An Empirical Examination of the Growth in Out-of-Market Commercial Lending: The Changing Competitive Landscape and the Role of Asymmetric Information

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Abstract:

Recent technological advances, such as credit scoring, may have altered the competitive landscape in the market for small business loans. If these changes have been substantial enough, the possibility exists that small business borrowers may no longer be dependent upon their local banks for credit, thereby ending what some have dubbed "the tyranny of distance." A consequence of this is the expansion of loans made by lenders with no branch presence in a local area. This study examines the growth of these out-of-market lenders, specifically focusing on the geographic pattern of their lending activities. Using a sample of over 2 million observations collected as a result of the Community Reinvestment Act from 1998 to 2003, this study finds that while there has been a substantial increase in the amount of out-of-market lending, this trend has been entirely the result of changes at larger lenders and among small loans ($100,000 or less). Recent theoretical research suggests that asymmetric information, in particular the information advantage conferred by proximity in the loan evaluation process, may place more distant lenders at a competitive disadvantage and cause them to be less likely to extend credit. This study examines how geographic lending patterns vary with two local market characteristics that should be negatively correlated with the extent of asymmetric information in the market, average credit score and the concentration of local banks. The results suggest that geographic out-of-market lending patterns are consistent with a deterrent effect of asymmetric information in commercial lending.

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1 Introduction

Recent technological advances have potentially altered the competitive landscape in the market for bank loans. In particular, improvements in the methods of scoring loan applications may now allow lenders to extend credit profitably to informationally opaque firms without the type of existing relationships that characterized small business lending in the past. If these changes have been substantial enough, the possibility exists that small businesses may no longer be dependent upon their local banks for credit, thereby ending what some have dubbed "the tyranny of distance." Rather than purchasing credit in local markets, small businesses would be able to seek credit in more competitive, national markets. The result would be a dramatic alteration in the competitive landscape of small business lending.

Consistent with such changes, Hannan (2003) and Brevoort and Hannan (Forthcoming) show that the share of small business loans accounted for by out-of-market lenders (defined as those lenders who extend credit to a geographic area in which they do not have any local branch presence) has been increasing over time. However, while the growing importance of out-of-market lending in the aggregate has been established, no research has examined which banks are opting to extend credit outside of the areas surrounding their branch networks or the distances over which they are willing to lend. Using data collected as a consequence of the Community Reinvestment Act (CRA) over the time period 1998-2003, I examine which lenders have chosen to extend credit outside of their local geographic markets and how the geographic pattern of their out-of-market lending activity is evolving over time.

The results of this examination document the growing trend toward greater out-of-market lending activity by commercial banks. The data show that, while out-of-market lending has increased overall, the increase has largely been confined to larger banks and almost exclusively to small loans. Through the time period covered by this study, not only has distance remained an important predictor of commercial lending activity but, for larger loans or smaller lenders, the importance of proximity may have increased.

One partial explanation for the importance of distance in lending is the information advantage conferred by proximity in the loan evaluation process. Recent theoretical research suggests that the presence of such information asymmetries may affect a lender's decision to be active in a particular market. In particular, if local lenders have better information about the creditworthiness of firms in a local market (or if these lenders receive a less noisy signal as a result of their loan application evaluations), then this will place out-of-market lenders at a competitive disadvantage that may reduce their willingness to extend credit. Using data

on average credit scores by MSA and the level of competition in the local banking market (both of which should be negatively correlated with the amount of asymmetric information), inferences are made about the presence of asymmetric information and its importance in small business lending. The empirical results support the presence of asymmetric information in small business lending, consistent with the theoretical literature.

This paper proceeds in the next section by laying out the empirical and theoretical literature relating to the relationship between distance and commercial lending, with particular focus on the relationship between distance and lending and the role of information asymmetries in commercial lending. The following section discusses the data used in this paper and what they indicate about the importance of out-of-market banks in commercial lending. Section 4 lays out the econometric estimations performed in this study and discusses the statistical and economic significance of the results. Section 5 draws conclusions and suggests avenues for future research.

2 Literature Review

The importance of proximity in the provision of banking services is well documented. Kwast, Starr-McCluer and Wolken (1997), using data from the 1993 Survey of Small Business Finance (SSBF), report that 92.4 percent of small businesses use a depository institution that is within 30 miles of the firm. Additionally, Scott (2003), using 2001 data from the Credit, Banks and Small Business Survey (CBSB), conducted by the National Federation of Independent Business, finds that the average travel time between a small business and its primary financial institution was 9.5 minutes, with a median time of 5 minutes. Also using data from the CBSB on the number of banks that small business owners perceive as being in their market, Amel and Brevoort (Forthcoming) estimate that 90 percent of small businesses look for banking services within 14.8 miles of their firm's location.

Studies that have examined credit utilization at small firms have also found local suppliers to be an important source of credit. Of traditional credit products defined in the SSBF, Kwast et al. (1997) find that the median distance between a small business and its lender is six miles or less for lines of credit, mortgage loans, equipment loans, motor vehicle loans, and other loans. The only traditional credit product with a median distance above this level is capital leases, with a median of 39 miles. Wolken and Rohde (2002), who compare the results of the 1993 and 1998 SSBFs, report similar findings, though they report that the percentage of firms who use local lenders has decreased. According to the data provided by

Wolken and Rohde, 72 percent of loans to small businesses were provided locally in 1993 and 68.5 percent in 1998.

In addition to empirical evidence that suggests most small business lending is provided locally, theoretical work has put forth explanations for why this should be so. In essence, these theoretical models assume that distance imposes costs on either borrowers or on lenders that result in local lending patterns.

The papers that model distance as increasing borrower costs are based on traditional models of spatial competition and focus on borrower travel cost. These models assume that borrowers incur costs of traveling to prospective lenders to apply for a loan, much the way that is commonly asserted for depositors choosing banks or models of horizontal product differentiation involving other products.[1] Chiappori, Perez-Castrillo and Verdier (1995) and Park and Pennacchi (2003) employ circular city models to describe consumer preferences for banking institutions. Villas-Boas and Schmidt-Mohr (1999) and Dell'Ariccia (2001) also employ borrower travel cost in a linear and a circular city model, respectively, that include asymmetric information about borrower quality, though this asymmetric information is unrelated to the location of the borrower. In all of these models, distance imposes costs on borrowers that lead them to prefer closer banks.

An alternative approach assumes that distance imposes costs that are borne directly by the lender. The costs incurred by the lender can vary with distance for a number of possible reasons. Evaluating loan applications may entail multiple site visits by a loan officer or extensive monitoring of the firm after a loan is made. In this case, travel cost again becomes a potentially important aspect of credit market competition for banks, except now the travel costs are borne by the bank instead of the borrower. Almazan (2002) is an example of this type of model that focuses on the costs to the lender of monitoring the firm.

Beyond travel cost, there is additional reason to suspect that lending at a distance may be costly for lenders. When evaluating small business loans in particular, lenders, lacking the "hard" information provided by detailed financial statements and publicly-priced debt or equity typically available for large firms, have to rely on "soft" information collected informally through established relationships between the lender and the borrower.[2] This soft information may be acquired in the process of providing additional banking services to the firm, such as checking accounts, that are normally provided by local financial institutions.

[1]Scott (2003), using data from the NFIB, reports that 65 percent of small business borrowers apply for credit in person, suggesting that travel costs may be an important consideration for these applicants.

[2]For a review of the importance of soft information and other issues involved in small business lending, see Berger and Udell (1998).

In this case, lenders that are closer to borrowers may possess superior information about the creditworthiness of the firm compared with more distant lenders, allowing them to effectively lend at lower cost through their superior ability to screen applicants. DeYoung, Glennon and Nigro (2004) find empirical evidence from a sample of Small Business Administration data that loans made at greater distances are positively associated with loan defaults, a finding consistent with the idea that more distant lenders are at an informational disadvantage.

If proximity confers an informational advantage on nearby lenders, this may have a deterrent effect on the willingness of potential out-of-market lenders to be active. While not dealing specifically with the issue of distance, Dell'Ariccia, Friedman and Marquez (1999) show that the information provided by previous credit relationships can provide such a substantial competitive advantage as to constitute a barrier to entry. However, the competitive disadvantage faced by these out-of-market lenders may be mitigated if they are larger and have superior access to cheaper wholesale funds.[3] Dell'Ariccia and Marquez (2004) provide a theoretical model of this type of situation where a lender faces competition from a less-informed, lower-cost bank. In that model, the low-cost lender is more likely to be active as its cost advantage increases or its informational disadvantage declines.

These results suggest that, if proximity does, in fact, confer an informational advantage in screening loan applications, banks located at a greater distance should be less likely to engage in lending in that market. On the other hand, if changes in technology, such as improvements in credit scoring, reduce the information advantage of proximity, one would expect to see lenders engaging in more out-of-market lending.

While no empirical study has specifically focused on out-of-market lenders, several studies examine the changing patterns of commercial lending. Petersen and Rajan (2002) use the 1993 SSBF to examine the evolving relationship between distance and lending. Using the cross section of data provided by the 1993 SSBF, the authors construct a "synthetic panel," based upon the year in which the small business reported the lending relationship began, that extends as far back as 1973. Petersen and Rajan conclude that the distance between small firms and their lenders has been increasing 3.4 percent per year, an increase that they attribute to improvements in bank productivity.

Additional evidence from the SSBF is provided by Wolken and Rohde (2002) who compare the results of the 1993 and 1998 SSBFs. They find that the average distance between a small firm's headquarters and the financial institution making the loan increased from 115 miles in 1993 to 244 miles in 1998. This dramatic increase in distance, however, was not reflected

[3]For evidence of the funding advantage of firms with access to wholesale funds, see Kiser (2003).

in the median distance between a borrower and a lender, which increased from 9 miles to 10 miles over the same period. The dramatic difference between the median and average distances suggests that the improvements in bank productivity documented by Petersen and Rajan (2002) have primarily affected the upper tail of the distance distribution.

To examine how the relationship between a bank's branch network and the location of its borrowers is changing over time at the lower end of the distance distribution, Brevoort and Hannan (Forthcoming) focus on the geographic lending patterns of local lenders. Using CRA data for a sample of nine randomly-selected MSAs over the period 1997-2001, they find that distance, while a factor in the local lending decisions of all banks, has less of an impact at larger banks. In addition, they find very little evidence that the relationship between distance and lending activity has changed over time for any of the three bank size classifications examined. In fact, the estimations in that paper suggest that distance may be serving as a greater deterrent to lending activity in local market lending over time. While this result may seem counter-intuitive given the changes in banking technology in the recent past, the results are consistent with the theory developed by Dell'Ariccia and Marquez (2004) for a situation in which local lenders are faced with greater competition from a less-informed, lower-cost lender.

A final paper to look at how the relationship between distance and lending is changing over time is by Degryse and Ongena (2005). Using data from a single, large Belgian bank, Degryse and Ongena find that the distance between this bank and its lenders did not increase substantially between 1975 and 1997. This result is consistent with the notion that the changes in technology that have led to increases in average distances between lenders and borrowers have not impacted all banking organizations or all businesses. This study is also notable in this regard as the data employed cover a longer time span than other studies that address this issue.

In addition to these studies that have examined the relationship between distance and lending, other studies have looked at the expanded use of credit scoring, a technology that may be among those causing changes in the importance of distance, affected the lending behavior of banks. In two related papers, Frame, Srinivasan and Woosley (2001) and Frame, Padhi and Woosley (2004) find that credit scoring use by large banks is positively correlated with small business lending, with the latter study focusing on lending to low- and moderate-income areas. However, since large lenders are more likely to acquire credit scoring technologies (Mester 1997) and since the authors are unable to separate treatment effects from selection effects, it is unclear how much of the higher lending can be attributed to the

use of credit scoring.

An additional study of credit scoring by Berger, Frame and Miller (Forthcoming) looks at the relationship between the use of credit scoring and the share of a bank's assets devoted to small business lending, among other things. The results indicate that credit scoring is associated with higher ratios of small business loans to bank assets, loan prices, and loan risk. As with the earlier paper on credit scoring, this study does not isolate the treatment effect, and since the decision to adopt credit scoring models is endogenous, one cannot determine, based on these results, how much of the associations they report are actually due to credit scoring.

3 Data and Univariate Analysis

The primary source of data employed in this study was collected in accordance with the Community Reinvestment Act (CRA). Independent commercial banks and savings institutions with assets of $250 million or more, or institutions that are part of holding companies with total assets of at least $1 billion, are required to report the number and volume of commercial loans originated and held in each year. These data are reported at the census tract level, so for each tract to which a given bank extends credit, the data indicate the aggregate number and amount of the loans made or held. Since the data are aggregates of lending at the census tract level, they contain no information about the terms of the individual loans or the characteristics of the borrower. Data on loans are reported for loan categories of $100,000 or less, $100,001 to $250,000, and $250,000 to $1 million.

CRA data on loan originations for commercial banks were collected for census tracts located within metropolitan areas in the United States, excluding those in Hawaii or Alaska.[4] Since a substantial portion of the distance between any lender in the lower 48 states and either Alaska or Hawaii is over territory over which there are likely to be fewer lenders Metropolitan areas used include Metropolitan Statistical Areas (MSAs), Primary Metropolitan Statistical Areas (PMSAs), and New England County Metropolitan Statistical Areas (NECMAs). In

[4]Hawaii and Alaska are excluded from the analysis both because they represent outliers in terms of the distance between their markets and most lenders in the sample, and because distance may not have the same deterrent effect in lending to these two markets since a substantial portion of the distance is over water or across Canada. For example, if lenders are less likely to extend credit over longer distances partially because of the presence of other lenders located at closer distances (perhaps because of the presence of a winner's curse in bank lending), then lenders would be more likely to extend credit over distances that traverse water or foreign countries, where competing lenders cannot locate. For treatments of the winner's curse in banking, see Riordan (1993) and Shaffer (1998).

this paper, these three types of metropolitan areas are collectively referred to as MSAs. Using the Office of Management and Budget's 1999 metropolitan area definitions, this resulted in 316 markets for each year in the sample. The loan originations for each bank entity were aggregated to the bank organization level to give a complete picture of the geographic lending patterns of bank organizations in urban areas.

These data were combined with data from the Federal Deposit Insurance Corporation's (FDICs) Summary of Deposits data, which provide the geographic location of each bank branch on June 30th of that year. Loans originated in MSAs in which the banking organization did not have at least one branch were classified as out-of-market loans. To calculate the distance over which each loan was made, the bank branch addresses were geocoded to longitude and latitude coordinates.[5] To calculate a single distance measure from a bank to an MSA, the great circle distance (or distance "as the crow flies") between the centroid of each census tract in the MSA and the nearest branch of that bank was calculated. The distance between the bank and the MSA was the average distance across the census tracts of that MSA.[6]

The remainder of this section uses these variables to describe how out-of-market lending activity at commercial banks has changed over the time period covered by this study.

[5]For those bank branches that had invalid physical addresses, or addresses for which the geocoding program was not able to identify the location with sufficient certainty, the longitude and latitude of the centroid of the zip code for that branch was substituted. These differences should be negligible given the scope of distances being calculated.

[6]Other measures of distance may have been preferable. For example, an argument can be made that a more appropriate measure of distance would be the distance between the loan officer who approves the loan and location of the borrower. Since the loan officer may not reside in the nearest branch (particularly if the lending decisions at the bank are centralized), the distance measure used here may not accurately reflect this distance. However, while this argument has merit, even when lending decisions are centralized, nearby branches may serve as points of contact with the customer that establish relationships or generate applications. Data on where loans were originated or where lending decisions were made are not available, so I am unable to determine which of these measures of distance is superior. To the extent that the distance between the nearest branch and the market does not reflect the most important measure of distance, this should diminish the likelihood of finding an effect of distance on lending. Additionally, Alessandrini, Croci and Zazzaro (2005) make a distinction between *operational* distance, which is the distance between a bank branch network and a borrower, and *functional* distance which is the distance between a bank's headquarters and its branches. This paper focuses solely on operational distance.

3.1 Out-of-Market Lending Over Time

The CRA data examined in this study account for over 22 million commercial loans, worth approximately $993 billion, made between 1998 and 2003.[7] Over this time period, both the number and volume of commercial lending increased substantially. The total number of loans in the data set almost tripled over this period, increasing from 1.8 million in 1998 to almost 5.7 million in 2003. At the same time, the growth in volume also increased substantially, though more slowly than the number of loans, increasing from $128 billion in 1998 to $219 billion in 2003.

The growth in out-of-market lending has also been significant over the time period covered by this sample. In 1998, 81.6 percent of CRA-reporting banking organizations extended credit in at least one MSA in which they did not have some local branch presence. Among these organizations, which accounted for 99.0 percent of loans in the sample in 1998, the number of loans extended to out-of-market MSAs accounted for 33.4 percent of the total number of loans by these institutions, but only 10.4 percent of the lending volume. The importance of out-of-market lending to these organizations was also quite skewed. While the majority of CRA-reporting organizations were engaged in some out-of-market lending, out-of-market lending made up more than 5 percent of the volume of the organization's commercial loans at only 55 percent of the banking organizations. Furthermore, out-of-market lending accounted for over half of the organization's commercial loan volume at only 11.5 percent of banking organizations. So while a substantial number of organizations engaged in out-of-market lending, the importance of this lending activity to these organizations was not as great.

By 2003, out-of-market lending activity had increased substantially. In that year, 88.1 percent of the banking organizations in the sample extended credit in at least one MSA in which it did not have some local branch presence, up 6 percentage points from five years earlier. At the same time, the share of out-of-market loans (by number of loans) in the portfolios of these organizations grew substantially, increasing almost 30 percentage points to 63.1 percent. However, while these numbers suggest a substantial increase in out-of-market lending activity, the share of out-of-market lending volume at these firms increased by only 3.3 percentage points to 14.8 percent. Additionally, while the number of lenders for whom out-of-market lending comprised more than 5 or 50 percent of their lending volume increased, the increase was more in line with the change in overall volume, increasing by 2.3

[7] These data exclude loans made by commercial banks to census tracts outside of MSAs or by banks identified as credit card banks.

and 1.7 percentage points respectively.[8]

The rapid growth in the number of out-of-market loans and more muted growth in loan volume suggests that the growth of out-of-market lending has been primarily in loans of small size. The loan size breakdowns in the CRA data confirm this hypothesis. Out-of-market loans accounted for 37.6 percent of loans of origination sizes of $100,000 or less in 1998 and 67.6 percent in 2003, an increase consistent with what is observed in the aggregate numbers. Over the same period, the share of out-of-market loans among loans of size $100,000 to $250,000 actually fell from 7.4 percent in 1998 to 6.5 percent in 2003. A similar decrease was observed in loans greater than $250,000, where the share of out-of-market lending decreased from 9.7 percent to 7.4 percent. These numbers suggest that not only has the increase in out-of-market lending been primarily in commercial loans of small size, but that the increase has occurred exclusively among those loans.

While the competitive presence of out-of-market lenders has changed most dramatically in small loans, differences between the loans offered by in-market and out-of-market lenders have also been the most pronounced among small loans. Among the larger two size classes of loans, the average sizes of in-market loans and out-of-market loans have been approximately equal. Among large loans (greater than $250,000), the average loan size of an out-of-market loan was $541,237 in 2003, which was about the same as the average large in-market loan, $527,460. Similarly, the average size of a medium loan ($100,000 to $250,000) from an out-of-market lender ($170,606) was about the same as from an in-market lender ($176,630). But among small loans ($100,000 or less), the average out-of-market loan was approximately one-quarter the size of an in-market loan ($5,814 versus $24,773).[9]

One possible explanation for the growth in out-of-market lending in the small loan segment of the market is the change in the composition of lenders in the sample. Between 1998 and 2003, the number of CRA-reporting organizations engaged in out-of-market lending increased from 801 to 1228.[10] It is possible that the changes in the pattern of out-of-market

[8]These results do not change dramatically by calculating the importance of out-of-market lending based on the number of loans. In 1998, 48.6 percent of bank organizations made at least 5 percent of their loans out of market, and 11.2 percent made more than 50 percent of their loans out of market. In 2003, these numbers had changed to 49.6 and 12.5 percent, respectively.

[9]The relative size of in-market and out-of-market loans has not changed substantially over time for any of the three size categories of loan. Between 1998 and 2003, the ratio of the size of the average in-market loan to the average out-of-market loan changed from 0.245 to 0.235 for small loans, 0.992 to 0.966 for medium loans, and 1.037 to 1.026 for large loans.

[10]Two factors lead to this increase. First, as already mentioned the percentage of banks engaging in out-of-market lending has been increasing over time. Second, over the years more banks have met the size threshold that mandates reporting CRA data.

lending might be caused by differences between these new out-of-market lenders and the ones engaged in this lending in 1998, if these new lenders engaged in relatively less in-market lending or smaller out-of-market loans.

To check this possibility, 532 lenders were identified who engaged in out-of-market lending in both 1998 and 2003. The data from these lenders exhibit patterns that are nearly identical to those described for the whole sample. The portion of out-of-market lending for this sample increased from 24.9 percent to 57.2 percent between 1998 and 2003, though again the increase in out of market lending was only observed for loans with originations of $100,000 or less. In terms of the relative size of in-market and out-of-market loans, the results were also almost identical with small out-of-market loans being about a quarter the size of small in-market loans[11] and with medium and large loans being approximately the same size in-market or out-of-market. The changes in the prevalence of out-of-market lending in the data, therefore, do not seem to be the result of changes in the composition of the sample over time.

Another possibility that may be affecting these results is the changing size distribution of organizations in the data. As time passes, an increasing number of organizations become CRA reporters as they grow beyond the minimum size threshold for reporting CRA data. As a result, adjusting for inflation, with each successive year one would expect the distribution of organizations in the CRA data to include a greater number of small banks. To adjust for this, banks in the data set were classified into three size classifications based upon their asset size, adjusted for inflation. As expected, the largest increase in the number of banks in the dataset was among small banks (assets in constant 2000 dollars of less than $500 million), which increased from 331 in 1998 to 568 in 2003. Of these, 251 banks were out-of-market lenders in 1998 and 469 in 2003. A substantial increase was also observed among medium sized banks ($500 million $<$ assets $<$ $5 billion), which grew from 537 to 708 organizations (441 to 645 out-of-market lenders). The number of large banking organizations in the data remained almost unchanged, increasing from 114 to 118 (109 to 114) over the sample time period.

Comparisons of the percentage of loans extended out of market for each of the three sizes of banking organizations over time yield an inconsistent picture. Some clarity can be added, however, by dividing banking organizations according to whether their average loan size is greater than $10,000. At small and medium sized banking organizations with

[11]The relative average size of small in-market loans was actually slightly higher for this group than for the full sample. The ratio of average out-of-market loan size to average in-market loan size for small loans for this sample was 0.32 in 1998 and 0.25 in 2003. The ratios for the full sample of out-of-market lenders were 0.25 and 0.24.

average loan sizes below $10,000, almost all loans across all of the years in the sample have been extended out of market, whether based on number of loans or loan volume.[12] Among large organizations making these small loans, the percentage of out-of-market loans increased dramatically, from 64.3 percent in 2000 to 87.0 percent in 2003 (there were no large banking organizations in the data with average loan sizes below $10,000 prior to 2000).

Among organizations with average loan sizes above $10,000 the trends are similar, though the levels are substantially different. Among small banking organizations, the portion of bank loan portfolios extended out of market was almost unchanged over the time period measured by either number of loans or by volume (by number of loans the percentages were 7.5 percent in 1998 and 7.7 percent in 2003 and by volume 10.1 and 10.3 percent respectively). Among medium organizations, the results differ depending upon the measure used. When looking at number of loans, out-of-market loans accounted for 7.8 percent of loans in 1998 and 11.4 percent in 2003. Measured in terms of lending volume, however, the out-of-market share fell from 11.3 to 8.8 percent. Out-of-market lending at medium-sized banks has only grown among smaller loans.[13] The results for large lenders with average loan sizes above $10,000 show a similar, though less contradictory trend. In terms of loan volume, out-of-market lending accounted for 8.2 percent of lending in 1998 and 8.1 percent in 2003. In terms of the number of loans, out of market lending at these large institutions increased substantially from 10.3 percent in 1998 to 22.0 percent in 2003.

The CRA data examined in this section show that there are substantial differences in the amount of out-of-market lending done by banks of varying sizes. Furthermore, these data suggest that the amount of out-of-market lending has increased substantially between 1998 and 2003, particularly when measured by the number of loans. However, there is evidence to suggest that this growth has occurred almost exclusively among smaller sized loans. The next section continues to examine differences in out-of-market lending patterns and how they are evolving over time by looking specifically about how out-of-market lending differs in terms of the distance over which these loans are being extended.

[12] At small banking organizations with average loan sizes below $10,000, the percentage of loans extended out of market was 99.4 percent in 1998 and 99.5 percent in 2003 (the numbers by volume were identical). At medium banking organizations making small loans, the corresponding numbers were 96.5 percent in 1998 and 99.5 percent in 2003 (by volume the numbers were 91.3 and 99.5 percent, respectively). Among these medium organizations, however, the share of loans extended out of market increased above 98 percent (by number or volume) the next year and remained above that level for the rest of the sample.

[13] Looking at the two larger size categories provided in the CRA data, the share of lending done out of market by medium-size banks fell over the time period of this sample, whether measured in terms of number or volume.

3.2 Changes in Distance over Time

As one might expect from a pattern of increasing out-of-market lending over time, the distance at which banking organizations are extending commercial loans has also been increasing. Average loan distance across all bank and loan sizes increased from 372 miles in 1998 to 578 miles in 2003, when measured in terms of the number of loans, and from 73.1 to 112.2 miles in terms of loan volume over the same period. This result is consistent with the idea that distance is becoming less important over time.

Much of this difference, however, can be attributed to the increase in out-of-market lending activity by banks documented in the previous section. Almost by definition, bank loans extended out of market are made at greater distances so that an increase in out-of-market lending activity should result in an increase in average lending distances at these institutions. If one were to examine how lending patterns have changed, however, by focusing exclusively on out-of-market loans, the data provide a somewhat richer picture of how the commercial lending market is evolving.

Looking exclusively at loans extended out of market, average loan distances are uniformly lower when measured in terms of volume than when measured based upon the number of loans extended. In 1998, average out-of-market loan distance was 1,076 miles based upon the number of loans and 504 miles based upon lending volume. This suggests that just as large loans are more likely to be made in market, large out-of-market loans are more likely to be made at shorter distances.

This is partially confirmed by examining average loan distances across the three loan size breakdowns provided in the CRA data. The average distance for small loans (less than $100,000) is substantially higher than for medium or large loans, both of which have similar average distances. In 1998, the average distance (measured by number of loans) was 1,106 miles for small loans, compared to 350 miles for medium loans and 381 miles for large loans. For medium and large sized loans, the average distances are almost identical when measured in terms of volume (348 miles and 380 miles respectively), suggesting that loan size for these out-of-market loans is not significantly affected by distance. For small loans, however, the average distance measured by volume (781 miles) is substantially less than when measured by number, suggesting that within this loan size category, larger loans tend to be made at shorter distances.

This difference between the average distance of out-of-market loans measured by number and volume is declining over time. In 1998 the ratio of the average distance measured by number to the average distance by volume was 2.13. By 2003, this ratio had fallen to

1.34, suggesting that the geographic pattern of out-of-market lending of larger loans may be becoming more like the pattern for small loans. Comparisons across the three loan size categories suggest that this is the case. While the ratios of average distances for medium and large size loans have remained approximately constant,[14] the ratio for small loans has declined substantially from 1.42 in 1998 to 1.07 in 2003. These results suggest that the geographic pattern of loan sizes has been changing over time.

Across all out-of-market loans, the change in average distance over time has reflected these changes in the geographic pattern of loan sizes. When measured based upon the volume of loans, the average distance of out-of-market loans has increased from 504 miles in 1998 to 679 miles in 2003. At the same time, the average distance of out-of-market loans measured by number has actually declined from 1,076 to 913 miles. When limited to the sample of 532 lenders who were engaged in out-of-market lending in 1998 and 2003, a similar pattern is observed with an increasing average when measured by volume and a decreasing average when measured by number of loans. This suggests that the divergence in average distance measures is not the result of changes in the composition of banks in the sample over time.

Evaluating average distance measures over time, however, may prove to be misleading as they do not account for changes the economic environment over time. Most importantly, these average distance figures do not control for expansions in bank branch networks. For example, consider a bank that had offices located only along the east coast of the United States that extends credit to every market in the U.S. If the next year, that bank merged with another bank located on the west coast that also extended credit to all markets in the country, even without a change lending activity by the merged firm the average loan distance would decline.[15] To correctly ascertain how the relationship between distance and lending is changing over time, the geographic location of the bank and the characteristics of the markets to which it is lending (or not) should be controlled for. The next section evaluates how lending patterns are changing over time, controlling for these other factors.

[14]The ratio for medium size loans has increased from 1.01 to 1.04, while the ratio for large loans has decreased from 1.00 to 0.977.

[15]If distance was measured not between the borrower and the closest bank branch, but rather between the borrower and the location of the bank's headquarters, then this result would not hold. However, using a distance-to-headquarters measure would also result in potentially serious errors if bank branch location is not controlled for. For example, if a bank was located in a single market and merged with a bank in a different market, but continued the same lending pattern, then the distance-to-headquarters measure would incorrectly indicate an increase in average loan distance. A more ideal method would be to calculate the distance between the borrower and the bank branch with which the firm interfaces with the bank. Unfortunately, the CRA data do not provide sufficient information to calculate such a distance.

4 Estimation and Results

4.1 Variables and Specifications

The theoretical research on lending in the presence of asymmetric information outlined in the literature review has shown that only a subset of lenders available to extend credit in a market will choose to be active lenders. In a study of particular interest to this paper, Dell'Ariccia and Marquez (2004) show the competitive implications of asymmetric information in the market for lending when a lender is faced with a competitor who is less informed about the quality of borrowers in the market, though who possibly has a cost advantage. The situation described by Dell'Ariccia and Marquez can be considered a reasonable approximation of lending competition between local and out-of-market lenders. If proximity confers an informational advantage on local lenders, say as a result of greater ease of soft information acquisition about either individual firms or local geographic markets, the resulting competitive implications should be as outlined in that model. One of these implications is that as the information advantage of the local lenders increases, the out-of-market lender is more likely to choose to remain inactive and not to supply credit to that market.

To examine the out-of-market lending patterns of banks we estimate the number and volume of loans made to MSAs in which banks do not have any branch presence. Specifically, the equation we estimate takes the form

$$L^*_{imt} = \alpha + X_{it}\beta + Z_{mt}\gamma + f_{it}(d_{imt}) + \epsilon_{imt} \tag{1}$$

where L^*_{imt} is a measure of the lending activity of bank i in market m during time period t, X_{it} is a vector of characteristics of bank i in period t, Z_{mt} is a vector of market characteristics, f_{it} is a function (that is allowed to vary across banks and to change over time) of the distance between bank i and market m, α, β, and γ are coefficients to be estimated, and ϵ_{imt} is a error term drawn from the normal distribution with mean zero and variance σ^2.

This study uses two measures of lending activity in each market, the number and dollar volume of loans originated by each bank in each MSA. Each measure of lending activity used is expressed in logs to allow changes in distance and other variables to affect the percentage of lending in a market rather than the level, and to limit the extent to which observations from large lenders drive the results.[16] Since the lending activity of any lender in a market

[16]Estimating the models reported in this paper in levels, instead of logs, does not materially alter the coefficients reported in this paper.

is often nonexistent (and cannot be negative), the observed amount of lending activity, L_{imt} is left-censored at zero. Accordingly, these equations are estimated as tobit models, where the dependent variable is the natural log of 1 plus the observed volume of lending ($L^*_{imt} = \log(1 + L_{imt})$).

To simplify the exposition, medium-size ($100,000 - $250,000) and large-size loans (greater than $250,000) were consolidated.[17] Since the trends outlined in the previous section suggest that substantial differences may exist across loan size categories, for each measure of lending activity, separate estimations are performed for both small loans ($100,000 or less) and the consolidated, big loans (greater than $100,000).

To account for the importance of bank-specific information, data on bank assets were collected from the Reports of Condition of Income ("Call Reports")[18] each year and aggregated to the bank organization level. Based on the level of assets reported by each organization, banks are grouped into three size categories. Bank organizations with assets of $500 million or less (in constant 2000 dollars) are denoted small. Medium banks are those with between $500 million and $5 billion in assets, and large banks have assets in excess of $5 billion. The estimations were performed with dummy variables ($SMALL$, $MEDIUM$, and $LARGE$) representing each of the three size classes. To account for potential differences in product mix across banking organizations, the natural log of the average size of an in-market bank loan (in constant 2000 dollars), $LOANSIZE$ and its square, $LOANSIZE2$ are included in each estimation.[19]

The market characteristics incorporated into the estimation include the natural log of the number of business establishments in each MSA ($FIRMS$) according to the Census Bureau's County Business Patterns data. The number of firms are included to capture differences in market size and demand conditions that may make a market more attractive to out-of-market lenders. An out-of-market bank's decision to extend credit to a metropolitan market may also be affected by the competitive conditions in the market. To capture the level of competition among in-market lenders, a Herfindahl-Hirschman Index (HHI) is calculated based upon the deposit shares of the commercial banks with branch presence in that MSA. Calculating the HHIs based on deposits as opposed to loans is meant to proxy for the amount of competition

[17] The results of estimations for medium- and large-size loans were very similar in both the sign and size of the relevent coefficients.

[18] Data were collected based on the December 31st Call Report of each year.

[19] A potentially preferable alternative would be to estimate the model using bank-specific fixed or random effects. Attempts to estimate such a model proved infeasible as a result of the large sample size and the large number of banking organizations included.

among the in-market banks without introducing significant concerns about the exogeneity of the variable. Finally, to account for geographic differences in the creditworthiness of borrowers across MSAs, average credit scores from TransUnion's TrenData data file are included ($SCORE$). While these credit scores are for individuals in the MSAs as opposed to the small businesses, individual credit histories of small business owners are increasingly used in evaluating small business credit applications. Indeed, Mester (1997) reports that the characteristics of small business owners outperform those of the small businesses themselves in scoring models.

Since a central point of concern of this paper is the geographic pattern of lending, the model also includes a variable representing the natural log of the distance between the bank branch network and each MSA. Distance was calculated as the average, great circle distance (expressed in miles) between the centroid of each census tract in the MSA and the nearest branch of that bank. The relationship between distance and lending is assumed to vary according to the size of the lender. As such, this distance measure is interacted with bank size dummy variables. Additionally, separate time-distance trends are estimated for each of the three bank size categories.

4.2 Results

A list of variables used in the estimations, along with summary statistics, is presented in Table 1. Each set of estimations was performed for the full sample of lenders, as well as for the sample of lenders who extended at least 5% of their loans in MSAs in which they had no branches (the "5% sample"). For the full sample, estimation results (for both the number and volume of loans) are presented in Table 2 for small loans and in Table 3 for big loans. Tables 4 and 5 report the results of identical estimations performed for the 5% sample.

Columns (1) and (4) in Tables 2-5 report the results of the baseline specification, which includes all of the independent variables in Table 1, for the number and volume of loans respectively. Each of these estimations also includes year-specific dummy variables, which are not reported in the tables to conserve space. Tables 6 and 7 then report the marginal effects, evaluated at the sample means, of those variables with nonlinear marginal effects.

Within the baseline specification, coefficients on lender characteristics show a consistent pattern. The dummy variables for medium and large banking organizations are negative across loan sizes and lender samples and statistically significant at the 1 percent level. The magnitude of the medium-bank-size dummy variable is generally larger than that for large

banks, the one exception being the the volume of large loans in the 5% sample.

The impact of average loan size is estimated as a quadratic function. The results of the baseline specification indicate that lending activity is decreasing and convex in the average size of a bank's in-market loans. In each case, the coefficients on both $LOANSIZE$ and $LOANSIZE2$ are significant at the 0.1 percent level. These coefficients suggest that banks that specialize in smaller loans in-market tend to extend more out-of-market credit, measured either in terms of the number or volume of loans.

Evaluated at the sample mean of average loan size, the marginal effect of average in-market loan size is negative and statistically significant at the 0.1 percent level for the number and amount of small loans in both the full and 5% samples. The magnitude of the coefficients suggest that the product mix of a commercial bank, as measured by $LOANSIZE$, has a significant impact on its amount of out-of-market lending. For the full sample, a one percent increase in average in-market loan size decreases the number of out-of-market loans extended by 1.55 percent and the volume of loans extended by 3.28 percent. The marginal effects for the 5 percent sample are even larger, a decrease of 1.94 in the number of loans and 3.70 in loan volume. For big loans, the marginal effect of average in-market loan size is positive but insignificant in the full sample. The marginal effect of $LOANSIZE$ in the 5% sample is negative for both the number and volume of big loans, but it is only statistically significant at the 1 percent level for the number of big loans extended.

The coefficients on variables representing market characteristics also exhibit clear and consistent trends. The number of firms in each market is positively related to out-of-market lending activity, and significant at the 0.1 percent level across loan sizes and for either the number or volume of loans. For small loans, a one percentage point increase in the number of business establishments in the market increases the number of loans extended by an out-of-market bank by 0.89 percentage points for the full sample of lenders (0.856 for the 5% sample) and increases the volume of these loans extended by 2.077 percentage points (1.800 for the 5% sample). For big loans, a percentage point increase in the number of business establishments has a smaller increase in the number of loans (0.74 and 0.807 percentage points in the two samples, respectively) and a larger increase in loan volume (3.956 and 3.972 percentage points).

The coefficients on both market concentration and mean credit score are negative and highly significant across all sizes of loans and lender samples. The coefficients on these two variables may seem counter-intuitive. For concentration, a standard structure-conduct-performance story would imply that in a market with higher local bank concentration, profit

margins will be higher, thereby inviting greater activity by out-of-market lenders. Similarly, higher credit scores should increase the willingness of out-of-market lenders to extend credit to borrowers in the MSA, which should also increase out-of-market lending activity. The coefficients are highly significant, however, and very robust to alternative specifications.[20]

The sign of these coefficients may be a reflection of the reduced form nature of the model. Survey data presented by Scott (2004) suggests that small business borrowers have a preference for local lenders.[21] As credit scores increase, borrowers will have an easier time receiving credit from local banks. Additionally, Petersen and Rajan (1995) suggest that in more concentrated markets lenders will be more willing to extend credit. In each case, borrowers will have an easier time getting credit from in-market lenders and as a result may rely less on out-of-market banks for credit.

The coefficients on the natural log of distance, $DIST$, are negative and statistically significant at the 0.1 percent level for all loans, for both loan size categories and both lender samples. This suggests, as expected, that as the distance between an MSA and a bank's branch network increases, both the number and volume of loans extended decrease. For small loans extended by small banks, a one percentage point increase in distance results in a 1.96 percentage point decrease in the number of loans (1.74 in the 5% sample) and a 4.57 percentage point decrease in the volume of loans (3.88 in the 5% sample). Similar distance elasticities are observed for big loans, where a similar increase in distance results in a 1.36 (1.43) percentage point decrease in the number of loans and a 7.34 (7.10) percentage point decline in loan volume. The larger distance elasticity for loan loan volume than loan number implies that as distance increases, average loan size decreases.

While the impact of distance is negative for each of the three bank sizes, the deterrent

[20]The one exception to the robustness of the coefficients to alternative specifications in the estimations that have been run comes from estimations that include census region dummy variables. Inclusion of these dummies results in coefficients on the mean credit score that are negative for small loans and positive on large loans, though these coefficients are generally not statistically signficant at the 1 percent level. The coefficients on market concentration remain negative and statistically significant for small loans, but are insignificant for large loans. Since both market concentration and mean credit scores exhibit more cross-sectional variation than time-series variation, it is not surprising that the inclusion of such variables has this effect. Other variables in the estimation are not materially affected by the inclusion of regional dummy variables. The inclusion of census tract fixed effects does not substantively affect the other results reported in this paper.

[21]These results are from the National Federation of Independent Business Research Foundation's Credit, Banks, and Small Business Survey for 2001. Seventy-six percent of respondents replied that a convenient location was either very important (49 percent) or important (27 percent) in looking for a financial institution. This was comparable to the share of respondents who felt that offering the cheapest credit available was either very important (48 percent) or important (25 percent), though somewhat behind being a reliable source of credit (58 and 23 percent, respectively).

effect of distance is more muted at medium and large banking organizations. For both the number and volume of loans and for each loan size category, the difference between the distance elasticity at small banks and medium banks and the difference between small banks and large banks is statistically significant at the 0.1 percent level. For both the number and volume of out-of-market loans, the deterrent effect of distance decays monotonically across bank sizes, though for all three bank sizes the marginal effect of distance remains negative and statistically significant at the 0.1 percent level. The decay in the lending that follows from a one percentage point increase in distance is 1.50 and 3.56 (1.28 and 2.86) percentage points in the number and volume of loans, respectively, made by medium lenders and declines of 1.11 and 2.63 (0.89 and 1.9) percentage points at large lenders.

To examine how geographic patterns are evolving over time, the log of distance is interacted with a linear time trend for each of the three bank sizes. The results fail to exhibit any clear or consistent change over time in the importance of distance in out-of-market lending. In fact, the coefficients that are statistically significant at the one percent level on the three time-distance trends are all negative. This suggests that when there is a statistically significant trend in the importance of distance, it is in the direction of being towards distance becoming a more important deterrent to lending. However, the coefficients are not negative and significant consistently enough (particularly in light of the large sample size employed in the estimations) to demonstrate any clear trend in the importance of proximity over time. Additionally, the sizes of the coefficients are small compared to the overall value of the distance trends, generally altering the slopes by 1% per year. By themselves, these time-distance interactions do not imply that either the volume or number of loans extended at a given distance is not increasing, as the yearly dummy variables (which are not reported in the table to conserve space) tend to increase over time. However, the negative coefficients on the time-distance interactions do imply that the *average* distance of out-of-market loans is decreasing.

The negative coefficient on distance (and the absence of a consistent deteriation in the coefficient's size over time), does, however, suggest that proximity is an important feature of lending competition not only within local markets, as found by Brevoort and Hannan (Forthcoming), but also for competitors extending credit at substantially greater distances. Several reasons for such a pattern exist, ranging from additional costs to the lender (i.e., greater difficulty in acquiring soft information or additional monitoring costs) to consumer preferences for nearby lenders. Of particular interest to this paper are the theoretical concerns raised in the literature about the role of asymmetric information in small business

lending.

Specifically, we conjecture that the likelihood that a lender will actively extend credit in a market (or the amount of lending that a bank is willing to extend in a market) is negatively related to the probability that any given loan extended will be bad. This probability is equal to the probability that the applicant is someone who is not creditworthy and will default multiplied by the probability that the bank will approve the application, conditional on the applicant not being creditworthy. The first term is therefore a function of the quality of the applicant pool, while the second term is a reflection of the quality of the signal generated by the bank's application evaluation process.

As discussed earlier, proximity may confer an information advantage. As a result, nearby lenders may have better information about applicants, which would be reflected in the quality of the signal generated by their application process. For more distant lenders, this would imply that the probability of approving the loan of an uncreditworthy applicant would be higher.[22] Consistent with the negative coefficient on distance, this suggests that, holding constant the probability that applicants in a market are creditworthy, as distance increases so does the probability of making bad loans. As a consequence, the lending activity of distant lenders should decrease.

Two measures of the quality of the applicant pool are employed here. The first is the average credit score of the population. As the share of creditworthy consumers in a market increases, so should average credit scores. In the presence of asymmetric information, specifically where signal quality decreases in distance, the marginal effect of average applicant creditworthiness on the probability of a bad loan being made is highest for more distant lenders. As a result, if proximity confers an information advantage, then the coefficient on the interaction of distance with mean credit score should be positive.

The second measure of the quality of the applicant pool comes from the theoretical models of Broecker (1990) and Freixas, Hurkens, Morrison and Vulkan (2004). Both of their papers suggest that as the level of competition in a lending market increases, so will the extent of adverse selection. A consequence is that as the number of competitors in a market increases, average applicant quality falls. As with average credit scores, in the presence of adverse selection, the coefficient on the interaction of market concentration and distance should be positive.[23]

[22] Additionally, the probability of an application from a creditworthy applicant being accepted might also be decreased.

[23] If more local competition in a market does not lead to a lower average quality applicants, then one would expect the coefficient on this interaction term to be zero. This coefficient, therefore, will only be positive

To test for the presence of asymmetric information in out-of-market lending, a second specification was estimated (for each loan size classification and both lender samples) that added these two interaction terms to the baseline specification. The results of this specification are reported in each table in columns (2) and (5) for the number and volume of loans respectively. In these estimations, the coefficients on the variables from the baseline specification were similar to those in the first specification.

The coefficient on the interaction of mean credit score and distance ($SCORExDIST$) is positive and significant at the 0.1 percent level for both big and small loans and across both samples. This implies that distance is less of a deterrent to lending activity when the loans are being extended to markets with higher average credit scores. Evaluated at the sample means for the full sample, the estimated distance elasticities are 1.99 for small banks, 1.53 for medium banks, and 1.14 for large banks. A one-standard-deviation increase in mean credit score (an increase of 26.7 points) causes each of these elasticities to fall by 0.13. For big loans, the decline in elasticities is not as sharp (0.10 percentage points), but given the elasticities at the sample means (1.39, 1.11, and 0.85, respectively) the relative importance is approximately the same.[24] The coefficients on $SCORExDIST$ are consistently lower in the 5% sample. This suggests that those banks engaged in proportionately more out-of-market lending may have superior lending technologies that reduce (but do not eliminate) the problem of asymmetric information in out-of-market commercial lending.

Similar results are found for the interaction of market concentration and distance ($HHIxDIST$). The coefficient on this interaction term is consistently positive and significant at the 0.1 percent level for each loan size and sample, except for in the estimation of large loans made by the 5% out-of-market lenders in which the coefficient is positive and significant at the 1 percent level. A one-standard-deviation increase in HHI (an increase of 0.869) leads to a decrease in the distance elasticity for the full sample of lenders of 0.056 for the number of loans and 0.132 for the volume of loans. The distance elasticities are less responsive to changes in the level of concentration than they are to changes in the mean credit score of the population, leading to the sensible conclusion that increases in the level of concentration do less to improve the quality of the applicant pool in a market than does an increase in mean

if there is asymmetric information consistent with the theory of Broecker (1990) and if distance confers an advantage in evaluating applications for credit.

[24]For the volume of small loans extended in the full sample, the initial distance elasticities are 4.64 for small banks, 3.64 for medium banks, and 2.71 for large banks. A one-standard-deviation increase in mean credit scores, decreases these elasticities by 0.34. The elasticities for the volume of big loans are 7.48, 6.00, and 4.44, respectively, declining by 0.55 from a one-standard-deviation increase in credit scores.

credit score. Nevertheless, the positive, statistically-significant coefficients on $HHIxDIST$ in these estimations indirectly support the idea, introduced by Broecker (1990), that increasing competition in the loan market reduces the quality of the applicant pool facing any individual lender.

An additional factor that may impact geographic patterns of out-of-market lending is the product mix of the bank. As discussed earlier, banks with lower average loan sizes engage in more out-of-market lending. If banks are more willing to extend small loans over greater distances, then banks with smaller average loan sizes may find distance less of a deterrent. To test this possibility, those banks with average in-market loan sizes of $10,000 or less were identified. Since these banks may have lending technologies and business strategies that are more like each other than banks with similar asset sizes but larger average loan sizes, this group of lenders was treated as a fourth bank size class (in addition to the three used in the previous specifications: small, medium, and large). Consequently, a dummy variable indicating whether a bank had an average in-market loan size under $10,000, $LT10000$, was included, as well as an interaction with the log of distance, $LT10000xDIST$, and with time and distance, $TxLT10000xDIST$.[25] The results are presented in columns (3) and (6) in each table.

The estimated coefficients or marginal effects in these estimations are similar to the results of the earlier specifications for variables relating to bank or market characteristics. The one exception appears to be the coefficients on average in-market loan size ($LOANSIZE$ and $LOANSIZE2$) in the estimations for big loans in the full sample. In this case, the marginal effect of average in-market loan size is no longer statistically significant at the 1 percent level. For small loans in both samples and for big loans in the 5% sample, average in-market loan size remains a convex, decreasing function, with the coefficients on both $LOANSIZE$ and $LOANSIZE2$ significant at the 1 percent level. For these latter estimations large average in-market loan sizes continue to be associated with less out-of-market lending.

The estimated coefficients on distance indicate that distance is less of a deterrent to those commercial banks that specialize in loans of less than $10,000, a result that is significant at the 0.1 percent level for both big and small loans and for both lender samples. Even for the lenders with average in-market loan sizes of under $10,000, the marginal effect of distance on lending activity remains negative and statistically significant at the 0.1 percent level.

[25] Alternative attempts to allow the distance elasticity to vary with the average size of a bank's in-market loans were made, including a continuous interaction of each bank's average in-market loan size with distance and interactions of distance with other threshold loan sizes. The $10,000 threshold reported in this paper yielded the best fit (measured by the log likelihood) of any of the alternative specifications examined.

The difference in distance elasticities between these small-loan lenders and other lenders is substantial. Evaluated at the sample means, for small loans, a one percent increase in distance is associated with a decrease of 0.61 percent in the number of loans and 0.87 percent in loan volume at these small-loan lenders, compared to declines of 1.86 and 4.46 for small banks, 1.55 and 3.72 for medium banks, and 1.10 and 2.64 for large banks.

The change of distance elasticities over time at these lenders with average in-market loan sizes of $10,000 or less is substantively different than the change experienced by lenders with greater average in-market loan sizes. Whereas in the previous specifications, the time trend on distance elasticity was sporatically positive, in the estimations that include small-loan lenders as a fourth bank class, the time trends on the distance elasticities are consistently negative for small, medium, and large banks for both the number and volume of loans across loan sizes and lender samples. This implies that at these lenders with average in-market loan sizes in excess of $10,000, distance is becoming an increasing deterrent to out-of-market lending, though the marginal effect of time on the distance elasticities is only significant at the 1 percent level in each case for medium banks (for other banks, the negative effect is only sportatically significant).

Unlike these lenders with large average in-market loan sizes, the trend in distance elasticity over time at the small-loan lenders is positive in each estimation. The marginal effect of time on the distance elasticity for these small-loan lenders is statistically significant at the 0.1 percent level in the full sample for the number of small loans and the number and volume of big loans. In the 5% lender sample, the marginal effect is signficant at the 0.1 percent level for the number and amount of big loans. The size of the time trend is also economically significant. In the five years that elapsed during the sample, distance elasticities for small loans from the full sample fell from 0.610 to 0.529 for the number of loans, a decline of 13.3%, and from 0.865 to 0.779 for the amount of loans, a decline of 9.97%. Declines were even larger for big loans, having fallen 35.1% for the number of loans and 37.0% for the volume of loans.[26] These results suggest that the deterrent effect of distance in out-of-market lending is only declining over time for those lenders that specialize in loans of under $10,000.

[26]Numbers in the 5% sample were of the same magnitudes. The distance elasticities for small loans dropped over the five year period from 0.441 to 0.380 for the number of loans (a decline of 14.0%) and from 0.528 to 0.468 for loan volume (11.3%). For big loans, elasticities for the number of loans fell from 0.466 to 0.291 (37.6%) and for the volume of loans from 2.21 to 1.34 (39.5%).

5 Conclusions

The growth of out-of-market lending has been substantial over the time period of this sample. This implies that local commercial lenders may be facing greater competition than in the past from lenders located outside of their market. Patterns in the CRA data suggest that the increase in out-of-market lending activity has been limited to larger banks and smaller loans. The distribution of out-of-market credit also demonstrates only minor changes over time for most commercial banks. Tobit estimations of out-of-market lending activity suggest that the deterrent effect of distance over time is only consistently declining at lenders that specialize in very small loans (under $10,000). For the majority of lenders, who have higher average loan sizes, the deterrent effect of distance does not seem to be declining over time. So while the level of competition has increased, it does not seem to suggest that there has been a general expansion of the geographic size of banking markets.

While it is not possible, given the limitations of the CRA data, to determine the cause of this change in lending patterns, the growth in out-of-market lending among smaller loans is consistent with a credit scoring explanation. Mester (1997) reports that credit scoring is being used in commercial lending primarily to evaluate applications for small loans. If credit scoring is driving the growth in out-of-market lending documented here, then the future pattern of out-of-market lending will depend upon how rapidly credit scoring spreads across banking organizations and whether lenders begin to apply credit scoring methods to larger commercial loans. A direct empirical test of the importance of credit scoring to the growth of out-of-market lending is left for future research.

Theoretical research has established the potential of asymmetric information to be an important component of competition in commercial lending. This study uses the geographic pattern of lending and data on the average credit score and the level of concentration in each local market to test if the impacts of these market characteristics on the geographic lending patterns of the banks are consistent with the presence of asymmetric information. The results here suggest that distance is less of a deterrent to lending for markets with higher credit scores or greater market concentration. This is consistent with the presence of asymmetric information in these markets.

The presence of asymmetric information in commercial lending raises several interesting issues about the nature of competition in lending markets. The theoretical work of Broecker (1990) and Freixas et al. (2004) suggest that, in the presence of such information problems, additional competition might serve to decrease consumer welfare. While the results of this

paper should not be used to draw similar conclusions, additional empirical research on the role of asymmetric information in commercial lending and its impact on interest rates, credit standards, credit allocation, and welfare is important for understanding commercial lending markets.

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	Full Sample		5% Lender Sample	
	Mean	Std. Dev.	Mean	Std. Dev.
Number of Small Loans	.061727	.5040965	.1368794	.7955368
Number of Big Loans	.0230499	.1869853	.037098	.2504521
Amount of Small Loans	.1345672	.8588103	.2547005	1.226429
Amount of Big Loans	.1306306	.91988	.1962852	1.133554
SMALL	.3466275	.475896	.3353268	.4721049
MEDIUM	.5530522	.4971776	.5682824	.4953159
LARGE	.1003203	.3004266	.0963907	.2951266
LT10000	.0046015	.0676781	.0098653	.098833
T98	.1419955	.3490456	.1363497	.3431597
T99	.1488404	.3559312	.1442118	.3513046
T00	.1602622	.3668492	.1620738	.3685188
T01	.1698224	.3754768	.1685178	.3743257
T02	.1815109	.385441	.1821768	.3859904
T03	.1975686	.398165	.2066702	.4049171
LOANSIZE	4.795848	.594866	4.869144	.6779053
DIST	6.581665	.8657675	6.589691	.8864189
FIRMS	9.08906	1.075233	9.089494	1.074963
SCORE	659.7677	26.74866	659.7189	26.79831
HHI	.1896611	.0868888	.1895602	.0868787

Notes:

Table 1: Summary Statistics for Full Sample and Sample of 5% Out-of-Market Lenders

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
Const.	22.156***	42.752***	33.880***	41.216***	93.515***	77.478***
	(.236)	(.987)	(1.000)	(.550)	(2.306)	(2.326)
MEDIUM	-1.128***	-1.137***	-.682***	-2.403***	-2.425***	-1.717***
	(.103)	(.103)	(.105)	(.238)	(.239)	(.242)
LARGE	-.285**	-.311**	-.201	-.867***	-.932***	-.988***
	(.107)	(.107)	(.109)	(.249)	(.249)	(.252)
LT10000			-2.693***			-12.725***
			(.262)			(.618)
LOANSIZE	-7.446***	-7.500***	-4.048***	-12.847***	-12.977***	-6.991***
	(.042)	(.042)	(.075)	(.099)	(.099)	(.177)
LOANSIZE2	.615***	.622***	.257***	.998***	1.018***	.383***
	(.005)	(.005)	(.008)	(.012)	(.012)	(.020)
DIST	-1.959***	-5.407***	-5.196***	-4.565***	-13.321***	-12.866***
	(.020)	(.162)	(.163)	(.047)	(.378)	(.378)
MEDIUM*DIST	.464***	.465***	.307***	1.000***	1.002***	.742***
	(.019)	(.019)	(.019)	(.044)	(.044)	(.044)
LARGE*DIST	.846***	.849***	.754***	1.931***	1.936***	1.815***
	(.020)	(.020)	(.020)	(.046)	(.046)	(.046)
LT10000*DIST			1.246***			3.594***
			(.040)			(.095)
T*DIST	-.004	.001	-.036***	-.008	.007	-.066***
	(.004)	(.004)	(.004)	(.009)	(.009)	(.009)
T*MEDIUM*DIST	.002	.002	.019***	.004	.004	.037***
	(.002)	(.002)	(.002)	(.005)	(.005)	(.005)
T*LARGE*DIST	.0008	.0009	.019***	-.010	-.009	.034***
	(.002)	(.002)	(.002)	(.005)	(.005)	(.005)
T*LT10000*DIST			.052***			.083***
			(.004)			(.008)
FIRMS	.890***	.894***	.899***	2.077***	2.086***	2.101***
	(.006)	(.006)	(.006)	(.015)	(.015)	(.015)
SCORE	-.008***	-.038***	-.037***	-.020***	-.095***	-.093***
	(.0003)	(.001)	(.001)	(.0006)	(.003)	(.003)
HHI	-1.806***	-5.361***	-5.037***	-4.395***	-12.810***	-12.032***
	(.101)	(.382)	(.383)	(.235)	(.891)	(.888)
SCORE*HHI	.0002***	.0002***	.0002***	.0005***	.0005***	.0005***
	(1.00e-05)	(1.00e-05)	(1.00e-05)	(.00003)	(.00003)	(.00003)
SCORE*DIST		.005***	.005***		.013***	.012***
		(.0002)	(.0002)		(.0006)	(.0006)
HHI*DIST		.639***	.579***		1.516***	1.371***
		(.065)	(.065)		(.151)	(.151)
/sigma	2.929***	2.926***	2.928***	6.914***	6.903***	6.878***
	(.010)	(.010)	(.010)	(.026)	(.026)	(.025)
Obs.	2032600	2032600	2032600	2032600	2032600	2032600
e(N-unc)	56485	56485	56485	56450	56450	56450
e(N-lc)	1976115	1976115	1976115	1976150	1976150	1976150
e(ll)	-245164.9	-244879.6	-243926.8	-297899.1	-297568.4	-296129.7
e(r2-p)	.318	.319	.322	.256	.256	.26

Notes: Standard errors in parentheses. Each estimation includes year dummy variables. The symbols *,**, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 2: Number and Volume of Small Loans Extended Out-of-Market, All Lenders

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
Const.	1.273***	16.165***	12.716***	6.543***	90.197***	70.891***
	(.195)	(.742)	(.757)	(1.063)	(4.046)	(4.123)
MEDIUM	-.603***	-.614***	-.533***	-3.177***	-3.237***	-2.796***
	(.076)	(.076)	(.076)	(.411)	(.411)	(.411)
LARGE	-.337***	-.369***	-.291***	-2.468***	-2.651***	-2.232***
	(.079)	(.079)	(.079)	(.431)	(.432)	(.432)
LT10000			-2.836***			-15.849***
			(.283)			(1.550)
LOANSIZE	-.907***	-.942***	.448***	-4.813***	-5.012***	2.791***
	(.043)	(.043)	(.082)	(.234)	(.234)	(.447)
LOANSIZE2	.095***	.100***	-.039***	.508***	.536***	-.246***
	(.005)	(.005)	(.008)	(.026)	(.026)	(.046)
DIST	-1.363***	-3.903***	-3.886***	-7.341***	-21.577***	-21.489***
	(.016)	(.124)	(.124)	(.088)	(.675)	(.674)
MEDIUM*DIST	.275***	.277***	.257***	1.467***	1.475***	1.366***
	(.015)	(.015)	(.015)	(.079)	(.079)	(.079)
LARGE*DIST	.537***	.541***	.522***	3.011***	3.035***	2.930***
	(.015)	(.015)	(.015)	(.083)	(.083)	(.083)
LT10000*DIST			.887***			4.932***
			(.045)			(.248)
T*DIST	-.002	.002	-.003	-.012	.007	-.018
	(.003)	(.003)	(.003)	(.017)	(.017)	(.017)
T*MEDIUM*DIST	-.008***	-.008***	-.008***	-.043***	-.042***	-.040***
	(.002)	(.002)	(.002)	(.009)	(.009)	(.009)
T*LARGE*DIST	-.007***	-.007***	-.006***	-.038***	-.037***	-.033***
	(.002)	(.002)	(.002)	(.009)	(.009)	(.009)
T*LT10000*DIST			.037***			.199***
			(.005)			(.026)
FIRMS	.740***	.743***	.743***	3.956***	3.969***	3.970***
	(.005)	(.005)	(.005)	(.028)	(.028)	(.028)
SCORE	-.005***	-.027***	-.027***	-.028***	-.151***	-.152***
	(.0002)	(.001)	(.001)	(.001)	(.006)	(.006)
HHI	-1.371***	-2.710***	-2.684***	-7.432***	-14.243***	-14.095***
	(.077)	(.282)	(.281)	(.421)	(1.534)	(1.531)
SCORE*HHI	.0002***	.0002***	.0002***	.0009***	.0009***	.0009***
	(1.00e-05)	(1.00e-05)	(1.00e-05)	(.00005)	(.00005)	(.00005)
SCORE*DIST		.004***	.004***		.021***	.021***
		(.0002)	(.0002)		(.001)	(.001)
HHI*DIST		.253***	.247***		1.288***	1.258***
		(.049)	(.049)		(.268)	(.267)
/sigma	2.067***	2.065***	2.063***	11.315***	11.298***	11.280***
	(.009)	(.009)	(.009)	(.050)	(.050)	(.050)
Obs.	2032600	2032600	2032600	2032600	2032600	2032600
e(N-unc)	41356	41356	41356	41356	41356	41356
e(N-lc)	1991244	1991244	1991244	1991244	1991244	1991244
e(ll)	-181362.1	-181129	-180859.3	-253131.3	-252886.2	-252593.9
e(r2-p)	.266	.266	.268	.203	.204	.205

Notes: Standard errors in parentheses. Each estimation includes year dummy variables. The symbols *,**, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 3: Number and Volume of Large Loans Extended Out-of-Market, All Lenders

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
Const.	19.217***	29.932***	20.349***	33.363***	60.223***	45.173***
	(.287)	(1.295)	(1.257)	(.625)	(2.827)	(2.786)
MEDIUM	-1.593***	-1.600***	-1.238***	-3.672***	-3.687***	-3.118***
	(.126)	(.127)	(.125)	(.274)	(.274)	(.275)
LARGE	-.621***	-.607***	-.636***	-2.622***	-2.590***	-2.764***
	(.137)	(.137)	(.135)	(.299)	(.299)	(.299)
LT10000			-2.720***			-12.581***
			(.261)			(.584)
LOANSIZE	-6.242***	-6.270***	-2.915***	-9.716***	-9.784***	-4.864***
	(.044)	(.044)	(.077)	(.097)	(.097)	(.171)
LOANSIZE2	.442***	.446***	.093***	.618***	.628***	.108***
	(.006)	(.006)	(.009)	(.013)	(.013)	(.019)
DIST	-1.741***	-3.491***	-3.093***	-3.879***	-8.264***	-7.533***
	(.024)	(.208)	(.201)	(.053)	(.454)	(.446)
MEDIUM*DIST	.461***	.462***	.322***	1.021***	1.023***	.794***
	(.023)	(.023)	(.022)	(.049)	(.049)	(.049)
LARGE*DIST	.851***	.848***	.751***	1.975***	1.969***	1.841***
	(.024)	(.024)	(.024)	(.053)	(.053)	(.053)
LT10000*DIST			1.154***			3.190***
			(.040)			(.089)
T*DIST	-.015**	-.012*	-.074***	-.028**	-.021	-.131***
	(.005)	(.005)	(.005)	(.011)	(.011)	(.011)
T*MEDIUM*DIST	.013***	.014***	.037***	.028***	.028***	.072***
	(.002)	(.002)	(.003)	(.005)	(.005)	(.006)
T*LARGE*DIST	.020***	.021***	.062***	.025***	.025***	.110***
	(.003)	(.003)	(.003)	(.006)	(.006)	(.006)
T*LT10000*DIST			.086***			.143***
			(.004)			(.008)
FIRMS	.856***	.858***	.854***	1.800***	1.803***	1.818***
	(.008)	(.008)	(.008)	(.017)	(.017)	(.017)
SCORE	-.005***	-.020***	-.018***	-.012***	-.050***	-.046***
	(.0003)	(.002)	(.002)	(.0007)	(.004)	(.004)
HHI	-1.310***	-4.949***	-4.094***	-2.969***	-11.518***	-9.833***
	(.127)	(.517)	(.497)	(.277)	(1.127)	(1.101)
SCORE*HHI	.0002***	.0002***	.0002***	.0004***	.0004***	.0004***
	(.00002)	(.00002)	(.00002)	(.00004)	(.00004)	(.00004)
SCORE*DIST		.002***	.002***		.006***	.005***
		(.0003)	(.0003)		(.0007)	(.0007)
HHI*DIST		.622***	.479***		1.462***	1.173***
		(.085)	(.082)		(.185)	(.182)
/sigma	2.703***	2.703***	2.594***	5.999***	5.995***	5.837***
	(.012)	(.012)	(.011)	(.027)	(.027)	(.026)
Obs.	757303	757303	757303	757303	757303	757303
e(N-unc)	36131	36131	36131	36111	36111	36111
e(N-lc)	721172	721172	721172	721192	721192	721192
e(ll)	-139969.7	-139907.4	-136999.4	-171708.5	-171630.5	-169054.8
e(r2-p)	.36	.36	.374	.282	.283	.293

Notes: Standard errors in parentheses. Each estimation includes year dummy variables. The symbols *,**, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 4: Number and Volume of Small Loans Extended Out-of-Market, 5% Out-of-Market Lenders

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
Const.	.241	10.134***	7.112***	1.779	54.345***	38.775***
	(.268)	(1.098)	(1.111)	(1.346)	(5.540)	(5.604)
MEDIUM	-1.071***	-1.078***	-.940***	-5.271***	-5.305***	-4.610***
	(.103)	(.104)	(.103)	(.521)	(.521)	(.521)
LARGE	-.972***	-.978***	-.736***	-5.664***	-5.699***	-4.489***
	(.115)	(.115)	(.116)	(.581)	(.581)	(.585)
LT10000			-3.681***			-18.820***
			(.313)			(1.583)
LOANSIZE	-.678***	-.701***	.364***	-3.639***	-3.760***	1.780***
	(.049)	(.049)	(.096)	(.244)	(.244)	(.484)
LOANSIZE2	.065***	.068***	-.037***	.359***	.376***	-.173***
	(.006)	(.006)	(.010)	(.028)	(.028)	(.050)
DIST	-1.427***	-3.083***	-3.010***	-7.101***	-15.880***	-15.527***
	(.022)	(.180)	(.180)	(.111)	(.909)	(.906)
MEDIUM*DIST	.353***	.354***	.327***	1.745***	1.750***	1.610***
	(.020)	(.020)	(.020)	(.099)	(.099)	(.098)
LARGE*DIST	.632***	.632***	.588***	3.291***	3.293***	3.071***
	(.022)	(.022)	(.022)	(.109)	(.109)	(.109)
LT10000*DIST			.945***			4.815***
			(.050)			(.252)
T*DIST	.0002	.002	-.006	-.0009	.010	-.033
	(.004)	(.004)	(.004)	(.022)	(.022)	(.022)
T*MEDIUM*DIST	-.009***	-.009***	-.009***	-.042***	-.042***	-.041***
	(.002)	(.002)	(.002)	(.011)	(.011)	(.011)
T*LARGE*DIST	-.007**	-.007**	-.005*	-.042***	-.041***	-.032**
	(.002)	(.002)	(.002)	(.012)	(.012)	(.012)
T*LT10000*DIST			.041***			.208***
			(.005)			(.027)
FIRMS	.807***	.809***	.809***	3.972***	3.980***	3.977***
	(.008)	(.008)	(.008)	(.038)	(.038)	(.038)
SCORE	-.004***	-.019***	-.018***	-.020***	-.097***	-.096***
	(.0003)	(.002)	(.002)	(.002)	(.008)	(.008)
HHI	-1.415***	-2.659***	-2.589***	-7.191***	-13.184***	-12.829***
	(.114)	(.432)	(.430)	(.575)	(2.179)	(2.170)
SCORE*HHI	.0002***	.0002***	.0002***	.001***	.001***	.001***
	(1.00e-05)	(1.00e-05)	(1.00e-05)	(.00007)	(.00007)	(.00007)
SCORE*DIST		.002***	.002***		.013***	.013***
		(.0003)	(.0003)		(.001)	(.001)
HHI*DIST		.224**	.212**		1.078**	1.014**
		(.074)	(.074)		(.372)	(.370)
/sigma	2.164***	2.163***	2.158***	10.973***	10.966***	10.937***
	(.012)	(.012)	(.012)	(.065)	(.065)	(.065)
Obs.	757303	757303	757303	757303	757303	757303
e(N-unc)	22781	22781	22781	22781	22781	22781
e(N-lc)	734522	734522	734522	734522	734522	734522
e(ll)	-97383.27	-97335.57	-97109.98	-135314.3	-135262.3	-135030.9
e(r2-p)	.245	.245	.247	.186	.186	.187

Notes: Standard errors in parentheses. Each estimation includes year dummy variables. The symbols *,**, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 5: Number and Volume of Large Loans Extended Out-of-Market, 5% Out-of-Market Lenders

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
			Small Loans - Full Sample			
DISTxSMALL	-1.959***	-1.992***	-1.855***	-4.565***	-4.644517***	-4.460***
	.0203	.0205	.0202	.0474	.0477773	.0473
DISTxMEDIUM	-1.495***	-1.527***	-1.548***	-3.565***	-3.642531***	-3.717***
	.0135	.0136	.0141	.0317	.0320514	.0330
DISTxLARGE	-1.112***	-1.142***	-1.102***	-2.634***	-2.708023***	-2.644***
	.0135	.0136	.0137	.0318	.0320713	.0321
DISTxLT10000			-.6095***			-.8654***
			.0375			.0887
TxDISTxSMALL	-.0043	.0013	-.0357***	-.0075	.0065431	-.0658***
	.0039	.0040	.0040	.0092	.0092723	.0094
TxDISTxMEDIUM	-.0026	.0031	-.0170***	-.0040	.0105892	-.0287**
	.0034	.0035	.0036	.0081	.0081612	.0083
TxDISTxLARGE	-.0035	.0022	-.0166***	-.0171*	-.0025899	-.0319***
	.0035	.0035	.0035	.0081	.0082204	.0083
TxDISTxLT10000			.0162***			.0173
			.0042			.0099
LOANSIZE	-1.551***	-1.530***	-1.580***	-3.275***	-3.217363***	-3.316***
	.0139	.0139	.0148	.0327	.0327287	.0342
			Big Loans - Full Sample			
DISTxSMALL	-1.363***	-1.387***	-1.369***	-7.341***	-7.478***	-7.377***
	.0161	.0162	.0162	.0878	.0884776	.0881
DISTxMEDIUM	-1.088***	-1.111***	-1.113***	-5.874***	-6.00***	-6.011***
	.0104	.0105	.0106	.0573	.0578965	.0582
DISTxLARGE	-.8261***	-.8465***	-.8477***	-4.329***	-4.443***	-4.447***
	.0103	.0104	.0105	.0568	.0571806	.0572
DISTxLT10000			-.4821***			-2.445***
			.0441			.2412
TxDISTxSMALL	-.0020	.0016	-.0032	-.0124	.0074	-.0181
	.0030	.0030	.0031	.0166	.016672	.0167
TxDISTxMEDIUM	-.0102***	-.0066*	-.0110***	-.0551***	-.0349*	-.0583***
	.0026	.0026	.0027	.0143	.0143722	.0145
TxDISTxLARGE	-.0087**	-.0051	-.0091**	-.0500***	-.0300*	-.0511**
	.0026	.0026	.0026	.0142	.0143137	.0144
TxDISTxLT10000			.0338***			.1811***
			.0051			.0279
LOANSIZE	.0052	.0189*	.0721***	.0551	.1315**	.4327***
	.0090	.0090	.0098	.0490	.0490489	.0531

Notes: Standard errors in parenthesis. The symbols *, **, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 6: Distance Elasticities for Small and Big Loans, Full Sample

	SpecI	SpecII	SpecIII	SpecIV	SpecV	SpecVI
	(1)	(2)	(3)	(4)	(5)	(6)
			Small Loans - 5% Sample			
DISTxSMALL	-1.741***	-1.760***	-1.595***	-3.879***	-3.924***	-3.718***
	.0242	.0244	.0233	.0530	.0533	.0520
DISTxMEDIUM	-1.281***	-1.298***	-1.274***	-2.858***	-2.900***	-2.924***
	.0167	.0168	.0168	.0365	.0368	.0374
DISTxLARGE	-.8905***	-.9115***	-.8437***	-1.903***	-1.955***	-1.877***
	.0175	.0176	.0171	.0386	.0389	.0383
DISTxLT10000			-.4414***			-.5277***
			.0370			.0832
TxDISTxSMALL	-.0150**	-.0119*	-.0735***	-.0283**	-.0206	-.1311***
	.0049	.0049	.0050	.0108	.0108	.0110
TxDISTxMEDIUM	-.0015	.0016	-.0364***	-.0002	.0076	-.0596***
	.0044	.0044	.0044	.0096	.0097	.0098
TxDISTxLARGE	.0054	.0086	-.0114*	-.0035	.0046	-.0214*
	.0045	.0045	.0044	.0098	.0099	.0098
TxDISTxLT10000			.0123*			.0119
			.0048			.0107
LOANSIZE	-1.940***	-1.929***	-2.007***	-3.697***	-3.667***	-3.814***
	.0171	.0171	.0175	.0372	.0372	.0381
			Big Loans - 5% Sample			
DISTxSMALL	-1.427***	-1.443***	-1.411***	-7.101***	-7.185***	-7.027***
	.0220	.0221	.0220	.1109	.1115	.1109
DISTxMEDIUM	-1.073***	-1.088***	-1.084***	-5.356***	-5.436***	-5.417***
	.0144	.0145	.0147	.0732	.0738	.0743
DISTxLARGE	-.7953***	-.8109***	-.8240***	-3.810***	-3.892***	-3.956***
	.0154	.0155	.0156	.0782	.0787	.0791
DISTxLT10000			-.4661***			-2.212***
			.0484			.2445
TxDISTxSMALL	.0002	.0023	-.0065	-.0009	.0099	-.0333
	.0043	.0043	.0044	.0219	.0219	.0220
TxDISTxMEDIUM	-.0085*	-.0064	-.0150***	-.0429*	-.0319	-.0746***
	.0037	.0037	.0038	.0189	.0190	.0192
TxDISTxLARGE	-.0072	-.0050	-.0118***	-.0432*	-.0316	-.0653***
	.0038	.0038	.0039	.0194	.0194	.0196
TxDISTxLT10000			.0350***			.1745***
			.0060			.0303
LOANSIZE	-.0433***	-.0350**	.00004	-.1407*	-.0967	.0915
	.0119	.0119	.0126	.0597	.0598	.0634

Notes: Standard errors in parenthesis. The symbols *, **, and *** correspond to significance at the 5, 1, and 0.1 percent levels, respectively.

Table 7: Distance Elasticities for Small and Big Loans, 5% Out-of-Market Lender Sample