Do Banks Lend Where They Borrow?
A Study on Local Small Business Lending in the U.S.

by

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Executive Summary

The ability of small businesses to access financing continues to be one of the most pressing policy issues in the U.S. Given the well-documented role of small businesses in creating jobs and furthering economic growth, policymakers and regulators must ensure that creditworthy firms and their owners are able to obtain sufficient financing to survive economic downturns and grow during expansions. Without adequate financing, small businesses cannot continue their critical contributions to economic growth and employment.

Data on small-business lending collected by bank regulators to comply with the Community Reinvestment Act (CRA) of 1977 provide analysts, policymakers, regulators, and the public with information on how much each bank is lending in a given area. The CRA requires large banks to report both the dollar amount and number of loans originated in amounts less than $1 million, providing detailed information on the status of bank lending to small businesses in more than 30,000 neighborhoods.[1] Only banks with assets above a certain threshold are subject to the CRA reporting requirements, but the data cover approximately 75 percent of small-loan originations.

This report provides an analysis of bank lending to small businesses, focusing on loans made in counties where a bank did not have a physical branch location. With the use of technology, banks have the ability to make loans to borrowers over greater distances, which should improve small business access to financing by expanding the number of lenders operating in a market. The report examines how out-of-market loan originations have changed the past two decades (2001 – 2017), including before, during, and after the financial crisis of 2008 – 2011.

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[1] Technically, the CRA requires banks to report the amount and number of small loans, rather than loans to small businesses. Some researchers estimate that many businesses with 500 or fewer employees obtain loans greater than $1 million. Such larger loans are not included in the CRA data.

The report does not directly test the link between out-of-market lending and the availability of credit, which is a promising topic for future research.

The findings in this report demonstrate the following: Out-of-market lending has been trending upwards over time. With the exception of the crisis years 2008 – 2011, the percentage of out-of-market lending has risen during each year from 2003 – 2017. Over the total period, the trend line in originations is strongly positive.

Out-of-market lending declined sharply during the financial crisis years of 2008 – 2011. Economic conditions in the U.S. began to deteriorate as early as 2007, but reached a bottom in 2009, when the national unemployment rate peaked at 9.9%. Out-of-market small-business-loan originations moved largely in the opposite direction to the unemployment rate. As the economy recovered, the unemployment rate declined in each year from 2010 – 2017, while out-of-market small-business-loan originations rose in each year from 2011 – 2017, reaching new highs at the end of the period.

The sensitivity of out-of-market lending to economic cycles is strongest among the group of loans originated in amounts less than or equal to $100,000. This could be, at least in part, indicative of a trend in credit-card loans, which tend to be smallest in notional value. Bank lending of large loans to small businesses (originated in amounts of $100,000 to $1 million) in out-of-market counties is much more resilient and grew by about twice as much during the sample period.

Credit-card specialty banks are fundamentally different than other banks with respect to distance lending. Measured by both the dollar amount and number of loans, credit-card banks, which are large but typically have only one physical branch in a single county (usually in Delaware, South Dakota, or Utah), make virtually all of their loans out-of-market. Because these loans are structurally different from traditional loans, often are securitized, and account for a

large portion of out-of-market lending, it is important to separate these loans when conducting an analysis of distance lending.

Banks that were subjected to regulatory stress tests beginning in 2009 significantly reduced the dollar amount, but not the number, of their out-of-market small-business-loan originations. Some of the stress tests increased the risk-weight on small-business loans by 50%, which may explain why banks reduced the amount of out-of-market small-business loan originations. However, these banks still had to satisfy regulatory reviews of their CRA lending, which focus on the number, rather than the aggregate amount of lending. When originations are split into small and large loans, it is evident that the decline in out-of-market lending caused by regulatory stress tests is primarily among the large-loan sample. Stress-tested banks actually increased their issuance of small loans in counties where they did not have a physical presence. To briefly summarize the key findings of this report:

- The percentage of out-of-market loan originations to small businesses, as measured by both dollar amount and number, has been trending upward over the past two decades. This increase in distance lending is more pronounced for large loans greater than US $100,000 up to $1 million.

- The percentage of out-of-market loan originations to small businesses, as measured by both dollar amount and number, declines when economic conditions are poor. The impact of poor economic conditions on distance lending is greater for small loans originated in amounts less than or equal to US $100,000 than for larger loans originated in amounts of $100,000 - $1 million.

- Credit-card specialty banks originate close to 100 percent of their loans out-of-market, and account for about 27 percent of the dollar amount and 51 percent of the number of

out-of-market originations. This trend in credit-card lending is prominent no matter the loan size.

- There is mixed evidence that banks which were subject to regulatory stress tests responded by significantly reducing their out-of-market lending. In the small-loan subsample, stress-tested banks increased their out-of-market lending, while distance lending of larger loans declined after the assessments.

Policy Relevance

The results from this study provide guidance to policymakers on at least four important issues. First is the role of distance between bank lenders and their borrowers. Many posit that distance has become less important as technology, such as the internet and credit-scoring, reduce the role of face-to-face meetings between loan officers and prospective borrowers in the underwriting process. This study shows that banks are indeed making a greater portion of their loans outside of markets where they have a physical presence. Increased competition in affected local markets should improve both the availability and price of credit in those markets. This is especially true for small and rural markets where there are few or even no bank branches. Greater geographic diversification of a bank's loan portfolio reduces the risk of that portfolio, enabling a bank to offer better loan terms. For these reasons, policymakers and regulators should encourage banks to expand out-of-market lending as a way to improve the availability and cost of credit for small businesses.

On the other hand, increased out-of-market lending may come at the expense of in-market lending, contrary to one of the primary goals of the Community Reinvestment Act, which is to ensure that banks meet the credit needs of the communities in which they operate. Greater out-of-market lending also raises questions as to whether regulators can continue to rely upon branch deposit data to define the markets in which a bank operates. As more banks issue out-of-

market loans, they diverge from the intentions of the Community Reinvestment Act and make it difficult to assess the impact of mergers on competition. Policymakers may wish to re-evaluate how the CRA defines a bank's "assessment area" to account for areas where a bank has significant lending activity but no physical presence.[2]

A second issue is with the exemption of banks with less than US $1 billion in assets from required reporting of CRA data on small-business loan originations. Prior to 2005, this exemption was set at only US $250 million. The rationale for this threshold change was, and continues to be, that small banks only lend in the markets in which they have a physical presence. However, the results in this study show that even the smallest lenders, when excluding credit-card and stress-tested banks, often do a significant share of their lending outside of the markets in which they have physical branches. Policymakers should revisit the size threshold at which community banks are exempted from CRA reporting requirements and use the CRA data reported by smaller banks to guide their recommendations.[3]

A third issue is how to account for business credit-card loans when analyzing data from both the Call Reports and CRA data on small-business loan originations. The Call Reports require banks to track and report consumer credit card loans separately from other types of consumer credit, but do not require the same reporting for business credit card loans. Instead, these loans are pooled with other types of business credit and reported as commercial & industrial (C&I) loans. This makes it virtually impossible to separate out business credit-card

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[2] 12 C.F.R. § 345.41 defines "assessment area" for purposes of the CRA. A bank's assessment area includes "the geographies in which the bank has its main office, its branches, and its deposit-taking RSFs, as well as the surrounding geographies in which the bank has originated or purchased a substantial portion of its loans (including home mortgage loans, small business and small farm loans, and any other loans the bank chooses, such as those consumer loans on which the bank elects to have its performance assessed)."
[3] On April 8, 2020, the U.S. Small Business Administration Office of Advocacy submitted a comment letter regarding a proposed rule in the Federal Register titled Community Reinvestment Act. Part of this rule would revise the definition of a "small bank" from assets less than $1.284 billion to $500 million or less. The SBA defines a small bank as one with assets less than $600 million and argued that using this threshold would be less burdensome on more than 200 banks with assets between $500 million and $600 million.

loans from traditional business loans when analyzing either the Call Report data or the CRA small-business-loan origination data. As credit-card loans are much smaller in size, structured and underwritten differently, issued over greater distances, and often securitized, any study of lending to small businesses needs to be able to identify this type of credit separately, which is not possible at this time with publicly available data.

A fourth issue is the decision by regulators to aggregate CRA data on small-business loan originations across C&I loans and nonfarm non-residential mortgages. These loan-types are reported separately in the Call Report data. The issue of credit-card loans applies solely to C&I loans, as banks do not issue credit-card loans securitized by non-residential mortgages. Previous research, such as Cole and White (2012), has demonstrated that C&I loans and non-farm nonresidential mortgages present very different risks to the viability of commercial banks. Together with the findings regarding credit cards, this report shows that regulators could improve data accuracy by requiring banks to report their small-business-loan originations separately for C&I loans and for nonfarm nonresidential mortgages.

1. Introduction

Bank lending has long been established as a crucial source of capital for U.S. small businesses, regardless of their size or stage in the business life cycle (Petersen and Rajan 1994, Cole and Wolken 1995, Berger and Udell 1998, Robb and Robinson 2014). Obtaining capital is pivotal for small businesses, directly affecting firm success, growth, and survival (Evans and Jovanovic 1989, Fan and White 2003, Cole and Sokolyk 2018). However, underwriting for small business loans can be a challenge as smaller companies sometimes lack the hard assets and credit history required for a bank to make efficient credit decisions. As technology has improved, banks have increased their use of technology over time to improve the loan-underwriting process (Frame et al. 2001, Frame et al. 2004, Akhavein et al. 2005, Berger et al. 2005). This facilitates issuing loans to borrowers who are located further away from bank branch locations by reducing transportation and monitoring costs (Petersen and Rajan 2002, DeYoung et al. 2008, DeYoung et al. 2011). But how have banks utilized their ability to lend outside of markets where they have a physical presence during the past two decades? And how did out-of-market lending change during the financial crisis years of 2008 – 2011? The existing literature is largely silent.

To provide answers to these two questions, this report presents results from analyzing small-business-loan originations reported by U.S. commercial banks to the FFIEC in compliance with provisions of the Community Reinvestment Act (CRA). These data are recorded by the location of the borrower rather than the location of the bank or its branches, which allows one to match bank lending in each county to bank branch locations using information provided by the FDIC's annual Summary of Deposits (SoD) survey. The measure of "distance" used in the analysis is the percentage of small-business-loan originations in counties where the reporting bank does not record any branch deposits relative to total originations. This measure summarizes whether a bank is lending to small businesses in the markets where it has no physical location.

The results indicate that out-of-market bank lending to small businesses is largely affected by economic conditions. As the $2008 - 2011$ financial crisis occurred, the percentage of out-of-market loan originations to small businesses declined, then rebounded sharply during the post-crisis years $2012 - 2017$; however, the findings in this study also suggest that previous analyses of this nature may be influenced by different lender or loan types.

The analysis shows that credit-card lending to small businesses has become more prevalent over time, and the small set of banks specializing in credit-card lending originate most of their small-business loans out-of-market. This raises an important issue regarding small business lending activity reported by the FFIEC in its CRA data and in the quarterly Consolidated Reports of Condition and Income (Call Reports). These reports do not require banks to report business credit cards as a subset of all business loans, as is done with consumer credit card loans. Instead, business credit-card loans are reported as business loans and aggregated together with business term loans and draw credit lines.

Prior literature has suggested that small banks primarily lend to small businesses within their local markets (Carter and McNulty 2005, Brevoort and Hannan 2006, Jagtiani and Lemieux 2016). Bankers build relationships with the borrowers in their community to better understand business operations, which leads to more banking business (Petersen and Rajan 1994, Berger and Udell 1995, Cole, 1998).

The report provides new evidence that community banks increasingly make loans to borrowers in markets where they do not have a physical presence. For example, in 2016, Meridian Bank (RSSD ID = 3271799), a community bank with assets of US $727 million, reported that it was holding $531 million of deposits in three counties within the state of Pennsylvania, but also reported that it originated small-business loans to borrowers located in 20

different U.S. counties, including counties located as far away as Florida, Texas, and even Oregon.

In this study, the authors compute the share of out-of-market lending for the banking industry over time, as measured by both the dollar amount and number of small-business loan originations each year. The univariate analysis shows a significant drop in out-of-market lending during the financial crisis years $2008 - 2011$, with the exception of banks that specialize in credit-card lending. Traditional banks change their lending habits during periods of economic weakness, lending to borrowers in areas where they have a physical presence. A multivariate analysis confirms these findings.

The report then examines credit-card specialty banks, which are identified by the FFIEC in its Uniform Bank Performance Report (UBPR). We argue that credit cards issued to small businesses should not be treated the same as traditional loans because they are much smaller in size, structured and underwritt.en differently, issued over greater distances, and often securitized by lenders. We find that credit-card specialty banks originated close to 100 percent of their loans out-of-market. Consequently, we analyze distance lending for all banks and separately for traditional banks and credit-card banks.

The report also considers differences in banks that were, and were not, subject to Federal Reserve stress tests that were implemented in response to the financial crisis. These banks are subsidiaries of large bank holding companies with hundreds and even, in some cases, thousands of branches across the U.S., which makes their out-of-market lending decisions less challenging. In our reduced subsample that excludes stress-tested banks, we find that the Financial Crisis was accompanied by reduction in the percentage of out-of-market lending of almost three-fourths when measured by the number of small-business-loan originations and about one-third when measured by the amount of small-business-loan originations. This evidence suggests that, as the

U.S. economy declined, banks chose to refocus on originating small-business loans in their local markets, where they are presumed to have an information advantage in selecting and monitoring local borrowers. The analysis also confirms that smaller banks do issue a meaningful portion of out-of-market lending. In 2017, more than half of the number and more than a quarter of the dollar amount of small-business loans originated by smaller banks were issued out-of-market.

In addition to analyzing out-of-market small-business lending for the entire sample of loans, this report also presents results where the full sample of originations is separated into small and large loans. This empirical analysis indicates a difference in behavior for small-business loan originations of these different sizes whether captured by the dollar amount or number of loans. Large-loan originations are much more resilient than small loans to economic cycles. Statistically, community banks did not cut back on distance lending of large loans during the Crisis, whereas out-of-market lending of small loans declined precipitously from 2008 − 2011. Also, while credit-card banks tend to issue many out-of-market loans regardless of size, bank stress testing led to an increase in the out-of-market lending of small loans and a decrease in the out-of-market lending of large loans.

These results make significant new contributions to the literature on distance lending and lead to several important policy implications. The report expands the literature on small-business distance lending by capturing an important time period (from 2001 – 2017), before, during, and after the financial crisis to see how banks react to economic distress. Prior research has yet to account for credit-card and stress tested banks when analyzing distance lending around economic cycles (Petersen and Rajan 2002, Hannan 2003, Brevoort and Hannan 2006, DeYoung et al. 2008, Granja et al. 2019). The authors argue that credit-card loans are structurally different from traditional loans from the perspectives of both the lender and the borrower. The analysis in this report accounts for this factor by examining different buckets of loan sizes and by removing

credit-card specialty banks. The results point to a reduction in out-of-market lending during the financial crisis years 2008 – 2011, especially by community banks making smaller loans. A decrease in distance lending would have affected small businesses located in counties with fewer banking options.

Other distance lending studies tend to examine a subset of data: whether obtaining proprietary data from a bank (Degryse and Ongena 2005, Agarwal and Hauswald 2010), using small business surveys (Petersen and Rajan 2002), or limiting the analysis to certain MSAs (Brevoort and Hannan 2006). Instead, this report accounts for all small-business lending by banks that are required to report CRA data. This provides a much larger sample from which to draw conclusions. The two closest studies to this one are Hannan (2003) and Granja et al. (2019). Hannan (2003) determines that in highly competitive markets, the supply of out-of-market lending is greater as non-local banks can operate at lower costs and undercut the competition in those markets. Granja et al. (2019) focus on how competition leads to greater risk taking during good economic times, on the premise that loans made at farther distances from a bank's physical location are riskier. However, as economic conditions worsen, they find that banks reduce distance lending. This sensitivity of distance lending to economic cycles is exacerbated in more competitive home markets. Hannan (2003) uses the share of out-of-market lending in each county in the U.S. Our measure is calculated at the bank level to determine if banks are lending in markets where they take deposits. These bank-level data allow us to test which bank-specific characteristics impact out-of-market lending. We are able to identify certain types of banks by size, organizational structure, and health for use in our empirical models.

Based upon an analysis of out-of-market small-business lending by commercial banks, this report proposes four main policy implications. The first is whether regulators can rely on bank deposits to locate where a bank operates, particularly in regard to small-business lending.

As technology has improved, one can assume that more banks have the capability to lend in markets outside of their locality. This has important implications for the Community Reinvestment Act (CRA) which tries to promote credit availability to local borrowers. It also affects regulators who analyze of the impact of bank mergers on competition.

The second calls for a reduction in the threshold of banks that report CRA data to FFIEC. If smaller banks were required to disclose new loan originations, then one could draw more impactful conclusions about the availability of small-business credit.

The third issue is regarding credit-card loans to small businesses. Ou and Williams (2009) report that half of small businesses have a credit card, yet there is no way to identify credit-card activity in the data that is publicly available. The authors propose that the FFIEC require banks to report credit-card loans to small businesses separately from other business loans in both the CRA originations reports and on the Call Reports. The analysis demonstrates that credit-card loans should be examined separately from traditional forms of lending, particularly in regard to bank lending over distances. This would allow for an accurate evaluation of out-of-market bank lending, and whether it has improved credit availability for small firms.

In a final proposal, the authors call for the separation of C&I loans and nonfarm non-residential mortgages in the CRA originations data in order to match the granularity of the Call Reports. This will allow for more granularity when analyzing small-business-loan originations by considering different loan types with different structures and implications.

2. Literature Review

Throughout history, the size of the banking industry has been heavily influenced by the state of the economy and restrictions placed on it by regulatory agencies. Bank lending to small businesses, in particular, seems to fluctuate quite drastically depending on these circumstances.

As Cole (2012) and Cole and Damm (2020) report, lending to small businesses in the U.S. more than doubled from 1994 to its peak in June 2008 right before the Great Recession. Afterwards, small-business lending had fallen almost 18 percent by June 2011 compared to a decline in total bank lending of around 9 percent. This disparity highlights the unique nature of small-business lending, which is greatly dependent on the relationship and distance between bank and borrower in addition to the economic and regulatory factors mentioned above.

In the U.S., as internet adoption becomes more widespread, improvements in technology and information sharing should allow lenders to issue credit over greater distances. However, evidence of increased distance lending from academic literature is mixed. Results depend on a number of different factors: the sample period, size of the bank, consideration of credit-card lenders, market type, and market concentration to name a few.

Petersen and Rajan (2002) examine distance as a factor in lending, finding that the average distance between small-business borrowers and their banks increased from 15.8 to 67.8 miles from 1973 to 1993. The median distance during this time period was between 2 – 5 miles, indicating that most banks still issued credit at close distances. According to Peterson and Rajan, lenders farther away from borrowers approve loan applications more often and charge lower interest rates. However, when examining loan contracts from a large Belgium bank, Degryse and Ongena (2005) observe the opposite effect, with distance resulting in a higher cost of borrowing, unless bank competition is high. Bellucci et al. (2013) find similar results in their study of loans by an Italian bank. Degryse and Ongena label this as evidence of spatial price discrimination which is the result of higher transportation costs, a theory that is supported by other literature, particularly when there is still a need for in-person interactions (Chiappori et al. 1995, Almazan 2002).

Frame et al. (2001) argue that increases in lending distance is being driven by advancements in credit scoring techniques and growth in the credit card industry. Several studies examine the impact of credit scoring, which allows banks to rely on 'hard' information to determine loan approval and interest rates, a practice more commonly employed by large banks. Small banks may rely on 'soft,' relationship-based information which enables them to compete in local markets (Frame et al. 2001, Cole et al. 2004, Frame et al. 2004, Akhavein et al. 2005, Berger et al. 2005). As distance grows, the use of soft information as a factor in underwriting small-business loans declines (Agarwal and Hauswald 2010), and so does the use of loan officer discretion in lending decisions (Cerqueiro et al. 2011). By examining a sample of SBA loans, DeYoung et al. (2008) find that distance increases the likelihood of borrower default, an effect that diminishes at credit scoring banks, providing support for the effectiveness of hard lending.

Other studies suggest that as competition/market concentration grows, large banks take advantage of credit scoring technologies. In response, local/smaller banks focus on lending where they have the informational advantage which leads to lending at shorter distances (Degryse and Ongena 2005, Dell'Ariccia and Marquez 2006, Bellucci et al. 2013), which is supported empirically in a study by Agarwal and Hauswald (2010) examining a proprietary dataset of small-business loan applications at one U.S. bank. Their results indicate that soft information is incredibly important in opaque lending relationships. When this type of information is present, they reject prior claims that distance reduces credit availability and increases the cost of borrowing. Past research has proven that small banks work to build relationships with informationally opaque firms (Cole et al. 2004, Scott 2004, Berger et al. 2005), giving themselves an advantage with more personalized borrowing options and capturing a firm's retail banking business, which results in higher switching costs. Jagtiani and Lemieux (2016) argue that it is less common for small community banks to engage in substantial lending

outside of their local market. Over the years, even prior to the financial crisis, small-business lending by community banks has been declining as they lose market share to alternative non-bank lenders and larger banks with credit scoring technologies.

Capturing borrower/lender distance for small-business lending can be challenging with publicly available data. The Community Reinvestment Act in the U.S. requires banks larger than a certain size threshold (US $1.284 billion as of 2019)[4] to report all small-business lending based on the county in which the borrower is located. Hannan (2003) matches these data to the FDIC's Summary of Deposits. He classifies a loan as out-of-market if the bank issuing the loan does not have any deposits at any branch in the county where the borrower is located. Hannan's data indicate that out-of-market lending grew significantly from $1996 - 2001$ in terms of the number of loans, but much more modestly in terms of the dollar amount of loans issued. Both trends hold when Hannan excludes bank subsidiaries that specialize in credit-card lending, which he identified using data from the Nilson Report. Credit-card subsidiaries dominate the number of micro loans to small businesses (less than US $100k in value), a point that is confirmed in a later study by Ou and Williams (2009). The main regressions of Hannan's analysis indicate that market concentration is associated with out-of-market lending, as lenders from external markets take advantage of cheaper labor to undercut competition. Other research finds evidence that the extension of credit in relation to distance is impacted by competition in the banking market (Petersen and Rajan 1995, Degryse and Ongena 2005, Bellucci et al. 2013). In less concentrated markets, when rival banks are substantially farther away, a bank has more power over the borrower in regard to the extension of credit and/or cost of borrowing. This market power effect

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[4] This threshold is set by the FFIEC on January 1st of each year: https://www.ffiec.gov/cra/pdf/AssetThreshold2019.pdf (Last accessed August 31, 2020)

is born by transportation costs, informational advantages, and the spatial market for surrounding banks (Degryse et al. 2009).

Brevoort and Hannan (2006) employ a distance model that captures spatially dependent errors, while correcting for heteroskedasticity, based on bank branches in nine MSAs and the closest census tracts that report CRA small-business borrowing. Their results indicate that, in these markets, out-of-market lending grew by a small amount from 1997 – 2001. However, the vast majority of lending still occurred within market. Distance is found to be a significant factor in lending decisions for this sample period, particularly in small banks compared to median or large banks. Overall, in this small sample, the researchers find that distance has slightly grown in importance for lending decisions. They conclude that small-business lending is becoming more localized, which presents evidence against the more widespread use of hard information lending in the industry implied by other research (Frame et al. 2001, Akhavein et al. 2005, Berger et al. 2005, Ou and Williams 2009).

Expanding technology capabilities have shaped the banking industry for the past 20 – 30 years. Credit scoring models, in particular, have improved credit availability to small businesses, reducing the value of local lending methods (Frame et al. 2001). Even more opaque, risky borrowers and those in lower income areas are now able to apply for loans from multiple sources, increasing the distance between lender and borrower (Berger and Frame 2007, DeYoung et al. 2011). This technological progress has also allowed large banks to better monitor their subsidiaries, reducing agency costs which affect local lending decisions (Berger and DeYoung 2006). This has led to a rise in the number of credit-card specialty banks which have captured a significant amount of the small-business lending market (Carter and McNulty 2005).

In analyzing CRA and Call report data, Ou and Williams (2009) report a steady increase in both the value and number of small-business loans issued from 1995 − 2007. However, the

majority of this rise is due to micro loans (less than US $100,000 in value) whose issuance grew by 300 percent in the sample period. The market share of large lenders in this loan size category expanded from 17.6 percent to 55.6 percent. In 2006, 85 percent of new micro loans captured by the CRA data were made by the top 12 lenders in this category who subsequently reported much lower average loan sizes compared with other lenders. These trends have led many studies to exclude credit-card lenders when analyzing the small-business lending industry (Frame et al. 2001, Hannan 2003, Avery and Samolyk 2004, Carlson et al. 2013). The interest rates on credit-card loans vary depending on repayment history, and the criteria for issuance is markedly different than traditional bank loans to small businesses. Also, credit-card loans are often securitized, leaving the issuer free from recourse should the loans default. Ou and Williams (2009) report large increases in the use of credit cards by small businesses, from 29 percent of businesses to 50 percent, per data from the 1998 and 2003 SSBFs. After these considerations, the authors of this report argue that it is essential to control for credit-card loans when analyzing any small-business lending data, a task that cannot properly be accomplished with the current data constraints.

Finally, in a more recent study, Granja et al. (2019) examine how competition leads to greater risk taking during good economic times. They find that loans made at greater distances from a bank's physical locations are riskier, and as economic conditions improve, less risk averse banks increase the distances at which they lend. Distance lending sensitivity to economic conditions is exacerbated by local market competition.

3. Data

The data used in this study come from three primary sources: (1) the FFIEC's CRA data on small-business loan originations,[5] (2) the FDIC's Summary of Deposits,[6] and (3) the FFFIEC's Report of Condition and Income.[7] We also obtain county-level control variables from various U.S. government agencies, including the U.S. Census Bureau.

3.1. FFIEC CRA Data on Small-Business Loan Originations

First, we obtain data on small-business loan originations from the annual CRA reporting data published mid-year by the U.S. Federal Financial Institutions Examination Council (FFIEC). The FFIEC is an interagency body that, among other duties, collects periodic financial information filed by depository institutions on behalf of the Federal Reserve System (FRS), the Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC). The CRA was passed into law in 1977 by Congress (12 U.S.C. 2901) and has been implemented by bank regulators (see 12 CFR parts 25, 228, 345, and 195). Congress intended that CRA would encourage each financial institution to take steps to meet the credit needs of borrowers in the localities in which the institution does business. We use the bank-level data organized by county.[8] The FFIEC defines small-business loans as those whose original

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[5] As of August 2019, the CRA data on small-business loan originations could be downloaded from its website at: https://www.ffiec.gov/cra/craproducts.htm (Last accessed August 31, 2020).

[6] As of August 2019, the annual Summary of Deposits data files could be downloaded from the FDIC's website at: https://www5.fdic.gov/sod/dynaDownload.asp?barItem=6 (Last accessed August 31, 2020)

[7] For periods beginning March 2000, the quarterly Reports of Condition and Income can be downloaded from the FFFIEC's Central Data Repository (CDR) website at: https://cdr.ffiec.gov/public/PWS/DownloadBulkData.aspx (Last accessed August 31, 2020).
For periods from March 1976 through December 2010, this information can be downloaded from the website of the Federal Reserve Bank of Chicago at:
https://www.chicagofed.org/banking/financial-institution-reports/commercial-bank-data (Last accessed August 31, 2020).
PDF file images of the reporting forms are available from the FFIEC's website at:
https://www.ffiec.gov/ffiec_report_forms.htm (Last accessed August 31, 2020).

[8] The CRA data on small-business loan originations are available for public download from the FFIEC's website at: https://www.ffiec.gov/cra/craflatfiles.htm (Last accessed August 31, 2020).

amounts are US $1 million or less and that were reported as either "Commercial and industrial loans" or "Loans secured by nonfarm or nonresidential real estate."[9] This loan size threshold is a proxy for small-business lending. It may include loans to larger businesses (with more than 500 employees), and it does not include loans to small businesses that are originated in amounts greater than US $1 million in notional value.[10] Also, C&I loans and non-farm nonresidential mortgages present very different risks to the viability of commercial banks (Cole and White 2012).We propose that the CRA implement a reporting change to separate these two groups of loans as they are in the bank Call Reports.

3.2. FDIC Summary of Deposits

The FDIC's Summary of Deposits (SoD) is an annual survey of FDIC-insured financial institutions that provides information on the dollar amount of deposits at each branch office of each institution as of June 30 of each year. The SoD also provided detailed information on the location of each branch office, including city, county, and state, as well as the identity of the branch's parent bank and bank holding company, if there is one. The SoD data are critical components of bank supervision and regulation, including assessing the competitive impact of mergers and whether a bank is meeting the needs of its communities as proscribed by the Community Reinvestment Act.

We obtain data on the amount of deposits in each county from the FDIC's Summary of Deposits (SoD), which requires all FDIC-insured financial institutions to report the amount of deposits at each branch as of June 30th each year. Therefore, we have the amount of deposits at

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[9] See the 2016 "A Guide to CRA Data Collection and Reporting" published by the Federal Financial Institutions Examination Council (FFIEC).

[10] See "Defining and Measuring Small Business Lending" published by the Federal Deposit Insurance Corporation (FDIC) as part of their 2018 Small Business Lending Survey: https://www.fdic.gov/bank/historical/sbls/section2.pdf (Last accessed August 31, 2020).

each bank by location and can combine this with the CRA data to analyze whether small-

business borrowers who receive loans from a given bank are in the same county as the bank's

deposit activity.[11]

3.3. FFIEC Consolidated Report of Condition and Income

The FFIEC's quarterly Consolidated Reports of Condition and Income are regulatory

reports that are filed by each commercial bank in the U.S. and are known informally among bank

researchers as "Call Reports." From this report, we obtain the information needed to create our

analysis variables, including our measures of small-business lending. The Call Reports provide

detailed financial information for each bank, including balance sheet data and income statement

data. As part of the FDIC Improvement Act of 1991, which was passed to address regulatory

shortcomings identified during the last major banking crisis, bank regulators were directed (in

Section 122) to begin collecting annual data on lending to small businesses and small farms.[12] To

comply with this requirement, beginning in 1994, regulators included a section that gathers

information on small-business lending in the June Call Report: *Schedule RC-C Part II: Loans to*

Small Businesses and Small Farms. These are the two primary types of commercial loans made

by commercial banks and correspond to items collected on Part I of Schedule RC-C, which

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[11] The FDIC provides a bank with some latitude in assigning deposits to a branch so that its SoD data are consistent with the banks' internal record-keeping practices. Deposits may be assigned to the branch based upon: (i) the closest proximity to the accountholder's address; (ii) where the account is most active; (iii) where the account was opened; (iv) branch manager compensation or similar purposes.
[12] See the text of Section 122 at: http://www.fdic.gov/regulations/laws/rules/8000-2400.html (Last accessed August 31, 2020).

provide the amounts of all loans secured by nonfarm nonresidential properties and of commercial & industrial (C&I) loans.[13]

For our empirical analysis, information about each bank is obtained from the June 30th Call Reports that are filed by each commercial bank in the U.S. These Reports provide key datapoints that allow us to identify credit-card specialty banks, match bank subsidiaries to their holding companies, determine control variables for our empirical analysis, and track the total outstanding balance of small-business loans in each bank's loan portfolio.

3.4. Small-Business Lending

The CRA data report small-business loan originations by each bank and the Call Reports indicate each bank's outstanding small-business loan balance. Both datasets collect information on the number and amount outstanding of loans secured by nonfarm nonresidential properties/commercial & industrial loans with (1) original loan amounts of less than or equal to US $100,000, (2) original loan amounts greater than US $100,000 up to $250,000, and (3) original loan amounts greater than US $250,000 up to $1 million. Neither dataset identifies credit-card loans to small businesses which, as we will explore further, creates difficulties in any analysis of these data, but particularly for a study on lending distance. We contend that credit-card loans should not be treated equally to conventional loans, and that for larger banks, a significant portion of their credit-card loans to small businesses are difficult to identify, which can distort local lending numbers (see Section 3.6 below).

Hannan (2003) and Brevoort and Hannan (2006) examine out-of-market small-business lending from 1996-2001. In 2001, banks reporting CRA data were required to begin recording

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[13] The schedule also identifies banks that make substantially all of their business loans in original amounts of US $100,000 or less. There are about 1,000 such banks. For these banks, the values of business loans from Part I of Schedule RC-C are used as the values of small-business loans. These banks still have to report the number of such loans.

loan renewals as a part of their origination activity in each year.[14] We confirm the findings of

Hannan (2003) that the percentage of out-of-market small-business loan originations grew

exponentially from 1996 – 2001, a trend that is much more prevalent when analyzing the number

of loans versus the total dollar amount. Large loans to small businesses were still likely to be

made within county. However, Hannan's is a county-level analysis that explains out-of-market

lending as the result of local bank competition. For our study, we examine out-of-market lending

at the bank level to determine which bank characteristics lead to less local lending, along with

local economic factors. Our CRA data is from 2001 – 2017, including loan renewals. We argue

that the rise in out-of-market lending documented by Hannan (2003) was not a permanent one. It

is instead impacted by economic forces, bank attributes, and financial sector regulations.

3.5. Defining Out-of-market Lending

To capture lending by banks in markets where they do not have branches, we construct a

similar measure to Hannan (2003), but at the bank level instead of per county. By matching data

from the SoD to CRA small-business loan originations by bank-county pairs in each year, we can

determine if a bank has a physical branch in the same county in which it issues loans. The SoD

reports the county in which the bank branch is located.[15] The CRA data reports the county in

which the small-business borrower is located. Our share of out-of-market lending per bank for

both the number and dollar amount of originated loans is:

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[14] An excerpt from the January 2001 Guide to CRA Data Collection and Reporting: "*Data collected in 2001 and subsequent years*. An institution should collect information about small-business and small-farm loans that it refinances or renews as loan originations. (A refinancing generally occurs when the existing loan obligation or note is satisfied and a new note is written, while a renewal is an extension of the term of a loan. However, for purposes of small-business and small-farm CRA data collection and reporting, it is no longer necessary to distinguish between the two.)."

[15] The SoD data include a small number of branches that report zero deposits. We treat small-business loans reported for counties where a bank only has a branch with zero deposits as "out-of-market." There are 543 bank-county-year observations in the matched CRA and SoD dataset out of approximately 1.3 million total observations where this occurs. Our results are virtually unchanged when we classify these observations as "in-market."

$$Share_{OM} = \frac{Loans_{OM}}{Loans_{IM} + Loans_{OM}}$$

where $Share_{OM}$ measures the percentage of small-business loan originations that are issued in counties where the bank does not have a branch that receives deposits. $Loans_{OM}$ is the number or amount of small-business loans that have been originated in markets where the bank does not have a branch that receives deposits. This is added to $Loans_{IM}$ in the denominator which is the number or amount of small-business loans that have been underwritten in markets where the bank does have a branch that receives deposits – together forming the number/amount of total small-business loan originations by each bank in a given year.

This measure of the share of out-of-market lending is the primary dependent variable in our empirical models. We will identify the determinants of out-of-market lending and analyze how these have changed over time. There are local factors, such as the number of small businesses within a county, that may lead to a bank lending in areas where it does not receive deposits. Bank-specific characteristics play a role as well. Large banks are associated with the use of credit scoring technologies which facilitate the loan underwriting process over longer distances (Akhavein et al. 2005, Berger et al. 2005, Berger and Frame 2007). Competition is also something to consider, as more rival banks may either lead to lower rates or the bank seeking to lend in other counties (Degryse and Ongena 2005, Bellucci et al. 2013). We exclude thrifts and do not account for banks that do not report CRA small-business loan originations because the local lending data on these institutions is not sufficient.

3.6. Credit-Card Specialty Banks

Neither the CRA nor FFIEC bank Call Report data specifically identify the amount or number of credit-card loans issued to small businesses by each bank. Studies have tried to

identify credit-card banks manually or with the help of the Nilson Report[16] (Frame et al. 2001, Hannan 2003), others exclude markets where credit-card lenders are prevalent (Avery and Samolyk 2004) or identify credit-card banks by the total amount of credit-card loans on the Call Report (Carter and McNulty 2005). These methodologies have their flaws, and none specifically identify the number of credit-card loans issued to small businesses. Compared with traditional loans, credit-card loans are generally much smaller in size, structured and underwritten differently, issued over greater distances, and often securitized by lenders. From the borrower's perspective, credit-card loans are not monitored as closely (there are no loan covenants) and any overdue payment results in high fees and interest penalties. Therefore, it would be difficult to draw meaningful conclusions about out-of-market small business lending without controlling for these types of loans.

For this study, we replicate the identification technique utilized by the FFIEC in its Uniform Bank Performance Report (UBPR). UBPR identifies a "credit-card specialty bank" as meeting the following two criteria:[17] (1) Credit Card Loans divided by Total Loans exceeds 50%; and (2) Total loans plus Securitized and Sold Credit Cards divided by Total Assets exceeds 50%. All data for these calculations are available via the bank Call Reports. For our analysis, we lower the threshold for criteria #2 to greater than 25% of assets in order to account for banks that have a large asset base, but still issue mostly credit card loans. Our designation of credit-card specialty banks encompasses the list published each year by FFIEC since 2001. We also apply our criteria in the years prior to 2001 to confirm its validity. **Table 1** presents a list of all banks that qualify as specializing in credit cards by our definition, along with the number of years the qualification was met over our 2001 − 2017 sample period. There are a total of 23 institutions

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[16] The Nilson Report is published annually and identifies the largest U.S. credit card companies.
[17] The defined criteria for a credit card specialty bank can be found on page 12 of the July 2019 User's Guide for the Uniform Bank Performance Report – Technical Information.

identified in the table, with AMERICAN EXPRESS CENTURION BK appearing most frequently.

"Credit card loans" are defined by the Fed Reserve as the "total amount outstanding of all funds advanced under these credit cards regardless of whether there is a period before interest charges are made . . . to individuals for household, family, and other personal expenditures."[18] This definition states that "credit extended under credit card plans to business enterprises" should be excluded and, instead, reported as commercial and industrial loans. Yet, the Call Report information on commercial and industrial loans does not enable one to separate business credit-card loans from other types of business loans and neither does the CRA data covering small-business loan originations.

From the list of credit-card-specialty banks, there are those such as American Express and Capital One, which are easy to identify based on their primary business objective of issuing credit cards. However, others are subsidiaries of larger banks, which complicates the analysis of small-business credit. For instance, FIA Card Services (RSSD ID =1830035) was a credit-card-lending subsidiary bank of the consolidated holding company Bank of America (RSSD ID = 1073757). In the second quarter of 2014, FIA reported US $89 billion in credit-card loans (89.2 percent of its total loans and 62.4 percent of assets). On October 1, 2014, FIA merged with the Bank of America holding company subsidiary Bank of America, NA (RSSD ID = 480228). Post-merger, Bank of America, NA did not qualify as a credit-card bank by FFEIC standards, as it reported only 11.6 percent of its loans from credit cards.

The CRA and Call Report data report small-business loans in three size buckets: less than or equal to US $100,000, greater than US $100,000 up to $250,000, and greater than US

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[18] See https://www.federalreserve.gov/apps/mdrm/data-dictionary/search/item?keyword=B538&show_short_title=False&show_conf=False&rep_status=All&rep_state=Opened&rep_period=Before&date_start=20190808&date_end=20190808 (Last accessed August 31, 2020).

$250,000 up to US $1 million. Credit-card loans appear to make up the majority of the micro loan category (under US $100,000) but are not specifically identified in the reporting. Before the merger with FIA in 2014, Bank of America's average small-business loan size was US $64.21 thousand. Post-merger, this figure dropped to US $11.74 thousand in 2015, as a result of the large number of business credit-card loans subsumed from FIA. In the second quarter of 2015 after the merger, the bank reported US $33 billion in small-business loans – US $5.5 billion more than in the same quarter of 2014 prior to the merger. Its portfolio of micro loans grew by US $5.8 billion or 56 percent over this time period, and the number of loans grew by 5.5x as shown in **Table 2**. In 2014, Bank of America, NA had 5,094 branches in 577 counties in the U.S. compared to FIA which only operated in one county, its headquarters, with 99.8 percent of its small-business loan originations classified as out-of-market lending.

In July of 2011, Citibank, NA (RSSD ID = 476810) a subsidiary of the bank holding company Citigroup Inc. (RSSD ID = 1951350) completed a similar merger with its associated credit-card lender Citibank (South Dakota), NA (RSSD ID = 486752). In the second quarter of 2011 Citibank (South Dakota), NA reported credit-card lending to be 92.7 percent of the US $166.5 billion loan portfolio on its balance sheet, whereas Citibank, NA reported zero credit-card loans. Through the merger, as shown in **Table 2**, Citibank, NA's small-business loan portfolio grew by 3x and its micro loans grew by almost 8x, dropping its average loan size from US $53.4 thousand to US $5.2 thousand. Afterwards, Citibank, NA still remained below the threshold to be considered a credit-card-specialty bank by the UBPR, with 30 percent credit-card loans to total loans. Its out-of-market small-business loan originations by dollar amount ballooned more than 10x from only 3.2 percent to 38.3 percent, which is still below our threshold and nowhere near the 100 percent out-of-market originations from Citibank (South Dakota), NA in 2011.

There was another credit-card bank merger by a large financial institution on May 19, 2019. The credit-card subsidiary of JP Morgan Chase Bank, NA (RSSD ID = 489913), with US $96.1 billion in credit-card loans merged with JP Morgan Chase Bank, NA (RSSD ID = 852218), which had a ratio of credit-card to total loans just under 5 percent. We do not have post-merger lending data from these institutions at the time of this study but expect similar trends as with Bank of America and Citibank. For the second quarter of 2017, JP Morgan Chase Bank, NA reported a small-business micro loan portfolio of US $8.4 billion (44 percent of total small-business loans) while Chase Bank, NA reported US $6.1 billion (99 percent of loans). In the year after their respective mergers, neither Bank of America or Citibank appeared on the UBPR's list of credit-card banks because their credit-card lending was below the FFIEC's threshold, while the banks were able to reduce the ratio of out-of-market small-business loan originations that stood out in their credit-card subsidiaries. We expect the same pattern with JP Morgan Chase Bank, NA over the next year.

3.7. Stress Tested Banks

Finally, we collect data on stress-tested banks through the Federal Reserve's website. In 2009, 19 of the largest U.S. financial institutions were subjected to a financial stress test conducted by the Federal Reserve to assess each bank holding company's capital buffer adequacy. The Supervisory Capital Assessment Program (SCAP) took place only one time, but the results identified ten bank holding companies (BHCs) that were not able to survive another financial crisis, which led to more scrutiny and regulation of the financial sector.

Then in 2011, the Comprehensive Capital Asset Review (CCAR) program was introduced by the Federal Reserve to allow for better control and monitoring over bank risk taking. According to the Federal Reserve, the CCAR: "evaluates a BHC's capital adequacy, capital adequacy process, and its planned capital distributions, such as dividend payments and

common stock repurchases." Part of the review included the Dodd-Frank Act supervisory stress testing (DFAST), which "is a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions on BHC capital."[19] The first examinations in 2012 were of the 19 original SCAP BHCs excluding insurer MetLife Inc., which had sold all bank deposits to eliminate its status as a BHC.

4. Methodology

In order to provide new evidence regarding how out-of-market lending has evolved in the banking industry, we employ both univariate and multivariate tests. We begin with a univariate analysis of small-business loan originations made to out-of-market borrowers in counties where the bank does not have a branch that receives deposits. We plot our small-business out-of-market lending ratio over time for both the dollar amount and number of loans issued.

Next, we conduct a series of multivariate tests on our dataset. We utilize panel-data techniques that exploit the nature of data to explain two different measures of out-of-market small-business lending: (1) the percentage of small-business loan originations issued to out-of-market borrowers measured by the *dollar amount of loans*; and (2) the percentage of small-business loan originations issued to out-of-market borrowers measured by the *number of loans*. Our general multivariate model takes the form of *Equation 1:*

$Share_{OM\ i,t}$

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[19] Information on these stress tests along with a list of banks that have been tested over the years, is available on the Federal Reserve website:
https://www.federalreserve.gov/supervisionreg/ccar-by-year.htm (Last accessed August 31, 2020).
https://www.federalreserve.gov/bankinforeg/stress-tests/CCAR/201503-comprehensive-capital-analysis-review-preface.htm (Last accessed August 31, 2020).

$$= \beta_0 + \beta_1 \times Credit\ Card\ Bank_{i,\ t\text{-}1} + \beta_2 \times Stress_{i,\ t\text{-}1} + \sum \beta_k \times Controls_{i,\ t\text{-}1} + \varepsilon_{i,\ t} \qquad \textbf{(1)}$$

where:

$Share_{OM}$ is one of our two measures of out-of-market small-business lending:

(1) *Share Amount* $_{OM}$ is the percent of the dollar amount of small-business loan

originations issued to borrowers in counties where bank *i* does not record deposits during

year *t*;

(1) *Share Number* $_{OM}$ is the percent of the number of small-business loan originations

issued to borrowers in counties where bank *i* does not record deposits during year *t*;

Credit Card is an indicator for if the bank *i* qualifies as a credit-card specialty bank in year

t-1 based on the explanation in Section 3.6;

Stress Tested is an indicator for a bank *i* that was subject to SCAP and/or CCARs stress

testing in year *t-1*;

Controls is a vector of control variables for bank *i* in year *t-1* including:

- *Size*: (the natural logarithm of) total bank assets;

- *LARGE*: an indicator for banks that reported more than $10 billion in assets;

- *LN_Branch*: (the natural logarithm of) the number of bank branches;

- *CNI_Branch*: the ratio of C&I loans to the number branches;

- *Non-performing Loan Ratio*: the ratio of non-performing loans to total assets;

- *S-Corp*: an indicator for banks organized as S-corporations rather than C-

  corporations;

- *OBHC*: an indicator for a bank that is a subsidiary of a One-Bank Holding Company;

- *MBHC*: an indicator for a bank that is a subsidiary of a Multi-Bank Holding

  Company;

- *Establishments:* the weighted average number of establishments with less than 500 employees in the counties in which a bank operates;

- *Merger:* an indicator for if the bank was involved in a merger the previous year;

- *HHI*: (the natural logarithm of) an average of the Herfindahl-Hirschman Index (HHI) in the counties in which a bank operates weighted by the bank's demand deposits in each county to capture competition;

- *Y2XXX*: a set of indicator variables for each year 2001 – 2017.

ε is an i.i.d. error term.

All explanatory variables are lagged one year to limit contemporaneous biases. Variables are described in further detail in **Table 3**. The number of banks reporting CRA loan originations in each year appear in **Table 4**.[20] Descriptive statistics are presented in **Table 5**. Panel A displays the statistics for the entire sample. Panel B presents the descriptive statistics for institutions that do not qualify as credit-card specialty lenders and Panel C is for credit-card specialty lenders only. From Panels B and C of **Table 5**, we see that the average percentage of out-of-market loans is much higher for credit card banks than for non-credit card banks (89.3% vs 19.3% when measured by dollar amount). Credit card banks tend to be larger by assets as they tend to make loans across the country. Also, a greater percentage of credit-card specialty banks were subject to stress tests (28.8% vs 1.0%). This is reflective of the few number of credit-card specialty banks, approximately 100 bank-year observations, versus more than 14,000 bank-year observations for the non-credit-card specialty institutions.

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[20] The large drop in the number of reporting banks from 2004 to 2005 is attributable to a change in the asset-size threshold by regulators from $250 million to $1 billion. Regulators made this decision in order to reduce reporting burden on smaller community banks.

5. Hypotheses

Our empirical tests and hypotheses are designed to determine the different factors that impact the amount and number of small-business loans that U.S. banks issue in out-of-market counties. Out-of-market loans are identified as loans to small businesses that are located in counties where the lending bank does not record deposits. The CRA encourages banks to lend capital in their local communities, but advancements in underwriting technology facilitate lending over longer distances when local conditions become unfavorable. We analyze out-of-market lending activity from 2001 – 2017, a longer sample period than prior studies, in which banks were subject to a range of different economic and regulatory conditions. We also look at determinants of out-of-market lending that have not previously been considered. Lending by credit-card specialty and stress-tested banks will be captured with specific variables in the empirical analysis or investigated with separate regressions.

As our sample period includes the 2008 financial crisis, we are able to determine which type of economic conditions are favorable for banks to lend over longer distances. We predict, in agreeance with Granja et al. (2019), that as conditions worsen, credit markets tighten as banks become more cautionary in extending credit, especially to more opaque small firms. This should lead to more local lending as a proportion of total bank lending. We posit that banks rely more heavily upon soft information in their underwriting decisions during weak economic times.

H1: Banks reduce out-of-market lending to small businesses when economic conditions are poor and increase out-of-market lending to small businesses when economic conditions are good.

As other studies have acknowledged, credit-card loans are a different form of credit from most standard loans issued by banks and, therefore, should not be treated equally in a distance study such as this one. We identify credit-card specialty banks by utilizing FFEIC guidelines

from its Uniform Bank Performance Report. However, the classification may be problematic as it does not utilize *small-business* credit-card lending and because some of the largest banks have merged with their credit-card subsidiaries, as previously explained in Section 3.6. Credit-card banks employ hard lending techniques and serve a national customer base, so we expect that they will lend over much greater distances. Also, credit-card banks often securitize a significant portion of their loans, which may lower their credit quality requirements when compared to relationship-based lenders. This is why we advocate for improvements in the Call Report and/or CRA data to require classification and reporting of business credit-card loans as a distinct subset of business loans.

H2: Credit-card specialty banks originate more out-of-market loans to small businesses as a proportion of their total loans than other banks.

Banks that were subject to SCAP and CCARs stress testing should be acutely aware of the risks and rewards of employing hard lending underwriting techniques. These stress tests, in the wake of the financial crisis, brought about much more bank scrutiny from regulators, the public, and politicians. Therefore, we would expect that banks reduced their out-of-market lending as a portion of total small-business originations in the years that they were subject to stress tests, in order to ensure new loans were being issued to the most informationally transparent borrowers.

H3: Banks that were subjected to regulatory stress tests from 2009 – 2017 participate in less out-of-market lending to small businesses as a portion of total loan originations.

With improvements in lending technology, we would expect out-of-market lending to have increased over time. By including year fixed effects and bank-specific factors in our empirical analysis, we should be able to determine the trend in out-of-market lending by examining the year indicator variables in our regressions. The majority of studies suggest that

lending distance has increased, so we anticipate similar results from our empirical work, especially after controlling for credit-card and stress-tested banks.

H4: Overall out-of-market lending to small businesses as a portion of total loan originations has increased over time.

6. Results

6.1 Univariate Analysis

     Figure 1 displays the out-of-market lending results of all banks within our sample period from 2001 – 2017. Similar to Hannan (2003), we observe a much higher out-of-market lending ratio in terms of the number of small-business loan originations as opposed to the dollar amount of loans issued. Both ratios follow a similar pattern around the financial crisis. In 2007, they reach a high point: 29.3 percent of the dollar value and 76.4 percent of the number of loans were originated in counties where the corresponding bank did not record deposit activity. These numbers fell to 17.3 percent and 63.4 percent respectively in 2011. While the dollar amount of loans issued out-of-market recovered to 25.1 percent in 2017, when considering the number of loans, out-of-market lending reached a low point of 46.2 percent in 2015 and has yet to recover significantly. Banks reduce their out-of-market lending during times of economic distress.

Figure 1.
Percentage of Loans Made Out-of-market (Full Sample)
(Sources: combined CRA and SOD data)
Share of out-of-market loans is defined as the amount/number of loans originated in counties where a bank did not record demand deposits, divided by the total amount/number of loans originated that year.
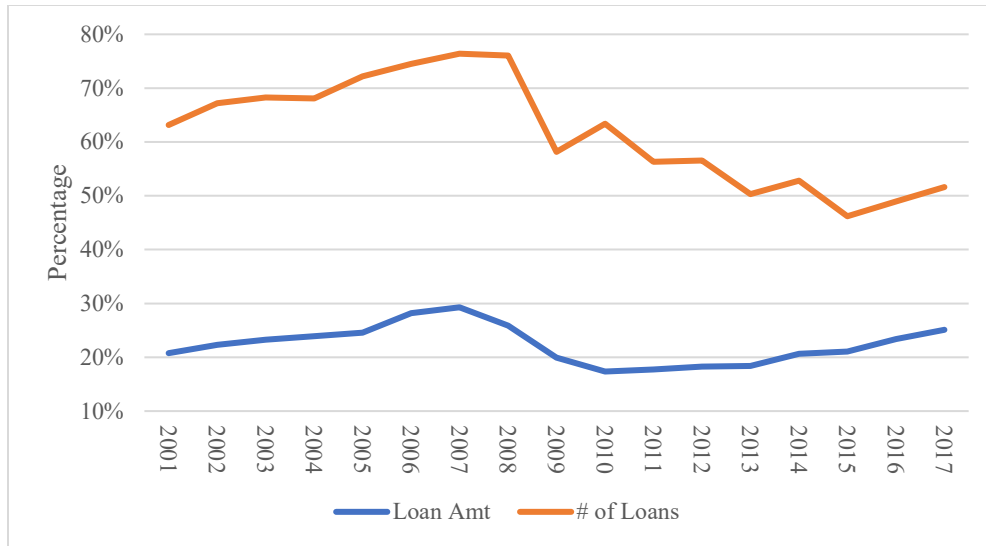
Figure 2.
Total Small Business Lending
(Source: CRA data)
The total dollar amount and number of small-business loans reported in a given year by the CRA.
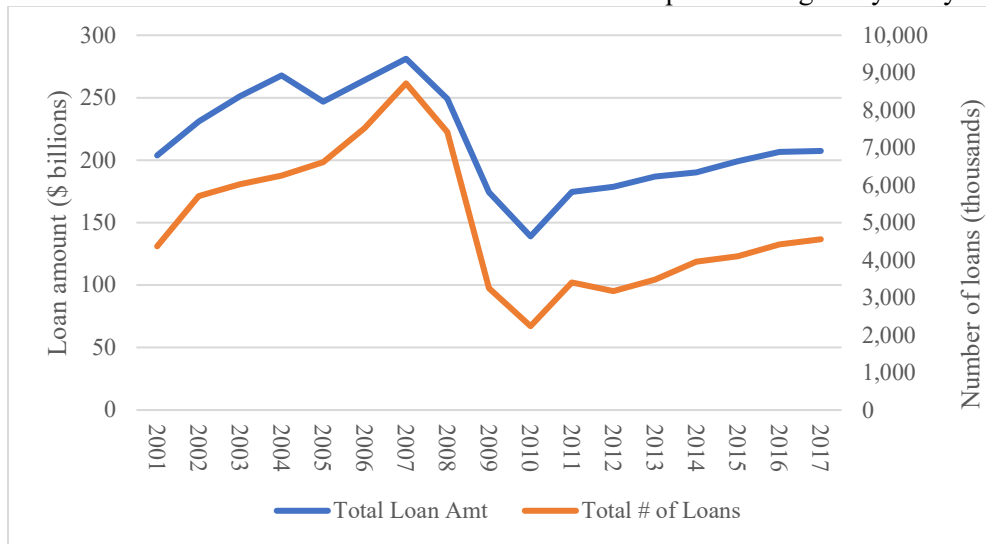
Figure 2 shows the overall number of small-business loan originations falling by 3x

while the amount falls by 2x from 2007 to 2010 to match the trend in out-of-market lending.

Banks scaled back on small business lending and concentrated on issuing loans within the

counties where they collect deposits.

However, this is only part of the story. If we just consider credit-card specialty banks (as

defined in Section 3.6), which accounted for approximately 74 percent of the number of new

small-business loan originations in 2007, we see that any out-of-market lending analysis is being

heavily influenced by the near 100 percent of out-of-market loans underwritten by credit-card

banks in each year (**Figure 3**). Over our sample period, credit-card banks identified by our

guidelines accounted for 27 percent of the dollar amount and 51 percent of the number of out-of-

market loans, which does not even include credit-card lending that occurred within non-credit-

card specialty banks. It is critical for studies to account for these banks in empirical models to

truly understand the nature of small business lending. As credit-card loans issued to small

businesses cannot be identified in the CRA or Call Report data, our definition of credit-card

loans is based on total consumer credit-card loans as found in the bank Call Reports (Schedule

Figure 3.
Percentage of Loans Made Out-of-market (Credit-Card Banks Only)
(Sources: combined CRA and SOD data)
Credit-card bank identification is defined in Section 3.6 using the criteria of the FFEIC in its UBPR based
on consumer credit-card loans as a percentage of total loans and total loans as a percentage of assets.
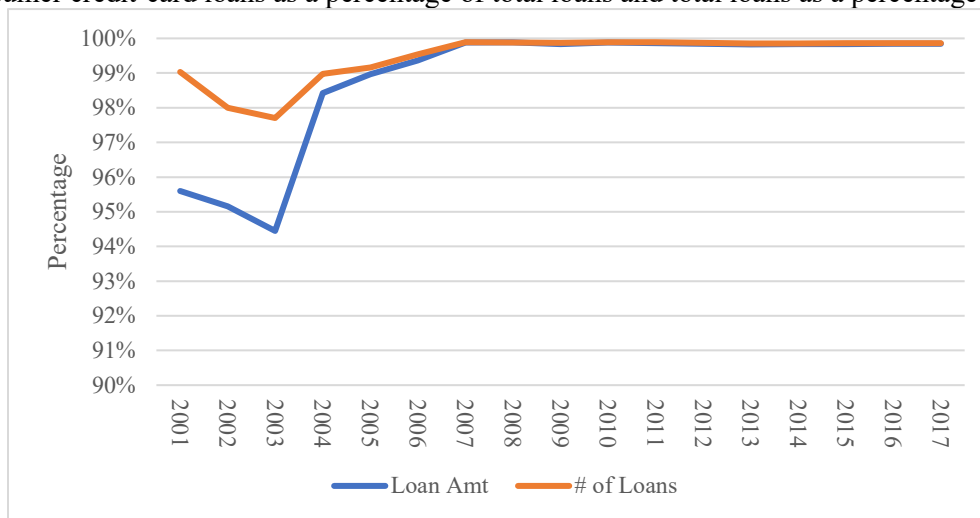
RC-C Part 1 Item 6.a). It would greatly benefit similar studies to ours to have banks report small-

business credit-card lending as a separate category on their Call Reports.

We also want to capture the impact of regulation on bank out-of-market lending. In 2009,

19 of the largest U.S. financial institutions were subjected to a financial stress test (SCAP)

conducted by the Federal Reserve to assess each bank holding company's capital buffer

adequacy. Then in 2011, the Comprehensive Capital Asset Review (CCAR) program was

introduced by the Federal Reserve to allow for better control and monitoring over bank risk

taking. With the increased scrutiny on these institutions, one would expect their out-of-market

lending to be affected. Within each organization, more care had to be taken in extending risky

credit, which should have encouraged the use of soft information and local lending techniques.

These banks have been among the largest in the U.S. and generally have branches in more

counties than the average bank. In addition, as we address in Section 3.6, three of the largest

banks have merged with their credit-card specialty subsidiaries, which further reduces the

proportion of out-of-market lending. We control for mergers in our multivariate analysis.

In **Figure 4,** we plot out-of-market lending of the BHCs that were part of SCAP and

CCARs stress testing, excluding their credit-card specialty subsidiaries. For these banks, the

percentage of out-of-market lending by dollar value reached its peak in 2006 but has remained

range-bound between 34.5 – 47.7 percent throughout the sample period with only slight

fluctuations around the Crisis. We would expect these large banks to have made greater use of

hard lending technologies over time to issue credit over longer distances, but this does not appear

to be the case as their percentage of out-of-market lending has not changed significantly.

Figure 4.
Percentage of Loans Made Out-of-market (Stress Tested Banks, No CC Subsidiaries)
(Sources: combined CRA and SOD data)
Banks that were subjected to SCAP or CCARs stress testing at any point during the sample period minus
their credit-card subsidiaries, if these subsidiaries are identifiable.
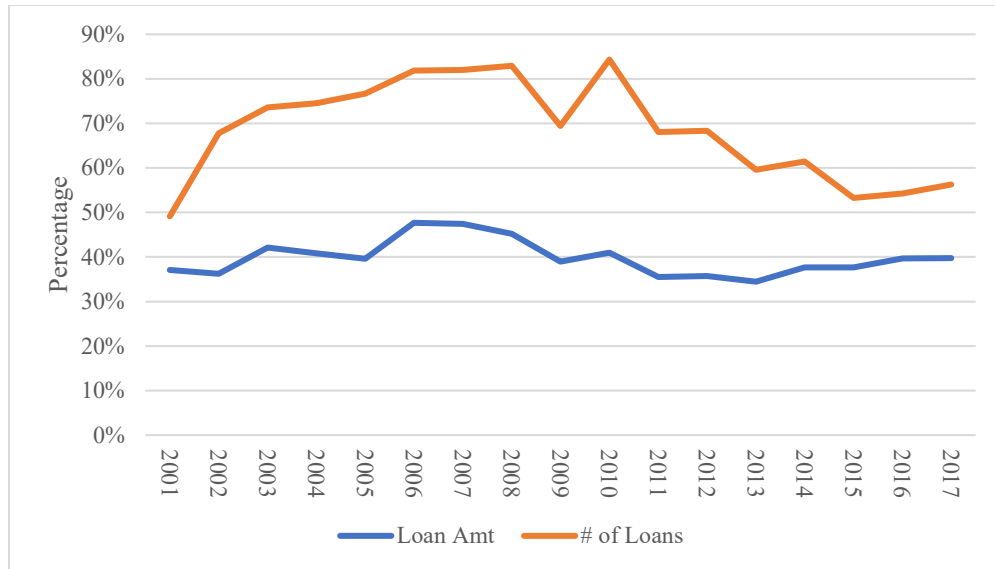
The percentage of out-of-market loans originated from 2007 to 2016 as measured by amount and number is either declining or relatively flat in these years. The Fed stress tests would have put pressure on banks to increase scrutiny around their lending decisions, ensuring less risk taking in their extension of credit. This is evident in the 33.3 percent decline in out-of-market originations by number of small-business loans from 2010 – 2017. While the Crisis may have impacted out-of-market lending by these banks, we really see a steady decline from 2010 – 2015 in the post-crisis years during the Fed stress testing. For these reasons, we remove any banks that were subject to SCAP or CCARs stress tests for the remainder of our univariate analysis. In our reduced sample of banks without credit-card specialty or SCAP/CCARs stress-tested banks, the trend in out-of-market lending appears to be strongly influenced by the health of the U.S. economy.

Figure 5.
Percentage of Loans Made Out-of-market (Amount of Loans, No ST or CC Banks)
(Sources: combined CRA and SOD data)

Banks that were subjected to SCAP or CCARs stress testing at any point during the sample period have been removed, along with any credit-card banks.
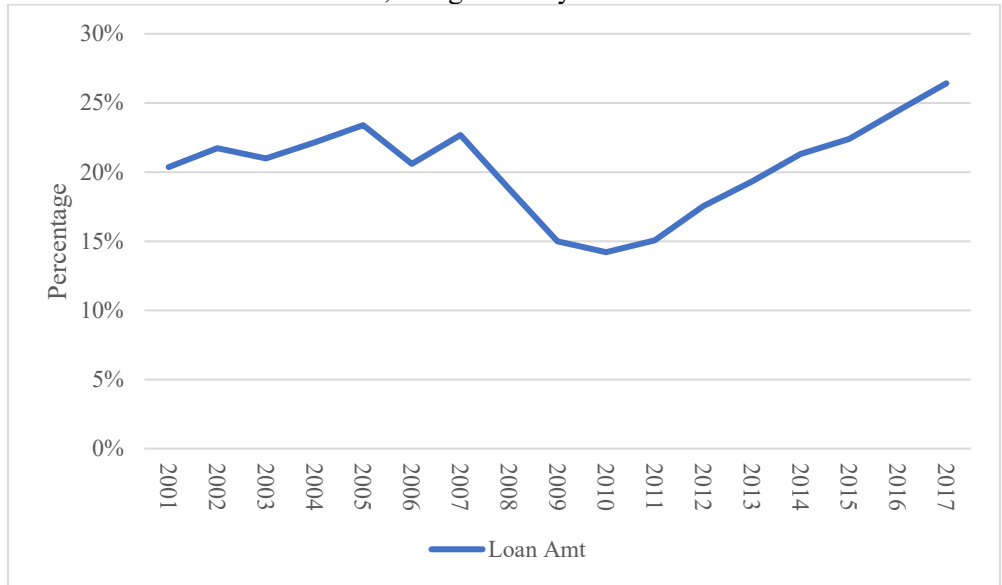
Figure 5 indicates that, from 2001 − 2007, the percentage of out-of-market small-business loans measured by the total amount of originations was steady, in the narrow range of 20.4 − 23.4 percent. The 2008 financial crisis lead to a reduction in out-of-market lending by these institutions to 14.2 percent at its lowest point in 2010. During the post-crisis period 2012 − 2017, out-of-market lending rebounded to an all-time high, up 86 percent by 2017 from its 2010 low.

Figure 6 displays out-of-market lending in terms of the number of loans for the same group of banks. This chart plots an even greater drop in out-of-market lending during the Crisis. From 2001 − 2017, the percentage of small-business loans made out-of-county fluctuated between 60 and 70 percent but plummeted to just 16.0 percent in 2010, as these smaller banks lent closer to home. Similar to the dollar amount of loan originations, the percentage of originated out-of-market loans by number rebounded during the post-crisis period, back up to 52.7 percent in 2017.

Figure 6.

Percentage of Loans Made Out-of-market (Number of Loans, No ST of CC Banks)
(Sources: combined CRA and SOD data)
Banks that were subjected to SCAP or CCARs stress testing at any point during the sample period have
been removed, along with any credit-card banks.
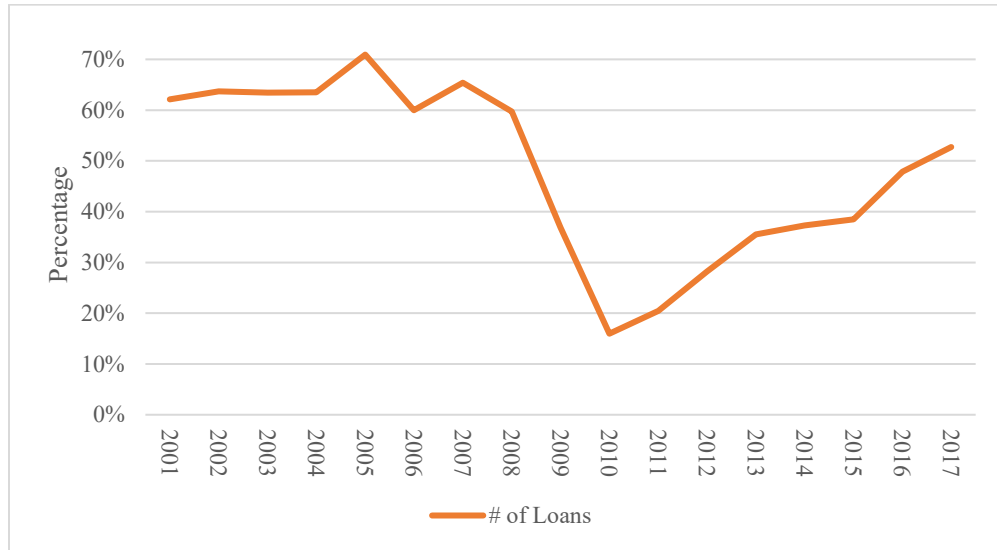
Previous literature explains how credit-scoring techniques and other lending technologies have continued to improve over time. This has given rise to bank lending over greater distances (Frame et al. 2001, Frame et al. 2004, Akhavein et al. 2005, Berger et al. 2005, DeYoung et al. 2011). The univariate analysis above suggests that there may be more to the story of distance lending, and that economic and bank-specific factors play a noteworthy role when analyzing the data. Although it appears that out-of-market lending returned to relatively normal levels by 2017, developments within the banking industry certainly affect the proclivity of banks to lend in counties where they do not record deposits.

The sample of banks in **Figures 5 and 6** is representative of smaller banks that reported lending for the CRA, indicating that these banks are still issuing a good portion of small-business loans to out-of-market borrowers and may have been more drastically affected by the Crisis. At the very least, this leaves the door open for further empirical analysis on these matters. We advocate for policy makers to consider lowering the asset-size threshold for banks reporting CRA data in order to better understand local small-business lending by these institutions.

Figure 7.
Amounts of In- and Out-of-Market Originations
(Source: combined CRA and SOD data)
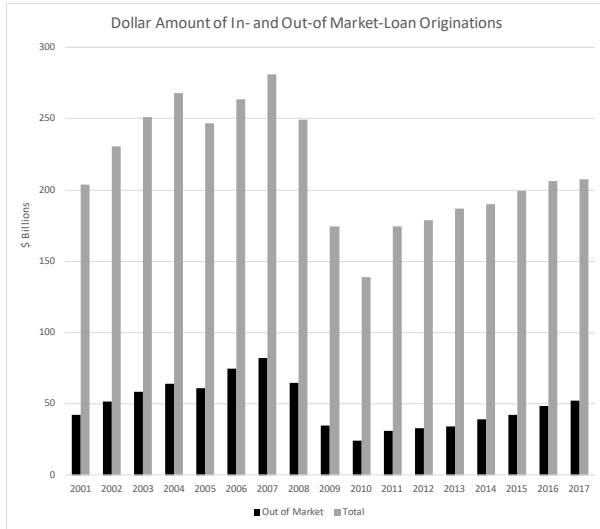
Figure 8.
Numbers of In- and Out-of-Market Originations
(Source: combined CRA and SOD data)

Dollar Amount of In- and Out-of Market-Loan Originations

Number of In- and Out-of-Market Loans Originations
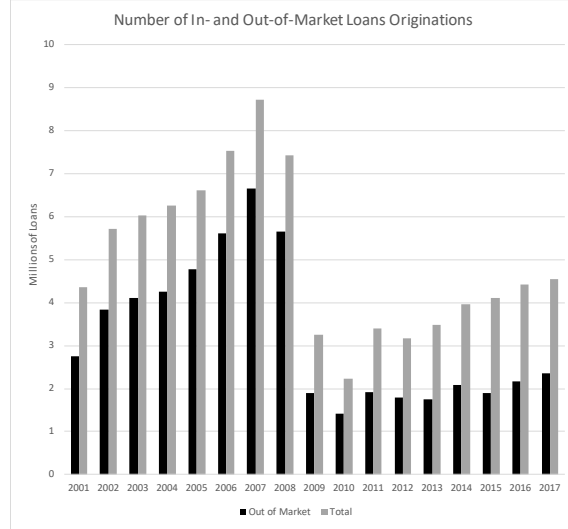
Figure 7 and **Figure 8** provide some perspective on the importance of out-of-market lending to the availability of small-business credit. The black bars show the dollar amount (**Figure 7**) or number (**Figure 8**) of out-of-market originations while the grey bars show the total dollar amount or number of in-market originations in a clustered-bar format. Both figures show that out-of-market lending and in-market lending move in tandem, expanding during good economic times and contracting during recessionary times. Hence, out-of-market lending appears to expand the available pool of credit to small borrowers.[21] While it is beyond the scope of this report, future research could provide more definitive evidence on how changes in out-of-market lending affect the total supply of small-business credit originated by commercial banks.

6.2 Multivariate Results – Amount and Number of Loans

In this section, we begin with an estimation of Equation 1 with an OLS regression model and year fixed-effects. **Table 6** presents the results. The dependent variable measures the

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[21] The Pearson correlation coefficient for aggregate amounts of in-market and out-of-market originations is 0.91 while the correlation coefficient for the aggregate numbers of in-market and out-of-market originations is 0.37. Both are highly significant at better than the 0.001 levels.

percentage of out-of-market loan originations to small businesses by dollar amount from 2002 – 2017. Of the year coefficients, the indicator for 2002 is omitted to avoid perfect collinearity, hence, all year coefficients indicate the percentage-point difference in the share of out-of-market originations relative to 2002. A plot of the year coefficients from the fourth model, excluding credit-card and stress-tested banks, is presented in **Figure 9**. Out-of-market originations grew from 2003 – 2007, but then declined during the financial crisis years of 2008 – 2011, before rebounding substantially from 2012 – 2017. By 2017, out-of-market lending by these financial institutions was six percentage points higher than in 2002.

Figure 9.
Year Fixed Effects
% Amount Out-of-Market Originations
(Sources: combined CRA and SOD data)

Figure 10.
Year Fixed Effects
% Number Out-of-Market Originations
(Sources: combined CRA and SOD data)
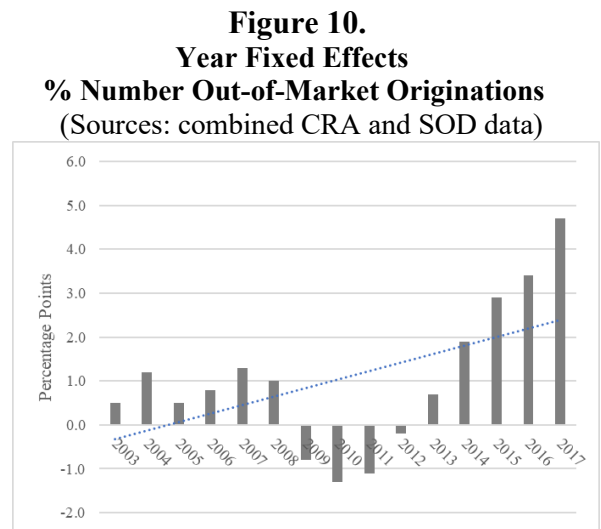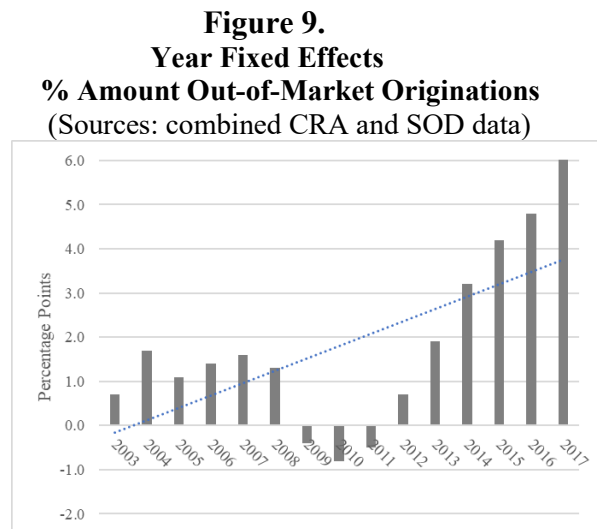
Regarding our hypotheses, there are four key findings. First, the fixed effects are negative for 2009 – 2011, but positive for all other years. These results are strongly supportive of H1, that banks reduce out-of-market lending to small businesses when economic conditions are poor, as suggested by Granja et al. (2019). The national unemployment rate in the U.S. rose sharply in 2008 and 2009 as the financial crisis unfolded, peaking at 9.9 percent in 2009, then declining each year thereafter through 2017.

Second, the linear trend line in **Figure 9** has a positive slope from 2003 – 2017. This result is supportive of H4, that out-of-market lending to small businesses has, in general,

increased over time. We find a substantial increase coming out of the financial crisis from 2012 – 2017 as the economy began to recover.

Third, the coefficients in **Table 6** for credit-card banks are statistically significant with values of 0.217 and 0.236 (models 1 and 3 respectively). This indicates that the percentage of out-of-market lending for credit-card specialty banks was, on average, 21.7 percentage points higher than for other banks, after controlling for bank size and other variables in the model. This result is highly supportive of H2, that credit-card specialty banks originate more out-of-market loans to small businesses than do other banks. Credit cards do not follow the same lending patterns as traditional loans. They are issued through hard lending techniques, often securitized, and carry different interest rate structures. For small-business borrowers, traditional loans have a structured repayment process that encourage disciplined spending while credit cards are less structured and may not provide enough capital to be useful in large transactions. Therefore, we argue that credit card out-of-market lending does not establish a true sense of credit availability to small businesses. These are lines of credit, making it difficult to assess the amount actually available to the borrower at a fair intertest rate.

Fourth, the coefficients in **Table 6** for stress tested banks are slightly negative at -0.025 and -0.015 (models 1 and 2 respectively). Only the coefficient in the complete bank sample is statistically significant. The sign suggests that in the years banks are stress tested, they reduce out-of-market lending (by dollar amount) to small businesses by 2.5 percentage points. This result supports H3, that banks subject to regulatory stress tests participate less in out-of-market lending than do other banks and should be controlled for in any out-of-market lending analysis. Doing so would be helpful in determining if small businesses located in counties where fewer banks operate still have adequate access to capital.

The results for our control variables are generally consistent with our expectations. The coefficient on *Size* (the natural logarithm of total assets) is positive and highly significant: 0.030 (model 1). This indicates that doubling the asset size of the bank increases the percentage of out-of-market lending by 3.3 percent. As shown in **Table 5** Panel A, the asset size of our sample banks ranges from less than US $1 billion to more than US $2 trillion. *LARGE* banks with assets over $10 billion participate in more out-of-market lending by 1.9 percentage points. The coefficient on *LN_BRANCH*, which is the natural logarithm of the number of bank branches, is a negative and highly significant -0.066. Doubling the number of branches reduces the percentage of out-of-market lending by 6.6 percent. As shown in **Table 5** Panel A, the number of branches for our sample banks range from one to more than 6,000. Banks with a wider reach are able to lend within-county more often.

The positive coefficient for *CNI_BRANCH* suggests that more business-lending overall is associated with a greater percentage of out-of-market loans. The coefficient on *NPLTA*, which is the ratio of nonperforming assets to total assets, is positive and significant: 0.659. A one percentage point increase in nonperforming assets increases out-of-market lending to small businesses by 0.66 percent. As shown in **Table 5** Panel A, the nonperforming asset ratios for our sample banks range from zero to 43 percent.

The coefficient on *SCORP*, which is our indicator for banks organized as S-corporations is statistically insignificant. There is no real difference in the out-of-market lending of banks by corporate form of organization (S-corporation vs. C-corporation). The *MBHC* indicator for multi-bank holding companies is not significantly different from zero, but the coefficient for OBHC (the indicator for one-bank holding companies) is negative and highly significant: -0.017. This indicates that banks which are subsidiaries of OBHCs have a slightly lower percentage out-of-market lending than do independent banks and banks that are subsidiaries of MBHCs.

The coefficient on the number of establishments with fewer than 500 employees in a county is a negative and highly significant. The percentage of out-of-market lending is significantly lower when a bank has locations in counties with more small establishments. Interestingly, our indicator for mergers is positive, suggesting that acquisitions allow banks to lend over greater distances rather than focusing on originating loans in the new markets they have just entered. Finally, our concentration coefficient is not significantly different than zero. High concentration in the counties that a bank operates in does not push it to lend over greater distances. Therefore, we do not find support for Degryse and Ongena (2005), Granja et al. (2019) and others.

For the next set of regressions presented in **Table 7**, we examine out-of-market lending using the number loan originations to small businesses from 2002 – 2017. In general, the results are consistent with those presented in **Table 6** for amounts. The coefficients of the year fixed effects are shown in **Figure 10** and indicate that out-of-market originations rose during 2003 – 2007, but then declined during the financial crisis years of 2008 – 2011, before rebounding during 2012 – 2017.

Regarding our hypotheses, there are, once again, four key findings. First, the year fixed effects are negative for 2009 – 2012, but positive for all other years. These results are strongly supportive of H1, that banks reduce out-of-market lending to small businesses when economic conditions are poor. As conditions worsen, banks issue a greater percentage of small-business loans in counties where they have branches. While overall lending declined during the Crisis years, businesses in counties with many bank branches may have had better access to capital.

Second, the linear trend line in **Figure 10** has a positive slope from 2003 – 2017. This result is supportive of H4, that out-of-market lending to small businesses has increased steadily over time. Just as with the dollar amount of loans, we see a spike in distance lending in the later

years as the economy fully recovered. The effect is not quite as strong when considering the number of loans.

Third, the credit-card bank coefficients in **Table 7** are positive and statistically significant. In the full sample, the percentage of out-of-market lending by number of loans was, on average, 20.7 percentage points higher for credit-card specialty banks than for others, after controlling for bank size and other variables in the model. This result is highly supportive of H2, that credit-card specialty banks originate more out-of-market loans to small businesses than do other banks. With such a large difference in distance lending between these types of lenders, it would be prudent to separate credit-card loans from other forms of borrowing when conducting a study of credit availability, but the data do not allow for such analysis.

Fourth, the coefficients in **Table 7** show a statistically insignificant coefficient of 0.000 for stress-test banks in the full sample model which increases to 0.013 when removing credit-card banks from the sample but is still not significant. These results fail to support H3, that banks subjected to regulatory stress tests participated in less out-of-market lending than to other banks. In combination with the results shown in **Table 6** for the dollar amount of out-of-market lending, we find weak evidence that regulatory stress tests led to a reduction in distance lending. However, in a subsequent analysis, we will demonstrate that accounting for loan size is necessary before drawing any definitive conclusions around these hypotheses. The results for our control variables in **Table 7** are generally consistent with our expectations and not qualitatively different for those in **Table 6**.

6.3 Multivariate Results – Loan-Size Analysis

The CRA data report loans issued to businesses up to US $1 million in size. From the discussion in Section 3.6, it is evident that credit-card loans tend to be smaller in notional value than traditional loans – credit-card lenders have smaller average loan sizes compared to their

bank holding company counterparts. If lending patterns in smaller loans do not match those of

larger loans, then any analysis when combining the two sizes may not be able to reach accurate

conclusions. For instance, an increase in bank lending of small loans could be offset by a

decrease in bank lending of larger loans, and while there may be more small businesses that

obtain credit, the amount of credit extended to the group might not be sufficient. For these

reasons, we separate out sample of originations into: (1) small loans − less than or equal to US

$100,000 in notional, and (2) large loans – greater than US $100,000 and up to US $1,000,000 in

notional. We then estimate the same regressions for out-of-market lending by the dollar amount

and number of loans issued.

Figure 11.
Year Fixed Effects (Loans ≤ 100k)
% Amount Out-of-Market Originations
(Sources: combined CRA and SOD data)
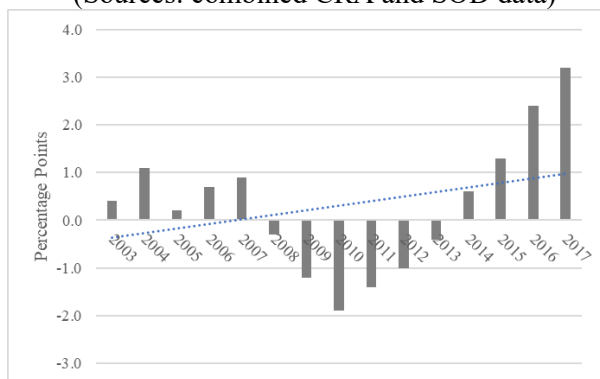
Figure 12.
Year Fixed Effects (Loans > 100k)
% Amount Out-of-Market Originations
(Sources: combined CRA and SOD data)
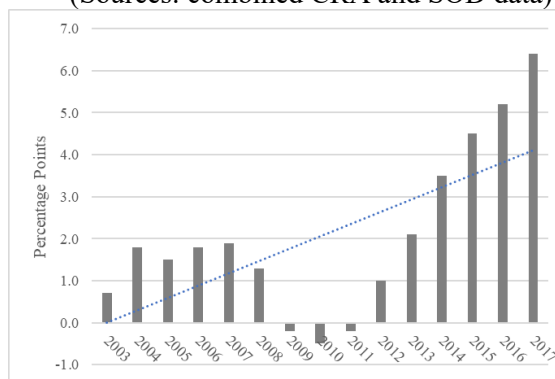
Tables 8 and **9** present results for the dollar amount of out-of-market lending in the

sample of small loans and large loans respectively. **Figures 11** and **12** plot the year coefficients

using the 4th model of no credit-card or stress-tested banks from **Tables 8** and **9** respectively.

From these graphs, we see a distinct difference in the evolution of out-of-market lending over

time. As shown in **Figure 11**, the reduction in out-of-market lending by dollar amount during the

Crisis years is much more pronounced for small loans less than or equal to US $100,000.

Relative to 2002, out-of-market lending was down by as much as two percentage points (in

2010) and was negative in six consecutive years from 2008 – 2013. For small loans, the linear trend line is much flatter than that of the larger loans. It does not even reach one percentage point by 2017.

As shown in **Figure 12**, the plot of large loans, greater than US $100,000 up to US $1 million, shows out-of-market lending to small businesses down only slightly during the Crisis relative to 2002. It is negative for three years from 2009 – 2011 and does not drop below negative 0.7 percentage points. The linear trend line has a much larger slope compared to that of the smaller loans, almost reaching four percentage points by 2017.

Therefore, regarding our hypotheses, we find more support for H1 in the small loan sample. Small loans are more sensitive to economic changes. The year coefficients from 2009 – 2011 are statistically significant in model 4 of **Table 8**. We expect that this sample is influenced by credit cards issued to small businesses, but without more detailed data, it is difficult to tell. We do conclude that while the percentage of out-of-market lending declined for small loan amounts to small businesses, lending of larger loans in out-of-market areas is much more resilient. These likely include a greater percentage of traditional loans, suggesting that small businesses may still have access to a supply of these loan-types from out-of-market lenders.

Second, we observe a more prominent linear trend line in out-of-market lending for large loans to small business than small loans. In the large loan subsample, we find greater support for H4, that out-of-market lending has increased over time. If larger loans proportionally capture more traditional lending than credit-card lending, we can conclude that improvements in lending techniques from technology and other methods have led banks to lending over greater distances, but given the data limitations, we cannot reach this conclusion with certainty.

Third, we find strong support for H3 regardless of loan size. Credit-card banks participate in more out-of-market lending to small businesses when measured by loan amount. The

coefficient of interest in the full bank sample is larger for small loans, less than or equal to US $100,000, but both are strongly statistically significant. In the small-loan subsample, credit-card lenders report out-of-market lending that is 19.9 percentage points higher on average than other banks.

Fourth, the coefficients for stress-tested banks in the two loan size subsamples reveal the true effects of regulatory oversight for this group of banks. In our model of out-of-market lending for all loan sizes, we found a weakly significant and negative coefficient for stress-tested banks (**Table 6**). In both models 1 and 2 of **Table 8**, the stress tested coefficient is positive and significant at the one percent level for small loans. Out-of-market lending, measured by the dollar amount of loans, is 4.1 – 6.2 percentage points higher for small loans in the years that banks are stress tested. Meanwhile, in the large loan subsample, stress testing is associated with a reduction in out-of-market lending by 2.5 – 2.9 percentage points, in support of H3. The scrutiny of SCAP and CCARs assessments appears to have caused banks to issue more small loans and fewer large loans out-of-county. If we assume that large loans represent more traditional lending, then small business received fewer traditional loans from out-of-county banks and potentially more credit-card loans. As banks are able to securitize credit-card loans, they may be removing much of the risk tied to these loans from their balance sheets.

The control variables in **Tables 8** and **9** are relatively consistent with those of the other tables, with the exception of HHI in the small loan subsample. Within county competition does not seem to impact distance lending in the full sample, but once we consider only small loans, we find that competition drives banks to explore other lending options away from the counties where they take deposits. These results are consistent with prior literature (Granja et al. 2019) and given improvements in the data, may suggest a trend of more credit-card lending.

Figure 13.
Year Fixed Effects (Loans ≤ 100k)
% Number Out-of-Market Originations
(Sources: combined CRA and SOD data)
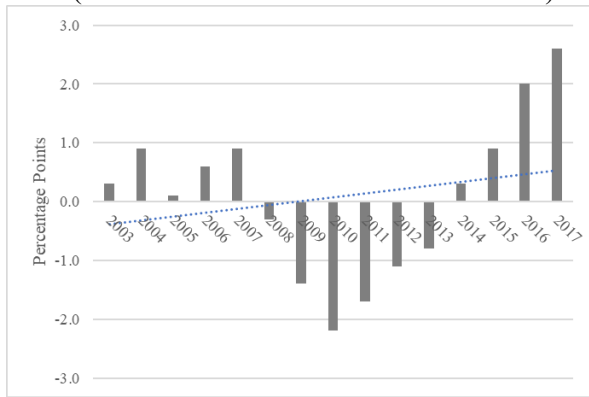
Figure 14.
Year Fixed Effects (Loans > 100k)
% Number Out-of-Market Originations
(Sources: combined CRA and SOD data)
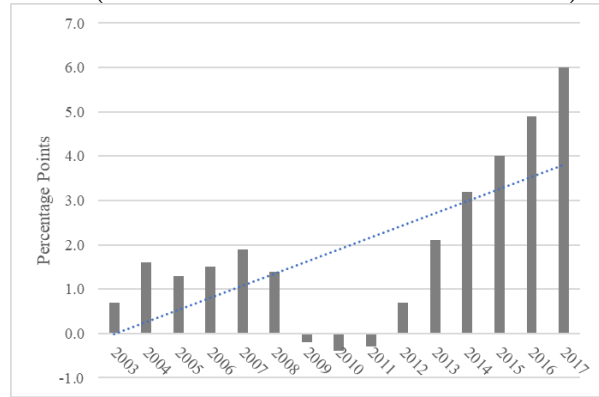
Next, we conduct a similar analysis for the percentage of small and large out-of-market loans measured by the number of loans issued. These results are presented in **Tables 10** and **11** respectively, with the year coefficients graphed in **Figures 13** and **14**. The plots of the year coefficients for out-of-market lending by number of loans are similar to those measured by dollar amount. During the financial crisis, banks significantly reduced out-of-market lending for the smallest loan-group. For large loans, out-of-market lending was only slightly below 2002 levels.

The linear trend line is upward sloping in **Figure 14**, the large loan graph. The linear trend for small loans is close to the x-axis throughout the sample period. We therefore conclude that H4 is most supported by the large-loan subsample, as the percentage of out-of-market lending continues to increase throughout the sample period. H1, on the other hand, is most supported by the small-loan size subsample, as we see the year coefficients are significant and negative during the financial crisis years compared with insignificant year estimates for sample of large loans.

Regarding out-of-market lending by credit-card banks, we find that these banks issue a greater percentage of out-of-county loans regardless of size. The credit card coefficient is positive and significant in all models, providing further support for H2. The coefficients are

larger in the small-loan models, indicating more out-of-market lending by credit-card specialty banks (18.8-25.9 percentage points) compared with all other banks.

The stress-tested bank coefficients are negative in the large loan models, whereas they are positive and significant in the small loan models. Once again, we find that regulatory assessments lead to an increase in small business loan originations in the smallest size group. This does not provide support for H3, but instead suggests the opposite effect. If we had more granular data, we could make further estimations comparing credit-card to traditional loan originations to more accurately assess the provision of credit by out-of-market lenders.

7. Summary, Conclusions, and Policy Relevance

This report provides an analysis of how out-of-market lending has changed during the past two decades (2001 – 2017), before, during, and after the financial crisis of 2008 – 2011. The analysis shows that:

- The percentage of out-of-market loan originations to small businesses, as measured by both dollar amount and number, has been trending upward over the past two decades. This increase in distance lending is more pronounced for large loans greater than US $100,000 up to $1 million.

- The percentage of out-of-market loan originations to small businesses, as measured by both dollar amount and number, declines when economic conditions are poor. During the crisis years of 2008-2011, the percentage of such originations fell significantly below the trend line, declining by about one-fourth from the pre-crisis period. The impact of poor economic conditions on distance lending is greater for small loans, less than or equal to US $100,000 in notional value.

- Credit-card specialty banks originate close to 100 percent of their loans out-of-market, and account for about 27 percent of the dollar amount and 51 percent of the number of out-of-market originations. This trend in credit-card lending is prominent no matter the loan size.

- There is mixed evidence that banks which were subject to regulatory stress tests responded by significantly reducing their out-of-market lending. In the small loan subsample, we find that stress-tested banks increased their out-of-market lending, while distance lending of large loans was reduced following implementation of the assessments.

Out-of-market lending has been trending upwards over time. With the exception of the Crisis years, the percentage of out-of-market lending has risen during each year from 2003-2017. Over 2002 – 2017, the trend line in originations is strongly positive.

Out-of-market lending declined sharply during the financial crisis years 2008 – 2011. Economic conditions in the U.S. began to deteriorate as early as 2007, but reached a bottom in 2009, when the national unemployment rate peaked at 9.9%. Small-business-loan originations moved largely in the opposite direction as the national unemployment rate, declining from 2008 – 2010 in most of our specifications. As the economy recovered, the unemployment rate declined each year from 2010 – 2017. After bottoming in 2010, out-of-market small-business-loan originations measured by dollar amount rose each year from 2011 – 2017, reaching new highs.

Credit-card specialty banks are fundamentally different than other banks with respect to distance lending. Measured by both the dollar amount and number of loans, credit-card banks, which are large but typically have only one physical branch in a single county (usually in Delaware, South Dakota, or Utah), make virtually all of their loans out-of-market. Because these loans are structurally different from traditional loans, often securitized, and account for a large

portion of out-of-market lending, we argue that it is important to separate out these types of loans when conducting an analysis of distance lending.

Banks that were subjected to regulatory stress tests beginning in 2009 reduced their percentage of out-of-market lending measured by the dollar amount, but not number of loans. Some of the stress tests increased the risk-weight on small-business loans by 50%, which may explain why banks reduced the amount of small-business loan originations. However, these banks still must satisfy regulatory reviews of their CRA lending, which focus on the number, rather than the aggregate amount of lending. We find more evidence of an effect on lending by stress-tested banks when we separate our sample into small and large originations. Stress tested banks increased their percentage of out-of-market lending tied to smaller loans, which may capture an increase in credit-card lending as many of these bank holding companies have credit-card subsidiaries. Meanwhile, the percentage of large out-of-county loans decreased following these regulatory assessments which could indicate a reduction in risk taking.

Policy Relevance

The results from this study provide guidance to policymakers on at least four important issues. First is the role of distance between bank lenders and their borrowers. Other studies posit that distance has become less important as technology, such as the internet and credit-scoring, reduce the role of face-to-face meetings between loan officers and prospective borrowers in the underwriting process.

Our results show that banks are indeed making a greater portion of their loans outside of markets where they have a physical presence. Increased competition in affected local markets should improve both the availability and price of credit in those markets. This is especially true for small and rural markets where there are few or even no bank branches. Greater geographic diversification of a bank's loan portfolio reduces the risk of that portfolio, enabling a bank to

offer better loan terms. For these reasons, policymakers and regulators should encourage banks to expand out-of-market lending as a way to improve the availability and cost of credit for small businesses.

On the other hand, increased out-of-market lending may come at the expense of in-market lending, contrary to one of the primary goals of the Community Reinvestment Act, which is to ensure that banks meet the credit needs of the communities in which they operate. Greater out-of-market lending also raises questions as to whether regulators can continue to rely upon branch deposit data to define the markets in which a bank operates. As more banks issue out-of-market loans, they diverge from the intentions of the Community Reinvestment Act and make it difficult to assess the impact of mergers on competition. Policymakers may wish to re-evaluate how the CRA defines a bank's "assessment area" to account for areas where a bank has significant lending activity but no physical presence.[22]

A second issue is with the exemption of banks with less than US $1 billion in assets from required reporting of CRA data on small-business loan originations. Prior to 2005, this exemption was set at only US $250 million. Even at this level, it exempted the vast majority of banks, which fell below that size demarcation. One rationale for this threshold change was, and continues to be, that small banks only lend in the markets in which they have a physical presence. However, the results in this study show that even smaller lenders, when excluding credit-card and stress-tested banks, often do a significant share of their lending outside of the markets in which they have physical branches. Policymakers should revisit the size threshold at

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[22] 12 C.F.R. § 345.41 defines "assessment area" for purposes of the CRA. A bank's assessment area includes "the geographies in which the bank has its main office, its branches, and its deposit-taking RSFs, as well as the surrounding geographies in which the bank has originated or purchased a substantial portion of its loans (including home mortgage loans, small business and small farm loans, and any other loans the bank chooses, such as those consumer loans on which the bank elects to have its performance assessed)."

which community banks are exempted from CRA reporting requirements and use the CRA data reported by smaller banks to guide their recommendations.[23]

The third issue is how to account for business credit-card loans when analyzing data from both the Call Reports and CRA data on small-business loan originations. The Call Reports require banks to track and report consumer credit card loans separately from other types of consumer credit, but do not require the same reporting for business credit card loans. Instead, these business credit-card loans are pooled with other types of business credit and reported as C&I loans. Data from the Kauffman Firm Surveys indicate that start-up firms have more business credit-card loans than traditional bank term loans and lines of credit, but that the amount of credit-card loans is much smaller. Our analysis indicates that some of the largest U.S. banks have merged their credit-card subsidiaries into their primary bank subsidiaries, making it virtually impossible to separate out business credit-card loans from traditional loans when analyzing either the Call Report data or the CRA small-business-loan origination data. From our results, we propose that regulators require separate reporting of information on business credit-card loans.

In our data and methodology sections, we lay out the case for why these loans should be separated. Credit-card loans are much smaller in size, structured and underwritten differently, issued over greater distances, and often securitized by lenders. Any study of lending to small businesses needs to be able to identify this type of lending, and yet there is no way to track these loans from publicly available data sources. This has been how loans have been treated since 1967, when the Call Report first required banks to separate consumer credit-card loans from

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[23] On April 8, 2020, the Office of Advocacy of the U.S. Small Business Administration submitted a comment letter regarding a proposed rule in the Federal Register titled Community Reinvestment Act. Part of this rule would revise the definition of a "small bank" from assets less than $1.284 billion to $500 million or less. The SBA defines a small bank as one with assets less than $600 million and argued that using this threshold would be less burdensome on more than 200 banks with assets between $500 million and $600 million.

other types of consumer loans. Pooling credit-card loans to businesses with other business loans does not allow academics, policymakers, and regulators to define credit-card banks. Current definitions, such as those defined in the UBPR, rely solely on consumer credit card loan data, disregarding the number and amount of business credit-card loans.

The fourth issue is the decision by regulators to aggregate CRA data on small-business loan originations across C&I loans and nonfarm non-residential mortgages. These loan-types are reported separately in the Call Report data. The issue of credit-card loans applies solely to C&I loans, as banks do not issue credit-card loans securitized by non-residential mortgages. Previous research, such as Cole and White (2012), has demonstrated that C&I loans and non-farm nonresidential mortgages present very different risks to the viability of commercial banks. Together with the findings regarding credit cards, this report shows that regulators could improve data accuracy by requiring banks to report their small-business-loan originations separately for C&I loans and for nonfarm nonresidential mortgages.

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Tables

Table 1:
List of Credit-Card Specialty Banks

This table displays credit-card specialty banks that we identify using the UBPR definition. UBPR identifies a "credit-card specialty bank" as meeting the following two criteria: (1) Credit Card Loans divided by Total Loans exceeds 50%; and (2) Total loans plus Securitized and Sold Credit Cards divided by Total Assets exceeds 50%. All data for these calculations are available via the bank Call Reports. We lower the threshold for criteria #2 to greater than 25% of assets in order to account for banks that have a large asset base, but still issue mostly credit card loans. The table also includes the bank identifier RSSDID and the number of years that it qualifies as a credit-card specialty bank over the sample period 2001-2017.

ENTITY NAME	RSSDID	Frequency
AMERICAN EXPRESS CENTURION BK	1394676	14
CHASE BK USA NA	489913	13
DISCOVER BK	30810	12
CAPITAL ONE BK USA NA	2253891	10
FIA CARD SVC NA	1830035	9
BB&T BANKCARD CORP	2689463	7
BANK OF AMER NA USA	1417557	6
CITIBANK SD NA	486752	6
PROVIDIAN NB	121709	5
BANKFIRST	2352507	4
CHASE MANHATTAN BK USA NA	489913	4
COMMERCE BK NA	588553	4
FIRST PREMIER BK	374653	4
COMENITY CAP BK	3224580	3
FREMONT NB&TC	264558	3
WELLS FARGO BK NEVADA NA	655576	3
CITIBANK NEVADA NA	455365	2
CONSECO BK	2636458	2
BANK ONE CO NA	25450	1
BANK ONE IL NA	262349	1
CITIBANK SOUTH DAKOTA NA	486752	1
INFIBANK NA	2689191	1
MERRICK BC	2615190	1

Table 2:
Select Loan Data from Bank of America and Citibank

This table displays the June Call Report statistics for subsidiaries of two bank holding companies, Bank of America and Citigroup Inc, which merged their credit-card subsidiary banks into their main bank subsidiaries: Bank of America, NA and Citibank, NA respectively during the sample period. Bank of America completed its merger on October 1, 2014 and Citigroup completed theirs on July 1 ,2011. These mergers made it more challenging to distinguish between credit card and traditional small-business lending.

	Bank Name	Bank of America, NA	FIA Card Services	Citibank, NA	Citibank (South Dakota), NA
	RSSD ID	480228	1830035	476810	486752
Total Loans On CR	*Before Merger*	27,427,000	5,969,000	3,150,000	4,558,028
	After Merger	33,000,000	-	9,081,000	-
Micro Loans on CR	*Before Merger*	10,422,000	5,735,000	624,000	4,536,277
	After Merger	16,235,000	-	5,587,000	-
Number of Loans on CR	*Before Merger*	427,116	2,248,263	58,984	1,683,994
	After Merger	2,810,275	-	1,746,893	-
Average Loan Size	*Before Merger*	64.2	2.7	53.4	2.7
	After Merger	11.7	-	5.2	-

Table 3:
Variable Definitions

Variable	Definition	Source	Source Items
Share Amount	Percent of dollar amount of out-of-market SBL originations in amounts < $1,000,000.	FFIEC CRA Report	Author Calculation
	Dollar amount of small business loan originations in amounts < $100,000	FFIEC CRA Report	SBLAMT1
	Dollar amount of small business loan originations in amounts > $100,000 & < $250,000	FFIEC CRA Report	SBLAMT2
	Dollar amount of small business loan originations in amounts > $250,000 & < $1,000,000	FFIEC CRA Report	SBLAMT3
	Dollar amount of small business loan originations in amounts > $100,000 & < $1,000,000		SBLAMT2+SBLAMT3
Share Number	Percent of number of out-of-market SBL originations in amounts < $1,000,000.	FFIEC CRA Report	Author Calculation
	Number of small business loan originations in amounts < $100,000	FFIEC CRA Report	SBLNUM1
	Number of small business loan originations in amounts > $100,000 & < $250,000	FFIEC CRA Report	SBLNUM2
	Number of small business loan originations in amounts > $250,000 & < $1,000,000	FFIEC CRA Report	SBLNUM3
	Number of small business loan originations in amounts > $100,000 & < $1,000,000		SBLNUM2+SBLNUM3
Credit Card Bank	Indicator for banks specializing in concumer credit-card loans.	FFIEC UBPR	CRC
Stress-Test Bank	Indicator for banks subject to the CCAR or SCAP stress tests.	Federal Reserve Board	
Bank Size	Natural logarithm of bank total assets.	FFIEC Call Report	RCFD2170
Large	Indicator for banks with greater than $10 billion in assets.	FFIEC Call Report	RCFD2170
Number Branches	Natural logarithm of the number of bank branches as reported in FDIC's Survey of Deposits.	FDIC Survey of Deposits	TOTBRANCH
C&I Loans per Branch	Dollar amount of bank C&I loans divided by number of bank branches.	FFIEC Call Report	RCON1766
NPL Ratio	Bank non-performing assets divided by total assets.	FFIEC Call Report	Author Calculation
	Nonaccrual Loans	FFIEC Call Report	RCON1403
	Loans Past Due 90+ Days and Still Accruing Interest	FFIEC Call Report	RCON1406
	Loans Past Due 30-89 Days and Still Accruing Interest	FFIEC Call Report	RCON1407
	Foreclosed Real Estate	FFIEC Call Report	RCON2150
S-Corporation	Indicator for banks organized as S-corporations.	FDIC Directory	SCORP
Independent Bank	Indicator for independent banks not operating as part of a holding company.	FDIC Directory	Author Calculation
OBHC	Indicator for a bank operating as part of a one-bank holding company.	FDIC Directory	OBHC
MBHC	Indicator for a bank operating as part of a multi-bank holding company.	FDIC Directory	MBHC
Number Small Businesses	Weighted average of number of small establishments in counties in which the bank operates.	County Business Patterns	Author Calculation
Merger Indicator	Indicator for banks involved in merger during previous year.	FDIC Directory	
HHI Concentration Ratio	Weighted average Herfindahl-Hirschman Index of bank concentration in counties in which bank operates.	FDIC Survey of Deposits	Author Calculation
Year t	Indicator for data reported in year t.	FFIEC CRA Report	YEAR

Table 4:
Number of Banks Reporting Small Business Loan Originations *
By Year

Year	Obs.	Percent
2001	1,481	9.35
2002	1,540	9.73
2003	1,665	10.52
2004	1,720	10.86
2005	907	5.73
2006	850	5.37
2007	811	5.12
2008	779	4.92
2009	760	4.8
2010	714	4.51
2011	702	4.43
2012	692	4.37
2013	669	4.23
2014	647	4.09
2015	646	4.08
2016	626	3.95
2017	623	3.94
Total	15,832	100

* The large drop in the number of reporting banks from 2004 to 2005 is attributable to a change in the asset-size threshold by regulators from $250 million to $1 billion. Regulators made this decision in order to reduce reporting burden on smaller community banks.

Table 5: *Panel A*
Descriptive Statistics for Analysis Variables – Entire Sample 2001-2017

Share Amount is the percent of dollar amount of out-of-market SBL originations in amounts < $1,000,000. Share Number is the percent of number of out-of-market SBL originations in amounts < $1,000,000. CCB is an indicator for banks specializing in credit-card loans. CCAR and SCAP are indicators for banks subject to the CCAR and SCAP stress tests, respectively. Total Assets is the total assets of the bank in $ millions. LARGE is an indicator for large banks with more than $10 billion in assets. TOTBRANCH is the number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming assets to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishment is the number of establishments with less than 500 employees in a particular county.

Variable	N	Mean	Median	Std Deviation	Minimum	Maximum
Out-of-Market Lending						
Dollar Amount	14,351	0.198	0.145	0.186	0	1
Amount < $100k	14,149	0.151	0.101	0.177	0	1
Amount > $100k	14,292	0.203	0.151	0.187	0	1
Share Number	14,351	0.170	0.116	0.180	0	1
Amount < $100k	14,151	0.145	0.095	0.176	0	1
Amount > $100k	14,292	0.192	0.141	0.183	0	1
Bank Controls						
CCB	15,209	0.007	0	0.085	0	1
CCAR	15,209	0.019	0	0.108	0	1
SCAP	15,209	0.012	0	0.108	0	1
Total Assets ($Mil)	15,209	9,903	889.5	80,500	4.2	2,051,004
LARGE	15,209	0.078	0	0.269	0	1
TOTBRANCH	15,122	63	13	317	1	6,377
CNI_TA	15,209	0.104	0.086	0.082	0	0.945
CNI_BRANCH	15,209	21.5	5.2	82.4	0	630
NPLTA	15,209	0.018	0.012	0.022	0	0.433
SCORP	15,209	0.065	0.000	0.247	0	1
OBHC	15,209	0.443	0.000	0.497	0	1
MBHC	15,209	0.105	0.000	0.306	0	1
Establishments (000)	15,206	21.5	7.9	36.5	0	269
Merger	15,209	0.114	0	0.318	0	1
HHI	15,209	1,824	1,661	927	436	8,994

Table 5: *Panel B*
Descriptive Statistics for Non-Credit Card Lenders

Share Amount is the percent of dollar amount of out-of-market SBL originations in amounts < $1,000,000. Share Number is the percent of number of out-of-market SBL originations in amounts < $1,000,000. CCB is an indicator for banks specializing in credit-card loans. CCAR and SCAP are indicators for banks subject to the CCAR and SCAP stress tests, respectively. Total Assets is the total assets of the bank in $ millions. LARGE is an indicator for large banks with more than $10 billion in assets. TOTBRANCH is the number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming assets to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishment is the number of establishments with less than 500 employees in a particular county.

Variable	N	Mean	Median	Std Deviation	Minimum	Maximum
Out-of-Market Lending						
Dollar Amount	14,250	.193	.144	.176	0	1
Amount < $100k	14,051	.146	.1	.165	0	1
Amount > $100k	14,212	.2	.15	.18	0	1
Share Number	14,250	.165	.116	.169	0	1
Amount < $100k	14,053	.14	.094	.163	0	1
Amount > $100k	14,212	.189	.14	.175	0	1
Bank Controls						
CCAR	15,098	0.01	0	0.102	0	1
SCAP	15,098	0.01	0	0.098	0	1
Total Assets ($Mil)	15,098	9,620,000	883,000	80,600,000	15,207	2,050,000,000
LARGE	15,098	0.074	0	0.262	0	1
TOTBRANCH	15,098	63	13	318	1	6,377
CNI_TA	15,022	0.105	0.086	0.082	0	0.945
CNI_BRANCH	15,098	19.2	5.1	73.8	0.0	630
NPLTA	15,098	0.018	0.012	0.022	0	0.433
SCORP	15,098	0.066	0	0.248	0	1
OBHC	15,098	0.445	0	0.497	0	1
MBHC	15,098	0.104	0	0.306	0	1
Establishments (000)	15,098	21.5	7.9	36.6	0.0	270
Merger	15,095	0.115	0	0.319	0	1
HHI	15,098	1,808	1,655	882	436	8,107

Table 5: *Panel C*
Descriptive Statistics for Credit Card Lenders

Share Amount is the percent of dollar amount of out-of-market SBL originations in amounts < $1,000,000. Share Number is the percent of number of out-of-market SBL originations in amounts < $1,000,000. CCB is an indicator for banks specializing in credit-card loans. CCAR and SCAP are indicators for banks subject to the CCAR and SCAP stress tests, respectively. Total Assets is the total assets of the bank in $ millions. LARGE is an indicator for large banks with more than $10 billion in assets. TOTBRANCH is the number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming assets to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishment is the number of establishments with less than 500 employees in a particular county.

Variable	N	Mean	Median	Std Deviation	Minimum	Maximum
Out-of-Market Lending						
Dollar Amount	101	.893	.998	.258	.013	1
Amount < $100k	98	.888	.998	.266	.012	1
Amount > $100k	80	.858	1	.307	0	1
Share Number	101	.885	.999	.276	.009	1
Amount < $100k	98	.882	.998	.28	.009	1
Amount > $100k	80	.853	.999	.313	0	1
Bank Controls						
CCAR	111	0.198	0	0.4	0	1
SCAP	111	0.288	0	0.455	0	1
Total Assets ($Mil)	111	48,800,000	30,600,000	51,600,000	4,234	207,000,000
LARGE	111	0.685	1	0.467	0	1
TOTBRANCH	100	6	2	19	1	112
CNI_TA	111	0.047	0.039	0.058	0	0.302
CNI_BRANCH	111	341.6	555.8	296.3	0.0	630.0
NPLTA	111	0.032	0.025	0.026	0.008	0.123
SCORP	111	0.036	0	0.187	0	1
OBHC	111	0.18	0	0.386	0	1
MBHC	111	0.18	0	0.386	0	1
Establishments (000)	111	15.0	8.9	18.2	0.0	87.8
Merger	111	0.081	0	0.274	0	1
HHI	111	4,017	2,357	2,700	1,066	8,994

Table 6:
Percentage of Out-of-Market Small-Business Lending by Loan Amount

Results from OLS regression where the dependent variable is Share Amount, defined as the percent of dollar amount of out-of-market SBL originations in amounts ≤ $1,000,000. Credit Card is an indicator for banks specializing in credit card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

VARIABLES	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.217	12.398 ***			0.236	11.318 ***		
Stress Tested	-0.025	-2.209 **	-0.015	-1.267				
Size	0.030	12.834 ***	0.028	11.621 ***	0.034	13.783 ***	0.033	13.318 ***
LARGE	0.019	2.867 ***	0.015	2.223 **	0.016	2.304 **	0.013	1.908 *
LN_BRANCH	-0.066	-29.987 ***	-0.063	-27.578 ***	-0.070	-30.828 ***	-0.069	-29.424 ***
CNI_BRANCH	0.001	26.953 ***	0.001	28.455 ***	0.001	27.717 ***	0.001	28.267 ***
NPLTA	0.659	9.700 ***	0.690	10.163 ***	0.614	9.116 ***	0.651	9.670 ***
SCORP	0.003	0.602	0.005	0.893	0.004	0.852	0.006	1.118
OBHC	-0.017	-5.791 ***	-0.017	-5.906 ***	-0.019	-6.658 ***	-0.019	-6.711 ***
MBHC	0.005	1.190	0.003	0.709	-0.002	-0.562	-0.004	-0.877
Establishments	-0.000	-10.700 ***	-0.000	-10.930 ***	-0.000	-10.769 ***	-0.000	-10.985 ***
Merger	0.009	2.302 **	0.010	2.413 **	0.010	2.562 **	0.011	2.671 ***
HHI	-0.002	-0.662	-0.004	-1.400	-0.001	-0.295	-0.003	-0.862
y2003	0.007	1.261	0.007	1.341	0.007	1.267	0.007	1.329
y2004	0.017	3.168 ***	0.017	3.229 ***	0.017	3.193 ***	0.017	3.204 ***
y2005	0.013	2.037 **	0.012	1.925 *	0.012	2.029 **	0.011	1.875 *
y2006	0.016	2.457 **	0.015	2.330 **	0.016	2.453 **	0.014	2.273 **
y2007	0.018	2.735 ***	0.017	2.562 **	0.018	2.751 ***	0.016	2.505 **
y2008	0.013	2.019 **	0.013	2.008 **	0.013	2.035 **	0.013	1.974 **
y2009	-0.003	-0.484	-0.004	-0.539	-0.003	-0.383	-0.004	-0.618
y2010	-0.008	-1.135	-0.009	-1.276	-0.006	-0.787	-0.008	-1.085
y2011	-0.005	-0.768	-0.006	-0.897	-0.003	-0.435	-0.005	-0.754
y2012	0.007	1.050	0.006	0.894	0.009	1.232	0.007	0.926
y2013	0.019	2.595 ***	0.018	2.491 **	0.021	2.884 ***	0.019	2.657 ***
y2014	0.032	4.476 ***	0.031	4.387 ***	0.033	4.608 ***	0.032	4.411 ***
y2015	0.043	6.039 ***	0.042	5.853 ***	0.044	6.026 ***	0.042	5.856 ***
y2016	0.051	6.995 ***	0.049	6.785 ***	0.050	6.829 ***	0.048	6.597 ***
y2017	0.062	8.447 ***	0.061	8.259 ***	0.063	8.484 ***	0.061	8.280 ***
Observations	13,179		13,093		12,920		12,869	
R-squared	0.350		0.280		0.317		0.282	

Table 7:
Percentage of Out-of-Market Small-Business Lending by Number of Loans

Results from OLS regression where the dependent variable is Share Number, defined as the percent of number of out-of-market SBL originations in amounts ≤ $1,000,000. Credit Card is an indicator for banks specializing in credit card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
VARIABLES	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.207	12.585 ***			0.233	12.080 ***		
Stress Tested	0.000	0.027	0.013	1.206				
Size	0.036	16.225 ***	0.034	14.915 ***	0.039	17.154 ***	0.038	16.707 ***
LARGE	0.018	2.793 ***	0.013	2.045 **	0.015	2.316 **	0.012	1.875 *
LN_BRANCH	-0.064	-31.118 ***	-0.061	-28.641 ***	-0.069	-32.326 ***	-0.067	-30.943 ***
CNI_BRANCH	0.001	30.461 ***	0.001	32.354 ***	0.001	32.031 ***	0.001	32.748 ***
NPLTA	0.627	9.847 ***	0.666	10.504 ***	0.576	9.210 ***	0.623	10.001 ***
SCORP	-0.003	-0.520	-0.001	-0.239	-0.001	-0.253	0.000	0.006
OBHC	-0.014	-5.237 ***	-0.014	-5.395 ***	-0.017	-6.349 ***	-0.017	-6.440 ***
MBHC	0.004	1.005	0.002	0.431	-0.005	-1.226	-0.006	-1.605
Establishments	-0.000	-10.625 ***	-0.000	-10.981 ***	-0.000	-10.845 ***	-0.000	-11.154 ***
Merger	0.007	1.953 *	0.008	2.090 **	0.008	2.072 **	0.008	2.202 **
HHI	-0.003	-0.935	-0.005	-1.770 *	-0.002	-0.630	-0.004	-1.261
y2003	0.005	0.915	0.005	1.031	0.005	0.927	0.005	1.020
y2004	0.012	2.358 **	0.012	2.444 **	0.012	2.401 **	0.012	2.427 **
y2005	0.006	1.100	0.006	1.004	0.006	1.120	0.005	0.971
y2006	0.010	1.599	0.009	1.470	0.010	1.639	0.008	1.442
y2007	0.014	2.320 **	0.013	2.149 **	0.015	2.409 **	0.013	2.143 **
y2008	0.010	1.662 *	0.010	1.671 *	0.011	1.745 *	0.010	1.691 *
y2009	-0.008	-1.207	-0.008	-1.270	-0.007	-1.062	-0.008	-1.341
y2010	-0.014	-2.139 **	-0.015	-2.302 **	-0.010	-1.573	-0.013	-1.944 *
y2011	-0.012	-1.810 *	-0.013	-1.961 **	-0.008	-1.250	-0.011	-1.648 *
y2012	-0.002	-0.256	-0.003	-0.439	0.000	0.024	-0.002	-0.358
y2013	0.007	1.046	0.006	0.928	0.009	1.365	0.007	1.082
y2014	0.019	2.811 ***	0.018	2.716 ***	0.021	3.093 ***	0.019	2.859 ***
y2015	0.030	4.451 ***	0.028	4.251 ***	0.031	4.611 ***	0.029	4.418 ***
y2016	0.038	5.562 ***	0.036	5.342 ***	0.037	5.392 ***	0.034	5.131 ***
y2017	0.047	6.825 ***	0.046	6.631 ***	0.048	7.015 ***	0.047	6.791 ***
Observations	13,179		13,093		12,920		12,869	
R-squared	0.383		0.308		0.352		0.315	

Table 8:
Percentage of Out-of-Market Small-Business Lending by Loan Amount (≤ $100K)

Results from OLS regression where the dependent variable is Share Amount, defined as the percent of dollar amount of out-of-market SBL originations in amounts ≤ $100,000. Credit Card is an indicator for banks specializing in credit-card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
VARIABLES	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.199	11.894 ***			0.269	13.714 ***		
Stress Tested	0.041	3.830 ***	0.062	5.590 ***				
Size	0.030	12.851 ***	0.026	11.166 ***	0.027	11.578 ***	0.026	10.812 ***
LARGE	0.021	3.314 ***	0.016	2.573 **	0.018	2.857 ***	0.016	2.501 **
LN_BRANCH	-0.059	-27.080 ***	-0.054	-24.314 ***	-0.056	-25.575 ***	-0.054	-23.889 ***
CNI_BRANCH	0.001	34.001 ***	0.001	36.795 ***	0.001	35.822 ***	0.001	36.893 ***
NPLTA	0.626	9.650 ***	0.646	10.017 ***	0.599	9.309 ***	0.635	9.909 ***
SCORP	0.003	0.699	0.005	1.043	0.004	0.809	0.005	1.130
OBHC	-0.013	-4.976 ***	-0.014	-5.113 ***	-0.015	-5.488 ***	-0.015	-5.535 ***
MBHC	0.009	2.284 **	0.007	1.707 *	0.005	1.257	0.004	0.909
Establishments	-0.000	-11.550 ***	-0.000	-11.935 ***	-0.000	-11.823 ***	-0.000	-12.057 ***
Merger	0.011	2.779 ***	0.011	2.970 ***	0.010	2.542 **	0.010	2.682 ***
HHI	0.009	3.248 ***	0.007	2.418 **	0.008	2.807 ***	0.006	2.127 **
y2003	0.004	0.791	0.005	0.965	0.004	0.841	0.005	0.973
y2004	0.011	2.147 **	0.011	2.289 **	0.011	2.262 **	0.011	2.316 **
y2005	0.002	0.377	0.002	0.319	0.003	0.486	0.002	0.353
y2006	0.007	1.156	0.007	1.100	0.008	1.309	0.007	1.156
y2007	0.009	1.504	0.008	1.373	0.011	1.707	0.009	1.449
y2008	-0.003	-0.459	-0.002	-0.394	-0.002	-0.302	-0.002	-0.324
y2009	-0.012	-1.963 **	-0.012	-1.907 *	-0.011	-1.775 *	-0.013	-2.007 **
y2010	-0.019	-2.892 ***	-0.019	-2.878 ***	-0.016	-2.422 **	-0.018	-2.724 ***
y2011	-0.014	-2.116 **	-0.014	-2.083 **	-0.011	-1.645	-0.013	-1.967 **
y2012	-0.010	-1.504	-0.010	-1.541	-0.008	-1.246	-0.010	-1.562
y2013	-0.004	-0.617	-0.004	-0.593	-0.002	-0.295	-0.003	-0.512
y2014	0.006	0.872	0.006	0.865	0.009	1.394	0.008	1.207
y2015	0.013	1.991 **	0.012	1.810 *	0.017	2.457 **	0.016	2.290 **
y2016	0.024	3.489 ***	0.022	3.297 ***	0.023	3.373 ***	0.021	3.134 ***
y2017	0.032	4.530 ***	0.030	4.387 ***	0.034	4.812 ***	0.032	4.603 ***
Observations	13,035		12,949		12,790		12,739	
R-squared	0.385		0.308		0.339		0.298	

Table 9:
Percentage of Out-of-Market Small-Business Lending by Loan Amount (> $100K)

Results from OLS regression where the dependent variable is Share Amount, defined as the percent of dollar amount of out-of-market SBL originations in amounts > $100,000 and ≤ $1,000,000. Credit Card is an indicator for banks specializing in credit-card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

VARIABLES	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.169	8.486 ***			0.175	7.439 ***		
Stress Tested	-0.029	-2.451 **	-0.025	-2.075 **				
Size	0.024	9.576 ***	0.024	9.501 ***	0.029	11.147 ***	0.029	11.326 ***
LARGE	0.021	2.982 ***	0.017	2.379 **	0.016	2.288	0.013	1.850
LN_BRANCH	-0.061	-26.403 ***	-0.060	-25.479 ***	-0.067	-27.805 ***	-0.067	-27.253 ***
CNI_BRANCH	0.001	26.665 ***	0.001	26.792 ***	0.001	26.419 ***	0.001	26.239 ***
NPLTA	0.624	8.838 ***	0.665	9.405 ***	0.585	8.319 ***	0.629	8.947 ***
SCORP	0.007	1.280	0.008	1.484	0.008	1.508	0.009	1.692 *
OBHC	-0.017	-5.569 ***	-0.017	-5.634 ***	-0.019	-6.357 ***	-0.019	-6.342 ***
MBHC	-0.001	-0.127	-0.001	-0.246	-0.007	-1.496	-0.007	-1.605
Establishments	-0.000	-10.345 ***	-0.000	-10.595 ***	-0.000	-10.340 ***	-0.000	-10.608 ***
Merger	0.010	2.254 **	0.009	2.225 **	0.011	2.539 **	0.011	2.537 **
HHI	-0.002	-0.709	-0.003	-0.941	0.000	0.058	-0.001	-0.229
y2003	0.007	1.266	0.007	1.215	0.007	1.251	0.007	1.195
y2004	0.018	3.318 ***	0.018	3.293 ***	0.018	3.299 ***	0.018	3.255 ***
y2005	0.015	2.345 **	0.014	2.175 **	0.015	2.282 **	0.013	2.097 **
y2006	0.018	2.623 ***	0.016	2.451 **	0.017	2.555 **	0.016	2.360 **
y2007	0.019	2.807 ***	0.017	2.478 **	0.019	2.729 ***	0.016	2.375 **
y2008	0.013	1.961 **	0.013	1.876 *	0.013	1.903 *	0.012	1.798 *
y2009	-0.002	-0.252	-0.003	-0.420	-0.002	-0.297	-0.004	-0.550
y2010	-0.005	-0.697	-0.007	-0.953	-0.004	-0.538	-0.006	-0.874
y2011	-0.002	-0.264	-0.004	-0.537	-0.001	-0.157	-0.004	-0.513
y2012	0.010	1.359	0.008	1.083	0.010	1.401	0.008	1.064
y2013	0.021	2.845 ***	0.019	2.605 ***	0.023	3.012 ***	0.020	2.708 ***
y2014	0.035	4.687 ***	0.033	4.513 ***	0.035	4.707 ***	0.033	4.441 ***
y2015	0.045	6.086 ***	0.043	5.828 ***	0.045	5.987 ***	0.043	5.750 ***
y2016	0.052	6.937 ***	0.050	6.624 ***	0.051	6.680 ***	0.048	6.364 ***
y2017	0.064	8.351 ***	0.062	8.139 ***	0.064	8.255 ***	0.062	8.041 ***
Observations	13,128		13,060		12,878		12,836	
R-squared	0.309		0.257		0.280		0.255	

Table 10:
Percentage of Out-of-Market Small-Business Lending by Number of Loans (≤ $100K)

Results from OLS regression where the dependent variable is Share Number, defined as the percent of number of out-of-market SBL originations in amounts ≤ $100,000. Credit Card is an indicator for banks specializing in credit-card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
VARIABLES	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.188	11.362 ***			0.259	13.328 ***		
Stress Tested	0.049	4.591 ***	0.071	6.368 ***				
Size	0.033	14.537 ***	0.030	12.861 ***	0.030	13.083 ***	0.029	12.326 ***
LARGE	0.019	3.081 ***	0.014	2.262 **	0.017	2.705 ***	0.014	2.274 **
LN_BRANCH	-0.058	-27.047 ***	-0.054	-24.307 ***	-0.056	-25.489 ***	-0.053	-23.822 ***
CNI_BRANCH	0.001	34.170 ***	0.001	36.953 ***	0.001	36.260 ***	0.001	37.315 ***
NPLTA	0.573	8.905 ***	0.604	9.456 ***	0.547	8.585 ***	0.594	9.376 ***
SCORP	0.001	0.106	0.002	0.402	0.001	0.199	0.002	0.475
OBHC	-0.013	-4.725 ***	-0.013	-4.892 ***	-0.014	-5.286 ***	-0.014	-5.361 ***
MBHC	0.005	1.202	0.002	0.592	-0.000	-0.040	-0.002	-0.410
Establishments	-0.000	-11.804 ***	-0.000	-12.228 ***	-0.000	-12.050 ***	-0.000	-12.316 ***
Merger	0.009	2.452 **	0.010	2.643 ***	0.008	2.133 **	0.009	2.271 **
HHI	0.009	3.193 ***	0.007	2.329 **	0.008	2.719 ***	0.006	2.014 **
y2003	0.003	0.638	0.004	0.790	0.003	0.688	0.004	0.799
y2004	0.009	1.843 *	0.010	1.973 **	0.010	1.964 **	0.010	2.007 **
y2005	0.001	0.194	0.001	0.124	0.002	0.325	0.001	0.178
y2006	0.006	0.940	0.005	0.863	0.007	1.125	0.006	0.951
y2007	0.009	1.446	0.008	1.300	0.010	1.691	0.009	1.417
y2008	-0.003	-0.464	-0.003	-0.419	-0.002	-0.271	-0.002	-0.313
y2009	-0.014	-2.195 **	-0.014	-2.182 **	-0.012	-1.985 **	-0.014	-2.257 **
y2010	-0.022	-3.278 ***	-0.022	-3.328 ***	-0.018	-2.712 ***	-0.020	-3.079 ***
y2011	-0.017	-2.505 ***	-0.017	-2.538 **	-0.013	-1.950 *	-0.015	-2.342 **
y2012	-0.011	-1.718 *	-0.012	-1.812 *	-0.010	-1.438	-0.012	-1.817 *
y2013	-0.008	-1.155	-0.008	-1.182	-0.006	-0.901	-0.008	-1.168
y2014	0.003	0.396	0.002	0.353	0.006	0.920	0.005	0.697
y2015	0.009	1.352	0.008	1.144	0.013	1.966 **	0.012	1.777 *
y2016	0.020	2.897 ***	0.018	2.683 ***	0.019	2.811 ***	0.017	2.551 **
y2017	0.026	3.746 ***	0.025	3.583 ***	0.028	4.087 ***	0.027	3.862 ***
Constant	-0.245	-7.172	-0.195	-5.642	-0.201	-5.836	-0.176	-5.044
Observations	13,037		12,951		12,792		12,741	
R-squared	0.385		0.307		0.339		0.297	

Table 11:
Percentage of Out-of-Market Small-Business Lending by Number of Loans (> $100K)

Results from OLS regression where the dependent variable is Share Number, defined as the percent of number of out-of-market SBL originations in amounts > $100,000 and ≤ $1,000,000. Credit Card is an indicator for banks specializing in credit-card loans. Stress Tested is an indicator for banks subject to the CCAR or SCAP stress tests in a particular year. Size is the natural log of total assets. LARGE is an indicator for large banks with more than $10 billion in assets. LN_BRANCH is the natural log of number of branches of the bank. CNI_TA is the dollar amount of C&I loans divided by the dollar amount of total assets. CNI_BRANCH is the dollar value of C&I loans divided by the number of branches of the bank. NPLTA is the ratio of nonperforming loans to total assets of the bank. SCORP is an indicator for banks organized as S-corporations. OBHC is an indicator for a bank operating as part of a one-bank holding company. MBHC is an indicator for a bank operating as part of a multi-bank holding company. Establishments is the number of establishments with less than 500 employees in a particular county each year. Merger is an indicator variable for whether a merger occurred in the previous year. HHI is the natural log of the weighted average Herfindahl-Hirschman Index of bank deposit in counties in which the bank operates.

	All Banks		Exclude CC Banks		Exclude ST Banks		Exclude CC & ST Banks	
VARIABLES	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat	Coef.	Tstat
Credit Card	0.165	8.687 ***			0.175	7.788 ***		
Stress Tested	-0.019	-1.745 *	-0.015	-1.332				
Size	0.024	9.832 ***	0.024	9.804 ***	0.028	11.431 ***	0.029	11.685 ***
LARGE	0.023	3.374 ***	0.019	2.771 ***	0.018	2.643 ***	0.015	2.225 **
LN_BRANCH	-0.060	-26.996 ***	-0.059	-26.116 ***	-0.066	-28.503 ***	-0.065	-28.022 ***
CNI_BRANCH	0.001	29.136 ***	0.001	29.294 ***	0.001	29.113 ***	0.001	28.915 ***
NPLTA	0.606	8.968 ***	0.648	9.589 ***	0.565	8.409 ***	0.610	9.105 ***
SCORP	0.008	1.511	0.009	1.745 *	0.009	1.755 *	0.010	1.971 **
OBHC	-0.016	-5.542 ***	-0.016	-5.615 ***	-0.018	-6.387 ***	-0.018	-6.374 ***
MBHC	-0.000	-0.046	-0.001	-0.189	-0.007	-1.593	-0.007	-1.721 *
Establishments	-0.000	-10.020 ***	-0.000	-10.320 ***	-0.000	-10.060 ***	-0.000	-10.370 ***
Merger	0.010	2.460 **	0.010	2.441 **	0.011	2.775 ***	0.011	2.786 ***
HHI	-0.004	-1.381	-0.005	-1.599	-0.002	-0.625	-0.003	-0.898
y2003	0.007	1.265	0.007	1.229	0.007	1.254	0.006	1.211
y2004	0.016	3.060 ***	0.016	3.059 ***	0.016	3.052 ***	0.016	3.028 ***
y2005	0.013	2.152 **	0.012	2.011 **	0.013	2.097 **	0.012	1.937 *
y2006	0.015	2.401 **	0.014	2.235 **	0.015	2.344 **	0.014	2.150 **
y2007	0.019	2.859 ***	0.016	2.520 **	0.018	2.798 ***	0.016	2.429 **
y2008	0.014	2.066	0.013	1.995 **	0.013	2.025 **	0.013	1.929 *
y2009	-0.002	-0.284	-0.003	-0.449	-0.002	-0.344	-0.004	-0.605
y2010	-0.004	-0.581	-0.006	-0.835	-0.003	-0.369	-0.005	-0.720
y2011	-0.003	-0.354	-0.004	-0.630	-0.001	-0.186	-0.004	-0.562
y2012	0.007	0.939	0.005	0.657	0.007	1.025	0.005	0.670
y2013	0.021	2.930 ***	0.019	2.691 ***	0.023	3.186 ***	0.020	2.870 ***
y2014	0.032	4.447 ***	0.030	4.276 ***	0.032	4.527 ***	0.030	4.253 ***
y2015	0.040	5.634 ***	0.038	5.368 ***	0.040	5.561 ***	0.038	5.316 ***
y2016	0.049	6.730 ***	0.046	6.409 ***	0.047	6.408 ***	0.044	6.078 ***
y2017	0.060	8.196 ***	0.059	7.983 ***	0.060	8.126 ***	0.058	7.906 ***
Constant	0.027	0.737	0.025	0.695	-0.036	-0.966 ***	-0.043	-1.165
Observations	13,128		13,060		12,878		12,836	
R-squared	0.331		0.277		0.302		0.276	