

Data Point:

Small Business Lending and the Great Recession

Consumer Financial Protection Bureau's Office of Research



This is another in an occasional series of publications from the Consumer Financial Protection Bureau's Office of Research. These publications are intended to further the Bureau's objective of providing an evidence-based perspective on consumer financial markets, consumer behavior, and regulations to inform the public discourse. See 12 U.S.C. §5493(d).¹

¹ This Data Point was prepared by Karl Schneider, Chris Stocks, and Jason Dietrich

Table of contents

Table of contents	2
1. Introduction & Background	3
1.1 Introduction.....	3
1.2 Background.....	4
2. Data	7
3. Small Business Lending Before, During, and Following the Great Recession	9
3.1 Overview	9
3.2 State-Level Analysis.....	12
3.3 County-Level Analysis	16
3.4 Counties Segmented by Growth Quintile.....	21
4. Small business lenders	26
5. Conclusion	32
Appendix A: Data Sources	33
Appendix B: Works Cited	34
Appendix C: Additional Figures	37

1. Introduction & Background

1.1 Introduction

This Data Point article focuses on small business credit, examining patterns in small business lending (SBL) and the sources of this lending among depository institutions pre-Great Recession (2004-2007), through the Great Recession (2008-2009), and then throughout the post-Great Recession Recovery period (2010-2017).² Unlike previous studies of small business credit, we drill down to analyze variation in lending and sources of lending across a number of different community characteristics. What becomes clear from this granular analysis is the significant variation in impacts of the Great Recession and the Recovery on different geographies.

This report offers a descriptive story of small business lending during these three time periods, which illustrates the geographic landscape and variation of this lending. This contributes to the efforts that the Bureau, other government agencies, and private industry are making to improve access to credit. The following analysis will feature descriptive statistics and discussion of trends, primarily through a geographic lens, to explore variation across the country during and after the Great Recession. Any discussion of causes of the Great Recession, or any causal linkages between the trends observed in small business lending and other economic activity during or after the Great Recession itself, are outside the scope of this report.

Key Findings

- Overall, small business lending growth during the Pre-period (2004-2007) was strong, but gains were greater in urban, more populated, wealthier, and more educated counties.
- Although there was substantial variation in small business lending growth during the Pre-period (2004-2007), virtually all counties were affected similarly by the Great Recession (2008-2009).
- Overall, small business lending growth was weak during the Recovery (2010-2017). In the typical county, by 2017 small business lending had only recovered to roughly half of 2004 levels.

² The Bureau's analysis ends in 2017 due to data limitations.

- The number of large banks, community banks, credit unions and thrifts has been declining since 2004.
- Compared to credit unions, each of the other lender types is relatively more likely to offer small business lending products. However, the proportion of credit unions that offer small business lending products has roughly doubled since 2004 (from 10 percent to 20 percent).

1.2 Background

According to the Small Business Administration (SBA) Office of Advocacy, there were approximately 30 million small businesses employing just under 48 percent of all U.S. employees in 2017.³ In addition to comprising a major component of the U.S. economy, small businesses have also had a significant impact on job creation, generating 62 percent of net new private sector jobs since the Great Recession, which is consistent with the trend over the last 25 years.⁴ Given their importance, much has been written about small businesses, especially the impact of the Great Recession on small businesses, and small business' role in the Recovery. Much of this work has focused on two important findings, significant declines in small businesses caused by the Great Recession, and the decline in the number of community banks, which are a key source of credit for small businesses.⁵

³ For more details see <https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-US.pdf>. For the purposes of this statistic, the SBA defined all small businesses as those with fewer than 500 employees.

⁴ Headd, Brian. "SMALL BUSINESS FACTS: SMALL BUSINESS JOB CREATION DECONSTRUCTED." SBA: Office of Advocacy, Sept. 2017, cdn.advocacy.sba.gov/wp-content/uploads/2019/06/10111825/Job_Creation_fact_sheet_FINAL_o.pdf. These results raise the question of how small businesses can generate nearly two-thirds of net new jobs yet have a share of total employment that is less than 50 percent and slightly declining. For small businesses with less than 500 employees, growth will push employment for some of these businesses above the 500-employee level and into the large business classification. The growth in employment for this subset of small businesses counts toward small business job gains, i.e. the 62 percent number. However, the total employment of these small businesses would not count toward the percent of total employment comprised of small businesses (i.e. the 48 percent number), since these formerly small businesses are not large firm employers. See <https://cdn.advocacy.sba.gov/wp-content/uploads/2017/08/04125711/Frequently-Asked-Questions-Small-Business-2018.pdf> for more details.

⁵ As one example, the 2019 Small Business Credit Survey indicates that 44 percent of applicants for small business credit in the sample sought credit from small banks. (<https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-employer-firms-report.pdf>)

On the business side, firm entry declined during the Great Recession, failing to compensate for failing older businesses resulting in a “missing generation” of entrepreneurs.⁶ Other work by the Federal Reserve showed that jobs at small businesses declined between 2007 and 2009.⁷

On the lender side, a recent study commissioned by the SBA Office of Advocacy and conducted by researchers at DePaul University showed that lending from banks to small businesses increased from \$308 billion in 1994 to \$659 billion in 2008, but then fell 18 percent down to \$543 billion by 2011.⁸ Researchers have identified a number of demand- and supply-side effects that have impacted the ability of traditional financial institutions to offer small business credit compared to other financial products.⁹ The reductions in access to capital due to these challenges have been exacerbated by recent bank and branch closures, reducing the formal banking options available to small businesses.¹⁰ Between 2009 and 2011, 389 banks across the nation failed.¹¹ Additionally, from 2008 to 2016, 6,008 bank branches closed.¹² Bank failures

⁶ Siemer, Michael. "Firm Entry and Employment Dynamics in the Great Recession." Federal Reserve Board: Finance and Economics Discussion Series, vol. 56, 2014.

⁷ Burgen, Emily, and Dionissi Aliprantis. "Measuring Small Business Employment over the Business Cycle." *FRB Cleveland Economic Trends*, 22 May 2012.
Tasci, Murat, and Emily Burgen. "Job Creation by Small and Large Firms over the Business Cycle." *FRB Cleveland Economic Trends*, 6 Feb. 2012.
Laderman, Elizabeth. "Small Businesses Hit Hard by Weak Job Gains." *Federal Reserve Board of San Francisco*, vol. 26, 9 Sept. 2013.

⁸ Cole, Rebel A. "How Did the Financial Crisis Affect Small Business Lending in the United States?" SBA: Office of Advocacy, Nov. 2012.

⁹ Mills & McCarthy discussed the impact of long application times, delay in receiving the capital, and lower acceptance rates on moving borrowers of small business loans away from traditional financial institutions. They found that relatively stable transaction costs for commercial loans, resulting in originating more high dollar commercial loans opposed to those to small businesses. Mills, Karen Gordon, and Brayden McCarthy. "The State of Small Business Lending: Credit Access during the Recovery and How Technology May Change the Game." *Harvard Business School: Working Paper*, vol. 15, no. 004, 22 July 2014.

Bordo and Duca found that declines in small business lending relative to total commercial lending were attributable to the Dodd-Frank Act, which caused a tightening of bank standards for small businesses. Bordo, Michael D., and John V. Duca. "THE IMPACT OF THE DODD-FRANK ACT ON SMALL BUSINESS." *NBER WORKING PAPER SERIES*, vol. 2450, Apr. 2018. The Government Accountability Office authored a report that showed a modest impact of regulations on community bank small business lending. Government Accountability Office. "Effect of Regulations on Small Business Lending and Institutions Appears Modest, but Lending Data Could Be Improved." 5 Sept. 2018, www.gao.gov/reports/GAO-18-312/#Highlights.

Research by the Cleveland Fed pointed to tightened credit standards among financial institutions, lower creditworthiness among small businesses, and declining demand by small businesses all contributing to a longer-term trend in the decline in small business lending. Wiersch, Ann Marie, and Scott Shane. "Why small business lending isn't what it used to be." *Economic Commentary/Cleveland Federal Reserve* 14 (2013): 2013-10.

¹⁰ Nguyen, Hoai-Luu Q. 2019. "Are Credit Markets Still Local? Evidence from Bank Branch Closings." *American Economic Journal: Applied Economics*, 11 (1): 1-32.

¹¹ FDIC, Bank Closing Summary. For the information on bank closures during and following the Great Recession please reference: <https://www.fdic.gov/bank/historical/bank/>.

¹² National Community Reinvestment Coalition. "Bank Branch Closures from 2008-2016: Unequal Impact in America's Heartland." 8 May 2017.

and closures reduce the number of competitors and could have an adverse impact on the supply of credit and the terms and conditions of credit. As an example, counties more reliant on the top four banks prior to the Great Recession, i.e. more SBL concentrated among the top four banks, had less credit available for small businesses, higher interest rates on loans, and an overall contraction of economic activity.¹³

This paper extends the research previously cited by looking more deeply at small business lending at a geographical level and analyzing the evolution of small business credit granting institutions following the great recession. Different descriptions of small business lending are analyzed in Section 3 of this paper and Section 4 looks at the evolving landscape of financial institutions granting small business loans.

¹³ Chen, Brian S., et al. "The Decline of Big-Bank Lending to Small Business: Dynamic Impacts on Local Credit and Labor Markets." NBER Working Paper Series, no. 23843, Sept. 2017.

2. Data

The Federal Financial Institutions Examination Council’s (FFIEC) Community Reinvestment Act (CRA) data is a primary data source used to analyze patterns in small business lending. Each year, banks and thrifts that exceed a stated asset threshold must report information on the number and dollar amount of originated loans, lines of credit and credit cards to small businesses and farms by census tract. CRA defines “loans to small businesses” as originated loans with loan amounts less than \$1 million that were reported on the Call Report as secured by nonfarm or nonresidential real estate or as commercial and industrial loans, and “loans to small farms” as originated loans with loan amounts less than \$500,000 that were reported to the Call Report as secured by farmland and to finance agriculture production and loans to farmers. According to the FFIEC, CRA data covers 71 percent of small business loans outstanding (by dollars) of institutions reporting under the Bank Call Report.¹⁴ We rely on CRA data here, because Call Report data is at the national level and therefore not suited for the type of geographic analysis in this paper. CRA data is available from 2004-2017, and the figures in this Data Point feature data running up until 2017 to reflect the data available. The best benchmark to assess the impact of the Great Recession in comparison to the pre-period is 2004 due to the fact that it represented the conditions of the pre-Recession while allowing for time for the economy to recover from the 2001 Recession.

Although CRA data provides a useful picture of the small business lending market at both the national and local levels, the data has limitations. First, the definition of “small business loan” is based off the size of the loan rather than the size of the business. As a result, CRA data includes small-dollar loans to large businesses and excludes large-dollar loans to small businesses. A limitation of the CRA threshold of 1 million and \$500,000 is that fewer loans are considered over time because the real value of the threshold falls as a result of inflation. Part of the story of decreasing small business loans under this threshold could be as a result of those businesses now applying for loans over \$1 million. Second, only banks and thrifts that meet a particular asset size threshold for the prior two years are required to report (the 2016 and 2017 reporting thresholds were \$1.226 billion). Smaller banks, credit unions, online lenders and other non-depository lenders are not required to report CRA data. Although CRA-reporting entities still comprise the largest portion of the small business lending market, CRA data could present an incomplete assessment of small business lending patterns if the Great Recession had different

¹⁴ See page 2 of this report from the FFIEC. “Findings from Analysis of Nationwide Summary Statistics for 2016 Community Reinvestment Act Data Fact Sheet”. 2017. <https://www.fdic.gov/news/news/press/2017/pr17088a.pdf>.

impacts on non-CRA reporters.¹⁵ The final important limitation of CRA data is that term loans, lines of credit, and credit cards are aggregated in the data. This is a concern for small business lending since cards and loans are very different products and serve different business purposes.

The FFIEC Bank/Thrift Call Report and the National Credit Union Administration (NCUA) Credit Union Call Report are additional data sources for the analysis of small business lending. Each quarter, banks, thrifts, and credit unions file a report of their financial condition to their regulator. Although there are significant differences between the two call reports, this report will only use a relatively similar, small subset of call report data to flag whether a financial institution offers small business lending products. Banks and thrifts are flagged as “small business lenders” if the institution has reported at least one small business loan/line outstanding as of year-end.¹⁶ Credit unions are flagged as small business lenders if they have at least one-member business loan outstanding on their books in the last year.¹⁷

A variety of additional data sources are used to augment the CRA and Call Report data. These data include the American Community Survey (for educational attainment), County Business Patterns (counts of employer businesses), Census Population statistics, FDIC Community Bank indicator, Local Area Unemployment Statistics, Non-employer Statistics (counts of non-employer businesses), Small Area Income/Poverty Estimates (for estimates of household income and poverty rates), and Summary of Deposits (for matching lenders across datasets). See Appendix A for sources and additional information about each dataset.

¹⁵ See Section 3.3.1 of the CFPB White Paper. "Key dimensions of the small business lending landscape." 10 May 2017, https://files.consumerfinance.gov/f/documents/201705_cfpb_Key-Dimensions-Small-Business-Lending-Landscape.pdf for a more robust discussion on industry composition in small business lending.

¹⁶ Derived from FFIEC Bank Call Report 031 and 041: Schedule RC-C, part II: FFIEC 031 and 041 Bank Call Reports, March 2019, Schedule RC-C, part II. Banks report all loans made under \$1 million. https://www.ffiec.gov/pdf/FFIEC_forms/FFIECo31_FFIECo41_201906_i.pdf.

¹⁷ A commercial loan is counted as a Member Business Loan if the member has more than \$50,000 in balance outstanding. For a detailed discussion regarding how credit union Business Loans are counted see the NCUA 5300 Call Report Schedule A: Section 4 <https://www.ncua.gov/files/publications/regulations/call-report-instruction-dec-2018.pdf>.

3. Small Business Lending Before, During, and Following the Great Recession

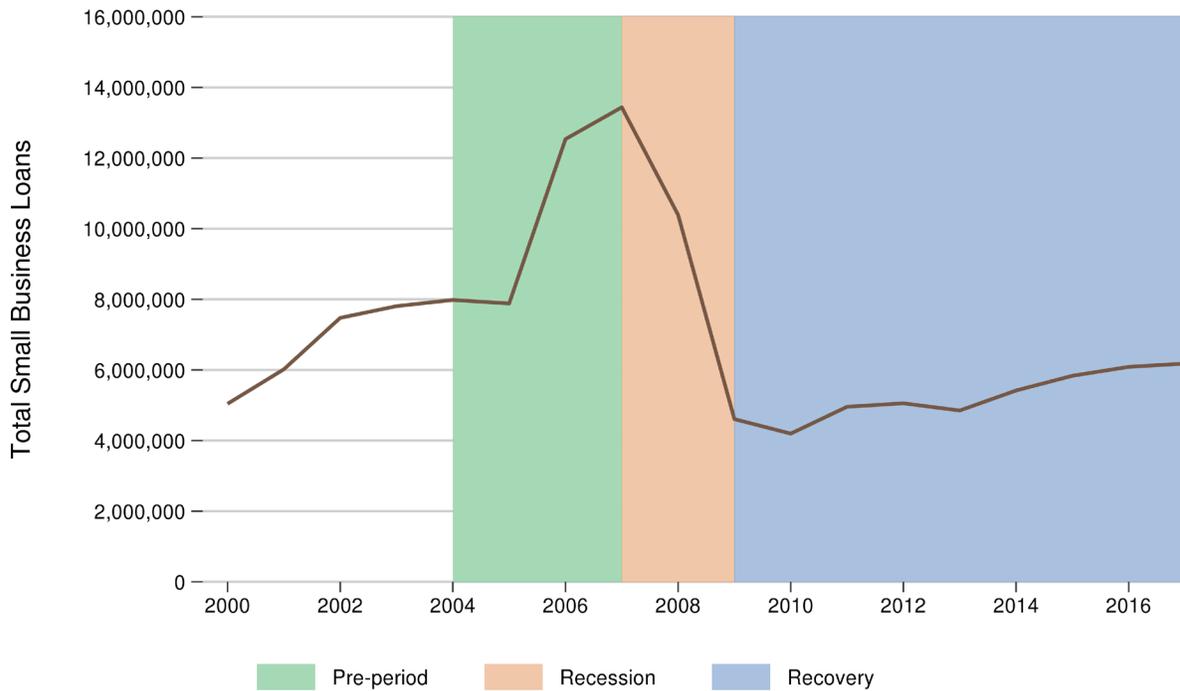
3.1 Overview

In order to discuss the broader effects of the Great Recession, we analyze small business lending patterns over three periods: the “Pre-period,” the “Great Recession,” and the “Recovery.” According to the National Bureau of Economic Research, the official period of contraction lasted from December 2007 to June 2009. Given that we are using annual data for all analyses, we define the Recession period as 2008 to 2009. The Recovery period follows naturally as 2010 to 2017, which are the most recent years with available data from all data sources. The beginning of the Pre-period is more difficult to define. To allow for enough recovery from the brief recession in 2001 and to ensure that small business lending was represented close to the pre-Recession levels we chose 2004 as the starting point for the Pre-period. Therefore, for the purposes of this analysis the “Pre-period” covers 2004 to 2007, the “Great Recession” 2008 to 2009, and the “Recovery” 2010 to 2017.

To provide context for the discussion, Figure 1 shows the total count of small business loans at the national level since 2000, with each of the three time periods shaded.¹⁸ As Figure 1 shows, our definitions of Pre-period, Great Recession, and Recovery appear to reflect the data well. At the national level, small business lending increased during the Pre-period, fell sharply during the Great Recession, and has been slowly rising during the Recovery, but has not returned to pre-Recession levels.

¹⁸ This count of small business loans uses the CRA data and the CRA definition of small business previously stated in the Data section.

FIGURE 1: TOTAL COUNT OF SMALL BUSINESS LOANS ACROSS THE THREE KEY TIME PERIODS: PRE-PERIOD (2004-2007), GREAT RECESSION (2008-2009), AND RECOVERY (2010-2017)



To focus the results and discussion on the supply of credit, when possible, we normalize all results by a measure of demand. The number of businesses roughly approximates to demand as the existence of firms is essential for small business lending. Specifically, “small business lending” will be presented as the number of small business loan originations per business. Normalizing the data in this way allows for the distinction between counties with few loan originations because there are few businesses in the county, and counties with few loan originations despite a high number of businesses in the county. There are a number of potential drivers of the patterns in small business lending that we identify and discuss in this paper, including characteristics of the local economies and the health of credit markets for small businesses. This paper focuses only on identifying and presenting patterns, and not on an analysis of the drivers of these patterns.

Our analysis uses number of loan originations to define small business lending as opposed to using loan amount. Using loan amount could result in a measure of small business lending that varies drastically based on larger dollar loans (up to the \$1 million cutoff used to define SBLs in the CRA data) to high growth or larger small businesses rather than reflecting the landscape of small businesses which total number of originations better represents. Four out of five small businesses within the United States are nonemployer, and using originations allows for those

businesses to be better reflected in this analysis, as nonemployer businesses, while they are less likely to take out small business loans, generally take out smaller loans when they do borrow.¹⁹

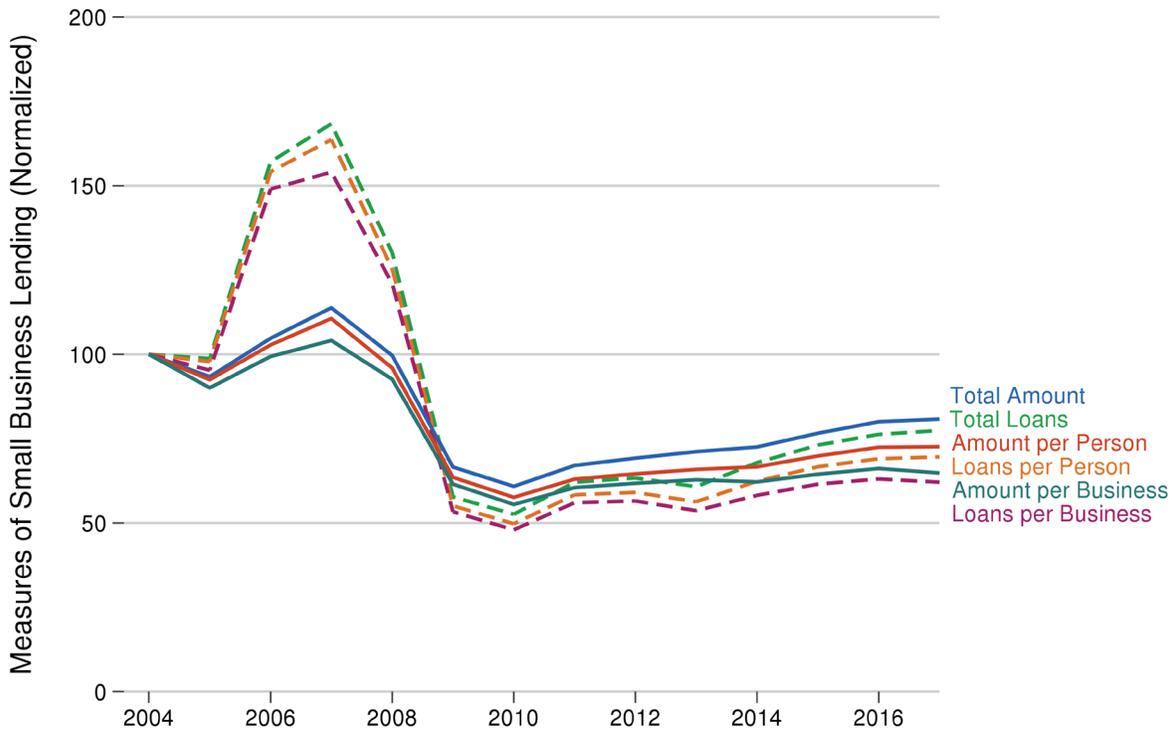
The measure of the number of businesses in each year relies on two measures: the County Business Patterns (CBP) and the Nonemployer Statistics (NES), both from the U.S. Census. The County Business Patterns counts the number of employer businesses during the week of March 12th.²⁰ The Nonemployer Statistics counts the number of nonemployer establishments using business income tax records from the IRS.²¹ These two measures are added to produce an estimate of the number of total businesses in a county, which acts as a proxy for the small business activity and the potential universe for small businesses that could access credit. As a robustness check, we considered a number of alternative measures to reflect small business lending. Figure 2 presents six specific measures we analyzed: total loans, loans per person, loans per business, total dollar amount of loans, dollar amount per person and dollar amount per business. All results are normalized to 100 percent in 2004. Although the three dollar amount measures show more muted patterns during the Pre-period and the Great Recession, all six measures show the same general pattern from Figure 1.

¹⁹ For more information on Nonemployer Businesses see SBA Office of Advocacy Fact Sheet <https://www.sba.gov/sites/default/files/advocacy/Nonemployer-Fact-Sheet.pdf>.

²⁰ For more information on the County Business Patterns see <https://www.census.gov/programs-surveys/cbp.html>.

²¹ For more information on the Nonemployer Statistics see <https://www.census.gov/programs-surveys/nonemployer-statistics/about.html>

FIGURE 2: VARIOUS MEASURES OF SMALL BUSINESS LENDING ORIGINATIONS, NORMALIZED TO 100% IN 2004



3.2 State-Level Analysis

To better understand potential patterns underlying the overall change in small business lending, we first analyze variation in the small business lending by geography. This analysis will provide the foundation for all subsequent analyses and will be referred to throughout the remaining sections.

Figure 3 presents changes in the number of small business loans originated per business per year and state for each of the three key periods.²² The first row presents the average percentage change in small business loans originated per business across states. To account for each period spanning a different number of years, we focus on an annualized measure of “growth rate per year.” The table shows that during the Pre-period, the annual percent change in small business

²²The percentage changes in small business loans across each period were created using the ends from each period. For example, the growth in the Pre-period was created by dividing the difference between 2007 and 2004 small business originated loans per business by 2004 small business originated loans per business.

lending per business averaged 14 percent increase across all states. This contrasts with a much larger 32 percent decline during the Great Recession and a small two percent increase during the Recovery.

To further explore variation across states within each period, the middle section of Figure 3 presents the distribution of total percent change in small business lending per business across states. For each percentile in the table, the number of states used to construct the percentile result will be the same across the three time periods, but the specific states used to construct the percentile result will likely differ across the three time periods. For example, the states in the 10th percentile in terms of growth in the pre-recession period were not the same states that were in the 10th percentile in the post-recession period or the recovery period. Since we are focused here on the variation of growth rates across states within each period, we use the total percent change from the beginning of each period to the end of the period instead of annualized changes as in the first row. Presenting the growth rates in this way has the additional benefit of showing evidence of the total change in small business lending over each entire period.

The most notable result here is the significant variation in both the Pre-period and Recovery, with much more limited variation during the Recession. For the Pre-period, the distribution of the total percent change in small business lending per business ranged from 16 percent for the lowest decile of states up to 82 percent for the highest decile of states. There is a slightly lower but still substantial variation during the Recovery, with a range of -2% for the lowest decile to 35% for the highest decile of states. These differences contrast with the Great Recession where the range from the 10th to the 90th percentile is only ten percentage points.

Finally, the bottom portion of Figure 3 presents the number and share of states that saw growth during each time period.²³ All states except for Mississippi showed growth in the Pre-period, while 76 percent of states saw growth in small business loans originated per business during the Recovery. Figure 5 will delve deeper into the differences in growth rate among different regions during the Recovery.

²³ This analysis includes the fifty states and the District of Columbia.

FIGURE 3: SUMMARIZING STATE-LEVEL GROWTH IN SMALL BUSINESS LOANS ORIGINATED PER BUSINESS ACROSS KEY PERIODS

		Pre-period	Recession	Recovery
		(2004-2007)	(2008-2009)	(2010-2017)
Average Annualized % Growth		14%	-32%	2%
Growth Percentiles: Total	p10	16%	-67%	-5%
	p25	24%	-66%	-1%
	Median	40%	-64%	13%
	p75	58%	-60%	22%
	p90	82%	-58%	34%
# States with Positive Growth		50	0	37
% States with Positive Growth		98%	0%	73%

Figure 4 shows small business lending levels in select states over time with each state’s results normalized to 100 in 2004. These states were chosen due to their size and importance in the U.S. Economy (New York, Texas, California and Florida), as an outlier state prior to the Great Recession (Mississippi), a state in the Great Plains (South Dakota) and a state in the industrial Midwest (Michigan).²⁴

Corresponding with the trends in Figure 3, there is a large variation in growth rates at the state-level during the Pre-period, as small business lending per business increased by nearly 100 percent from 2004 to 2007 in states such as Florida and New York, while there was contraction from 2004 to 2007 in Mississippi.

A trend emerges in the Recovery portion of this graph as normalizing to 2004 lending levels shows slight increases in lending during the Recovery, with no substantial differences in lending growth rates among the six states. Despite some limited variation, like Figure 3 shows, unlike both the Pre-period and the Great Recession, the Recovery period shows limited variation in annualized growth of small business loans originated per business across states or time.

²⁴ Florida, Texas, New York, and California are the four largest state economies in the United States per the Bureau of Economic Analysis see: <https://www.bea.gov/data/gdp/gdp-state>.

FIGURE 4: STATE-LEVEL VARIATION IN SMALL BUSINESS LOANS ORIGINATED PER BUSINESS GROWTH DURING THE PRE-PERIOD, NORMALIZED TO 100% IN 2004

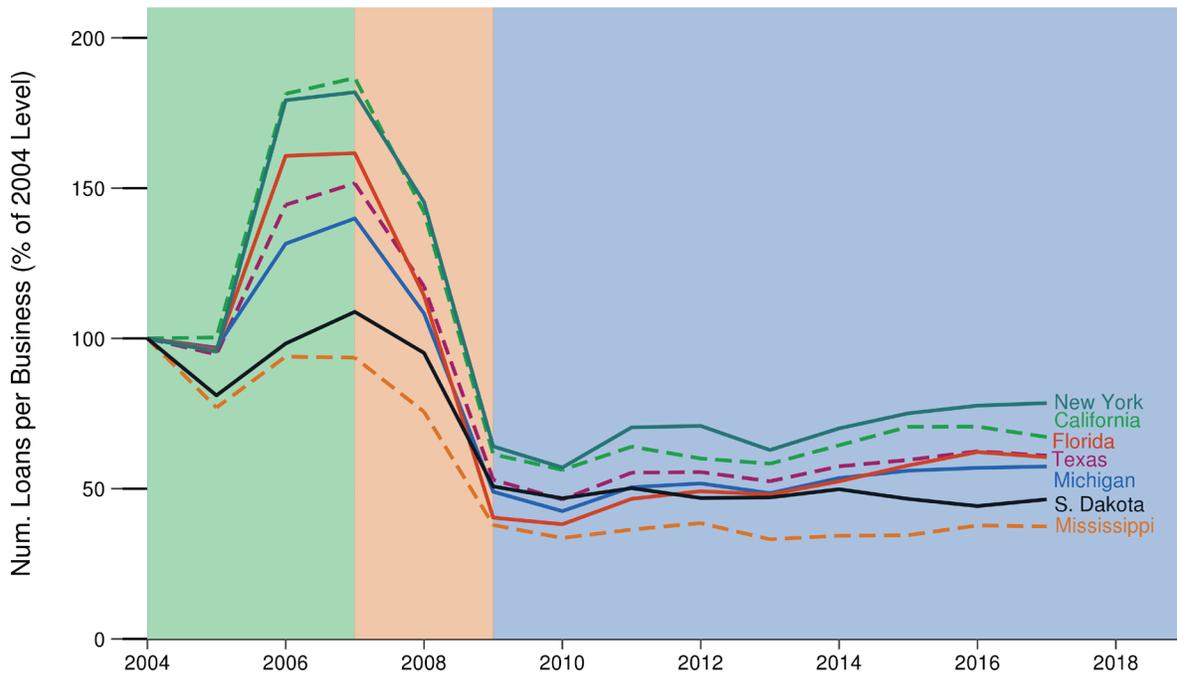
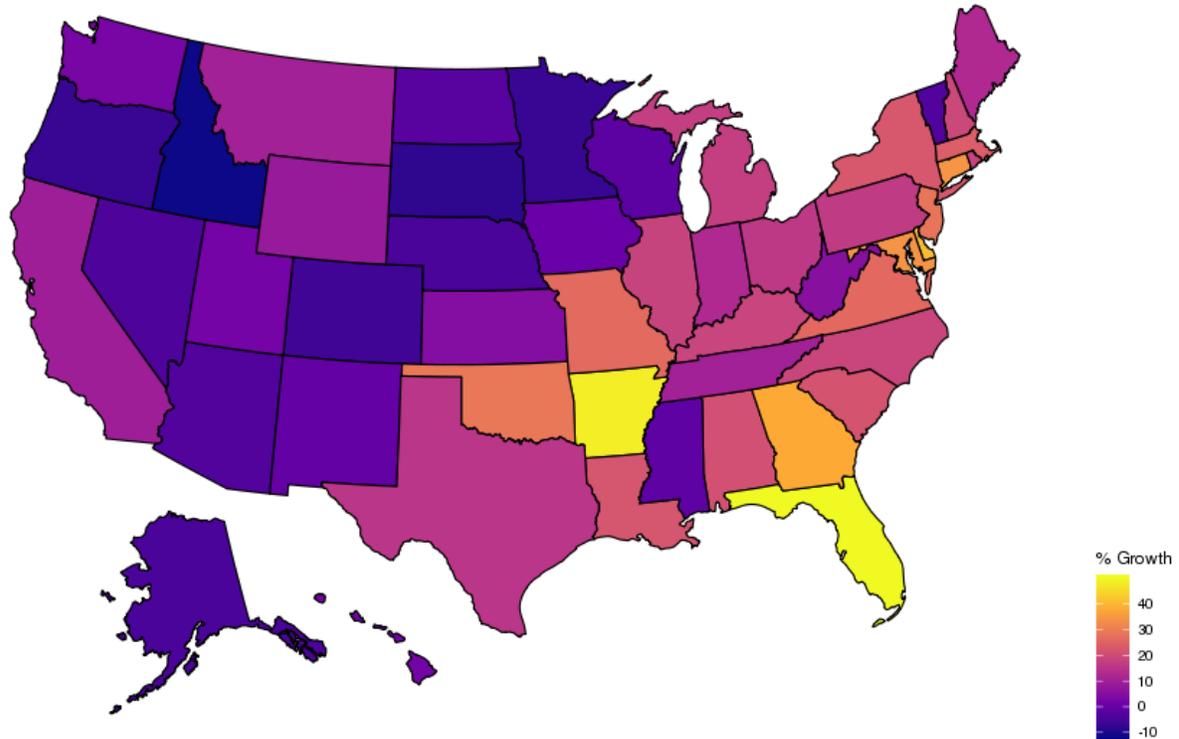


Figure 5 maps the growth in small business loans originated per business during the Recovery period. The growth is calculated by comparing 2017 and 2009 small business loans originated per business and uses the same metrics as Figures 3 and 4.

There is a clear regional trend—where states in the Great Plains and in the West have recovered at a much slower rate than the median state (total growth of 13 percent per Figure 3). This contrasts with the Eastern Seaboard and Southern states like Georgia, Florida, and Arkansas, where SBL rebounded at a higher rate since the Great Recession. Further research is needed to determine if these regional differences are based on an urban-rural divide, industry composition, or other characteristics.

FIGURE 5: PERCENTAGE GROWTH SMALL BUSINESS LOANS ORIGINATED PER BUSINESS DURING THE RECOVERY (2010-2017)²⁵



3.3 County-Level Analysis

Like Figure 3 with the state-level analysis, Figure 6 presents the number of small business loans originated per business per year and county for each of the three key periods. The first row presents the average percentage change in small business loans originated per business across counties. To account for each period spanning a different number of years, we focus on an annualized measure of “growth rate per year.” During the Pre-period, the annual percent change in small business loans originated per business averaged 10 percent across all counties. This

²⁵ Additional maps were generated using the same measures: small business loans per business for the pre-period and the Great Recession. These maps can be found in Appendix C. Please note that the gradient style is the same, the scale changes based on the time period.

contrasts with a much higher 32 percent decline during the Great Recession and a small three percent increase during the Recovery.²⁶

To explore variation across counties within each period, the middle section of Figure 6 presents the distribution of total percent change in small business lending per business across counties. As for the state-level analyses, these results use total percent change rather than annualized percent change for each period. The most notable result here is the significant variation in both the Pre-period and Recovery, with much more limited variation during the Great Recession. For the Pre-period, the distribution of the total percent change in small business lending per business ranged from negative six percent for the lowest decile of counties up to 64 percent for the highest decile of counties, with a similar distribution for the Recovery. This finding contrasts with the Great Recession where the range from the 10th to the 90th percentile is only 20 percentage points. The variation in all of these buckets is greater than the variation among states, which indicates the greater heterogeneity in small business lending between counties than among states.

Finally, the bottom portion of Figure 6 presents the number and share of counties that saw positive growth during each time period. As expected, a high percentage of counties showed lending growth in the Pre-period, and a high, but slightly lower percentage of counties showed lending growth in the Recovery. Strikingly, only one county, Owsley County in Kentucky, showed positive lending growth during the Great Recession, highlighting the severity of this time period.²⁷

²⁶ The county- and state-level averages show differences, because we do not weight either set of results by respective population sizes.

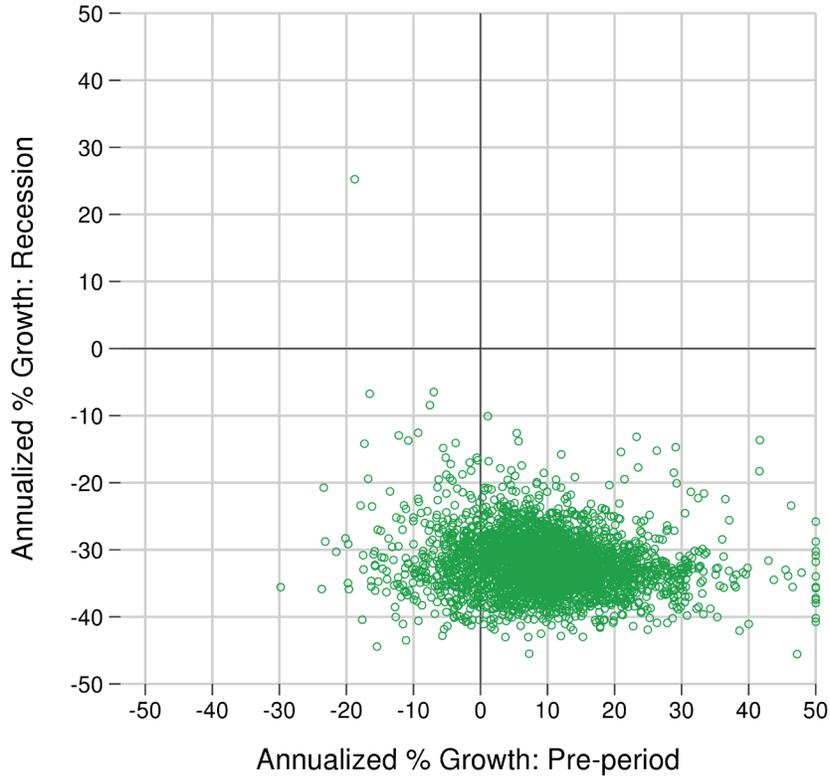
²⁷ Owsley County is a small, poor county in Kentucky with their largest industries in Health Care & Social and Education. Owsley County is an outlier, as the number of loans increased from 5 loans in 2007 to 8 loans in 2009. For more information, see: <https://datausa.io/profile/geo/owsley-county-ky/>.

FIGURE 6: SUMMARIZING COUNTY-LEVEL GROWTH IN SMALL BUSINESS LOANS ORIGINATED PER BUSINESS ACROSS KEY PERIODS

		Pre-period	Recession	Recovery
		(2004-2007)	(2008-2009)	(2010-2017)
Average Annualized % Growth		10%	-32%	3%
Growth Percentiles: Total	p10	-6%	-74%	-20%
	p25	12%	-70%	-5%
	Median	28%	-65%	12%
	p75	47%	-59%	34%
	p90	64%	-54%	62%
# Counties with Positive Growth		2,700	1	2,128
% Counties with Positive Growth		86%	0%	68%

Figure 7 presents the relationship between counties' annualized rates of growth in small business loans originated per business during the Pre-period and the Great Recession. The horizontal axis represents annual growth in small business lending during the Pre-period while the vertical axis represents annual growth during the Great Recession. Two points are evident. First, there is essentially no relationship between counties' Pre-period and Great Recession growth rates. Second, the distribution of points (counties) highlights the substantially larger variation in Pre-period growth rates compared to the Recession. In total, although some counties gained much more than others during the Pre-period, the Great Recession was near-uniformly harmful across the country for local small business lending.

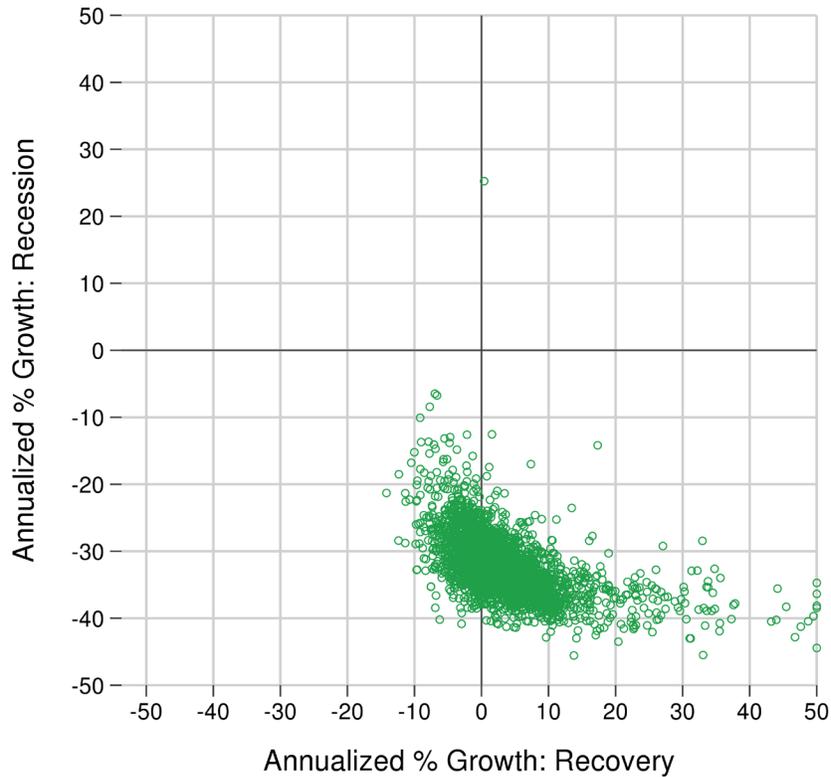
FIGURE 7: COMPARING COUNTIES' ANNUALIZED SMALL BUSINESS LOANS ORIGINATED PER BUSINESS PERCENT GROWTH RATES DURING THE PRE-PERIOD (2004-2007) AND RECESSION (2008-2009) *



* Values outside the plot range are reduced to 50 percent.

Figure 8 presents the relationship between counties' Great Recession and Recovery annualized rates of growth in small business loans originated per business. The horizontal axis represents annual growth in small business lending during the Recovery while the vertical axis represents annual growth during the Great Recession. Unlike Figure 7 above that showed no relationship between the Pre-period and Recession periods, here there is a reasonably strong relationship between growth during the Great Recession and Recovery periods. The general negative slope of the data points suggests that counties that fared the worst during the Great Recession tend to be recovering at faster rates. However, there are still many counties experiencing negative growth during the Recovery, regardless of their experience during the Great Recession.

FIGURE 8: COMPARING ANNUALIZED SMALL BUSINESS LOANS ORIGINATED PER BUSINESS PERCENT GROWTH BETWEEN THE GREAT RECESSION (2008-2009) AND RECOVERY (2010-2017) *

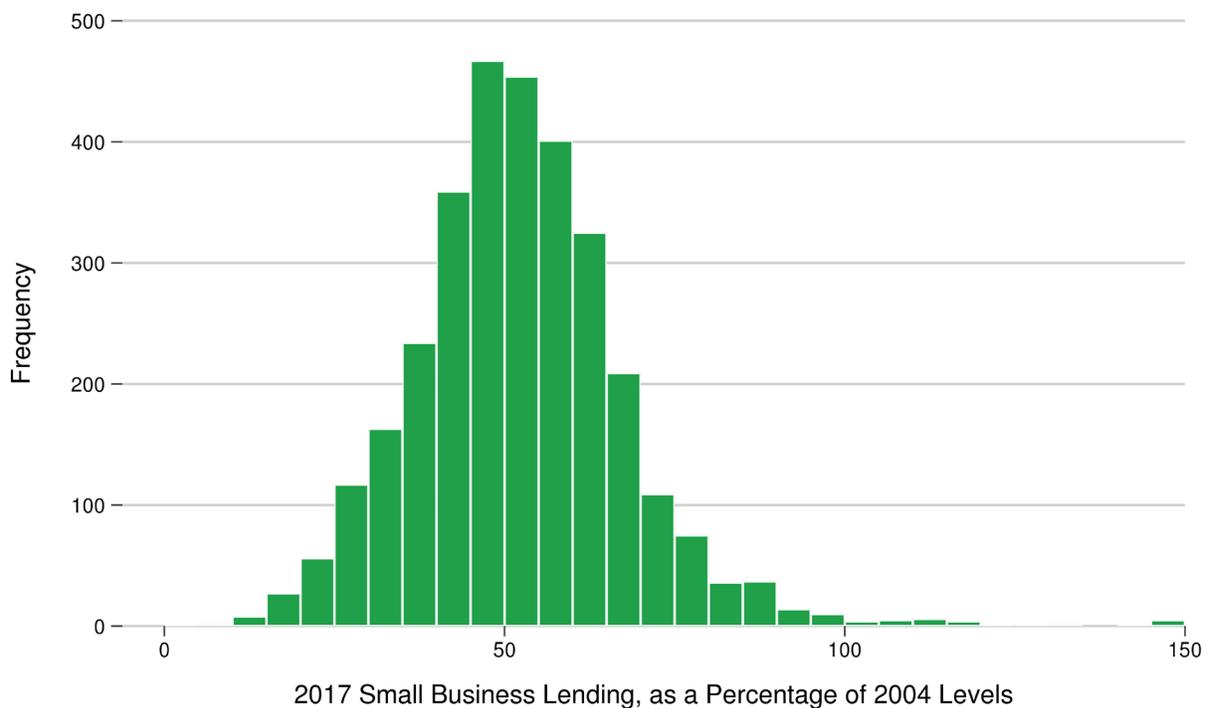


* Values outside the plot range are reduced to 50 percent.

As shown in Figure 6, 71 percent of counties had positive small business lending growth during the Recovery, implying that 29 percent of counties had negative or neutral small business lending growth. Figure 9 shows a histogram of each county's 2017 small business lending relative to 2004 levels. As of 2017, only 28 counties have returned or surpassed their 2004 small business lending levels.²⁸ The median county has only recovered to roughly half (51%) of 2004 lending levels.

²⁸ Among the 28 counties that rebounded or surpassed their 2004 SBL per business levels, 6 of them were rural counties in Texas and 6 were in Arkansas. One notable inclusion was Kings County in New York City which encompasses the borough of Brooklyn, which grew 14% in comparison to their 2004 SBL per business.

FIGURE 9: COUNTIES' 2017 NUMBER OF SMALL BUSINESS LOANS ORIGINATED PER BUSINESS, EXPRESSED AS A PROPORTION OF BASELINE 2004 LEVELS*



* Values outside the plot range are reduced to 150 percent

3.4 Counties Segmented by Growth Quintile

To further understand the micro-level patterns in small business lending during the Pre-period, Great Recession, and Recovery, Figures 10, 11, and 12 present median values of population, rural status, household income, poverty rate, and college graduation rates for counties in each quintile of the distribution of annual growth during the Pre-period, Great Recession, and Recovery in small business loans originated per business.²⁹ Each of these quintiles is dynamic and the composition of the counties changes based on the growth rate of the county during each distinct time period. These time periods are the same as previous graphics: Pre-period (2004-2007), Great Recession (2008-2009), and Recovery (2010-2017). In addition, the county-level results in the figures are not weighted by county population size, so small counties are given the same

²⁹ Rural status is defined using the CFPB list of rural counties <https://www.consumerfinance.gov/policy-compliance/guidance/rural-and-underserved-counties-list/>. Quintile refers to counties grouped into five equal groups based on the annual growth of small business loans per business. Household income and poverty rates are defined by Small Area Income and Poverty Estimates (SAIPE), a survey of counties and states conducted by the US Census. Household income refers to the median household income of the county.

weight as large counties. This leads to estimates that are generally higher than national averages for poverty and rural rates and generally lower for population, income and graduation rates.

As an example of how to interpret Figure 10, for the counties in the lowest quintile of annualized growth in small business loans originated per business in 2007 the median population was 17,297, the median household income was \$37,259, and the median college graduation rate was 14.8 percent. All these values refer to those at the end of the period. The values at the top of the graph represent the range of percentages for the growth in small business loans originated per business in each quintile. The trends in Figure 10 are very clear; counties with the lowest annualized growth in small business loans originated per business were much smaller and more rural, with lower household incomes and college graduation rates, and higher poverty rates.

Figure 11, covering the Great Recession, should be interpreted in the same way as Figure 10 above. Unlike for the Pre-period where each of these measures showed a monotonic relationship with annual growth in small business loans originated per business, some of these measures show a U- or inverted U-shaped pattern here, especially for population size and rural percentage. As an example, counties in the lowest quintile of annualized growth in small business loans originated per business, i.e. showing the largest percentage decline, were the smallest counties by population, with a median of just over 14,000. Median county population sizes increased for counties in quintiles 2 and 3, but then declined for quintiles 4 and 5. Comparing quintiles 1 and 5, these results suggest that within small, rural counties with low household incomes, high poverty rates, and low college graduation rates, there is a subset that experienced a high decline in annual growth of small business loans originated per business and a separate subset that experienced a slightly lower decline.

Figure 12, covering the Recovery, should be interpreted the same way as Figures 10 and 11. The U- or inverted U-shaped relationships for population and rural percentage found during the Great Recession again appear for the Recovery. The fifth quintile is poorer, less educated, and a lower income than the other quintiles, which is different from the pre-recession period. Within small, rural counties with low household incomes, high poverty rates and low college graduation rates, there is a subset that experienced a higher decline in annual growth of small business loans originated per business and a separate subset that experienced a higher increase. Additional analysis is needed to identify what is driving these differences in lending across quintile.

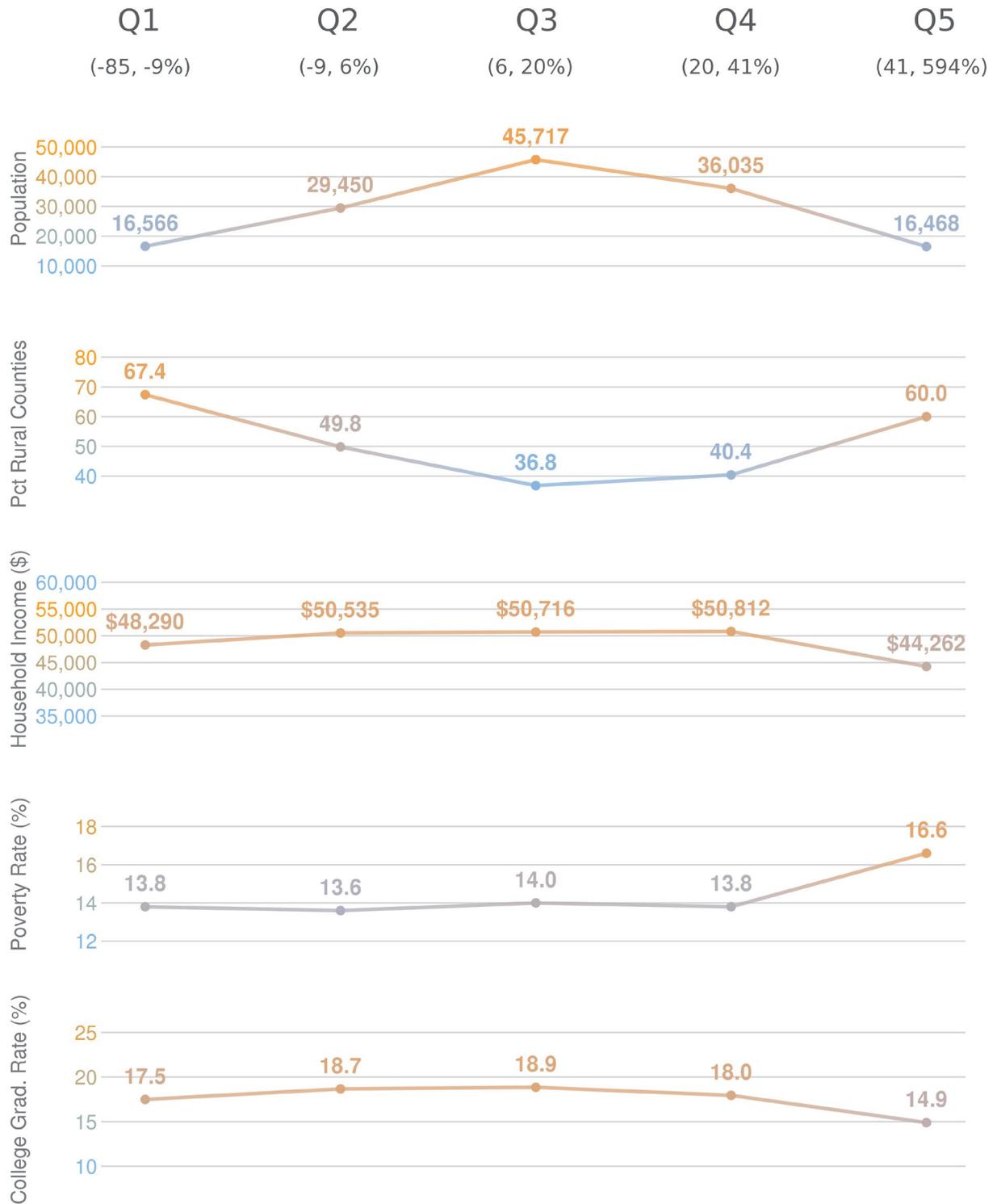
FIGURE 10: CHARACTERISTICS OF COUNTIES SEGMENTED BY GROWTH QUINTILE DURING THE PRE-PERIOD (2004-2007)



FIGURE 11: CHARACTERISTICS OF COUNTIES SEGMENTED BY GROWTH QUINTILE DURING THE GREAT RECESSION (2008-2009)



FIGURE 12: CHARACTERISTICS OF COUNTIES SEGMENTED BY GROWTH QUINTILE DURING THE RECOVERY (2010-2017)



4. Small business lenders

In order to characterize the small business lending market during the Great Recession, it is also important to understand the entities supplying credit during that time.³⁰ The total number of depository financial institutions in the U.S. has been steadily declining for many years. Figure 13 shows the total number of unique financial institutions by type over time. The number of all types of Depository Institutions (credit unions, community banks, thrifts, and large banks) has shrunk by 41 percent since 2000.³¹ (This report classifies banks into “large” or “community” based on the FDIC’s definition of a community bank in coming up with these figures).³² This downward trend in number of institutions has been consistent during the entire period, other than a slight increase and then decline for large banks from 2007-2009.³³

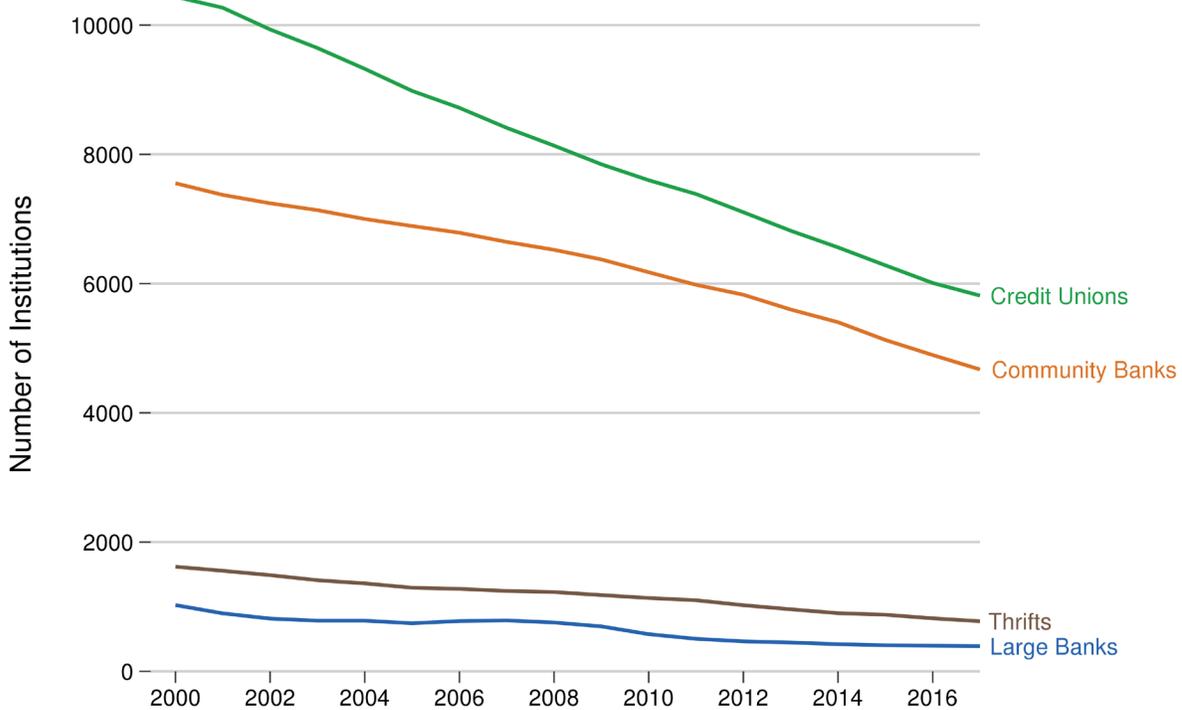
³⁰ For more information on small business lenders specific to banks see the FDIC Small Business Lending Survey available at <https://www.fdic.gov/bank/historical/sbls/full-survey.pdf>.

³¹ This is a part of a larger trend of the number of banks declining since the Savings and Loans Crisis, See Miller, Stephen Matteo, et al. "On the Historical Rise and (Recent) Decline in the Number of Banks." George Mason: Mercatus Center, 18 June 2019, www.mercatus.org/bridge/commentary/historical-rise-and-recent-decline-number-banks.

³² See Chapter 1 of the FDIC’s Community Bank Study (<https://www.fdic.gov/regulations/resources/cbi/study.html>) for a thorough description of their definition of a Community Bank, and the corresponding Community Bank Initiative dataset for the Community Bank flag. This definition uses percent of assets held in specialty bank charters, loan-to-assets, core deposits-to-assets, number of total banking offices, level of deposits for any one office, location-based criteria, and asset-size limits.

³³ An important note for the raw number of institutions offering small business loans is the consolidation among banks. Voluntary mergers have accelerated since the Great Recession among banks with most of those mergers among community banks. Voluntary mergers signify those entered into freely by both parties, while an involuntary merger signifies those forced by regulators or a dire financial situation to merge. An expanded discussion about voluntary mergers can be found in Kowalik, Michal, et al. "Bank Consolidation and Merger Activity Following the Crisis." Federal Reserve Bank of Kansas City Economic Review, pp. 31-49.

FIGURE 13: NUMBER OF DEPOSITORY INSTITUTIONS BY INSTITUTION TYPE



A segment of the SBL market growing in importance is the Fintech market.³⁴ Estimates by S&P found that five large Fintech lenders (OnDeck, Kabbage, Credibly, Square Capital and PayPal Working Capital) that focus on Small and Medium Enterprise (SME) businesses originated \$6.5 billion of loans in 2017, and the report found year-over-year increases of SME lending by these Fintech lenders since 2014.³⁵ A white paper produced by the Bureau in 2017 estimated the small business lending market was \$1.4 trillion outstanding, indicating that Fintech lending only refers to a part of the SBL marketplace.³⁶ An annual survey by the Federal Reserve of employer

³⁴ Financial technology, which is commonly referred to as FinTech, refers to the application of technological products, services, and other solutions into traditional consumer and commercial finance. Firms that predominately leverage innovative technologies to provide financial services to businesses and consumers can be considered Fintech lenders.

³⁵ Dixit, Nimayi. "2018 US Digital Lending Market Report." S&P Global Market Intelligence, 2018, p. 9 available at <http://marketplacelendingassociation.org/wp-content/uploads/2018/11/SP-2018-US-Digital-Lending-Mkt-Report.pdf>.

³⁶ See Figure 2 of the CFPB White Paper. "Key dimensions of the small business lending landscape." 10 May 2017, https://files.consumerfinance.gov/f/documents/201705_cfpb_Key-Dimensions-Small-Business-Lending-Landscape.pdf

small businesses found a growing number of small businesses apply to online lenders when seeking credit—rising from 19 percent in 2016 to 32 percent in 2018, indicating the increasing importance of the online market.³⁷

Figure 14 shows for each type of institution the share of lenders that offer small business loans. For community banks, large banks and credit unions, the number of institutions that offer small business products is divided by the total number of institutions and plotted yearly. Since relevant data for thrifts are only available after 2012, the share of thrifts that offer small business lending products is calculated from 2012 on. The Total line represents the share of all institutions that are small business lenders – note that it jumps at 2012 once thrifts are included in the calculation.

Most notable in Figure 14 is the variation across institution type in the percentage of institutions that offer small business products. Consistent with the literature on the role of community banks in small business lending, nearly all community banks offer small business products. This finding contrasts with credit unions where less than 21 percent of all credit unions offer small business products in each year. Nonetheless, the share of credit unions that offer small business products has been growing over time.

³⁷ See "Small Business Credit Survey: 2019 Report on Employer Firms", 2019, page ii available at www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-employer-firms-report.pdf. Within this report online lenders encapsulate a wide variety of nonbank online-based sources "including retail/payments processors, peer-to-peer lenders, merchant cash advance lenders, and direct lenders".

FIGURE 14: SHARE OF LENDERS OFFERING SMALL BUSINESS LOANS OVER TIME BY INSTITUTION TYPE

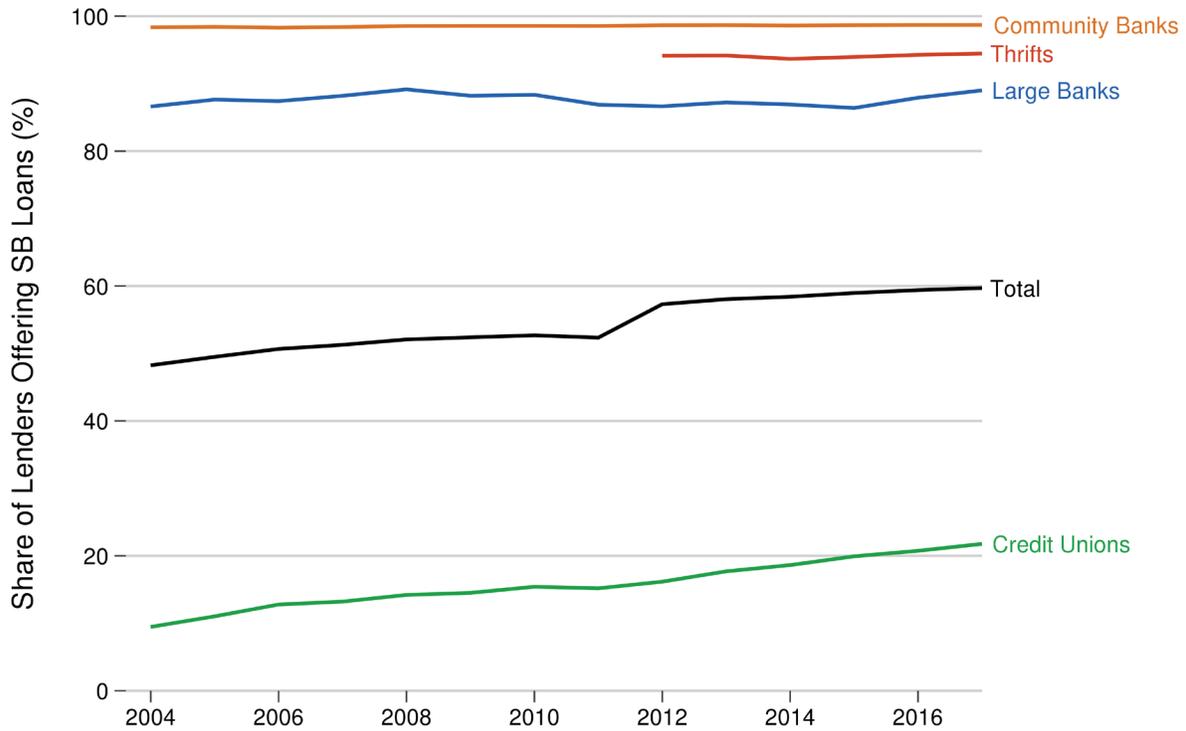


Figure 14 presents the shares of existing institutions that offer small business products but does not reflect the absolute number of such depository institutions that are in operation or those that offer small business credit. Figure 15 presents the number of each institution type that offer these products for the institutions that we are analyzing. All results are normalized to 100 in 2004. Thrifts are broken out separately and not further broken out by whether they provide small business lending products, because information on small business lending was taken from Call Reports, and thrifts reported Call Report data only from 2012 through 2017. Prior to 2012, thrifts reported thrift Financial Reports, which are not available electronically.

FIGURE 15: NUMBER OF FINANCIAL INSTITUTIONS BY INSTITUTION TYPE AND SMALL BUSINESS LENDING STATUS, NORMALIZED TO 100% IN 2004

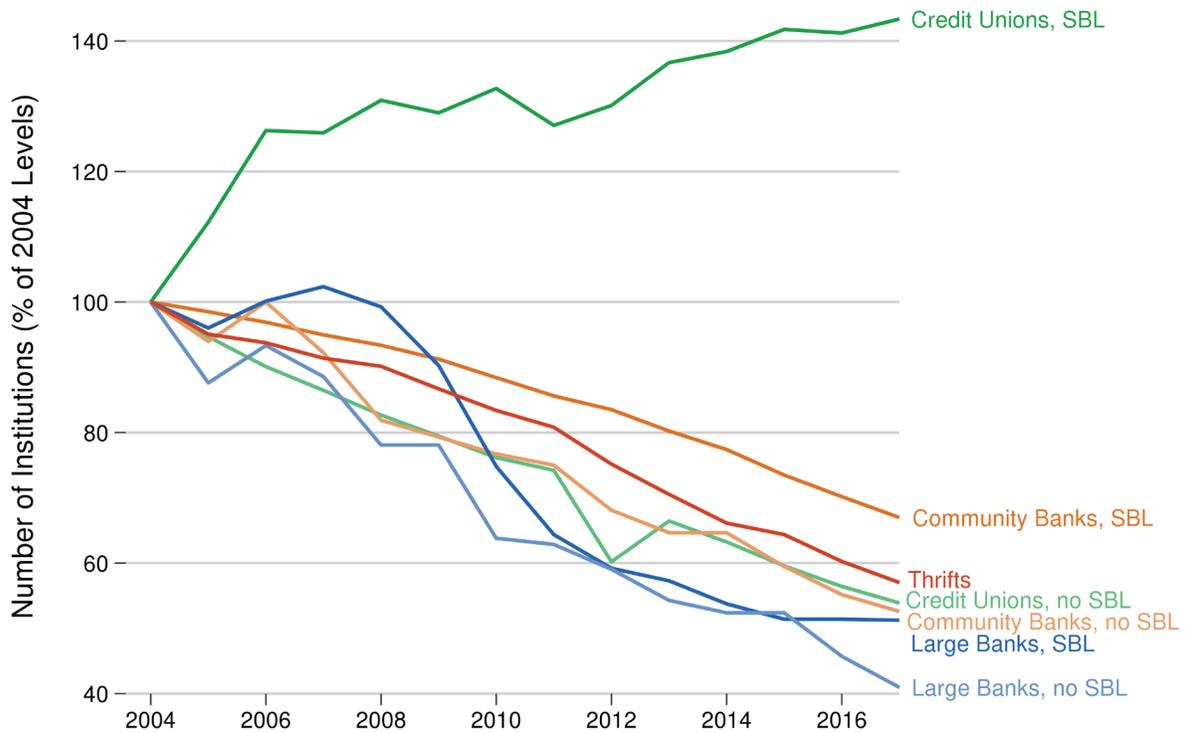


Figure 15 shows the decline in the number of financial institutions over recent years. Other than credit unions that offer small business lending products, the number of each institution type declined by at least 25 percent between 2004 and 2017. Figure 15 shows the significant variation across institution types. As noted, the number of credit unions offering small business lending products has increased by over 40 percent since 2004. According to Figures 13 and 14, this increase is a result of more existing credit unions making Small Business loans, rather than new credit union entrants into the market. In addition, for the remaining institution types that showed declines, the number of community banks and large banks that offer small business products declined less than community banks and large banks that did not offer small business lending products.

Although bank lending to small businesses has contracted considerably, research commissioned by the SBA Office of Advocacy and conducted by researchers at the University of California-Berkeley found that small business lending among credit unions partially offset the fluctuations

in bank lending to small businesses.³⁸ This impact is limited, as there is a lending cap on credit unions for Member Business Loans at 12.25 percent of Total Assets.³⁹

Not all depository institutions in the U.S. offer small business lending products. It is important to note that the characterization of “small business lender” used in the preceding analyses is quite basic, and only considers whether the institution does any small business lending at all. A more holistic picture of how each institution type participates in the small business lending market could include information about loan volumes, product availability, or geography of lending. None of this analysis includes small banks that do not report under the call report, non-depository institutions including FinTech’s, and other potential sources of Small Business Credit. Data limitations make analysis in this vein difficult and such an analysis is not the focus of this report. Therefore, this analysis alone is insufficient to draw any conclusions about how well these types of institutions meet the credit needs of small businesses. Nonetheless, this analysis is informative in its breakdown of the evolution of these Financial Institutions on the dimension of time and offering SBL products.

³⁸ Wilcox, James A. “The Increasing Importance of Credit Unions in Small Business Lending.” Prepared for the SBA Office of Advocacy. Sept. 2011. This report measured small business lending at the dollar level and found that increases in SBL dollars at credit unions accounted for \$.07 of the fluctuation in SBL at the bank-level.

³⁹ Please see page 78 within this final rule from the NATIONAL CREDIT UNION ADMINISTRATION (NCUA). "12 CFR Part 723." 18 Feb. 2016, www.ncua.gov/files/agenda-items/AG20160218Item2b.pdf.

5. Conclusion

Small business lending was significantly affected by the Great Recession. Applying various measures of the Great Recession and Recovery to local geographies reveals that in many communities, their small business lending in 2017 still has not returned to pre-Recession levels.⁴⁰

At both the state and county geographies, there was significantly more variation in the growth in SBL during the pre-period than either decline during the recession or the growth during the recovery. At a state-level there was some evident regional variation during the Recovery period, with states on the East Coast rebounding at a higher rate than states in the Great Plains or the West.

At the county-level, a typical county returned to roughly half of 2004 lending levels by 2017. While there was considerable variation in growth rates during the pre-period, small business lending growth was relatively stagnant during the Recovery period (2010-2017). Only one county had growth during the Great Recession, indicating how widespread the crisis was.

Looking at lenders, the number of all types of institutions (thrifts, community banks, credit unions, and large banks) have declined since 2004. In terms of the share of institutions that offer SBL products, the share of credit unions offering SBL has doubled since 2004 (10% to 20%), while the share of large banks and community banks offering SBL has remained relatively stable.

Further research could analyze the varying levels of small business lending before, during, and after the Great Recession. Research into whether this geographic variation in the recovery of Small Business Lending is driven by state fiscal policies, industry composition, or other relevant factors remains important. Given the importance of community development and the role that small businesses play in this development, it is important to understand the experiences of these communities during the periods around the Great Recession.

⁴⁰ The reasons for the Recovery ending in 2017 is as a result of data limitations CBP measures are currently only available until 2017.

Appendix A: Data Sources

Dataset	Publisher	Year(s)	Figures Used
American Community Survey (5-Year)	Census	2007, 2010, 2017	10, 11, 12
County Business Patterns	Census	2004-2017	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Census Population and Housing Unit Estimates	Census	2004-2017	2, 10, 11, 12
Community Reinvestment Act Disclosure Data	FFIEC	2000-2017	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Historical Community Banking Reference Data	FDIC	2000-2017	13, 14, 15
Bank and Thrift Call Report	FFIEC	2000-2017	13, 14, 15
Local Area Unemployment Statistics	BLS	2007, 2010, 2017	10, 11, 12
Credit Union Call Report	NCUA	2000-2017	13, 14, 15
Non-employer Statistics	Census	2004-2017	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Rural Counties List	CFPB	2016	10, 11, 12
Small Area Income and Poverty Estimates	Census	2007, 2010, 2017	10, 11, 12
Summary of Deposits	FDIC	2000-2017	13, 14, 15

Appendix B: Works Cited

Bordo, Michael D., and John V. Duca. "THE IMPACT OF THE DODD-FRANK ACT ON SMALL BUSINESS." *NBER WORKING PAPER SERIES*, vol. 2450, Apr. 2018.

Burgen, Emily, and Dionissi Aliprantis. "Measuring Small Business Employment over the Business Cycle." FRB Cleveland *Economic Trends*, 22 May 2012.
<https://www.clevelandfed.org/en/newsroom-and-events/publications/economic-trends/2012-economic-trends/et-20120522-measuring-small-business-employment-over-the-business-cycle.aspx>.

Burgen, Emily and Tasci, Murat. "Job Creation by Small and Large Firms over the Business Cycle." *FRB Cleveland Economic Trends*, 6 Feb. 2012.
<https://www.clevelandfed.org/en/newsroom-and-events/publications/economic-trends/2012-economic-trends/et-20120206-job-creation-by-small-and-large-firms-over-the-business-cycle.aspx>.

Bureau of Economic Analysis. "Gross Domestic Product by State: Second Quarter 2019." 7 Nov. 2019, www.bea.gov/data/gdp/gdp-state.

Chen, Brian S., et al. "The Decline of Big-Bank Lending to Small Business: Dynamic Impacts on Local Credit and Labor Markets." *NBER Working Paper Series*, no. 23843, Sept. 2017.
<https://www.nber.org/papers/w23843>

Cole, Rebel A. "How Did the Financial Crisis Affect Small Business Lending in the United States?" SBA: Office of Advocacy, Nov. 2012. Accessed 29 Aug. 2017.
<https://www.microbiz.org/wp-content/uploads/2014/04/SBA-SmallBizLending-and-FiscalCrisis.pdf>.

Consumer Financial Protection Bureau. "Key dimensions of the small business lending landscape." 10 May 2017, https://files.consumerfinance.gov/f/documents/201705_cfpb_Key-Dimensions-Small-Business-Lending-Landscape.pdf.

Dixit, Nimayi. "2018 US Digital Lending Market Report." *S&P Global Market Intelligence*, 2018, <http://marketplacelendingassociation.org/wp-content/uploads/2018/11/SP-2018-US-Digital-Lending-Mkt-Report.pdf>.

FDIC. "Bank Closing Summary- 2001 through 2019." 2019.
<https://www.fdic.gov/bank/historical/bank/>.

Federal Reserve. "Small Business Credit Survey: 2019 Report on Employer Firms.", 2019, www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-employer-firms-report.pdf.

FFIEC 031 and 041 Bank Call Reports, March 2019, Schedule RC-C, part II.
https://www.ffiec.gov/pdf/FFIEC_forms/FFIECO31_FFIECO41_201906_i.pdf.

FFIEC. "Findings from Analysis of Nationwide Summary Statistics for 2016 Community Reinvestment Act Data Fact Sheet". 2017.
<https://www.fdic.gov/news/news/press/2017/pr17088a.pdf>.

Government Accountability Office. "Effect of Regulations on Small Business Lending and Institutions Appears Modest, but Lending Data Could Be Improved." 5 Sept. 2018,
www.gao.gov/reports/GAO-18-312/#Highlights.

Headd, Brian. "SMALL BUSINESS FACTS: SMALL BUSINESS JOB CREATION DECONSTRUCTED." SBA: Office of Advocacy, Sept. 2017, cdn.advocacy.sba.gov/wp-content/uploads/2019/06/10111825/Job_Creation_fact_sheet_FINAL_o.pdf

Kowalik, Michal, et al. "Bank Consolidation and Merger Activity Following the Crisis." *Federal Reserve Bank of Kansas City Economic Review*, pp. 31-49.
<https://www.kansascityfed.org/publicat/econrev/pdf/15q1Kowalik-Davig-Morris-Regehr.pdf>

Laderman, Elizabeth. "Small Businesses Hit Hard by Weak Job Gains." *Federal Reserve Board of San Francisco*, vol. 26, 9 Sept. 2013. <https://ideas.repec.org/a/fip/fedfel/y2013isept9n2013-26.html>

Mills, Karen Gordon, and Brayden McCarthy. "The State of Small Business Lending: Credit Access during the Recovery and How Technology May Change the Game." *Harvard Business School: Working Paper*, vol. 15, no. 004, 22 July 2014.
https://www.hbs.edu/faculty/Publication%20Files/15-004_09b1bf8b-eb2a-4e63-9c4e-0374f770856f.pdf.

National Community Reinvestment Coalition. "Bank Branch Closures from 2008-2016: Unequal Impact in America's Heartland." 8 May 2017. https://ncrc.org/wp-content/uploads/2017/05/NCRC_Branch_Deserts_Research_Memo_050517_2.pdf.

NATIONAL CREDIT UNION ADMINISTRATION (NCUA). "12 CFR Part 723." 18 Feb. 2016,
www.ncua.gov/files/agenda-items/AG20160218Item2b.pdf

NCUA 5300 Call Report, March 2019, Schedule A, Section 4.
<https://www.ncua.gov/files/publications/regulations/call-report-instructions-march-2019.pdf>.

Nguyen, Hoai-Luu Q. "Are Credit Markets Still Local? Evidence from Bank Branch Closings." *American Economic Journal: Applied Economics*, 11 (1): 1-32. 2019. http://faculty.haas.berkeley.edu/hqn/nguyen_aej_201901.pdf.

Siemer, Michael. "Firm Entry and Employment Dynamics in the Great Recession." *Finance and Economics Discussion Series*, vol. 56, 2014.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2172594.

Wiersch, Ann Marie, and Scott Shane. "Why small business lending isn't what it used to be." *Economic Commentary/Cleveland Federal Reserve* 14 (2013): 2013-10.
<https://www.clevelandfed.org/newsroom-and-events/publications/economic->

<commentary/2013-economic-commentaries/ec-201310-why-small-business-lending-isnt-what-it-used-to-be.aspx>.

Wilcox, James A. "The Increasing Importance of Credit Unions in Small Business Lending."
Prepared for the SBA Office of Advocacy. Sept. 2011.
<https://www.sba.gov/sites/default/files/files/rs387tot.pdf>.

Appendix C: Additional Figures

FIGURE 16: PERCENTAGE GROWTH IN SMALL BUSINESS LOANS PER BUSINESS DURING THE PRE-PERIOD (2004-2007)

