0.007 (0.015)	-0.076 (0.092)	0.036[1] (0.007)
Lender is bank	-1.156[1] (0.062)	-1.143[1] (0.062)	-1.112[1] (0.063)	-1.112[1] (0.063)	-1.155[1] (0.062)
Lender is a non-financial firm	-0.378[1] (0.096)	-0.376[1] (0.096)	-0.369[1] (0.098)	-0.369[1] (0.098)	-0.378[1] (0.096)
Lender provides a checking acct	-1.111[1] (0.059)	-1.111[1] (0.059)	-1.160[1] (0.061)	-1.157[1] (0.061)	-1.111[1] (0.059)
Lender is firm's first lender	-0.134[1] (0.049)	-0.133[1] (0.049)	-0.141[1] (0.050)	-0.137[1] (0.050)	-0.134[1] (0.049)

Firm had records for filling out survey	0.091[5] (0.042)	0.086[5] (0.042)	0.097[5] (0.044)	0.097[5] (0.044)	0.091[5] (0.042)
Firm has credit card	-0.003 (0.043)	-0.015 (0.043)	-0.012 (0.044)	-0.011 (0.044)	-0.003 (0.043)
Ownership share of largest owner (%)	-0.255[1] (0.076)	-0.255[1] (0.076)	-0.283[1] (0.078)	-0.284[1] (0.078)	-0.255[1] (0.076)
Corporation (1=yes)	0.069 (0.052)	0.088[10] (0.052)	0.076 (0.054)	0.077 (0.054)	0.069 (0.052)
Franchise (1=yes)	0.292[1] (0.091)	0.305[1] (0.091)	0.316[1] (0.093)	0.318[1] (0.093)	0.293[1] (0.091)
Owner Managed	-0.044 (0.050)	-0.046 (0.050)	-0.049 (0.052)	-0.051 (0.052)	-0.044 (0.050)
Owner's age when relation began	0.000 (0.003)	-0.000 (0.003)	-0.000 (0.003)	0.000 (0.003)	0.000 (0.003)
Owner's experience when relation began	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)
Sales Area Regional (1=yes)	0.073 (0.047)	0.072 (0.047)	0.051 (0.048)	0.051 (0.049)	0.074 (0.047)
Sales Area National (1=yes)	0.360[1] (0.060)	0.367[1] (0.060)	0.335[1] (0.061)	0.337[1] (0.062)	0.361[1] (0.060)
Firm in MSA (1=yes)	-0.129[5] (0.055)	-0.155[1] (0.056)	-0.147[5] (0.058)	-0.150[1] (0.058)	-0.129[5] (0.056)
Herfindahl Index > 1800	0.046 (0.045)	0.017 (0.045)	0.042 (0.046)	0.043 (0.046)	0.046 (0.045)
R^2	0.318	0.319	0.314	0.314	0.318
Number of Observations	5974	5974	5662	5662	5974

Note:

The table contains regressions of the log of one plus the distance to the firm's lender. The sample includes only relationships beginning since 1973. Dummy variables are included for whether the lender is a bank or a non-financial firm. The missing category is non-bank financial lenders. Each observation represents a firm-lender pair. In some cases, firms began borrowing from more than one lender at the same time. In these cases, there is more than one observation for each firm. The estimates in column I are the estimates from Table III, column II, and are reported here only for comparison. The other columns contain controls for changes in the lending environment over the sample period. In most cases, the variables vary across both time and census region. Both total loan amounts and GDP are reported in real dollars.

Table VI: Determinants of the Method Used to Communicate with Lender
Includes Changes in the Lending Environment

Independent Variables	Models				
	I	II	III	IV	V
Log(Banks/1000 Square Miles)		-0.045 (0.031)			
Log(Bank Employees/Total Loans)			-0.744[1] (0.156)	-0.779[1] (0.165)	
Log(Bank Employees/GDP)			-0.563[1] (0.204)	-0.601[1] (0.209)	
Log(Bank Employees)					
Log(Total Loans)					
Log(GDP)					
Log(Bank Employees/Total Loans) (based on national numbers)				-0.066 (0.654)	
Log(Bank Employees/GDP) (based on national numbers)				1.859 (2.198)	
Log(Loan Losses/Total Loans)					0.004 (0.068)
Firm's age	0.005[5] (0.002)	0.005[5] (0.002)	0.005[5] (0.002)	0.005[10] (0.002)	0.005[5] (0.002)
Year relation started	0.047[1] (0.007)	0.047[1] (0.007)	-0.025 (0.020)	0.090 (0.125)	0.047[1] (0.009)
Lender is bank	-1.243[1] (0.079)	-1.236[1] (0.079)	-1.226[1] (0.080)	-1.226[1] (0.080)	-1.243[1] (0.079)
Lender is a non-financial firm	-0.459[1] (0.121)	-0.456[1] (0.121)	-0.464[1] (0.124)	-0.471[1] (0.124)	-0.458[1] (0.121)
Lender provides a checking acct	-1.660[1] (0.077)	-1.661[1] (0.077)	-1.704[1] (0.079)	-1.706[1] (0.079)	-1.660[1] (0.077)
Lender is firm's first lender	-0.218[1] (0.064)	-0.217[1] (0.064)	-0.221[1] (0.065)	-0.221[1] (0.065)	-0.218[1] (0.064)

Firm had records for filling out financial part of survey	0.087 (0.057)	0.083 (0.057)	0.082 (0.059)	0.083 (0.059)	0.087 (0.057)
Firm has a credit card	0.048 (0.057)	0.042 (0.057)	0.060 (0.059)	0.059 (0.059)	0.048 (0.057)
Ownership Share of largest owner (%)	-0.215[5] (0.101)	-0.215[5] (0.101)	-0.240[5] 0.104	-0.239[5] 0.104	-0.215[5] 0.101
Corporation (1=yes)	0.109 (0.071)	0.120[10] (0.072)	0.129[10] (0.074)	0.129[10] 0.074	0.109 0.071
Franchise (1=yes)	-0.017 (0.120)	-0.011 (0.120)	0.002 (0.124)	0.001 (0.124)	-0.017 (0.120)
Owner Managed	-0.017 (0.067)	-0.018 (0.067)	-0.024 (0.069)	-0.023 (0.069)	-0.017 (0.067)
Owner's age when relation began	0.004 (0.004)	0.004 (0.004)	0.003 (0.004)	0.003 (0.004)	0.004 (0.004)
Owner's experience when relation began	-0.003 (0.004)	-0.003 (0.004)	-0.004 (0.004)	-0.004 (0.004)	-0.003 (0.004)
Sales Area Regional (1=yes)	-0.023 (0.064)	-0.023 (0.064)	-0.049 (0.065)	-0.048 (0.065)	-0.023 (0.064)
Sales Area National (1=yes)	0.385[1] (0.079)	0.388[1] (0.079)	0.326[1] (0.081)	0.325[1] (0.081)	0.385[1] (0.079)
Firm in MSA (1=yes)	0.296[1] (0.076)	0.282[1] (0.077)	0.217[1] (0.080)	0.215[1] (0.080)	0.296[1] (0.076)
Herfindahl Index > 1800	-0.077 (0.060)	-0.093 (0.061)	-0.098 (0.062)	-0.103 (0.062)	-0.077 (0.060)
α_1	92.061[1] (12.956)	91.358[1] (12.973)	-46.467 (39.654)	181.12 (248.46)	91.968 (18.226)
α_2	93.256[1] (12.958)	92.553[1] (12.975)	-45.269 (39.654)	182.32 (248.46)	93.163 (18.227)
R^2	0.215	0.215	0.218	0.218	0.215
Number of Observations	5945	5945	5633	5633	5945

Note:

The table contains regressions of the log of one plus the distance to the firm's lender. The sample includes only relationships beginning since 1973. Dummy variables are included for whether the lender is a bank or a non-financial firm. The missing category is non-bank financial lenders. Each observation represents a firm-lender pair. In some cases, firms began borrowing from more than one lender at the same time. In these cases, there is more than one observation for each firm. The estimates in column I are the estimates from Table IV, column I, and are reported here only for comparison. The other columns contain controls for changes in the lending environment over the sample period. In most cases, the variables vary across both time and census region.

Table VII: Determinants of Interest Rate on Firm's Most Recent Loan

Independent Variables	Models					
	I	II	III	IV	V	VI
Maturity matched treasury rate	0.367[1] (0.029)	0.367[1] (0.029)	0.367[1] (0.029)	0.369[1] (0.029)	0.370[1] (0.029)	0.370[1] (0.029)
Log(Firm's assets)	-0.243[1] (0.021)	-0.243[1] (0.021)	-0.243[1] (0.021)	-0.242[1] (0.021)	-0.242[1] (0.021)	-0.242[1] (0.022)
Outside debt/assets	-0.107 (0.067)	-0.107 (0.067)	-0.107 (0.080)	-0.104 (0.067)	-0.103 (0.067)	-0.104 (0.079)
Corporation (1=yes)	-0.385[1] (0.086)	-0.384[1] (0.086)	-0.384[1] (0.099)	-0.376[1] (0.086)	-0.376[1] (0.086)	-0.376[1] (0.100)
Log(1+firm age)	-0.024 (0.044)	-0.032 (0.048)	-0.032 (0.049)	-0.015 (0.044)	-0.012 (0.047)	-0.012 (0.050)
Loan has floating rate (1=yes)	0.030 (0.074)	0.030 (0.075)	0.030 (0.071)	0.032 (0.075)	0.032 (0.075)	0.032 (0.072)
Loan is collateralized	0.091 (0.075)	0.091 (0.074)	0.091 (0.070)	0.088 (0.074)	0.087 (0.074)	0.087 (0.071)
Lender is a bank (1=yes)	-0.565[1] (0.099)	-0.567[1] (0.099)	-0.567[1] (0.148)	-0.557[1] (0.099)	-0.556[1] (0.099)	-0.556[1] (0.150)
Lender is nonfinancial firm	-0.460[5] (0.230)	-0.459[5] (0.230)	-0.459 (0.485)	-0.443[5] (0.230)	-0.444[5] (0.230)	-0.444 (0.484)
Owner has had delinquency	0.457[1] (0.114)	0.457[1] (0.114)	0.457[1] (0.146)	0.463[1] (0.114)	0.463[1] (0.114)	0.463[5] (0.150)
Firm has had delinquency	0.348[1] (0.078)	0.350[1] (0.079)	0.350[1] (0.079)	0.351[1] (0.079)	0.351[1] (0.079)	0.351[1] (0.078)
Number of financial lenders	0.075[1] (0.021)	0.076[1] (0.021)	0.076[1] (0.018)	0.073[1] (0.021)	0.073[1] (0.021)	0.073[1] (0.018)
Predicted distance from Lender	-0.546[1] (0.179)	-0.528[1] (0.184)	-0.528[5] (0.217)			
Predicted distance * Year relation started		-0.001 (0.004)	-0.001 (0.003)			

Predicted method used to communicate with lender				-1.328[1] (0.418)	-1.398[1] (0.542)	-1.398[1] (0.546)
Predicted method * Year relation started					0.005 (0.024)	0.005 (0.021)
R^2	0.174	0.175	0.175	0.175	0.175	0.175
Number of observations	3523	3523	3523	3523	3523	3523

Note:

The dependent variable is the rate on the most recent loan. The average loan rate is 8.4%. The estimates in columns III and VI are identical to those in columns II and V, but the standard errors have been estimated by the bootstrapping technique (1000 repetitions).

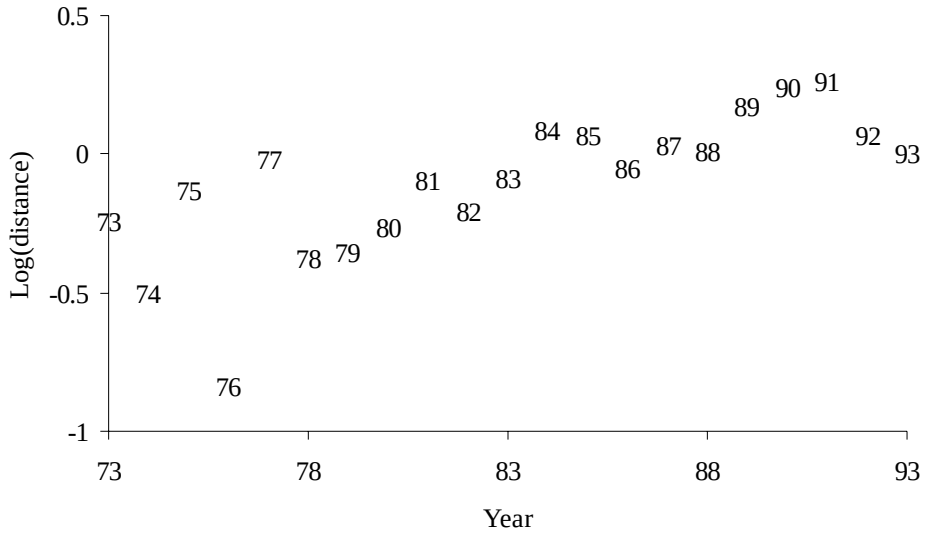
Table VIII: Probability of Loan Approval on Most Recent Loan

Independent Variables	Models					
	I	II	III	IV	V	VI
Log(Firm's assets)	0.350[1] (0.026)	0.349[1] (0.026)	0.349[1] (0.026)	0.352[1] (0.026)	0.349[1] (0.026)	0.349[1] (0.025)
Return on assets (profits/assets)	0.375[1] (0.080)	0.386[1] (0.080)	0.386[1] (0.080)	0.382[1] (0.079)	0.381[1] (0.080)	0.381[1] (0.080)
Outside debt/assets	0.005 (0.015)	0.005 (0.015)	0.005 (0.020)	0.004 (0.015)	0.004 (0.015)	0.004 (0.021)
Corporation (1=yes)	-0.034 (0.104)	-0.028 (0.104)	-0.028 (0.115)	-0.037 (0.105)	-0.036 (0.105)	-0.036 (0.111)
Firm age	0.008 (0.006)	0.008 (0.006)	0.008 (0.005)	0.007 (0.005)	0.007 (0.005)	0.007 (0.005)
Length of longest relationship	0.012 (0.009)	0.004 (0.010)	0.004 (0.010)	0.012 (0.009)	0.004 (0.010)	0.004 (0.010)
Debt from financial service provider (%)	1.590[1] (0.107)	1.563[1] (0.108)	1.563[1] (0.115)	1.584[1] (0.107)	1.554[1] (0.108)	1.554[1] (0.113)
Number of financial lenders	0.021 (0.029)	0.028 (0.029)	0.028 (0.029)	0.020 (0.029)	0.029 (0.029)	0.029 (0.030)
Herfindahl index > 1800	0.187[5] (0.080)	0.184[5] (0.080)	0.184[5] (0.078)	0.191[5] (0.080)	0.187[5] (0.080)	0.187[5] (0.079)
Predicted distance from lender	0.680[1] (0.257)	0.824[1] (0.269)	0.824[1] (0.297)			
Predicted distance * Year relation started		-0.010[10] (0.006)	-0.010[10] (0.006)			
Predicted method used to communicate with lender				1.614[1] (0.638)	2.927[1] (0.928)	2.927[1] (0.967)
Predicted method * Year relation started					-0.084[5] (0.024)	-0.084[5] (0.043)
Pseudo R^2	0.172	0.173	0.173	0.172	0.173	0.173
Number of observations	4548	4548	4548	4548	4548	4548

Note:

The independent variable is 1 if the firm was approved for a loan and zero otherwise. The sample include both those firms that applied for a loan as well as those firms that did not apply for a loan because they expected to be turned down. The last group is coded as being turned down for a loan. Only loans which were applied for (or considered) in the last three years are included. The estimates in columns III and VI are identical to those in columns II and V, but the standard errors have been estimated by the bootstrapping technique (1000 repetitions).

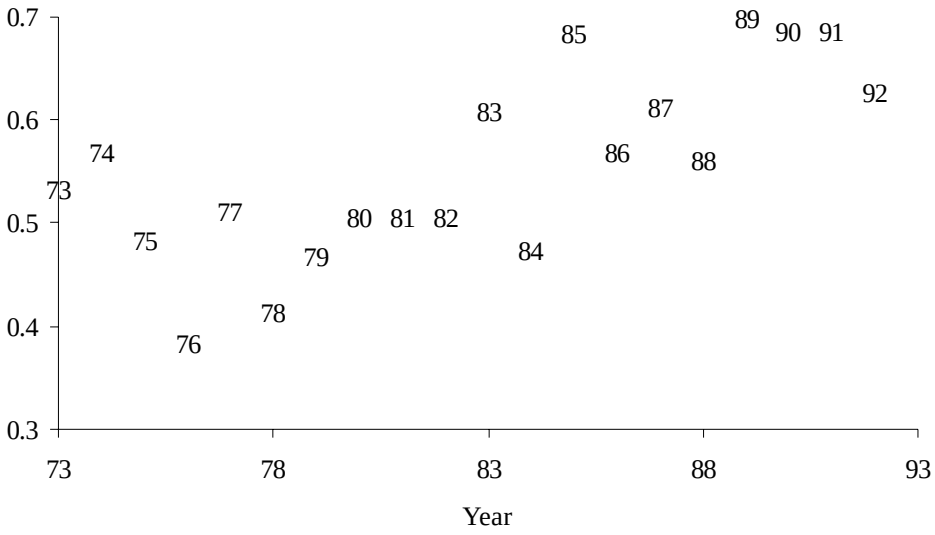
Figure I: Changes in the Distance to Lender over Time.



Note:

This is the estimated distance between a firm and its lender based on the estimates from Table III. All variables except the year in which the relationship began is set equal to the sample mean. In the regression, the year variable is replaced by a set of year dummy variables. This allows the functional form of the relationship between distance and year have any form.

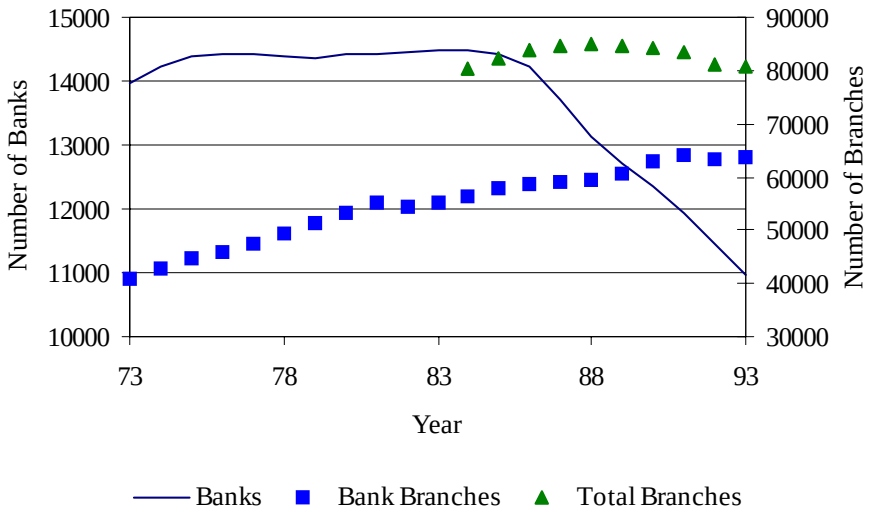
Figure II: Changes in the Method of Communicating with Lender over Time



Note:

The estimated probability of using mail or phone as the most frequent method of communicating with a lender as a function of the year the lending relationship started. The alternative method of communication is in person. The probability is calculated for a new firm which was borrowing and had a checking account from a bank. The probabilities are based on multinomial logit (as in Table IV) except the variable Year relationship was started was replaced with a series of year dummy variables.

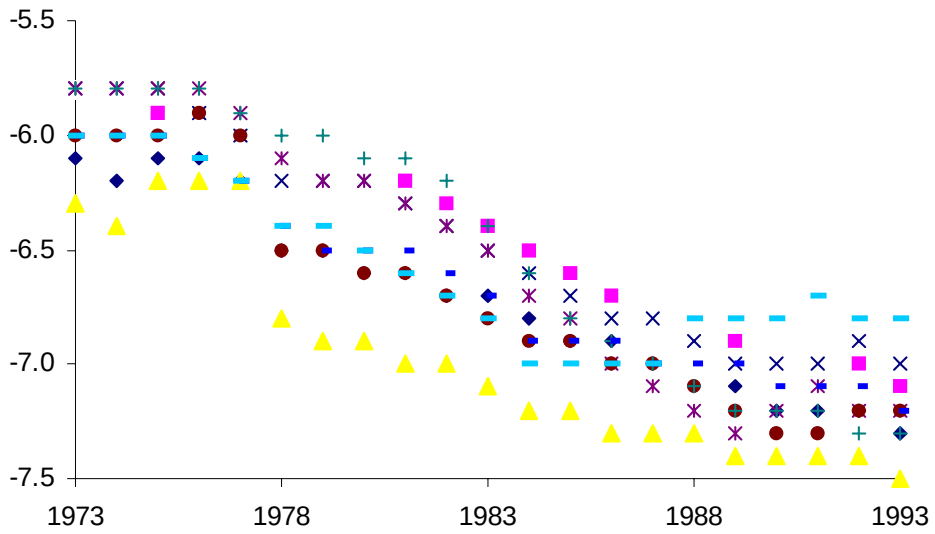
Figure III: Number of Banks and Bank Branches



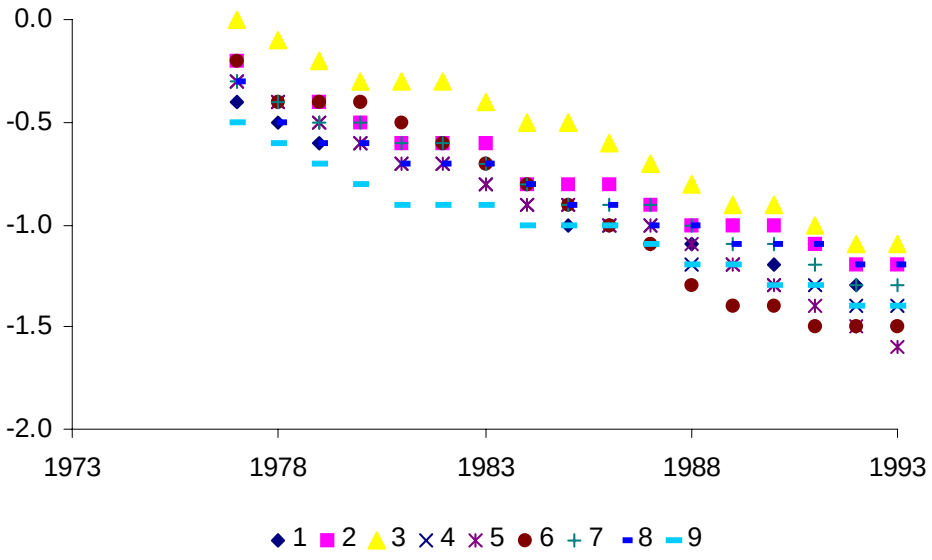
Note:

The number of banks and bank offices is from taken from the FDIC web site. The number of banks are graphed along the left axis as a line and are stable until 1984 when they begin to decline. The number of offices are graphed along the right axis. The graph contains both the number of bank offices and the number of bank plus S&L offices. The data on S&L offices is available only since 1984.

Figure IV: Total Bank Employment
A: Relative to Total Bank Lending



B: Relative to Gross Region Product



Note:

Figure IV-A is the graph by census region (1-9) of the log of total bank employment divided by total bank lending (in $1000s). Both numbers are from the Federal Deposit Insurance Corporation (FDIC) web site.[18] Both number are reported by state. Figure IV-B is the graph by census region of the log of total bank employment divided by total gross region product. Gross state product data was collected from the Bureau of Economic Analysis (BEA), Commerce Department web.[19] Gross state product is only available starting in 1977 site and is reported in millions of dollars. Regional numbers are the sum of the numbers for each state in the region.

[18] http://www2.fdic.gov/hsob/

[19] http://www.bea.doc.gov/bea/regional/gsp/gsplist.htm