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The Community Reinvestment Act and Small Business Lending in Low- and Moderate-Income Neighborhoods during the Financial Crisis

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Introduction

Over the last three years, the financial crisis and ensuing recession have led to tectonic shifts in the availability of credit, especially for small businesses. Data show that the number of loans to small businesses has dropped from 5.2 million loans in 2007 to 1.6 million in 2009. The drop in the number of dollars available in credit to small businesses is also dramatic: in 2007, small businesses accessed nearly $137 billion in loans and lines of credit; in 2009, this amount had dropped by nearly half, to $73 billion (FFIEC 2010).[2] In addition to the constriction of traditional lines of credit, entrepreneurs have also seen other avenues for credit dry up, including limited availability of Home Equity Lines of Credit (HELOCs), the inability to refinance their homes or use their homes as collateral, and lowered limits and/or raised interest rates on credit cards (Bernanke 2010).

These trends are of significant concern to policy-makers, particularly given the important role that small businesses play in the US economy (e.g. Bernanke 2010; Duke 2010). Small businesses—defined as nonfarm entities with fewer than 500 employees—account for about half of private-sector output, employ more than half of private-sector workers, and generate a large share of new jobs. Small businesses may be particularly important to the well-being of lower-income households and neighborhoods. Research has shown that small businesses employ a larger share of persons on public assistance and those with lower education levels, can help to boost lower-wage workers above the poverty line, and can help to promote local economic development and revitalize distressed communities (CFED 2004; Clark and Keys 1999; Immergluck and Smith 2003; Cytron 2006; Bates 2006).

Making credit accessible to small businesses, therefore, is seen as a critical component of economic recovery (Bernanke 2010; Duke 2010). Despite this policy focus, however, few studies have documented recent trends in small business lending (FFIEC 2010), and even fewer have focused attention on the implications of the reduction in credit for small businesses in low- and moderate-income neighborhoods. In this paper, we seek to address this gap by examining trends in small business lending in low- and moderate-income (LMI) neighborhoods by large banks regulated under the Community Reinvestment Act (CRA). We focus our empirical analysis on two key questions. First, how has access to bank loans for small businesses in LMI neighborhoods changed in the face of the financial crisis and general credit downturn?[3] Second, what factors are associated with the amount of small business lending–and changes in this amount– at the neighborhood level? Through descriptive statistics and

[1] The views expressed in this paper are those of the authors and not necessarily those of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

[2] Data reported are for loans to small, non-farm businesses.

[3] "Low-income" communities are defined as ones with median household income less than 50 percent of the area median. "Moderate-income" means that median household income that is at least 50 percent but less than 80 percent of the broader area. "Middle-income" denotes median household income is between 80 percent and 120 percent of the area's median household income. "High income" means median household income is greater than 120 percent of the area's median household income.

cross-section regressions on census-tract level data, we hope to provide a more detailed understanding of the dynamics of small business lending in LMI neighborhoods during the financial crisis.

The paper proceeds as follows. In the first section, we examine the literature on the CRA and small business lending, and provide an overview of the small business lending data. In the second section, we provide descriptive statistics and maps documenting trends in small business lending across the United States, with specific attention to differences between LMI and higher-income areas. In the third section, we formalize the descriptive analysis and the maps with regressions that examine the factors correlated with the distribution of small business lending at the neighborhood level. In particular, we examine the links between the foreclosure crisis and access to small business credit. Our goal is to describe the types of neighborhoods that are experiencing the greatest declines in small business lending, not to establish a causal relationship between these factors and access to credit. In the final section we discuss the implications of this research for policy and suggest avenues for future research.

Small Business Lending and the CRA

Access to credit is vital for small business startup, expansion, and survival, and financial institutions play an important role in providing capital to small firms since they are not in a position to access funds from publicly traded markets (Ou and Williams 2009). According to the 2003 Survey of Small Business Finances, in 2003, almost 90 percent of small businesses used some form of credit, compared with just over 80 percent in 1998. Small business loans are certainly not the only source of credit for small businesses: 80 percent of small firms used non-traditional sources of credit such as owners' loans and personal and business credit cards to help finance their business. However, 60.4 percent of businesses relied on a traditional bank loan; among firms with more than 20 employees, this percentage rises to 85 percent or more (Survey of Small Business Finances 2003).

Despite the importance of credit, small businesses face numerous constraints in obtaining traditional financing. Small firms or startups may have little or no credit history, and lenders may face difficulties assessing the risk of new businesses (especially when the service or product is innovative and doesn't have a clear track record). These information gaps are thought to lead to credit rationing in the small business loan market. Craig, Jackson and Thomson (2006) lay out two mechanisms by which credit rationing could occur in the presence of such gaps: adverse selection and moral hazard. Adverse selection occurs when a bank increases a loan's interest rate for borrowers it perceives but doesn't know to be riskier, in an attempt to compensate for the higher perceived risk. But, not only does the pool of borrowers affect interest rates, interest rates affect who borrows. As the interest rate rises, the average riskiness of those who are *willing* to borrow also increases. Only borrowers with a large enough probability of making a high enough revenue with which to pay back the loan with the higher interest rate and still retain some profit will be interested. But, such borrowers also have a higher probability of defaulting on the loan. So, higher interest rates can result in lowering the bank's expected profits from lending. Instead of adjusting interest rates, then, the bank may simply tighten the supply of credit for borrowers it perceives to be riskier. Furthermore, changes in interest rates can change the behavior of any particular borrower. For instance, raising the interest rate may induce a borrower to take more risk than he or she otherwise would--the moral hazard problem. In a competitive credit market with no information gaps, borrowers would bid up the interest rate until credit demand equaled supply, but, in the presence of adverse selection and moral hazard, this market mechanism may not work well, and, as a result, credit is rationed.

Credit rationing is of particular concern in lower-income and minority areas. Businesses tend to be less well-established in these areas, which can lead to heightened difficulty in assessing risk and creditworthiness. In addition, in neighborhoods that have been historically underserved by financial services, would-be borrowers have not had the opportunity to establish lending relationships that can help to mediate information gaps that often arise (Petersen and Rajan 1994). The racial composition of business owners in lower-income areas may further restrict credit supply. Evidence suggests that minority-owned businesses are denied loans at higher rates than white-owned businesses, even after controlling for a wide variety of firm characteristics (Squires and O'Conner 2001; Cavalluzzo, Cavalluzzo, and Wolken 2002; Blanchflower et al. 2003). These disparities in denial rates can manifest themselves geographically: in lower-income and minority neighborhoods, a greater share of small businesses may be started by minority entrepreneurs, thereby leading to spatial inequalities in the distribution of credit (Immergluck and Smith 2003; Squires and O'Connor 2001). In a comprehensive review of small business lending data conducted by the Federal Reserve Board of Governors, Canner (1999) found observable differences in small business lending by neighborhood income and by race, as well as by central city and suburban location, yet cautions against drawing concrete conclusions from the data without additional information on other contextual factors that could influence the supply and demand for small business credit (Canner 1999). Other researchers have found that the race of the neighborhood is statistically related to small business loan denial rates, even after controlling for neighborhood income (Bostic and Lampani 1999; Immergluck 2002).

To overcome these barriers to credit, the federal government has long intervened in credit markets, both through direct guaranteed lending programs under the Small Business Administration and through bank regulation under the CRA. The CRA encourages federally insured banks and thrifts to meet the credit needs of the communities that they serve, including LMI areas. While much of the attention on CRA has focused on home mortgage lending, banks are also evaluated on the extent to which they meet the credit needs of small businesses. While the CRA does not set quantitative lending targets, the CRA works on the principal that by encouraging banks to lend to small businesses in LMI neighborhoods, the lender will learn more about businesses near their branches and thus create positive informational externalities associated with successful and profitable lending in LMI areas. In 1995, revisions to the CRA clarified the requirements associated with lending to small businesses and small farms, and for the first time required an annual reporting of geographic data on small business and small farm lending by larger banking institutions.

Few researchers have used the CRA data to describe patterns of small business lending in low-income neighborhoods. The literature on small business lending has instead focused on bank size, consolidation, and competition (Bonaccorsi di Patti and Gobbi 2001; Samolyk and Richardson 2003); examinations of the link between the distance between the small business and the supplier of credit (Petersen and Rajan 2002; Brevoort, Holmes and Wolken 2010); the role of credit scoring on access to credit (e.g. Frame, Padhi and Woosley 2001; DeYoung et al. 2007); and whether or not small business lending can be linked to economic productivity (Craig, Jackson and Thomson 2006). Taken together, these studies point to complicated inter-relationships between bank size, location, and the processes by which loan officers make underwriting decisions about small business loans, all of which may play out differently in lower-income and minority neighborhoods than in higher-income and predominantly white neighborhoods. For instance, research has shown that distance matters to small business lending and that a vast majority of small businesses rely on the credit services of banks located nearby (Brevoort, Holmes and Wolken 2010; Laderman 2008). Laderman (2008), for example, finds that only about 10 percent of small business lending is from banks with no branch in the local market. This suggests that the CRA has

an important role to play in ensuring that small businesses have access to credit from banks within their metropolitan area.

A few studies have examined whether or not government intervention in credit markets boosts local employment and economic productivity. For example, Craig, Jackson and Thomson (2006) explore the relationship between SBA lending and local economic growth. They find that SBA guaranteed lending had a small positive influence on the rate of economic growth at the MSA and county level and that the effect is greater in low-income markets. We were only able to find one study that looked specifically at the impact of the CRA on small business lending. Using data from the late 1990s, Zinman (2002) finds that the CRA increases lending to small businesses, increasing access to credit for approximately five percent of firms, with little evidence of adverse effects on bank profits or loan quality. He also suggests that CRA-induced credit increases produce real benefits at the county level, demonstrating a slight increase in local payrolls.

What is interesting, however, is that in all of these papers, there is almost no description of where small business lending happens or what neighborhood-level factors are associated with small business lending. Given the financial crisis, we believe it is particularly important to develop an understanding of which low-income neighborhoods have been affected by the contraction of credit among large banks, and whether or not these are the same neighborhoods that have been affected by high rates of foreclosure and unemployment.

Data and Methods

This paper relies on small business lending data from 2003 to 2009 collected under theCRA. Banks with assets of at least $1 billion are required to report the geographic distribution of their small business lending, providing information about the number, amount, and census tract of loans under $1 million in size. Reportable loans include both commercial and industrial (C&I) loans and loans secured by nonresidential real estate and are defined to include extensions of new loans, granting of new credit lines, and refinancing of existing loans.[4] In 2003, about 1,640 banks and 470 thrifts filed reports, accounting for almost four-fifths of the total volume of small business loans outstanding in June of that year (Federal Financial Institutions Examinations Council 2004). The CRA defines small business lending as loans of less than $1 million made for business purposes and/or loans made to businesses with less than $1 million in revenues. LMI areas are defined at the census tract level; a loan counts as an LMI loan if it is to a business (borrower) located in (residing in) a census tract where the median family income is less than 80 percent of median family income in the tract's metropolitan statistical area (MSA). We limit our analysis of the CRA data to loans of less than $1 million made to non-farm businesses with less than $1 million in revenue, originated by largebanks required to report their small business lending activities.[5] In addition, we further restrict the sample to loans made in MSAs and to loan originations, not loan purchases.

The CRA reports are the first and only publicly available data on small business lending at the local level, allowing us to assess changes in lending in LMI neighborhoods. However, the data also have some

[4] Banks report business credit card lines of credit, whether drawn on or not, on the CRA. In contrast, personal credit card lines of credit, even if used for business purposes, are not reported on the CRA. However, we omit from our sample banks that specialize in business or personal credit card lending.

[5] Some smaller banks voluntarily report small business lending data. However, due to potential volatility over time in the number of such banks, we limit this analysis only to required reporters of CRA small business lending data.

significant limitations. Unlike mortgage lending data reported under the Home Mortgage Disclosure Act, data on small business lending are not provided at the loan level and do not include any information about the borrower. The data also do not report small business loan applications, so it is not possible to assess differences in denial rates among different borrowers or neighborhoods, nor is it possible to assess local demand for credit (Canner 1999). In addition, the location reported for the borrower (e.g. a company's headquarters) may not be the same as where the loan is actually used. This, in addition to the fact that small banks—which often are a significant source of small business loans—are not required to report small business lending activities, suggests that our results do not provide an exact measure of the change in small business lending and that results should be treated with caution. Despite these limitations, the analysis presented here does provide an important initial understanding of trends in CRA small business lending.[6]

In addition to the data on small business lending from the CRA, we rely on several other data sources to help describe the local demographic and socio-economic context for small business lending. Table 1 outlines each of these data sources, the level and year at which the data are measured, and the variables assessed. For the unemployment rate, house price index, and percent of loans in foreclosure—all of which are reported multiple times over the year, we assess the levels in June of the corresponding year.

Data Source	Geographic Scale	Time Period	Variables
US Census	Census Tract	2000	• FFIEC Low/Moderate/Middle/Upper Income Census Tract • Percent Black, Hispanic, Asian • Central City
American Community Survey	County	2004, 2007, 2008	• Median Household Income
Home Mortgage Disclosure Act (HMDA)	Census Tract	2004, 2007, 2008	• Number of Conventional, Owner Occupied Mortgages (1-4 family) Originated
Bureau of Labor Statistics	County	2004, 2007, 2008	• Unemployment Rate
National proprietary database	Zip Code	2004, 2007, 2008	• Percent of Home Mortgage Loans in Foreclosure
Dun and Bradstreet	Census Tract	2004, 2007, 2008	• Number of Small Businesses • Number of Small Businesses in Real Estate/Construction
FHFA	MSA	2004, 2007, 2008	• House Price Index

[6] All four regulatory agencies recently concluded a public comment period on the Community Reinvestment Act, requesting (among other things) public comment as to whether the agencies should "revise the evaluation of and/or data requirements for small business and small farm lending activities."

We restrict our analysis to census tracts located in MSAs which reported data in the 2004 American Community Survey (ACS), which includes all areas with a population over 250,000 and some areas with a population of over 65,000. While this restricts our analysis to small business lending in larger cities, it allows us to assess how changes between 2004 and 2007, and, subsequently, between 2007 and 2008, are related to changes in small business lending over this time period. In September 2010, the Census will release the 2009 American Community Survey, which will allow us to extend our analysis to match the small business lending data. Initially, our intent was to use many more variables from the ACS, but other variables that we tested in the model did not prove to be significant and/or were highly collinear with variables which we have included. In any case, it is important to remember that in this paper we are examining only a slice of the small business lending market.

Trends in Small Business Lending in LMI Communities

For the nation as a whole, the data demonstrate a clear expansion and contraction cycle in small business credit. Figure 1 presents data on the number and dollar volume of small business loans in the US between 2003 and 2009. Both the number and dollar volume of small business loans peaked in 2007 and then dropped dramatically in 2008; by 2009, both measures had dropped below 2003 levels. This is consistent with broader measures of C&I lending; in almost every recession, C&I loan growth peaks just before the start of the recession, falls during the recession, and does not turn back upward until after the recession has ended (Keeton 2009). The graph also shows that between 2005 and 2007, large banks changed the nature of their small business lending, in that they originated many more loans for smaller amounts. In 2005, the average loan amount calculated at the census tract level was $70,500; in 2007, the average loan amount had dropped to $41,500. By 2009, this trend had reversed. Although we cannot explain this shift, it is possible that small business owners during this time period used home equity lines of credit or money from their home refinancing to meet their credit needs, thus leading to a demand for smaller business loans from banks.

Figures 2a and 2b compare the trends in small business lending in LMI census tracts with the trends in higher income census tracts. The figures show that much of the small business lending boom and subsequent bust was concentrated in middle- and upper-income census tracts, although LMI neighborhoods did experience a similar expansion and contraction in small business lending. However, the trends in LMI neighborhoods were much more muted, and LMI neighborhoods did not see an equal share of the growth in small business lending volumes. Figure 3, which presents the same data depicted as year-over-year changes, shows that the number and amount of small business loans in LMI neighborhoods grew more slowly during the “boom” years. In addition, between 2008 and 2009, the contraction in small business lending has actually been greater in LMI neighborhoods. Overall, between the peak in 2007 and 2009, LMI neighborhoods saw the number of small business loans from large banks drop from 395,000 to 144,000, resulting in $7.6 billion fewer dollars flowing to these communities in just a two-year period.

Next, we compare the volume of small business lending to the number of small businesses located in LMI versus middle- and upper-income tracts. Some of the observed differences above may be due merely to the fact that LMI tracts have fewer small businesses. In Figure 4, we show the ratio of the number of small businesses per loan in each census area income designation. Overall, the number of small businesses per loan is significantly larger in LMI neighborhoods. For example, in 2004, in LMI neighborhoods there was 1 loan for every 13.3 small businesses; in middle- and upper-income neighborhoods, the ratio was 1 loan for every 10.7 businesses. Even more striking is the widening of the gap as a result of the recession. In 2009, LMI neighborhoods had only 1 loan for every 28.4 small

businesses, compared with 1 loan for every 22.6 small businesses in middle- and upper-income neighborhoods. These preliminary data suggest that the recession has had a greater impact on small business lending in LMI neighborhoods.

In Figures 5 and 6, we examine the geographic distribution of small business lending during the boom and bust periods of our analysis. The most striking pattern is the close correlation of the growth in small business lending between 2003 and 2007 with the growth of subprime lending and home construction over this same time period. Areas of dark and light blue as well as green, which reflect small business growth rates above the US median, are especially pronounced in, for example, California's Inland Empire and Central Valley, as well as in Las Vegas, Phoenix, Denver, Minneapolis/St. Paul, Atlanta, and Florida. In contrast, most of the areas along and to the east of the Mississippi saw very little growth in small business lending over this time period.

The map in Figure 6 presents almost a complete reversal of these trends. California's Central Valley, Las Vegas, Phoenix, and Florida have all seen the largest contraction in small business lending since the recession. But the story isn't completely straightforward. For example, Denver and Minneapolis/St. Paul have seen relatively smaller declines in small business lending. In the following section, we look at the factors associated with these different trends using regression analysis.

Small Business Lending at the Local Level: What Matters?

In our first set of regression models, we examine three questions regarding the overall volume of small business lending. First, we look at the factors associated with small business lending at the neighborhood level, in 2004, 2007, and 2008.[7] These three years mark clear points in the small business lending cycle: a pre-boom base (2004), the peak of small business lending (2007), and the first year of credit contraction (2008). For each year, we run three separate models. The first looks for associations between small business lending and standard socio-economic and demographic variables. The second incorporates measures that attempt to capture factors related to the housing and mortgage market. Based on the maps presented above, our hypothesis is that areas that saw a "booming" housing sector were also the same areas that saw a large volume of small business lending. The third model includes state fixed effects. The results for the three time periods are presented in Tables 1-3.

Interestingly, there is quite a lot of variation in the results, both across the models and across time periods. A few of the findings that remain consistent across the models are that census tracts with more small businesses and more lenders have more small business loans and that census tracts in the central city have higher volumes of small business loans than those in the suburbs. Also consistent across the models is that census tracts with a higher proportion of Black and Hispanic residents have fewer small business loans, and that census tracts with a higher proportion of Asian residents have more small business loans.

In most cases, LMI census tracts are also associated with lower numbers of small business loans. The exception is in 2008 (Table 3), when we control for the volume of mortgage lending, the house price in the MSA, and the tract foreclosure rate. In other words, in 2008, with additional housing market controls added to the market, LMI census tracts were actually likely to see slightly higher numbers of small business loans than middle- and upper-income census tracts. Although more research is needed

[7] We use 2004 as a base year rather than 2003 because the ACS covers more MSAs in 2004, and the level of small business lending did not change much between these two years.

to understand this reversal, our hypothesis is that some LMI neighborhoods, precisely because they were more affordable during the housing boom, may have received a boost to ongoing growth due to "gentrification" during this period. These neighborhoods may be more resilient to the economic downturn and continue to experience a demand for small business loans. Oakland's Temescal neighborhood, for example, saw dramatic gentrification between 2004 and 2008, and it continues to see increased commercial activity and new small businesses, despite the recession.

The models also attest to the strong link between foreclosures and the contraction of small business lending. In 2004, the neighborhood foreclosure rate has no significant effect on the number of small business loans in the tract. Already in 2007, and again in 2008, however, this variable is important. Tracts with a higher foreclosure rate are associated with significantly fewer small business loans. In 2008, this effect continues even after controlling for state fixed effects, although the relationship becomes weaker.

Unemployment at the MSA level also changes across the models. In 2004, the unemployment rate is not significantly related to the number of small business loans; by 2008, this effect is strong and significant. In addition, in the models without state fixed effects, a higher unemployment rate is correlated with a larger number of small business loans, while in the model with state fixed effects, increases in local area unemployment are correlated with decreases in small business lending. The sign of the latter correlation is more intuitively appealing. And, the statistical significance suggests that even when broad state economic conditions are somewhat controlled for, the health of the local economy is related to neighborhoods' small business financing environments. However, the direct effect associated with changes in local unemployment may be relatively small. In 2008, for example, a one percentage point increase in the MSA unemployment rate is associated with only about three fewer small business loans in the census tract.

Overall, the models suggest that the factors related to the volume of small business lending did shift between 2004 and 2007, and that, in general, LMI neighborhoods receive fewer small business loans than middle- and upper-income neighborhoods, even after controlling for variables such as neighborhood income and the number of small businesses. In future research papers, we intend to explore this connection further to see if it is possible to tease out potential differences in small business loan demand between LMI and higher income neighborhoods, as well as examine whether small business owners in LMI neighborhoods may have turned to alternative forms of credit – e.g. HELOCs and/or personal credit cards—to meet their credit needs during this time period.

In the second stage of our analysis, we analyze the factors associated with the small business lending "boom" between 2004 and 2007, as well as the factors associated with the small business lending "bust" between 2007 and 2008. Again, this is a preliminary analysis, and we intend to extend the "bust" time period to 2009 once the 2009 ACS Census data are made available. However, this analysis allows us to identify some of the preliminary factors that are associated with increases and declines in small business lending at the local level.

Table 4 presents the results of the model assessing the factors related to the growth in small business lending between 2004 and 2007, where the dependent variable is the percent growth in small business lending over this time period. Column 2 in the table presents the model with state fixed effects. Several variables are noteworthy. First, it is clear that LMI neighborhoods did not see the same boom in small business lending as did higher income neighborhoods. In addition, the small business lending boom was concentrated in suburban census tracts, not in the central city. In particular, the model

suggests that there was a close relationship between the small business lending boom and the housing boom: neighborhoods that saw high house price appreciation, an increase in subprime lending, an increase in the number of lenders, and a growth in the number of small businesses related to real estate and/or construction are all significantly more likely to have experienced growth in small business lending between 2004 and 2007. The tract foreclosure rate in 2007 is negatively related to increases in small business lending, but this disappears once we include state fixed effects.

In Table 5, we run a similar model, but this time examine the factors associated with the decline in small business lending between 2007 and 2008. Whereas central city neighborhoods did not see as much of a boom in small business lending between 2004 and 2007, they also did not see as much of a decline. Neighborhoods with a higher percentage of black residents also did not see as steep of a decline in small business lending. In contrast, areas that saw large declines in house prices, as well as declines in the number of lenders, did see larger declines in small business lending. Areas that saw a larger decline in subprime lending are associated with a larger decline in small business lending, as are tracts with higher foreclosure rates. Neighborhoods with a higher percentage of Asian and Hispanic residents also saw steeper declines.

Conclusion and Policy Implications

In this paper, we provide the first descriptive analysis of trends in small business lending between 2003 and 2009, a period characterized by significant volatility in both the housing and financial sectors. We find that there is a strong relationship between the boom and bust housing market cycle and patterns in small business lending, both over time and over space. While small business lending expanded rapidly between 2003 and 2007, this expansion was uneven, and neither LMI communities nor neighborhoods with a high percentage of African American residents appear to have benefited as much as other areas from the boom. Since 2007, small business lending has contracted significantly, particularly in areas that have also seen contractions in the housing sector.

These results provide only a first attempt at understanding recent trends in small business lending and whether or not the contraction of small business credit is having a disparate impact on LMI communities. Important questions remain. First, small business lending by large CRA reporters reflects only one part of the overall credit market for small businesses; it is important for future research to situate bank lending within the context of broader credit markets. However, given that large banks have a distinct obligation to meet the small business credit needs of the areas they serve, understanding where they made loans over this time period is also important. Our results suggest that there could still be credit rationing away from LMI communities, despite the CRA. Future research is needed to understand why LMI neighborhoods continue to receive fewer loans per small business and whether limited access to credit may be limiting small business development in these areas. This is a critical question for public policy, particularly as small businesses are seen as key drivers of neighborhood stabilization and economic development.

Second, our paper cannot tease out how changes in small business lending are driven by changes in supply or changes in demand. The lack of data on small business loan applications severely limits our ability to understand where there is unmet demand for credit and whether or not small businesses in LMI neighborhoods are being denied small business credit by banks. While we do have some information on patterns of small business lending by banks with a CRA obligation, we do not have the ability to assess to what degree those loans reflect a true commitment to meeting the credit needs of the banks' local communities. Access to more comprehensive data on small business lending –

especially across the different types of credit markets – would greatly facilitate our understanding of credit barriers and gaps in LMI neighborhoods.

Third, the link we find between the housing cycle and small business lending is intriguing and deserves further exploration. Our paper graphically illustrates the spillover effects of the mortgage crisis into another vital sector—for the economy as a whole as well as for LMI areas in particular. Our findings suggest that in order to reverse the cycle of disinvestment in neighborhoods hit hard by foreclosures, we need to address the small business sector as well as housing.

Finally, it appears that in reducing the ranks of the banking industry, the mortgage crisis and ensuing recession may have also pared small business lending. While we do not know the direction of causality, we note that the significant correlation between the decline in the number of lenders in a neighborhood and the decline in the volume of small business loans suggests that bank failures and consolidations, even among larger institutions, may have consequences for the provision of small business loans over the long-term. With respect to LMI areas, then, increasing lender scarcity should signal the need for ongoing focus on meeting the credit needs of small businesses in these neighborhoods.

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Figure 1: Trends in US Small Business Lending, 2003-2009

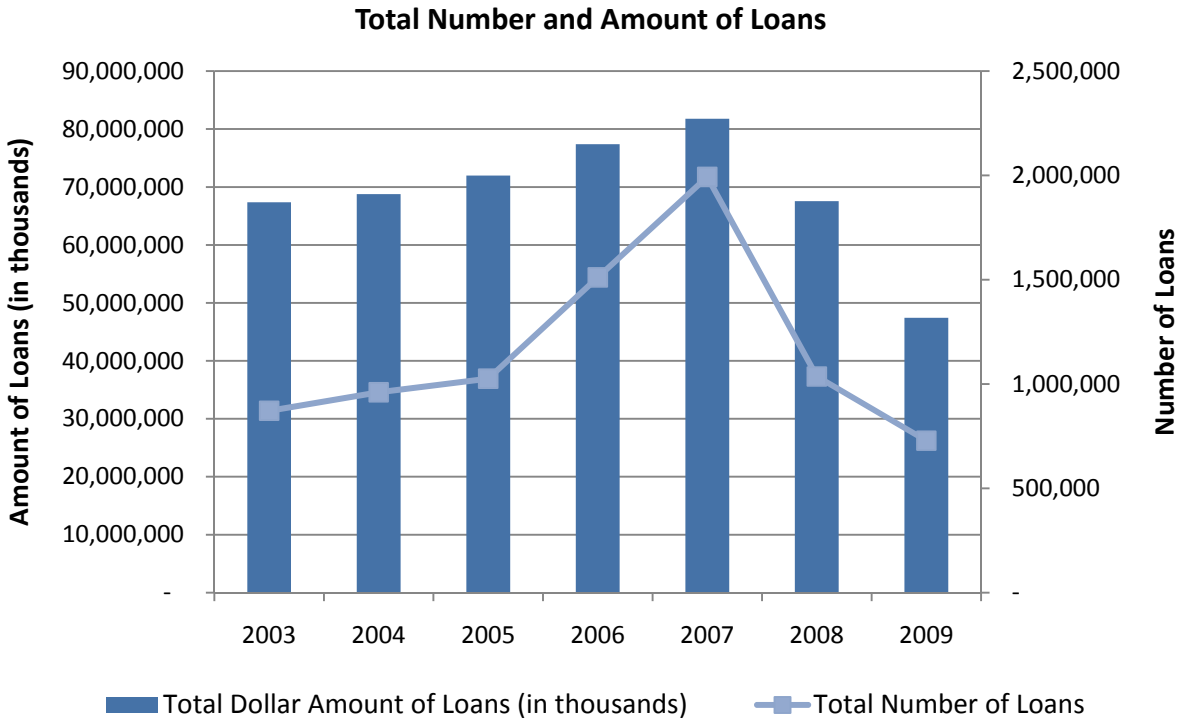
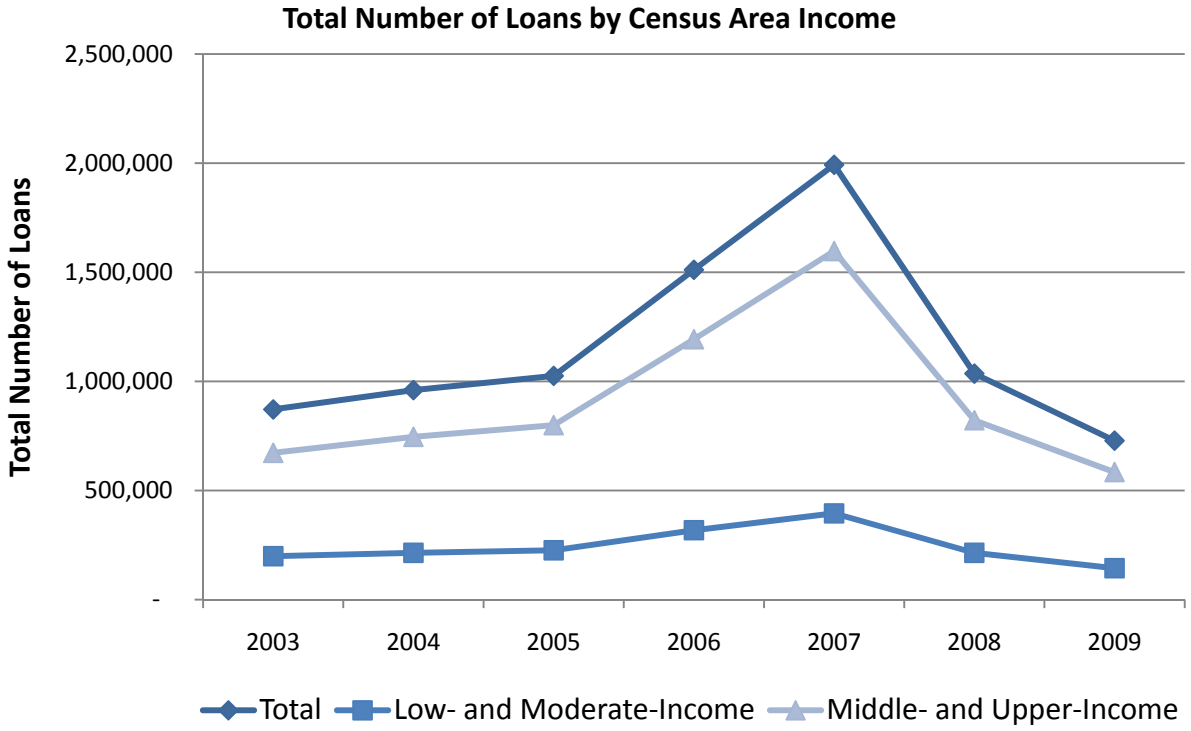


Figure 2: Trends in Total Number and Amount of Loans by Census Area Income, 2003 - 2009



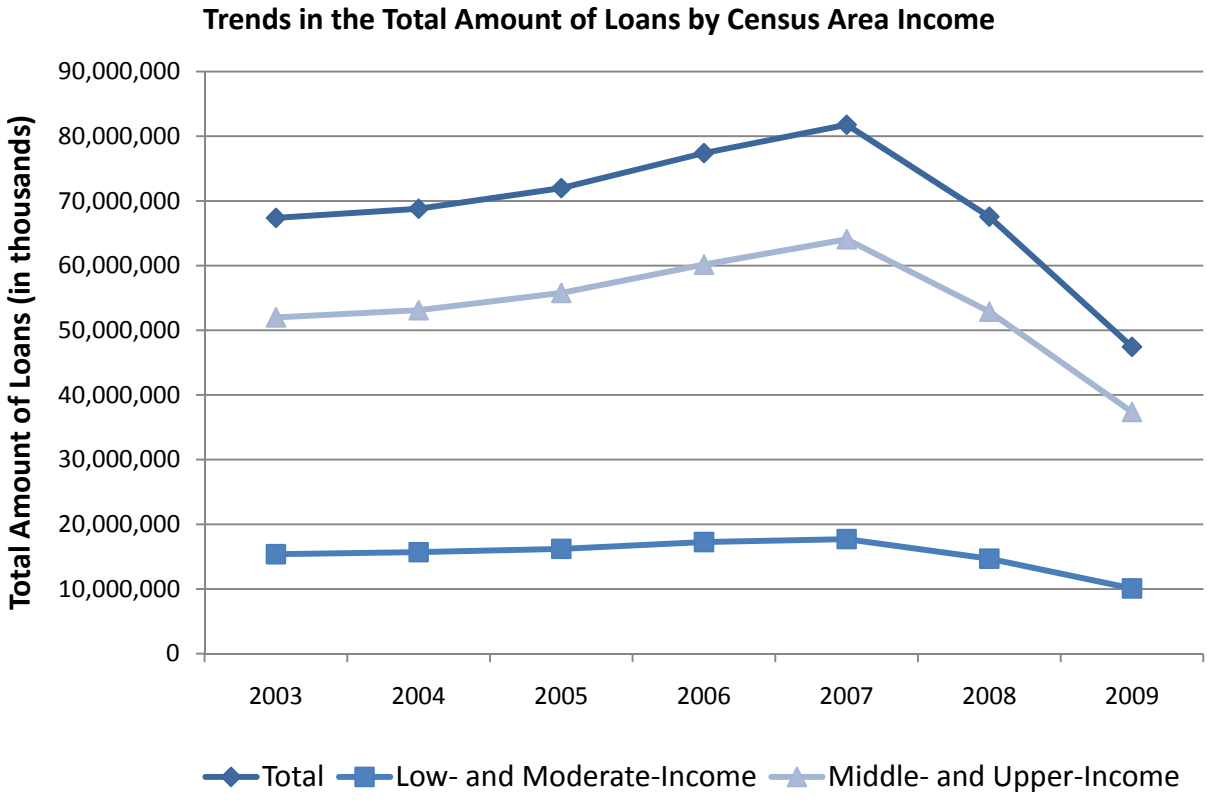
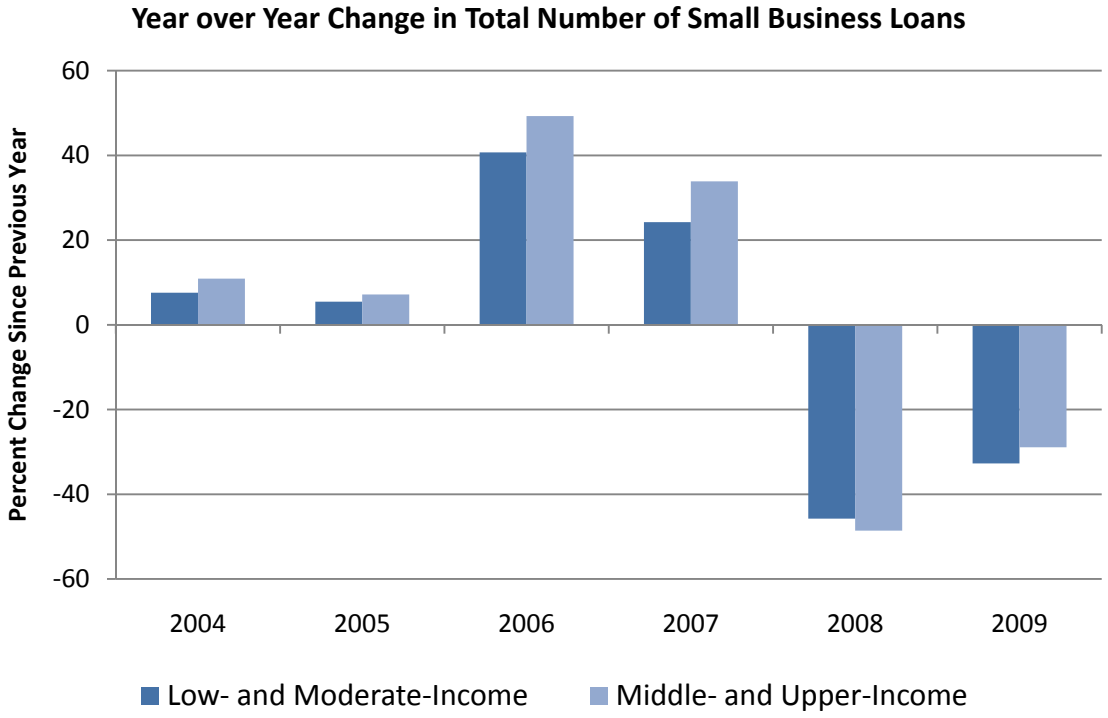


Figure 3: Changes in the Number and Amount of Small Business Lending by Census Area Income



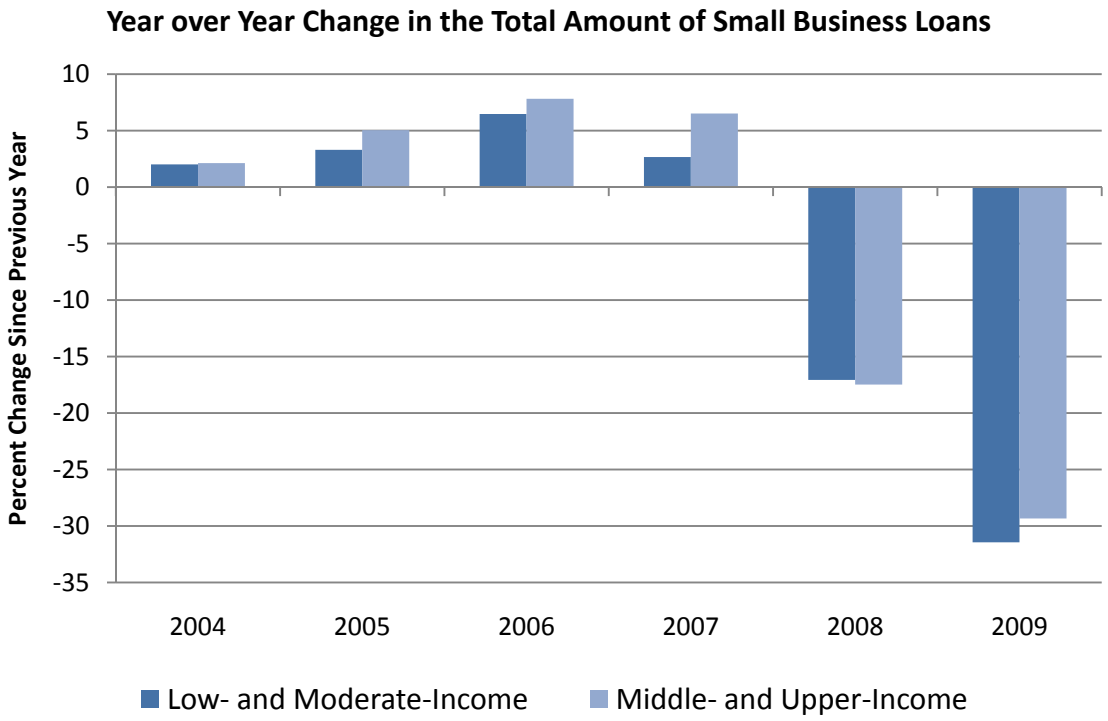


Figure 4: Distribution of Small Business Lending by Census Area Income, 2003 – 2009

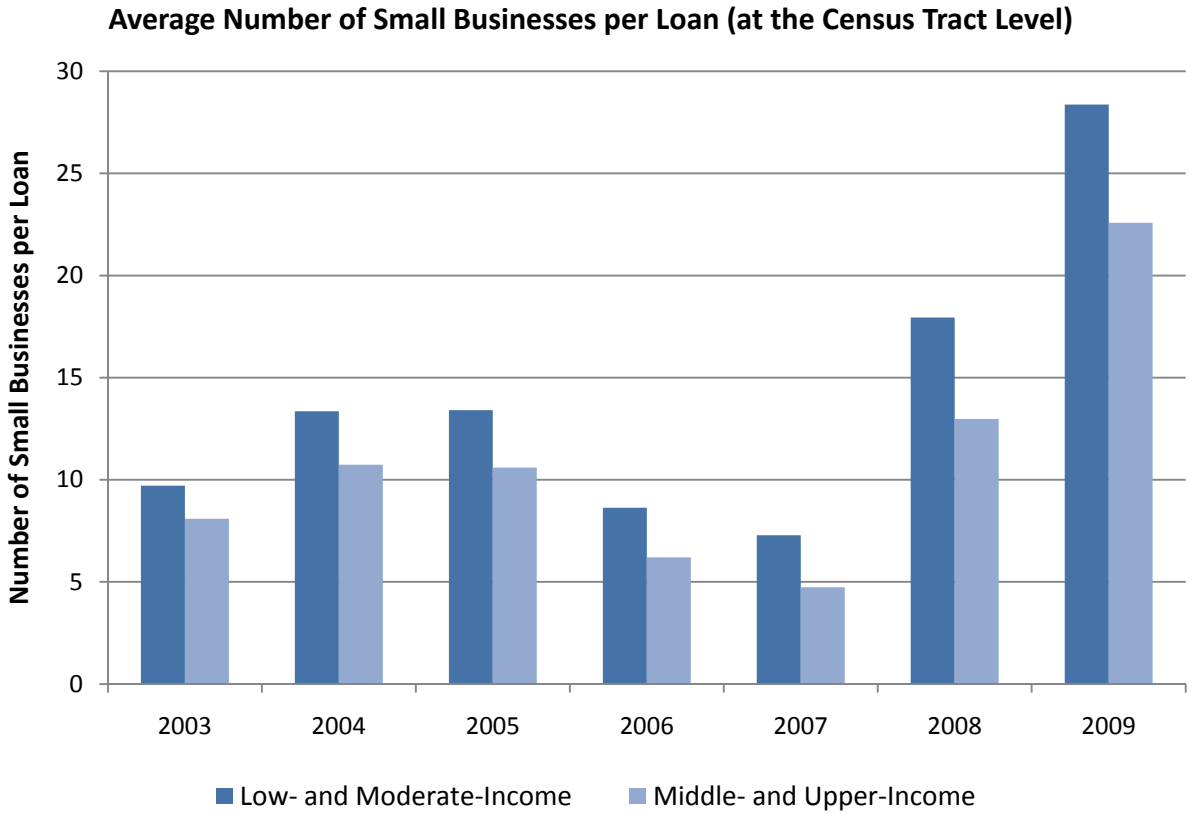


Figure 5: Geographic Distribution of the Growth in Small Business Lending During the Credit Boom

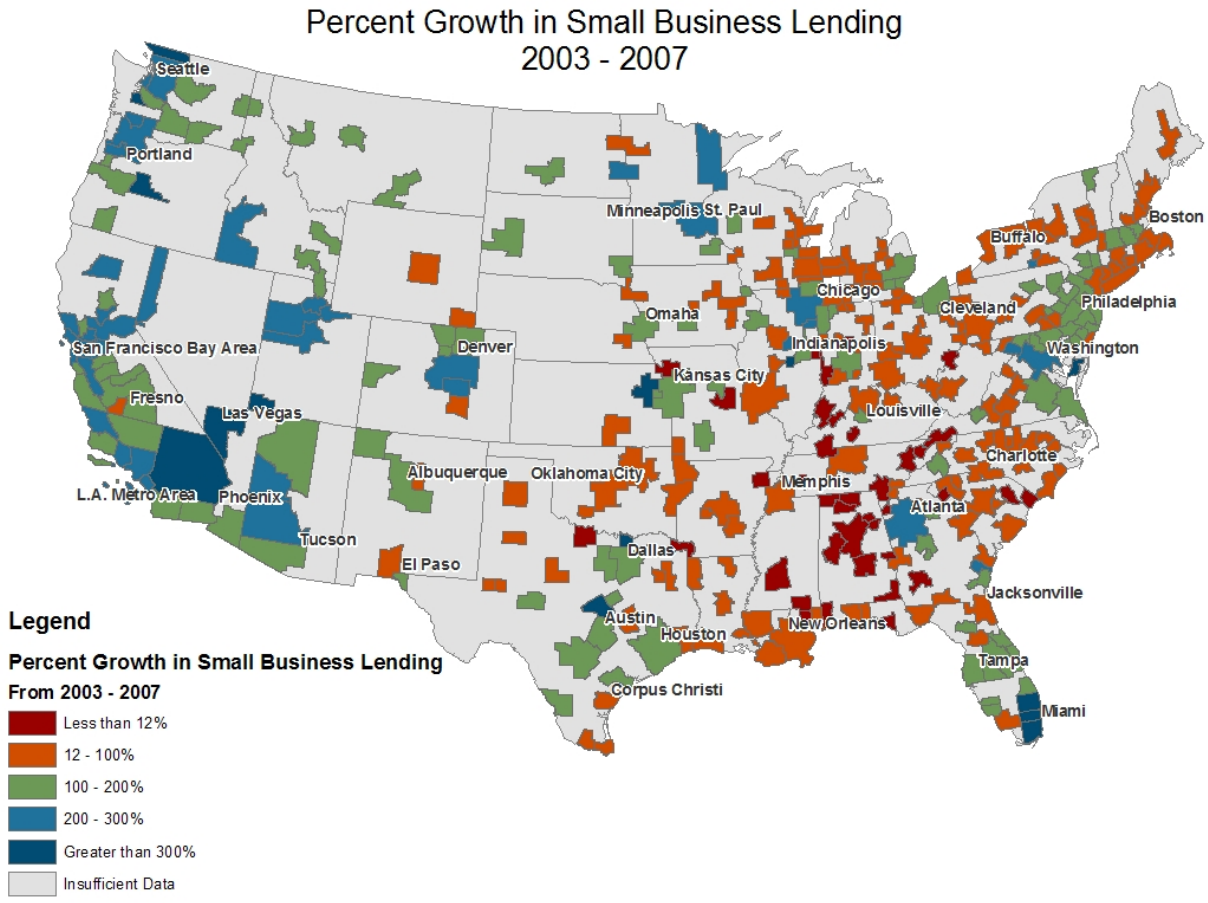


Figure 6: Geographic Distribution of the Contraction in Small Business Lending During the Recession

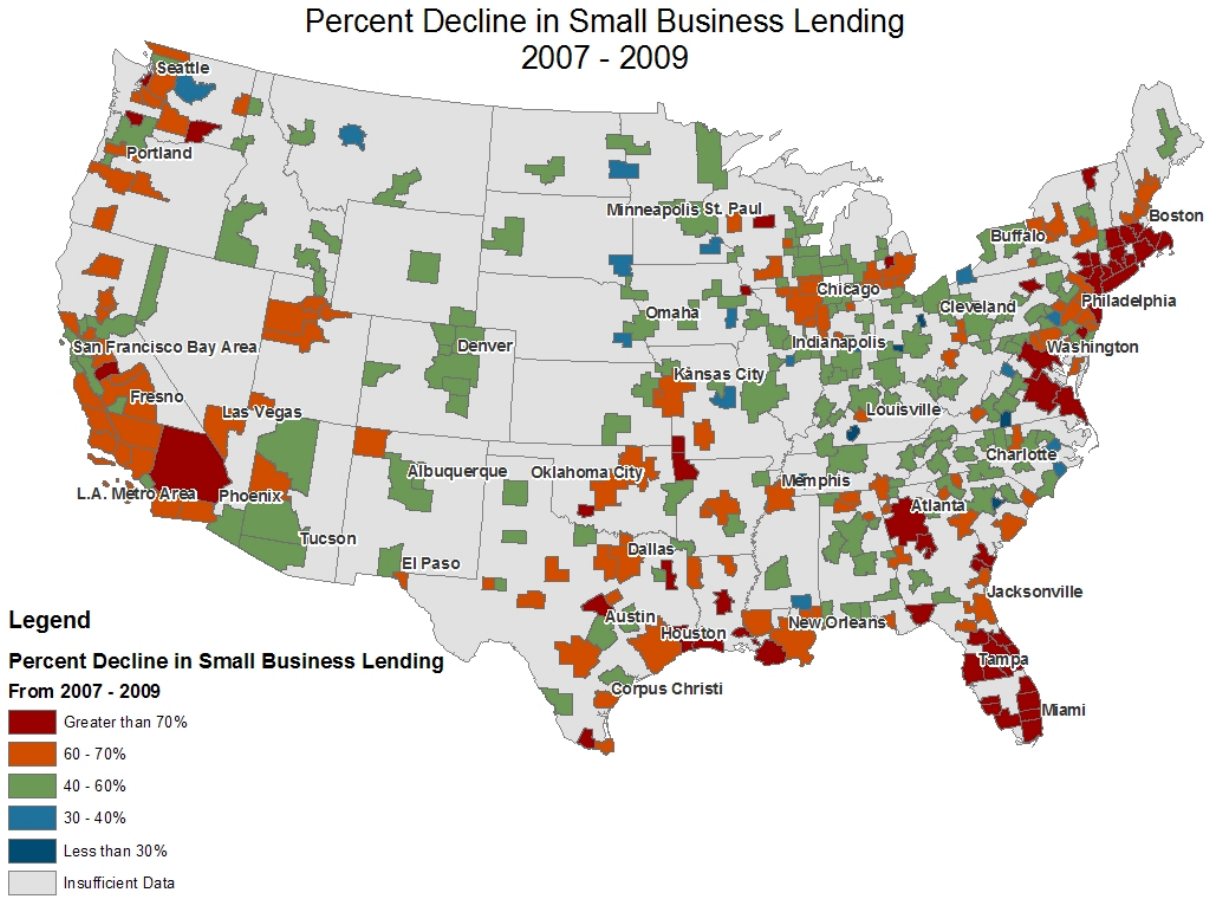


Table 1: The Incidence of Small Business Loans in MSA Census Tracts, 2004									
	Number of Small Business Loans in Census Tract								
	(1)			(2)			(3)		
	Estimate	S.E.		Estimate	S.E.		Estimate	S.E.	
Intercept	-5.5373	1.116	***	-5.905	1.136	***	25.281	1.808	***
Low- or Moderate-Income Census Tract	-2.2322	0.315	***	-1.602	0.326	***	-1.166	0.301	***
% Population Black	-0.0614	0.007	***	-0.059	0.008	***	-0.064	0.007	***
% Population Hispanic	-0.0008	0.007		-0.001	0.007		-0.019	0.007	**
% Population Asian	0.0776	0.013	***	0.083	0.013	***	0.057	0.013	***
Central City	3.8700	0.243	***	4.098	0.245	***	1.832	0.235	***
Total Small Businesses in Tract 2004	0.1257	0.001	***	0.126	0.001	***	0.124	0.001	***
Total Number of Lenders in Tract	1.1580	0.051	***	1.119	0.051	***	1.670	0.051	***
MSA Median Income 2004	-0.1727	0.012	***	-0.158	0.012	***	-0.128	0.013	***
MSA Unemployment Rate 2004	0.0326	0.109		0.023	0.109		-0.185	0.137	
MSA House Price Index 2004	0.0546	0.004	***	0.047	0.004	***	0.007	0.008	
Number of 1st Lien Mortgages Originated in Tract 2004				0.005	0.001	***	0.005	0.001	***
Tract Foreclosure Rate 2004				-0.188	0.219		0.192	0.206	
State Fixed Effects	No			No			Yes		
Observations	20431			20184			20184		
R Squared	0.69			0.69			0.75		
Mean of Dependent Variable	29.4			29.53			29.53		

Significance Levels
*** <.001
** .01
* .1

Notes: Observations are Census Tracts in MSA's with a population of above 250,000 in 2004.

Table 2: The Incidence of Small Business Loans in MSA Census Tracts, 2007									
	Number of Small Business Loans in Census Tract								
	(1)			(2)			(3)		
	Estimate	S.E.		Estimate	S.E.		Estimate	S.E.	
Intercept	-42.8465	2.312	***	-46.912	1.997	***	-31.811	2.845	***
Low- or Moderate-Income Census Tract	-11.5901	0.673	**	-1.729	0.592	**	-1.129	0.530	
% Population Black	-0.2723	0.016	***	-0.251	0.014	***	-0.138	0.014	***
% Population Hispanic	-0.0022	0.014		-0.008	0.012		-0.196	0.012	***
% Population Asian	0.3077	0.028	***	0.398	0.024	***	0.168	0.023	***
Central City	5.4721	0.518	***	7.425	0.446	***	2.759	0.412	***
Total Small Businesses in Tract 2007	0.1906	0.002	***	0.186	0.001	***	0.176	0.001	***
Total Number of Lenders in Tract	2.5790	0.100	***	1.208	0.088	***	2.864	0.084	***
MSA Median Income 2007	-0.1088	0.021	***	-0.106	0.019	***	-0.218	0.020	***
MSA Unemployment Rate 2007	0.2183	0.267	**	0.635	0.231	*	-2.785	0.322	***
MSA House Price Index 2007	0.1931	0.005	***	0.169	0.004	***	0.099	0.009	***
Number of 1st Lien Mortgages Originated in Tract 2007				0.139	0.002	***	0.132	0.001	***
Tract Foreclosure Rate 2007				-1.862	0.330	***	0.306	0.318	
State Fixed Effects	No			No			Yes		
Observations	20431			20188			20188		
R Squared	0.64			0.73			0.80		
Mean of Dependent Variable	61.8			61.8			61.8		

Significance Levels
*** <.001
** .01
* .1

Notes: Observations are Census Tracts in MSA's with a population of above 250,000 in 2004.

Table 3: The Incidence of Small Business Loans in MSA Census Tracts, 2008									
	Number of Small Business Loans in Census Tract								
	(1)			(2)			(3)		
	Estimate	S.E.		Estimate	S.E.		Estimate	S.E.	
Intercept	-27.2129	1.468	***	-34.036	1.401	***	2.796	2.113	
Low- or Moderate-Income Census Tract	-2.4475	0.431	***	1.999	0.418	***	0.928	0.354	**
% Population Black	-0.1975	0.010	***	-0.136	0.010	***	-0.015	0.009	*
% Population Hispanic	-0.0291	0.009	***	0.006	0.008		-0.107	0.008	***
% Population Asian	0.1975	0.018	***	0.177	0.017	***	0.021	0.015	
Central City	5.7396	0.332	***	5.763	0.315	***	1.878	0.276	***
Total Small Businesses in Tract 2008	0.0849	0.001	***	0.084	0.001	***	0.082	0.001	***
Total Number of Lenders in Tract 2008	2.4486	0.068	***	1.682	0.066	***	2.596	0.057	***
MSA Median Income 2008	0.0518	0.014	***	-0.006	0.013		-0.132	0.013	***
MSA Unemployment Rate 2008	0.9073	0.142	***	1.321	0.138	***	-3.131	0.199	***
MSA House Price Index 2008	0.0629	0.004	***	0.087	0.004	***	-0.001	0.006	
Number of 1st Lien Mortgages Originated in Tract 2008				0.093	0.002	***	0.086	0.002	***
Tract Foreclosure Rate 2008				-1.305	0.114	***	-0.239	0.111	*
State Fixed Effects	No			No			Yes		
Observations	20431			20189			20189		
R Squared	0.58			0.63			0.75		
Mean of Dependent Variable	32.6			32.6			32.6		

Significance Levels
*** <.001
** .01
* .1

Notes: Observations are Census Tracts in MSA's with a population of above 250,000 in 2004.

Table 4: Factors Related to the Growth in Small Business Lending, 2004 - 2007						
	Percent Growth in Small Business Lending at the Census Tract Level					
	(1)			(2)		
	Estimate	S.E.		Estimate	S.E.	
Intercept	67.037	2.537	***	-61.224	7.965	***
Low- or Moderate-Income Census Tract	-43.372	2.118	***	-38.864	2.059	***
% Population Black	-0.333	0.053	***	-0.133	0.054	**
% Population Hispanic	0.278	0.042	***	-0.317	0.048	***
% Population Asian	1.492	0.088	***	0.705	0.096	***
Central City	-17.845	1.535	***	-15.934	1.568	***
MSA Income Growth 2004 - 2007	1.007	0.144	***	0.449	0.158	**
MSA House Price Growth 2004 - 2007	1.307	0.053	***	1.297	0.107	***
Growth in Lenders 2004-2007	0.484	0.011	***	0.435	0.011	***
Growth in the Unemployment Rate, 2004 - 2007	0.436	0.077	***	-0.152	0.132	
Growth in the Number of Real Estate/Construction Small Businesses, 2004-2007	0.226	0.026	***	0.220	0.025	***
Growth in Subprime Lending, 2004 - 2007	0.020	0.007	**	0.000	0.007	
Tract Foreclosure Rate 2007	-2.394	1.299	*	0.986	1.371	
State Fixed Effects	No			Yes		
Observations	19174			19174		
R Squared	0.22			0.31		
Mean of Dependent Variable	131.7			131.7		

Significance Levels
*** <.001
** .01
* .1

Notes: Observations are Census Tracts in MSA's with a population of above 250,000 in 2004.

Table 5: Factors Related to the Decline in Small Business Lending, 2007 - 2008						
	Percent Decline in Small Business Lending at the Census Tract Level					
	(1)			(2)		
	Estimate	S.E.		Estimate	S.E.	
Intercept	33.944	0.432	***	25.717	1.402	***
Low- or Moderate-Income Census Tract	-6.659	0.368	***	-5.398	0.349	***
% Population Black	0.008	0.009		-0.021	0.009	*
% Population Hispanic	0.063	0.007	***	0.062	0.008	***
% Population Asian	0.124	0.015	***	0.112	0.016	***
Central City	-3.565	0.267	***	-1.701	0.270	***
MSA Income Decline 2007 - 2008	0.042	0.045		-0.016	0.047	
MSA House Price Decline 2007 - 2008	0.185	0.023	***	0.816	0.046	***
Decline in Lenders 2007 - 2008	0.338	0.006	***	0.325	0.005	***
Growth in the Unemployment Rate, 2004 - 2007	-0.002	0.011		0.127	0.019	***
Decline in the Number of Real Estate/Construction Small Businesses, 2007 - 2008	-0.007	0.004	*	-0.005	0.004	
Decline in Subprime Lending, 2007 - 2008	0.023	0.004	***	0.015	0.003	***
Tract Foreclosure Rate 2008	1.198	0.110	***	-0.009	0.118	
State Fixed Effects	No			Yes		
Observations	19469			19469		
R Squared	0.21			0.32		
Mean of Dependent Variable	47.1			47.1		

Significance Levels
*** <.001
** .01
* .1

Notes: Observations are Census Tracts in MSA's with a population of above 250,000 in 2004.