Report to the Congress on the Availability of Credit to Small Businesses

September 2017

Board of Governors of the Federal Reserve System

Report to the Congress on the Availability of Credit to Small Businesses

September 2017

Board of Governors of the Federal Reserve System

This and other Federal Reserve Board reports and publications are available online at
www.federalreserve.gov/publications/default.htm.

To order copies of Federal Reserve Board publications offered in print,
see the Board's Publication Order Form (www.federalreserve.gov/files/orderform.pdf)
or contact:

Printing and Fulfillment
Mail Stop K1-120
Board of Governors of the Federal Reserve System
Washington, DC 20551
(ph) 202-452-3245
(fax) 202-728-5886
(e-mail) Publications-BOG@frb.gov

Contents

Executive Summary ... 1

Flows and Terms of Business Credit ... 5
- Aggregate Business Financing ... 5
- Financing for Nonfinancial Corporations ... 5
- Financing for Small Businesses ... 8

Credit Use by Small Businesses ... 15
- Small Business: Definition and Background ... 15
- Risks of Lending to Small Businesses ... 16
- Credit Use ... 17
- Credit Application Experience ... 24

Providers of Credit to Small Businesses ... 35
- Lending by Depository Institutions ... 36
- Lending by Nondepository Sources ... 46

Special Issues ... 51
- Government Initiatives to Support Credit Access for Small Business ... 51
- Securitization of Small Business Loans ... 58

References ... 61

Executive Summary

Section 2227 of the Economic Growth and Regulatory Paperwork Reduction Act of 1996 requires that, every five years, the Board of Governors of the Federal Reserve System submit a report to the Congress detailing the extent of small business lending by all creditors. The act specifies that the study should identify factors that give policymakers insight into the small business credit market, including the demand for credit by small businesses, the availability of credit, the range of credit options available, the types of credit products used, the credit needs of small businesses, the risks of lending to small businesses, and any other factors that the Board deems appropriate.[1]

Between 2012 and 2017, the years covered by this report, financial markets were generally tranquil and remained accommodative of growth in spending and investment. Supported by low interest rates, equity prices rose notably over this period, and yields on corporate debt remained low. The U.S. economy expanded at a moderate pace, and labor markets approached full employment. Continuing the recovery from the financial crisis, debt on the balance sheets of nonfinancial businesses expanded, supported by robust increases in corporate bonds and banks' loans. While terms on business credit also eased, on net, debt growth was restrained by limited demand for borrowing by small businesses.

The concerns of the Congress and other policymaking bodies about small business financing largely stem from the perception that small firms have more difficulty gaining access to credit than do large businesses or other types of borrowers. The source of this difficulty may be the higher cost of lending to small firms due to greater riskiness or challenges in evaluating and monitoring credit risks, or it may be inefficiencies in markets that hinder pricing of risk or impede the effective pooling of risks. To the extent that private-market impediments or inefficiencies are the source of any difficulties for small business financing, policymakers may focus on measures that mitigate these market failures. It is important to note that no single policy prescription would likely work for all small businesses, and no single definition of small business would be appropriate for all industries. As discussed in this report, credit needs and borrowing sources differ widely among small businesses.

One challenge for this report is that up-to-date and comprehensive information about the universe of small businesses is sparse, with most evidence about financing needs and sources derived from surveys. One relatively new survey, the U.S. Census Bureau's Annual Survey of Entrepreneurs (ASE), launched in 2015, shows that the use of credit products exhibits some clear patterns. Among all of the types of financing that small business operators were asked about, owner financing was the most commonly used type, followed by financing from banks and other finance companies. While grants and outside investors provide vital financing for certain small businesses, this type of funding is only given to a very small share of firms.

The ASE also shows a clear relationship between firm age and credit use. Young small businesses are more likely to tap into informal sources of credit such as funding from owners or family and friends, while older firms are more likely to receive funding from more traditional sources. This difference is likely tied to the greater informational opacity of new firms. This opacity might make evaluating creditworthiness more difficult for arms-length lenders, which could reduce the supply of more formal credit available to young firms.

In most cases, small businesses appear to have been able to meet their credit needs. However, in some cases, small businesses may have wanted more credit

[1] As required by the law, the Board consulted with the Comptroller of the Currency, the Administrator of the National Credit Union Administration, the Administrator of the U.S. Small Business Administration, the Board of Directors of the Federal Deposit Insurance Corporation, and the Secretary of Commerce.

than they were able to obtain. Data from the ASE indicate that in 2014 the majority of firms did not apply for a new loan of any type, although, for those that applied, success rates were relatively high. Among the 13 percent of firms that applied for a bank loan, nearly three-fourths received the full amount for which they applied. Credit card applications were slightly less frequent than bank loan applications, although a bit more likely to have been approved. New home equity loan applications for businesses were even less common, with slightly more than 30 percent of applicants not receiving all of the funding they sought from this source.

Some firms that may have wanted additional credit may not have applied for it because they anticipated that their applications would be denied. Such firms are known as “discouraged borrowers.” The ASE asks firms whether there were times during 2014 when the business needed additional financing but the owner chose not to apply. Almost 10 percent of firms fell into this category. The reason most commonly stated for not applying for additional credit was that the firm did not want to accrue debt, with nearly two-thirds of discouraged firms providing that response.

Usage of different types of small business credit varies by the age and industry of the firm as well as by the gender, race, and ethnicity of the owners. However, the usage represents the intersection of what firms would like to use to finance their firms with what providers are willing to supply. The additional questions in the ASE on loan applications and forgone applications would indicate that—at least for some firms—demand exceeds supply. But it is important to keep in mind that not all credit applications should be approved. There is a great deal of fluctuation in the small business population, and determining which businesses are a good credit risk is a challenge that small business credit providers need to carefully evaluate.

Because banks are the leading source of external credit to small business, much attention has been paid to developments in banking that may influence credit availability. The substantial consolidation of the banking industry over the past 25 years is one such development. Mergers and acquisitions have dramatically reduced the number of banks, thereby increasing the importance of large institutions and the concentration of industry assets. These changes to the structure of the industry have raised concerns about possible reductions in the availability of credit to small businesses because large banks tend to be proportionately less committed than smaller banks to small business lending.

Despite their declining numbers and a fall in their share of industry assets, however, small banks continue to account for a sizable share of small business loans. In 2016, banks with assets of $250 million or less accounted for 58.2 percent of all banking organizations but only 2.4 percent of all banking assets (table 16). However, they held 9.1 percent of all small business loans and 8.2 percent of microloans. Similarly, the 30.2 percent of banks with between $250 million and $1 billion in assets held 5.0 percent of industry assets, but 16.9 percent of small business loans and 9.9 percent of microloans.

The relevant market for many small business loans remains local. The structure of the local banking market is particularly important because changes in concentration could affect the level of competition for small business lending, which, in turn, could influence the cost of borrowing and the quantity of credit demanded. To address some key issues associated with the availability of credit to small businesses, one must shift the analysis from lending at the industry level to the local level. Analysis of bank structure within smaller geographic areas is likely to capture more accurately the relevant market conditions that small firms face when seeking credit, and that influence competition in the market for small business loans. The primary measure used by antitrust authorities to assess market concentration is the deposit-based Herfindahl-Hirschman Index (HHI), which is computed as the sum of the squared market shares (that is, the shares of total deposits) of each firm in a market. In 2016, the average level of the HHI was 1,694 in urban areas, 2,396 in micropolitan areas, and 4,254 in rural areas. These numbers were little changed over the period.

Savings institutions, defined as savings banks and savings and loan associations, provide much less credit to small businesses than do commercial banks. The primary lines of business for these institutions, often referred to as thrifts, tend to involve providing retail financial services, such as residential mortgage loans, savings accounts, and negotiable order of withdrawal (or NOW) accounts, to households. As of June 30, 2016, there were 4,824 commercial banking organizations and 763 thrifts (tables 15 and 21). The value of small business loans held by savings institutions was slightly less than one-tenth of the value held by banks, while the value of microloans (loans

less than $100,000) held by savings institutions was less than one-fifth the value of commercial bank holdings. Savings institutions held $54.8 billion in small business loans and $25.1 billion in microloans, compared with $551.6 billion and $132.8 billion, respectively, held by commercial banks.

A credit union is a not-for-profit financial cooperative, owned and controlled by the people who use its services. Credit unions offer many of the same financial services that banks do. Like savings institutions, credit unions historically have not provided a great deal of credit to small businesses. According to the 2003 Survey of Small Business Finances, credit unions provided less than 1 percent of aggregate dollars outstanding to small businesses. However, credit unions have become a more important source of small business loans in recent years. In a 2009 National Federation of Independent Business survey, fewer than 4 percent of firms reported using a credit union as their primary financial institution. By 2010, this figure had increased to just less than 5 percent, and it was near 7 percent by 2011, the last time these data were reported. Similarly, 9.6 percent of households that owned small businesses in the 2013 Survey of Consumer Finances reported using a credit union as the firm's primary financial institution.

Venture capital is an important source of financing for the subset of small businesses that are young and have the potential for high growth. Venture capital investment increased dramatically between 2012 and 2015 before falling off a bit in 2016 and the first quarter of 2017 (figure 9 and table 26). The total amount invested by venture capital firms grew from about $41 billion in 2012 to almost $80 billion in 2015 before declining slightly to about $71 billion in 2016. The number of firms receiving funding from a venture capital firm followed a similar trend, climbing from about 7,900 firms in 2012 to around 10,400 in 2015 before declining to just over 8,400 in 2016.

Support for small businesses has been a priority of policymakers for several decades, and federal, state, and local agencies have sponsored programs that assist in channeling capital to small business. Several long-standing government initiatives exist to help support credit access for small businesses, particularly small businesses owned by historically underserved groups such as women and minorities. Two such initiatives of particular importance are the Community Reinvestment Act (CRA) and various loan programs sponsored by the U.S. Small Business Administration (SBA). The CRA was enacted in 1977 to encourage federally insured depository institutions to help meet the credit needs of their local communities, particularly low- and moderate-income neighborhoods, consistent with safe and sound operations. The SBA provides financing to young and growing small firms through several channels such as the 7(a) Loan Program and SBA 504 Certified Development Companies. Among the policy objectives of the SBA loan programs are the goals of promoting entrepreneurship opportunities for women and minorities.

Securitization is the process of packaging individual loans and other debt instruments, converting the package into a security, and enhancing the credit status or ratings to further some securities' sale to third-party investors. The securitization of small business loans has the potential to substantially influence the availability of credit to small businesses, but the obstacles to securitizing small business loans are large. Securitization generally has thrived in markets in which the costs of acquiring and communicating information to investors about loans and borrowers are low. In contrast, most small business loans cannot readily be grouped into large pools that credit agencies and investors can easily analyze: Loan terms and conditions are not homogeneous, underwriting standards vary across originators, and information on historical loss rates is typically limited. The information problems associated with small business loans can be overcome, or offset to a degree, by some form of credit enhancement, as in the case of the SBA's 7(a) loans. However, the more loss protection needed to sell the securities, the smaller are both the net proceeds from the sale of the securities and the incentive for lenders to securitize their loans. Small business loans are an asset for which the high transaction costs of providing credit enhancements have made many potential securitizations unprofitable.

Between 2012 and 2016, the secondary market volume of the guaranteed portion of 7(a) SBA loans grew from around $4.5 billion to about $8.5 billion. The secondary market for 7(a) SBA loans appears to be healthy and operating well. With no programmatic changes in the foreseeable future, the market should continue to move along smoothly at current levels.

Overall, between 2012 and 2017, credit conditions for small businesses were largely stable. Favorable supply conditions prevailed throughout most of the period, coupled with weak loan demand from small business owners. By 2017, credit flows to small businesses had improved, though they remained below their pre-crisis levels.

Flows and Terms of Business Credit

Between 2012 and 2017, the years covered by this report, financial markets were generally tranquil and remained supportive of growth of spending and investment. Supported in part by low interest rates, equity prices rose notably, and yields on corporate debt remained low. The U.S. economy expanded at a moderate pace, and labor markets approached full employment. Continuing the recovery from the financial crisis, debt on the balance sheets of nonfinancial businesses expanded, supported by robust increases in corporate bonds and banks' loans. While terms on business credit also eased, on net, debt growth was restrained by limited demand for borrowing by small businesses.

Aggregate Business Financing

Aggregate business finance data broken down by firm size are generally not available. For this report, various proxies are used, including organization type and the size of the debt at the time of origination.

Aggregate nonfinancial business debt, which contracted in the immediate aftermath of the financial crisis, grew at a steady pace of nearly 6 percent per year from 2012 to 2017 (figure 1, panel A).[2] As a result, the ratio of nonfinancial business debt to gross domestic product has risen over this period and remains well above historical norms (figure 1, panel B).

Gross equity issuance by nonfinancial firms has also increased notably since 2012, surpassing pre-crisis levels, owing mostly to the recovery in private equity issuance (figure 1, panel C).[3] Public equity issuance, through both initial and seasoned offerings, rose at a moderate pace from 2012 to 2015 but retraced part of that increase in 2016 as a result of a lackluster market for initial public offerings. In contrast, estimates of private equity issuance increased sharply over the period and rebounded to levels last seen before 2009. The pace of equity retirements through cash-financed mergers and share buybacks was very strong and has continued to outpace equity issuance by a wide margin. As a result, net equity issuance remained negative throughout the period.

Financing for Nonfinancial Corporations

While there are little available data specifically on financing conditions for small businesses, measures of financing conditions in the aggregate and for large businesses suggest that conditions have largely recovered to pre-crisis levels in recent years. Default rates on corporate bonds and on commercial and industrial (C&I) loans were low to moderate over the period overall, although the rates on C&I loans moved up slightly in 2015 and 2016 (figure 2, panel A). Yields on triple-B-rated and high-yield corporate bonds remained very low by historical standards (figure 2, panel B). The spreads of yields on corporate bonds to those on comparable-maturity Treasury securities rose notably in 2015 and early 2016, reflecting in part concerns about the credit outlook of firms in the energy sector, but subsequently moved to levels similar to those prevailing in 2014.

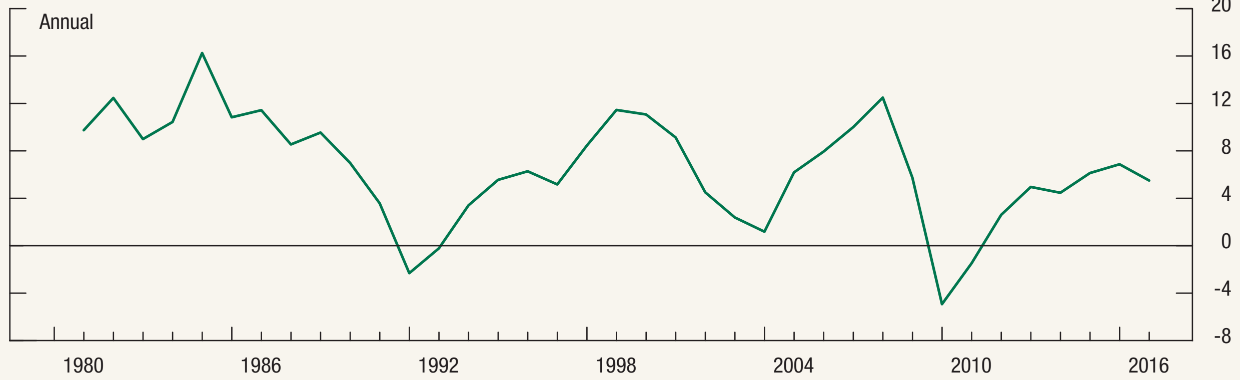
---

[2] Data used in this section are from the Financial Accounts of the United States published by the Federal Reserve Board, Consolidated Reports of Condition and Income for banks, and surveys of lenders and of small businesses. Information from the Financial Accounts of the United States relates to organizational type rather than to size of firm. A business can be organized as a corporation (C corporation or S corporation) a proprietorship, or a partnership. Most proprietorships and partnerships are small businesses. Large, publicly traded firms are generally C corporations, which are subject to corporate income taxes and securities laws. S corporations are designed primarily for small businesses and generally are not subject to corporate income taxes.

[3] Gross equity issuance equals the value of funds raised through the sale of equity by publicly and privately held nonfinancial firms. This measure does not net out equity retired though share repurchases or cash-financed mergers and acquisitions. Only publicly traded companies have access to the equity markets. The Annual Survey of Entrepreneurs of the U.S. Census Bureau—discussed in more detail in the next chapter—estimated that there were 5.4 million firms with employees in 2014. Kahle and Stulz (2017) report that there were fewer than 4,000 publicly traded firms in that same year.

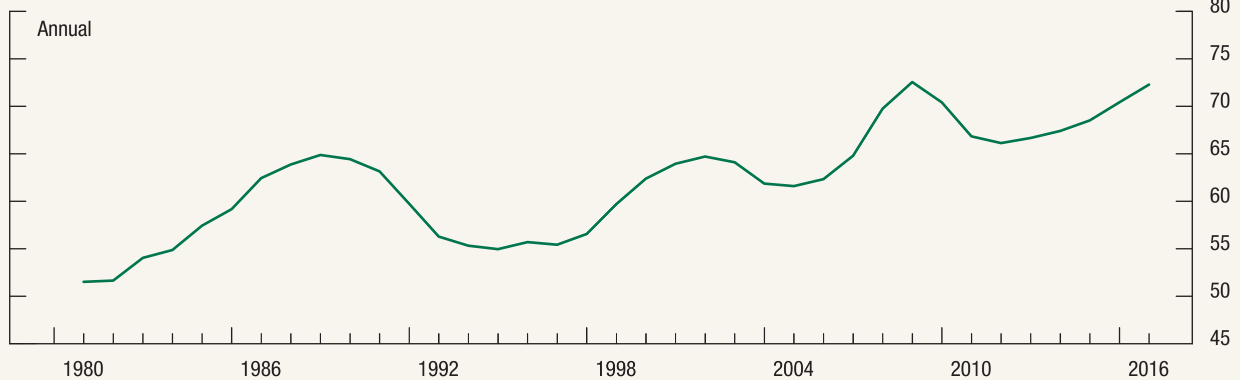
Figure 1. Total debt and equity of nonfinancial businesses, 1980–2017

A. Percentage change in total debt



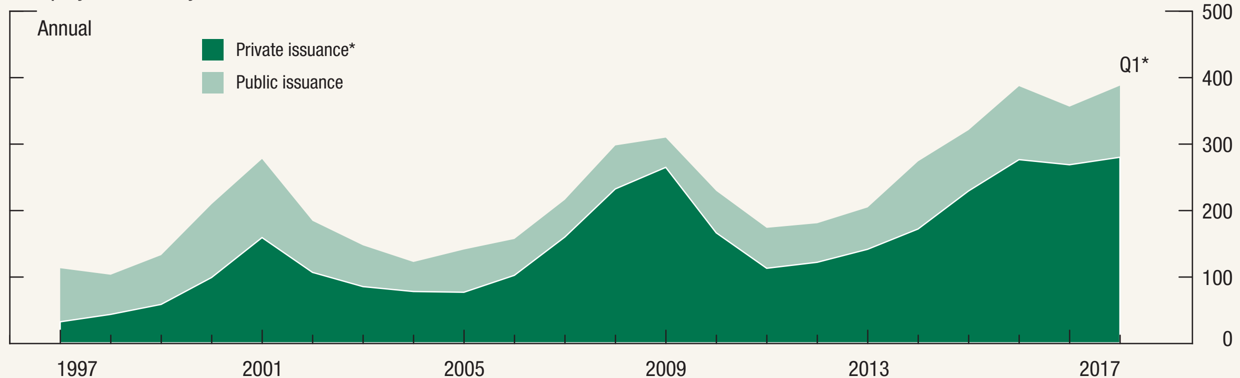
Source: Federal Reserve Board, Financial Accounts of the United States.

B. Ratio of nonfinancial business debt to gross domestic product



Source: Federal Reserve Board, Financial Accounts of the United States.

C. Equity issuance by nonfinancial U.S. firms

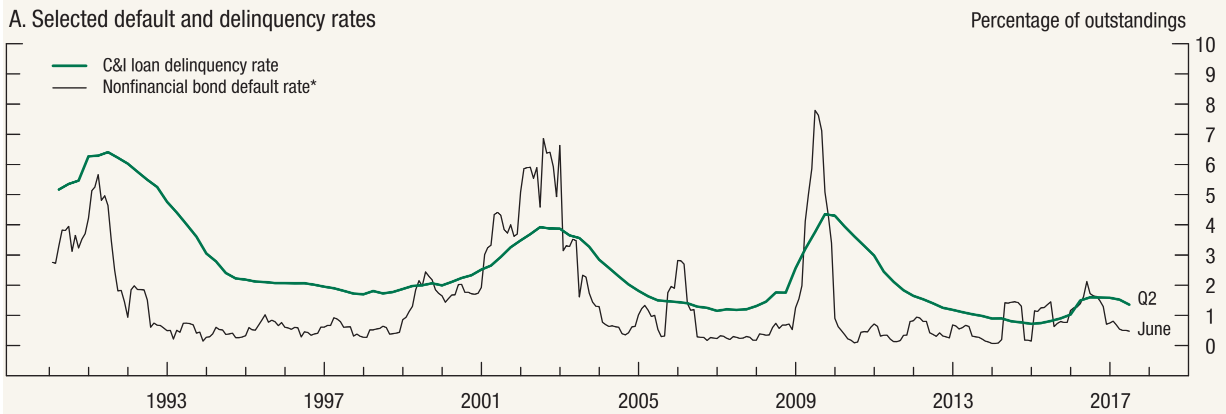


Note: Data for 2017 reflect private issuance through the first quarter.

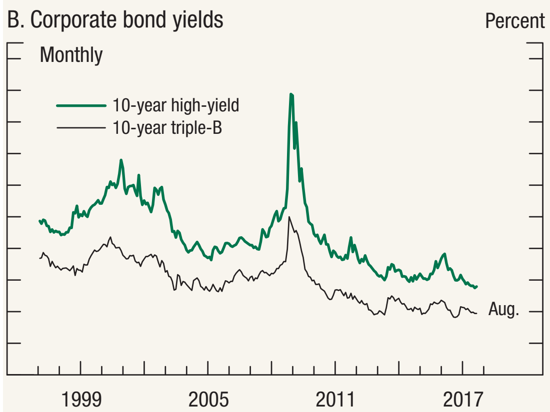
*Includes venture capital, buyouts, corporate finance, mezzanine, and other private equity investments.

Source: Thomson Reuters SDC Platinum, WSJ Pro Private Equity Analyst, and the PwC/CB Insights MoneyTree™ Report.

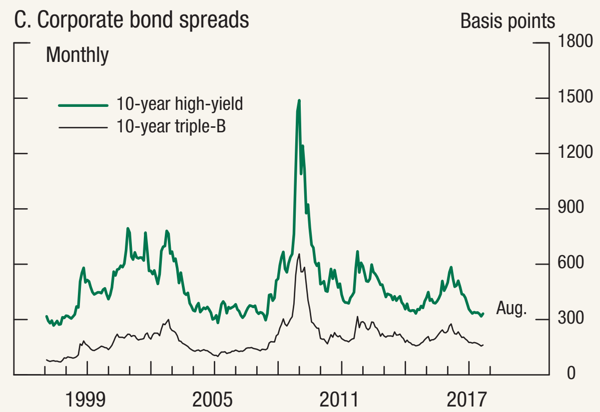
Figure 2. Corporate credit conditions, 1990–2017



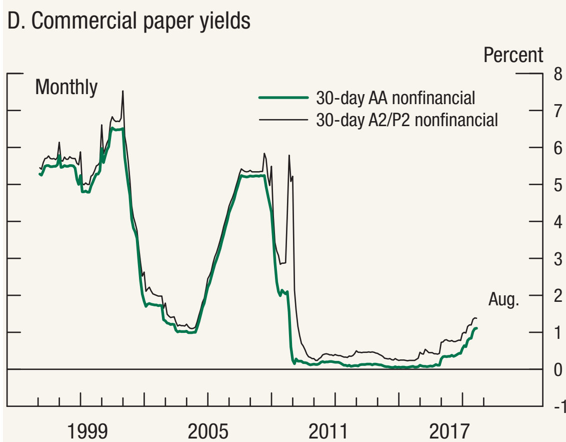
*Six-month trailing defaults divided by beginning-of-period outstanding, at an annual rate.
Source: For default rate and outstanding amount of nonfinancial bonds, Moody's Analytics, Inc.; for delinquency rate and outstanding amount of commercial and industrial (C&I) loans, Call Report data.



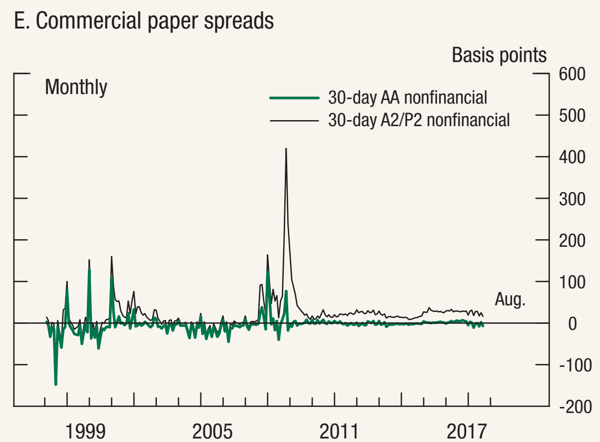
Source: Staff estimates of smoothed yield curves, bond data from BofA Merrill Lynch Global Research, used with permission.



Note: Spreads over 10-year Treasury yield.
Source: Staff estimates of smoothed yield curves, bond data from BofA Merrill Lynch Global Research, used with permission; staff estimates of smoothed yield curve, U.S. Department of the Treasury.



Source: DTCC Solutions LLC, an affiliate of The Depository Trust & Clearing Corporation.



Note: Spreads computed over the target federal funds rate.
Source: DTCC Solutions LLC, an affiliate of The Depository Trust & Clearing Corporation.

On the whole, corporate bond yield spreads remained a touch above pre-recession levels, though below the median of their historical distributions since 1997 (figure 2, panel C). Borrowing costs for shorter-term debt issued by nonfinancial firms also have remained very low since 2009, with slight increases in commercial paper rates in 2015 and 2016, as shown in figure 2, panel D, about in line with increases in the federal funds rate. As a result, the spreads of rates on A2/P2-rated commercial paper over the target federal funds rate were generally stable at low levels (figure 2, panel E).

Nonfinancial corporate debt rose steadily from 2012 to 2016 (figure 3). Debt growth was supported by a robust pace of bond issuance by nonfinancial corporations, as firms took advantage of the low interest rate environment. Commercial paper outstanding at nonfinancial firms rose sharply from 2012 to 2014 and has remained roughly unchanged since then. While these financing sources experienced significant growth in recent years, neither represents a significant source of credit to small firms. On balance, bank lending standards eased over this period, helping support the robust growth of bank loans to corporations. While commercial real estate prices rose rapidly from 2012 to 2016, mortgage debt rose only modestly, on net, over this period.

Financing for Small Businesses

Fully comprehensive data that directly measure the financing activities of small businesses do not exist. However, various sources of information can serve as proxies for small business financing activity and can be used to identify patterns of small business financing. These sources suggest that despite robust growth in aggregate nonfinancial business debt, financing flows to small businesses grew slowly over the past several years.

In addition to steady growth in aggregate nonfinancial corporate debt, total outstanding debt of partnerships and proprietorships, of which small businesses represent a significant fraction, rose at a moderate pace from 2012 to 2016 (figure 4).[4] The two largest components are commercial and residential mortgage debt and loans from commercial banks that are not secured by real estate. Outstanding mortgage debt rose moderately over the past several years, supported by sizable increases in both multifamily residential mortgages and commercial mortgages backed by a range of business property types. In addition, bank loans extended without real estate collateral have grown at a robust pace, reflecting in part the ongoing strengthening of bank balance sheets and a concurrent easing of standards.

However, the amount outstanding on loans to businesses by commercial banks (both with and without real estate collateral) with principal less than or equal to $1 million, which are typically extended to small firms, has shown only modest increases in recent years. Commercial bank loans with principal less than or equal to $100,000 have also seen relatively muted growth, although they grew at a robust 8.3 percent from 2015 to 2016.

Evidence suggests that the slow growth in small business credit has reflected continued weak demand. Some insights into the demand for small business financing can be inferred from small business investment plans as reported in polls conducted by the National Federation of Independent Business (NFIB).[5] According to the polls, the net percentage of firms with planned capital outlays and the net percentage that anticipated business expansions recovered very slowly from record lows during the financial crisis (figure 5, panels A and B). However, growth in late 2016 and early 2017, particularly for the net percentage that anticipated business expansions, was very strong. Data on observed demand for C&I loans, as reported in the Federal Reserve Board's Senior Loan Officer Opinion Survey on Bank Lending Practices (SLOOS), suggest that demand for loans grew steadily from the recession through 2015, although it decreased slightly in 2016 (figure 5, panel C).[6]

Credit conditions for small business lending became increasingly accommodative during the recovery from the crisis—indicating an increase in the supply of small business credit—although they remain slightly less accommodative than before the crisis.

---

[4] It should be noted that while small businesses represent a significant fraction of the number of partnerships and proprietorships, total borrowing by these firms represents a much smaller share of the total liabilities of this group. Aggregate trends should thus be interpreted with some caution.

[5] Each month, the NFIB polls a sample of its members to assess business conditions and the availability of credit for small businesses. The sample for the first month of each quarter is significantly larger than for the other two months. For instance, the January 2017 poll sampled 10,000 members, with 1,874 responses. The February and March 2017 polls sampled 5,000 members, with 764 and 704 responses, respectively. About 90 percent of the respondents have fewer than 40 employees.

[6] The SLOOS is available on the Federal Reserve Board's website at https://www.federalreserve.gov/data/sloos/sloos.htm.

Figure 3. Total debt of nonfinancial corporate businesses

Level of debt, 2011–16

Billions of dollars

Type of debt	2011	2012	2013	2014	2015	2016
Total debt	6,377	6,716	7,091	7,499	8,009	8,424
Bonds[1]	4,050	4,388	4,667	4,940	5,353	5,642
Mortgages	573	448	431	395	435	474
Bank loans[2]	629	712	786	856	936	985
Commercial paper	116	130	145	182	177	183
Other loans[3]	1,008	1,037	1,063	1,126	1,109	1,140
MEMO						
Trade debt	1,772	1,837	1,938	2,088	2,048	2,146

Note: Debt outstanding at end of period. Seasonally adjusted data.

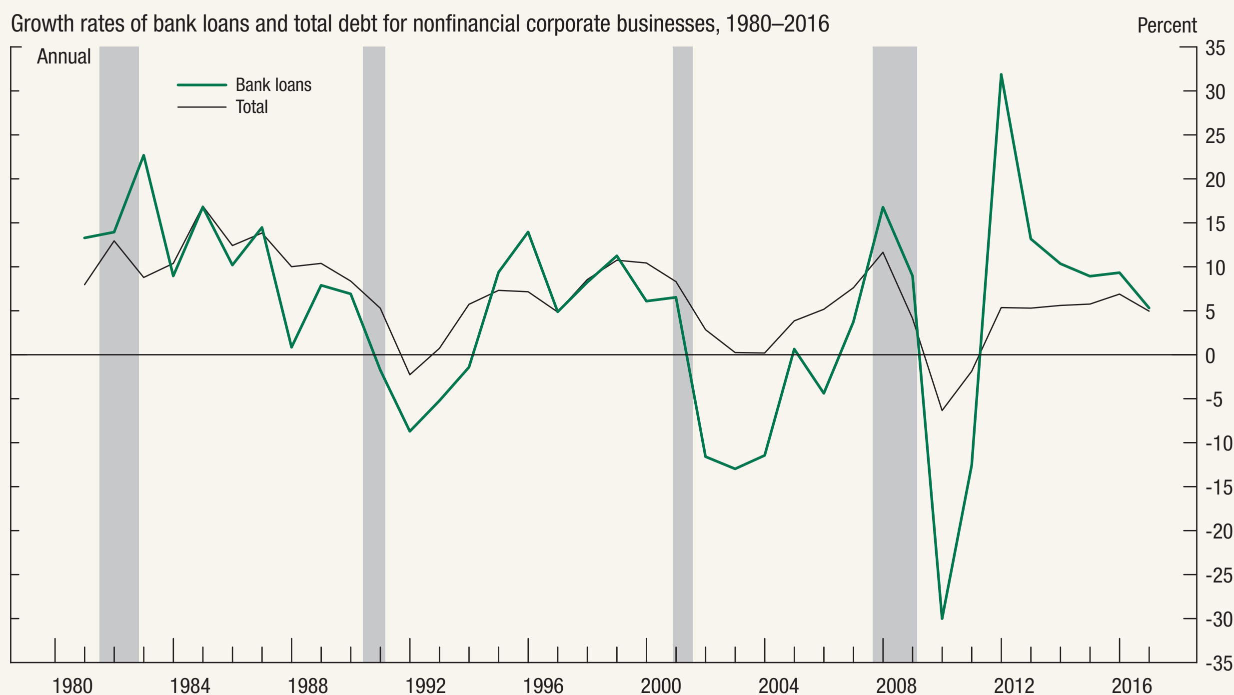
[1] Industrial revenue bonds and corporate bonds.

[2] Extended without real estate.

[3] Loans from finance and all other nonmortgage loans that are not extended by banks.

Source: Federal Reserve Board, Financial Accounts of the United States.

Growth rates of bank loans and total debt for nonfinancial corporate businesses, 1980–2016



Note: The shaded bars indicate periods of economic contraction as defined by the National Bureau of Economic Research.

Source: Federal Reserve Board, Financial Accounts of the United States.

Results from the SLOOS indicate that lending standards for small borrowers were eased a bit from 2012 through 2014, although a small net fraction of banks reported having tightened standards in 2016 (figure 6, panel A). The net percentage of respondents to the NFIB reporting that it was somewhat or very difficult to obtain credit has declined in recent years from its post-crisis high in 2009 (figure 6, panel B). In terms of borrowing costs, data from the SLOOS show that the net fraction of banks that reported narrowing loan spreads for small firms largely mirrors the same series for large and middle-market firms (figure 6, panel C). Despite this improvement, borrowing costs remain elevated

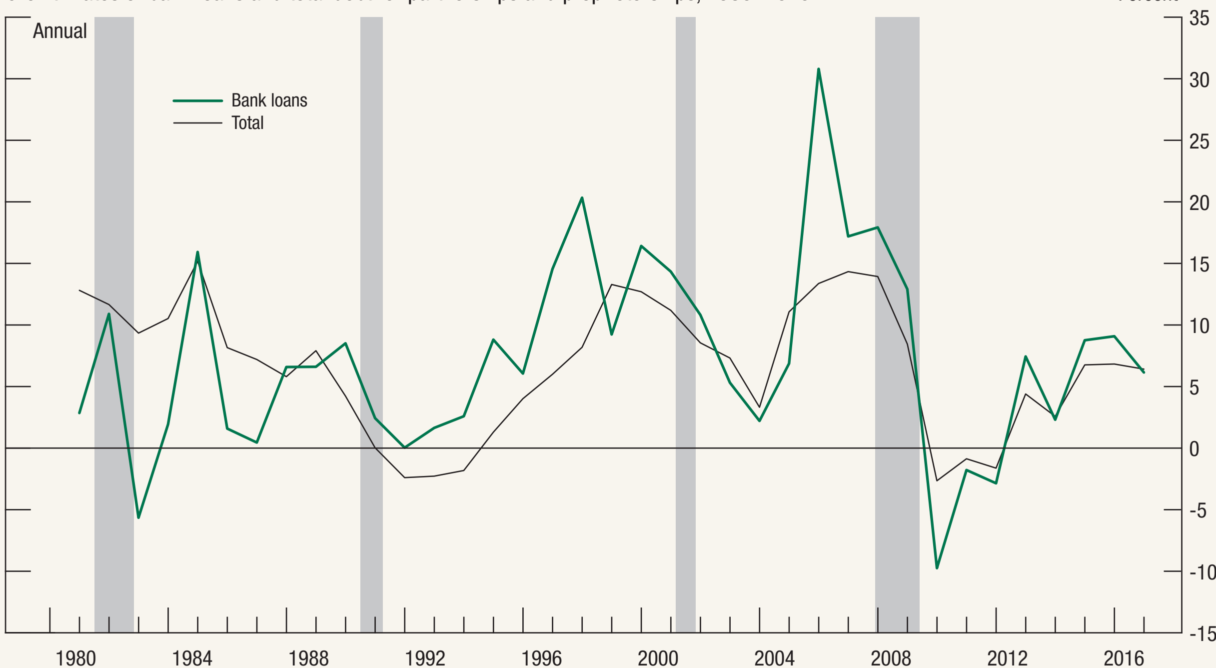
Figure 4. Total debt of partnerships and proprietorships

Level of debt, 2011–16
Billions of dollars

Type of debt	2011	2012	2013	2014	2015	2016
Total debt	3,887	4,057	4,162	4,443	4,744	5,047
Mortgages	2,814	2,909	2,985	3,170	3,368	3,595
Bank loans[1]	901	968	990	1,077	1,175	1,247
Other loans[2]	171	181	187	196	202	205
MEMO						
Trade debt	483	494	528	537	588	646

Note: Debt outstanding at end of period. Seasonally adjusted data.
1 Extended without real estate.
2 Loans from finance and all other nonmortgage loans that are not extended by banks.
Source: Federal Reserve Board, Financial Accounts of the United States.

Growth rates of bank loans and total debt for partnerships and proprietorships, 1980–2016

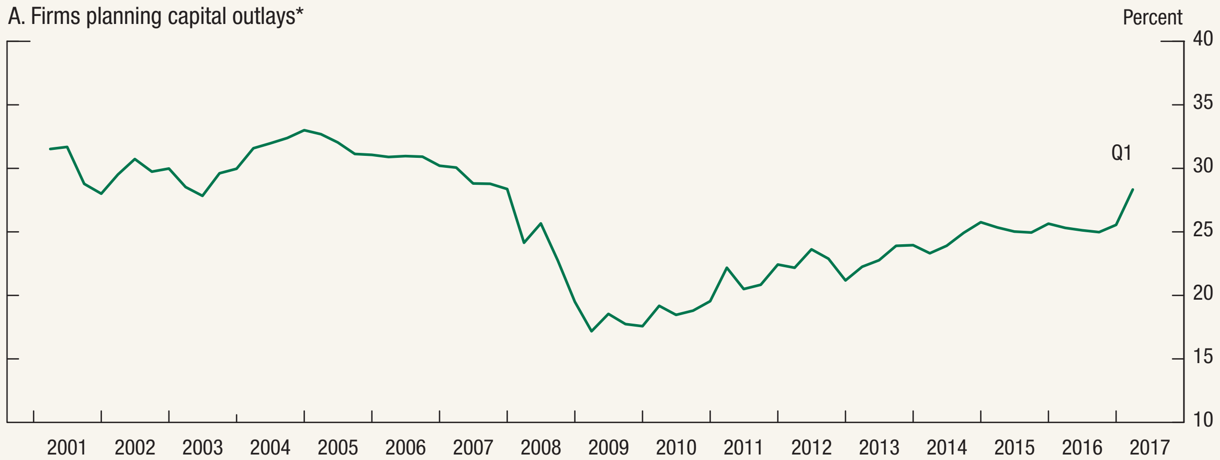


Note: The shaded bars indicate periods of economic contraction as defined by the National Bureau of Economic Research.
Source: Federal Reserve Board, Financial Accounts of the United States.

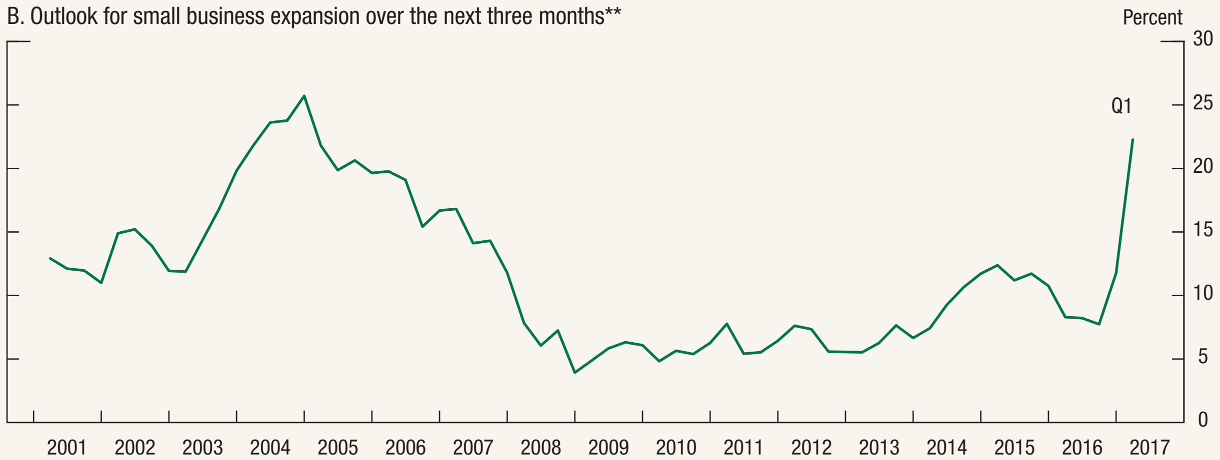
relative to their pre-crisis range. Nevertheless, responses to other questions in the NFIB polls suggest credit availability is a relatively minor concern for small businesses. In particular, since 2008, respondents are much more likely to cite weak product demand, taxes, or government regulations rather than the availability and cost of credit as the most significant problem they face (figure 7).

Figure 5. Small business outlook, 2001–17

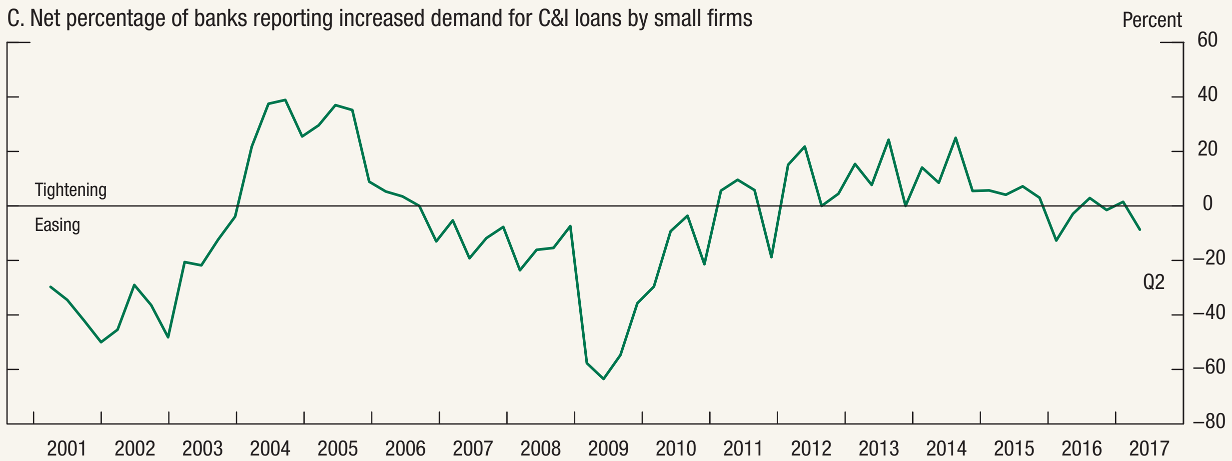
A. Firms planning capital outlays*



B. Outlook for small business expansion over the next three months**



C. Net percentage of banks reporting increased demand for C&I loans by small firms



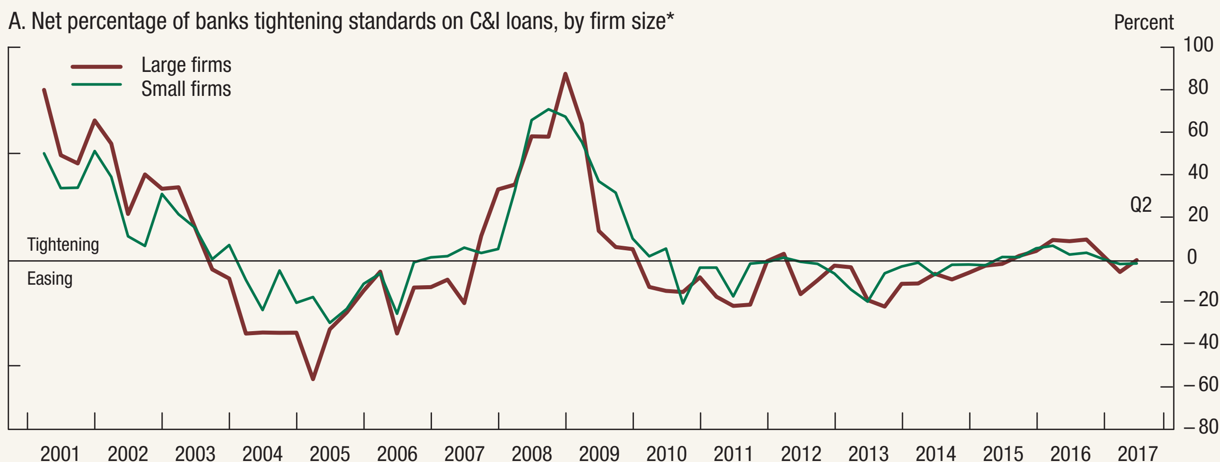
Note: NFIB data are quarterly aggregates of monthly data and are seasonally adjusted. SLOOS data are quarterly and are not seasonally adjusted. C&I is commercial and industrial.

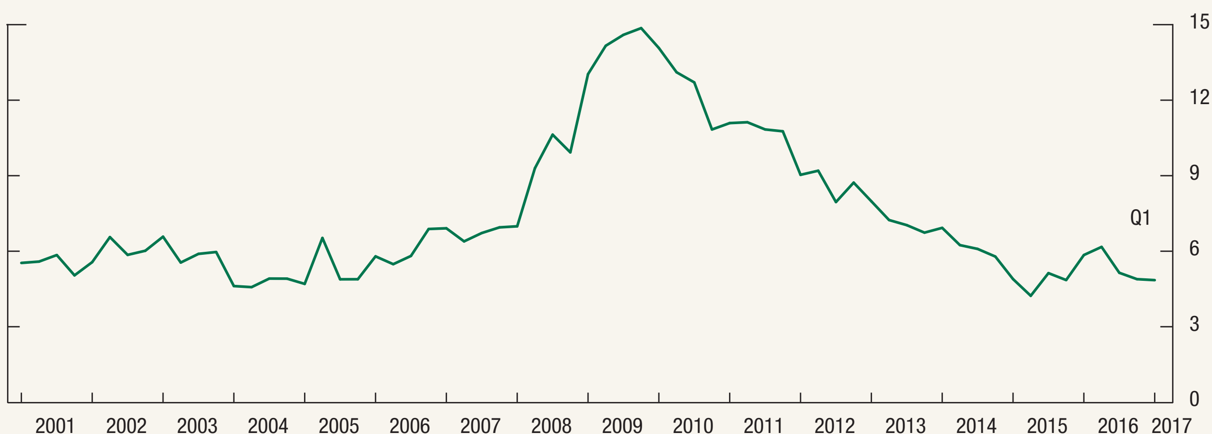
*Percentage of firms planning capital outlays in next six months.

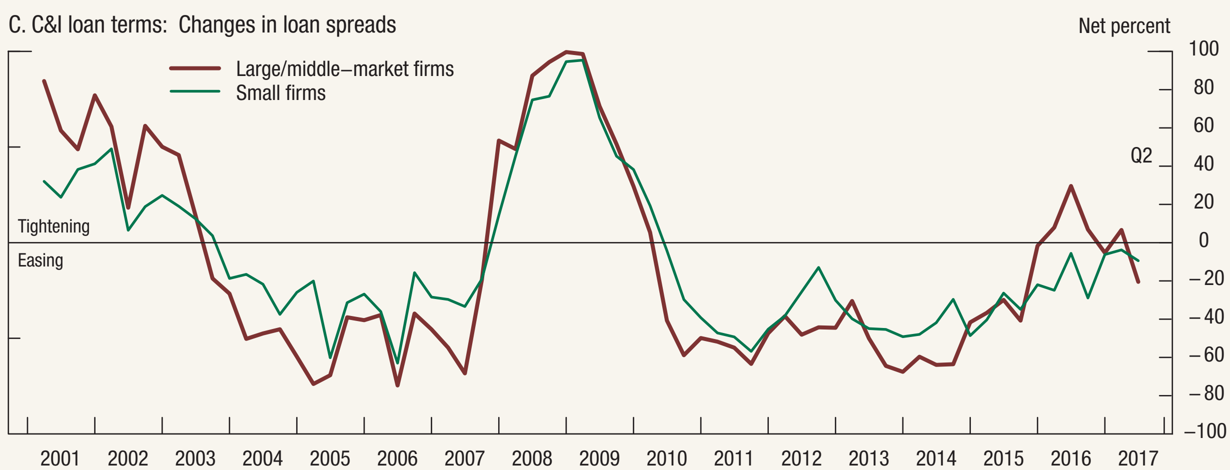
**Percentage of firms that consider the next three months a good time to expand.

Source: For panels A and B, National Federation of Independent Business (NFIB), Small Business Economic Trends; for panel C, Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices.

Figure 6. Credit availability to small businesses, 2001–17







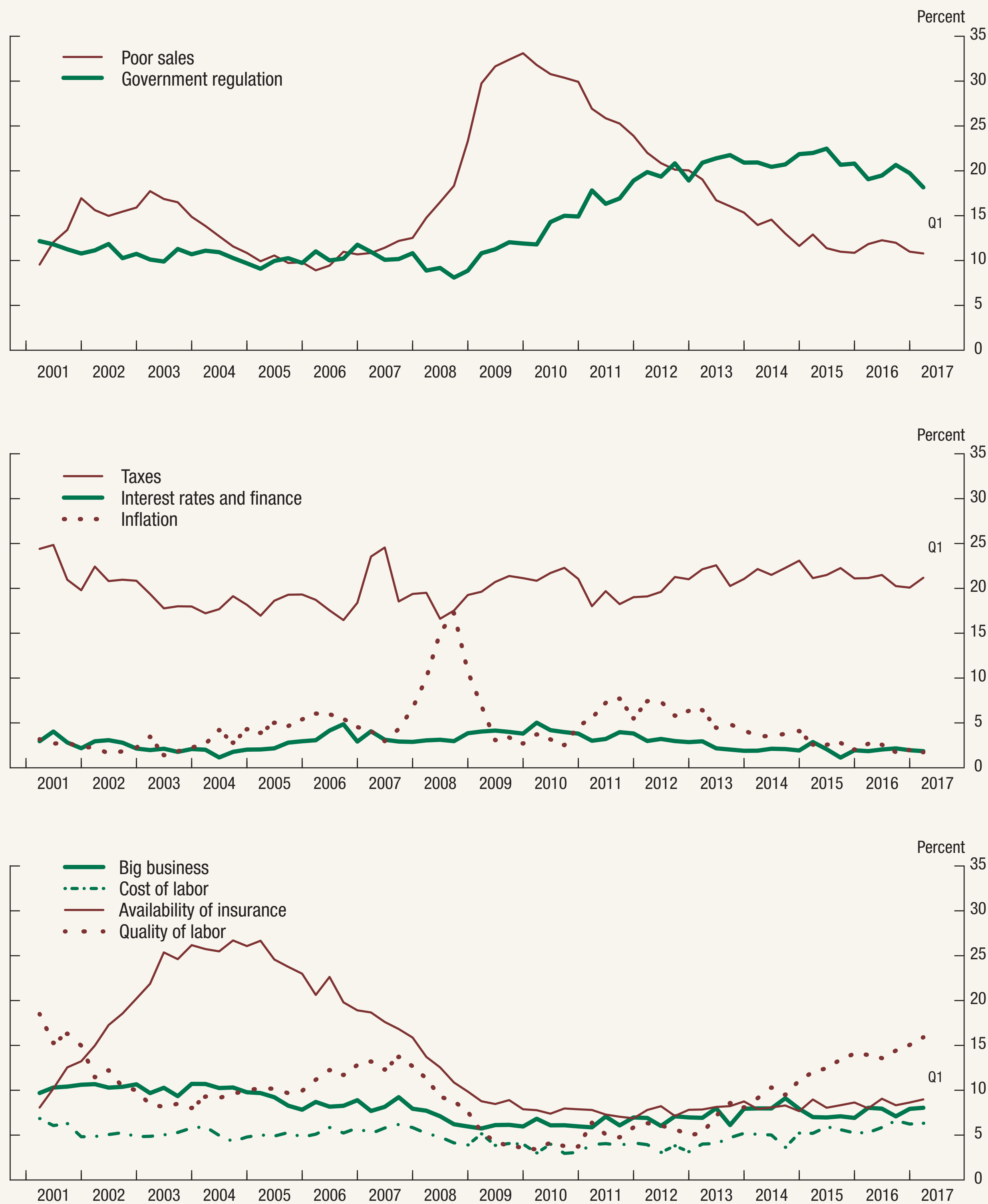
Note: For panels A and C, data are quarterly and are not seasonally adjusted. For panel B, data are quarterly aggregates of monthly data and are seasonally adjusted.

*Firms with annual sales of more than $50 million are considered large.

**This question is asked only of firms reporting that they regularly borrow.

Source: For panels A and C, Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices; for panel B, National Federation of Independent Business, Small Business Economic Trends.

Figure 7. Most important problem facing small businesses, 2001–17



Note: NFIB data are quarterly aggregates of monthly data and are seasonally adjusted.

Source: National Federation of Independent Business (NFIB), Small Business Economic Trends.

Credit Use by Small Businesses

This section examines the composition and borrowing behavior of small firms to identify characteristics that are associated with important patterns of credit use. It also discusses the special role that small businesses play in the U.S. economy and the unique challenges they face in obtaining credit.

Small Business: Definition and Background

Defining what is meant by "small business" is the difficult first step in conducting a policy-relevant analysis of the financing needs of small business. The financing needs are very different for a "mom and pop" grocery store, a microenterprise in the inner city, a high-tech start-up firm, a business that is ready to expand from early-stage growth to the next higher level, or a business that has neared the point of issuing public debt or equity. Yet the term "small business" encompasses all of these entities. According to a broad guideline used by the U.S. Small Business Administration (SBA), a small business is a firm or enterprise with fewer than 500 employees. This definition encompasses nearly all businesses in the United States.

Data from the U.S. Census Bureau's Business Dynamics Statistics indicate that there were approximately 5.1 million active employer firms across 6.7 million establishments in 2014.[7] The vast majority of these firms were small businesses according to the SBA definition, with 99.6 percent employing fewer than 500 employees, a fraction that is consistent with previous years.[8]

Table 1. Characteristics of small employer firms, 2014

Percentages	Firms	Establishments	Employment
Employment (number of employees)			
1–4	56.2	51.3	10.4
5–9	20.2	18.7	11.7
10–19	12.0	11.5	14.3
20–49	7.5	8.4	20.3
50–99	2.3	3.7	14.2
100–249	1.3	3.8	17.4
250–499	0.4	2.5	11.7
Industry			
Services	47.4	46.3	44.4
Retail trade	18.0	18.5	20.0
Finance, insurance, real estate	8.8	9.4	5.8
Construction	7.3	6.7	6.2
Wholesale trade	6.0	6.2	6.5
Manufacturing	4.4	4.3	8.8
Transportation and public utilities	3.7	3.7	3.7
Agricultural services, forestry, fishing	2.4	2.2	1.6
Sectors not classified	1.7	2.2	2.4
Mining	0.4	0.4	0.6
Census region			
Midwest	21.4	21.5	22.9
Northeast	20.4	19.8	19.6
South	35.3	34.8	34.4
West	24.4	23.9	23.1

Source: Business Dynamics Statistics, U.S. Census Bureau.

Among small businesses, more than half employ fewer than 5 employees and nearly one-third employ between 5 and 19 employees (table 1). Fewer than 2 percent of small firms employ more than 100 employees. The breakdown by number of establishments is similar, although the distribution is slightly more concentrated in the larger small businesses. The employment shares reflect a slightly different picture, with employment spread more uniformly throughout the distribution and a larger mass in the center. These last two observations are consis-

[7] The Business Dynamics Statistics is a data set for public use that consists of annual aggregate statistics describing establishment openings and closings, firm start-ups, and job creation and destruction by firm size, age, industrial sector, and state. An establishment refers to a single location, while a firm is defined at the enterprise level as all establishments under the operational control of the enterprise. For more details, see https://www.census.gov/ces/dataproducts/bds.

[8] There are an additional 23.8 million small businesses that have no employees; these firms average less than 4 percent of all sales and receipts nationally. Because of their small economic effect, these firms are excluded from the Business Dynamics Statistics. In this report, small businesses refers to small employer businesses.

tent with the fact that larger firms are likely to have both more employees and more establishments than smaller firms.

Small businesses operate in every major segment of the U.S. economy. The most common industry for small businesses in 2014 was services, which accounted for nearly half of small firms (table 1). Retail trade firms accounted for an additional 18.0 percent of firms, finance and insurance firms for another 8.8 percent, and construction firms for 7.3 percent. The remaining small businesses were principally involved in wholesale trade (6.0 percent), manufacturing (4.4 percent), transportation and public utilities (3.7 percent), and agriculture (2.4 percent).

Geographically, small businesses were widely dispersed throughout the nation, with 21.4 percent in the Midwest, 20.4 percent in the Northeast, 35.3 percent in the South, and the remaining 24.4 percent in the West. This distribution roughly reflects the 2016 population distribution, with 21.3 percent of the population living in the Midwest, 17.6 percent in the Northeast, 37.6 percent in the South, and the remaining 23.6 percent in the West (U.S. Census Bureau, Population Division, 2016).

Small businesses contribute significantly to the strength and vigor of the U.S. economy. According to the SBA, in addition to accounting for the vast majority of all firms, small businesses account for nearly one-half of private-sector employment, about two-fifths of private-sector payroll, and roughly one-third of the total export value (U.S. Small Business Administration, Office of Advocacy, 2016). In addition, most large and successful companies began as smaller firms.

The concerns of the Congress and other policymaking bodies about small business financing stem from the perception that small firms have more difficulty gaining access to credit sources than do large businesses or other types of borrowers. The source of this difficulty may be the higher cost of lending to small firms due to greater riskiness or challenges in evaluating and monitoring credit risks, or it may be inefficiencies in markets that hinder pricing of risk or impede the effective pooling of risks. To the extent that private-market impediments or inefficiencies are the source of any difficulties for small business financing, policymakers may focus on measures that mitigate these market failures. It is important to note that no one policy prescription would likely work for all small businesses, and no one definition of small business would be appropriate for all industries. As discussed in this report, credit needs and borrowing sources differ widely among small businesses.

Table 2. Failure rates of businesses, 2009 and 2014

Percentages	2009	2014
All firms	**5.0**	**4.2**
Firm age		
0	9.5	8.3
1	7.1	5.3
2–4	4.9	4.2
5–8	3.6	3.0
9+	2.5	2.3
Firm employment		
0–9	10.7	8.9
10–19	3.6	3.0
20–49	2.9	2.3
50–99	2.7	2.2
100–499	2.2	2.2

Source: Business Dynamics Statistics, U.S. Census Bureau.

Risks of Lending to Small Businesses

Lending to small businesses is generally considered riskier and more costly than lending to larger firms. Business Dynamics Statistics data, compiled by the U.S. Census Bureau, provide insights into some of the risks. Table 2 provides information on the failure rates of firms in 2009 and 2014 by the age and employment of the firm. A few important facets of small business dynamics can be observed in table 2. First, small businesses failed at a higher rate in 2009 than in 2014; during 2009, 5 of 100 businesses failed, while only 4.2 of 100 failed in 2014.

Second, the failure rate in the early years of a business—when the firm is likely to be the smallest—is quite high relative to later years. For example, nearly 1 in 10 new businesses failed within the first year of operation in 2009, while, among firms that were at least nine years old, only 1 in 50 failed. The trends are similar in 2014, with the likelihood of failure diminishing with the age of the firm, although failure rates were lower for each firm age group than in 2009.

Finally, smaller firms fail at a higher rate than larger firms. Nearly 11 percent of firms with fewer than 10 employees failed in 2009, while only 2 percent of firms with between 100 and 499 employees did so. Again, the trend for 2014 is similar with a lower baseline level.

Historically, and particularly in the early life of a business, lenders have had difficulty determining the creditworthiness of applicants for small business loans. The heterogeneity across small firms, together with widely varying uses of borrowed funds, has impeded the development of general standards for assessing applications for small business loans and has made evaluating such loans relatively expensive.

Lending to small businesses is further complicated by the "informational opacity" of many such firms. Obtaining reliable information on the creditworthiness of a small business is often difficult because little, if any, public information exists about the performance of most small businesses. Small businesses rarely have publicly traded equity or debt securities, and public information on such firms is typically sparse. Many small businesses also lack detailed balance sheets and other financial information often used by lenders in making underwriting decisions.

The cost to the lender does not end with the decision to grant a loan. Small business lenders typically have to monitor the credit arrangement with individual borrowers. For very small firms, a close association between the finances of the business and those of the owner may increase loan-monitoring costs.

Historically, the relatively elevated costs of evaluating small business loan applications and the ongoing costs of monitoring firm performance have made loans to small businesses less attractive for some lenders, especially because, when expressed as a percentage of the (small) dollar amount of the proposed loan, these noninterest costs are often quite high compared with loans to middle-market or large corporate borrowers. Financial institutions, especially commercial banks, are believed to have an advantage in dealing with information problems. Through interactions with a firm that uses its financial services, the lending institution can obtain additional information about the firm's activities, ownership, financial characteristics, and prospects that is important in deciding whether to extend credit.[9] Lenders can use information gathered over time through long-term relationships with business owners and other members of the local community to monitor the health of the business and to build appropriate incentives into loan agreements.[10] The role of relationship lending will likely continue to be significant, even as developments such as automated banking, credit scoring, and bank consolidation influence the competitive structure of the banking industry.[11]

Insights on the risks of lending to small businesses may be gained by examining delinquency rates at banks that primarily make business loans of less than $1 million, which will be referred to as small-business-lending-intensive (SBLI) banks.[12] During and following the recent financial crisis, these risks became much more obvious as small businesses struggled to keep current on their outstanding debt. Figure 8 shows the delinquency rates for C&I loans and loans secured by nonfarm nonresidential properties (NNP) for SBLI banks compared with other banks.[13] Since 2009, the C&I delinquency rate has reached historical lows but stands ½ percentage point higher at SBLI banks than other banks. For NNP loans, the story was slightly different. While delinquency rates at all banks have trended downward since 2009, the rates at non-SBLI banks declined more sharply and fell below the rates at SBLI banks in the first quarter of 2012. As of the last quarter of 2016, NNP delinquency rates had returned to pre-recession levels at SBLI banks and reached historical lows at non-SBLI banks.

Credit Use

Up-to-date and comprehensive information about the universe of small businesses is sparse, and most evidence about financing needs and sources is derived from surveys, many of which have limited

9 Banks typically provide multiple products to small businesses. The 2003 Survey of Small Business Finances indicates that small firms that obtained at least one product at a commercial bank averaged 2.1 products at that bank. The comparable average number of products at nonbanks was 1.3. Small firms with at least one product at a bank had one or more other products at that bank almost 60 percent of the time. In contrast, more than 80 percent of small firms that had a product with a nonbank provider obtained no other products from the nonbank.

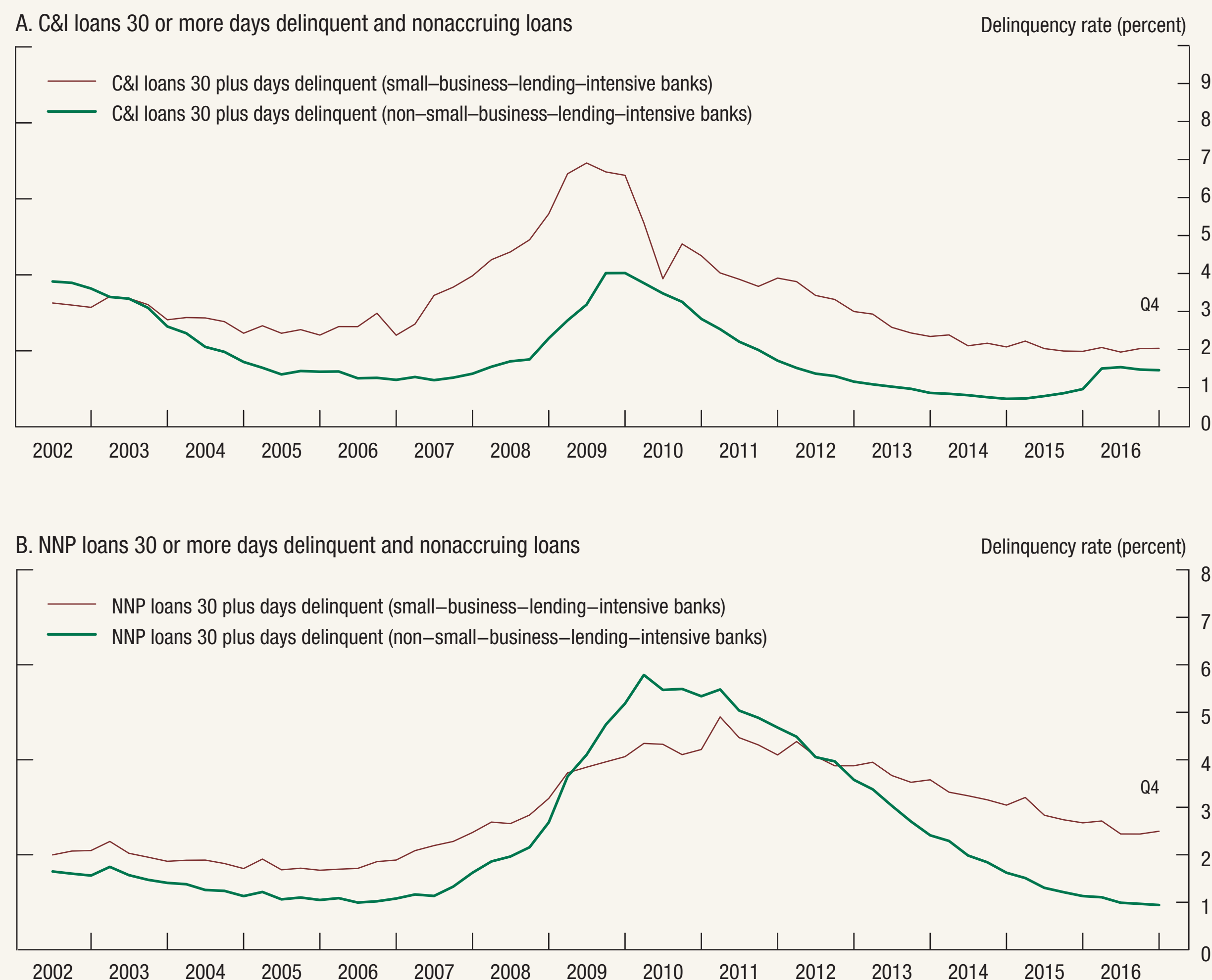
10 A detailed description of the process of relationship lending and the way it differs from nonrelationship lending is provided by Berger and Udell (2002). Boot (2000) and Berger and Udell (1998) include detailed discussions of the costs and benefits of relationship lending, including a review of the literature.

11 Recent information on community banks and relationship lending is in Critchfield and others (2004) and Avery and Samolyk (2004).

12 SBLI banks are defined as banks for which at least 80 percent of the outstanding balances on loans to businesses are loans with original principal amounts of less than $1 million.

13 Consolidated Reports of Condition and Income (Call Reports) do not provide information on delinquency rates by size of borrower or size of loan. We look at delinquency rates on all C&I loans and all NNP loans at SBLI banks as proxies for performance on small C&I and small NNP loans.

Figure 8. Delinquent nonfarm nonresidential property and commercial and industrial loans, 2002–16



Note: Beginning March 2010, the data reporting frequency changed from annual to quarterly.

Small–business–lending–intensive banks are defined as institutions where 80 percent or more of their commercial and industrial (C&I) and nonfarm nonresidential property (NNP) loans have initial values of $1 million or less. NNP loans are loans secured by nonfarm, nonresidential real estate. Data are unweighted.

Source: The data are constructed from special tabulations of Call Reports (Consolidated Reports of Condition and Income for U.S. Banks, Schedule RC–C, Part II: Loans to Small Businesses and Small Farms) dated June 30, 2001, to December 31, 2016.

coverage or rely on nonrepresentative samples. In response to the lack of information on small businesses, the Federal Reserve Banks initiated a convenience sample survey of small businesses, which is described in the box "The Small Business Credit Survey." In addition, the U.S. Census Bureau launched the Annual Survey of Entrepreneurs (ASE) in 2015. The ASE surveys a representative sample of approximately 290,000 firms with paid employees from the universe of private nonagricultural firms. It collects demographic information on up to four individual owners as well as firm-specific information.[14]

The survey that was fielded in 2015 solicited information on the firm for 2014. The owner-specific questions cover age, sex, educational attainment, citizenship, ethnicity, race, and veteran status. Firm-specific questions cover a variety of topics, including the year the business was established, how it was funded initially and in the current year, worker types, customer types, digital presence, global presence, and business operations.[15] There are also questions on firm owners' motivations for starting the firm, aspirations for the firm, financial challenges, and profit-

[14] For more information on the ASE, see Foster and Norman (2016, 2017).

[15] For a full list of the questions asked in the survey, refer to U.S. Census Bureau (2014).

ability.[16] At the writing of this report, only data for 2014 are available.[17]

Types of Credit Used

Data from the ASE provide useful insights into credit use by small businesses. Although the use of a particular type of credit is influenced by both demand and supply factors, the data are nonetheless valuable in developing a picture of the demand for credit by small businesses. The data reveal patterns at both the aggregate and the firm levels.

Small businesses use a variety of types of credit to fulfill their financial needs, including banks and other financial institutions; loans from owners; loans from family and friends; outside investors, such as angel investors, venture capitalists, and other businesses; and grants from various government agencies. The ASE collects information on how much new money was received from these sources in 2014. It is important to note that the ASE does not collect information on money received before 2014 and so does not provide a distribution of the complete debt holdings of the firm. It also does not distinguish between monies used from a business versus personal credit card or loans. Nor does it distinguish between banks and other types of finance companies. Nonetheless, understanding where current financing comes from is helpful in understanding small business credit use. Patterns for each product are discussed in the following.

Banks and Other Financial Institutions

Formally, small businesses receive external funding from banks and other financial institutions in the form of business loans, business credit cards where the business carries a balance, and lines of credit. In 2014, about two-thirds of businesses reported having received no funding from this source (table 3). Among firms receiving credit from financial institutions, nearly 26 percent received more than $250,000 in funding from these traditional channels.

By age, young businesses were less likely to have received funding from banks or other financial institutions. The likelihood generally increased with a business's age. Among firms that did receive such financing, there is generally an inverse relationship between the age of the firm and the size of the funding received, with older firms being more likely to borrow larger amounts.

Asian-owned firms were least likely to have received a business loan or credit card from a bank, while American Indian-owned firms were most likely to have received bank financing. However, among the recipients of this type of financing, the size of the loan generally appears evenly distributed by race and ethnicity, although a smaller share of black-owned and Hispanic-owned businesses received loans of $100,000 or more. Male-owned firms were a few percentage points more likely than their female-owned counterparts to have received traditional financing. Conditional on borrowing, male-owned firms were also more likely to have received larger loans than female-owned firms.

There is substantial variation in usage of funding from banks and finance companies by industry. Approximately half of unclassified firms and firms in agriculture received such funding in 2014, compared with only one-fourth of firms in real estate and in finance and insurance. There is also large variation in the size of the loans received by industry. For example, 79 percent of management firms receiving credit from financial institutions received loans of $250,000 or more, compared with 20 percent of firms engaged in professional and technical services.

Owner Loans

Small business owners often provide funding for their businesses from their personal savings, retirement accounts, or home equity loans or from funds they borrow personally. In 2014, about 55 percent of firms received funding from their owners, with 20 percent of those firms receiving $250,000 or more (table 4). The pattern of use as well as the size of the loan varies greatly by age of the firm; the race, gender, and ethnicity of the owners; and the industry.

Only 29 percent of firms less than 2 years old did not receive funding from their owners. The more established a firm is, the less likely it is to have received owner funding in 2014, with only 44 percent of firms more than 15 years old receiving such funds. The higher propensity of younger firms to use owner loans may be related to an inability to access a traditional bank loan without an established track history.

[16] Data by firm employment size are not available. As a result, all statistics from the ASE include both small and large businesses. However, given that businesses with fewer than 500 employees make up 99.6 percent of all businesses, these statistics should accurately represent credit use by small businesses.

[17] The 2015 data became available too late for inclusion in the report.

Box 1. The Small Business Credit Survey

The Small Business Credit Survey (SBCS) attempts to strengthen our understanding of small business financing needs, and the extent to which these needs are being met, by asking business owners about their credit needs and experiences.

Background

The 2007–09 recession and accompanying financial crisis brought about a significant reduction in lending to businesses of all sizes. Evidence from a variety of sources suggests that the volume of lending to large firms recovered quickly but that, even after several years, small business loan volumes had yet to return to pre-crisis levels (Board of Governors, 2012). Given the importance of small businesses to the U.S. economy and the importance of access to credit to small business growth and performance, policymakers have a strong interest in understanding the dynamics of the small business credit environment.

With limited data available on small business credit conditions, the 12 Federal Reserve Banks conducted a series of meetings in 2010 to gather information and perspectives on small business access to credit. Following these meetings, several Reserve Banks conducted regional surveys of business owners in their Districts to gather information on the owners' credit market experiences. In 2014, 4 Reserve Banks—Atlanta, Cleveland, New York, and Philadelphia—collaborated on a joint survey. In 2015, 7 Reserve Banks participated in the SBCS. By 2016, all 12 Reserve Banks were participating in the survey.

About the Survey

The SBCS is a convenience sample survey conducted in partnership with business and industry associations, local agencies, and nonprofits. The survey captures the perspectives of business owners who operate firms with fewer than 500 employees in the coverage area. The results are weighted to reflect the full population of businesses in the covered states along the dimensions of industry, age, employee size, and geography, but they may not be completely representative of all small businesses.

The SBCS questionnaire covers firm performance and challenges as well as financing needs and experiences. With respect to firm performance and challenges, small businesses were asked about changes in revenue, in number of employees, in outlook for the business, and in financial challenges facing the business. With respect to financing needs and borrower experiences, businesses were asked about sources of financing, credit products used, and experiences applying for and obtaining credit.

Selected Results from the 2016 Small Business Credit Survey

The 2016 SBCS, which was fielded in the third and fourth quarters of 2016, yielded 10,303 responses from employer firms in 50 states and the District of Columbia.[1] Key findings on credit access from the survey highlight the importance of personal finances in the operations of many small businesses and suggest that some small businesses experienced difficulty obtaining sufficient financing. Table A indicates that about one-fifth of firms rely on personal funds as their primary source of funding. The fraction increases to one-fourth for firms with less than $1 million in revenues.[2]

1 A total of 15,991 firms responded to the survey; 10,303 were employer firms.

2 The Reserve Banks also produce a series of reports that separately examine businesses with $1 million or less in revenues, such as start-ups, minority-owned firms, and women-owned firms. The most recent report examines start-up firms (Federal Reserve Bank of New York, 2017).

(continued on next page)

By race, gender, and ethnicity of the owner, black-owned firms were the most likely to have received owner loans, while white-owned firms were the least likely. Female-owned firms were more likely to have received owner loans than their male-owned counterparts. Conditional on receiving an owner loan, however, female-owned businesses were less likely to have borrowed at least $100,000.

By industry, loans from owners are most common among unclassified firms and least common among management companies. Among unclassified firms that had an owner loan, more than one-fourth received $250,000 or more in funding from their owners. The distribution of loan sizes across industry looks similar to the distribution of loan sizes across age, race, and gender categories.

Family and Friends

Small businesses may also turn to family and friends when more traditional sources of finance are not

Box 1. The Small Business Credit Survey—*continued*

Table A. Primary funding source by revenue size of the firm
Percent

	Retained earnings	Personal funds	External financing
All firms	**64**	**21**	**15**
Less than or equal to $1 million	63	25	12
Greater than $1 million	69	11	20

Source: 2016 Small Business Credit Survey, Report on Employer Firms.

Table C. Financing received by revenue size of the firm
Percent of applicants

	All	Part	None
All firms	**40**	**36**	**24**
Less than or equal to $1 million	33	38	29
Greater than $1 million	55	31	14

Source: 2016 Small Business Credit Survey, Report on Employer Firms.

Table B. Application and approval rates for loan and line of credit products
Percent of firms that applied

	Application rate	Approval rate
Business loan	51	58
Line of credit	41	68
SBA loan or line of credit	23	55
Auto or equipment loan	15	79
Personal loan	14	57
Cash advance	9	72
Mortgage	7	68

Note: The approval rate reflects firms that received at least partial funding. SBA is the U.S. Small Business Administration.

Source: 2016 Small Business Credit Survey, Report on Employer Firms.

Fewer than half of small businesses (45 percent) applied for credit in the past year. Table B breaks down the types of loans that firms sought. A business loan was the most common type of application, with just over half of firms that applied for credit applying for this type of loan. Just under 60 percent of these applications were approved.[3] While only 15 percent of businesses that applied for credit applied for an auto or equipment loan, nearly 80 percent of such applications were approved. Just under one-fourth of firms that applied for credit applied for a U.S. Small Business Administration loan or line of credit; the approval rate for these applications was the lowest for any loan type at 55 percent.

Table C provides information on the share of applicants that received all, part, or none of the funding for which they applied. Only two-fifths of firms applying for credit received all of the funding they requested, although an additional one-third received partial funding. The smallest firms were more likely than larger firms to receive either partial funding or no funding. For full results on the SBCS, see Federal Reserve Bank of Atlanta and others (2017).

[3] In the SBCS, "approval" is defined as a firm receiving at least some of the financing sought.

available. The ASE asked business owners to report the total amount of money the business received from family, friends, and employees. In 2014, the majority of firms did not receive funding from family and friends (87.5 percent), with 10 to 20 percent of recipients receiving each of the loan sizes reported, conditional on receiving any funding (table 5).

As with loans from owners, loans from family and friends are less frequent as the firm ages. Slightly more than 80 percent of firms less than 2 years old received no funding from family and friends, compared with 90 percent of firms more than 15 years old, with the rate of disuse rising steadily with age. When funding is received, the distribution of the loan size from family and friends is roughly the same across age groups.

White-owned firms are the least likely race category to have received any funding from family and friends, while Asian-owned firms are the most likely. Male-owned firms are slightly less likely to have received such a loan than a female-owned firm.

Table 3. Use of bank credit, 2014

Category of firm	Percent	Percent, conditional on using any						
	$0	$1–$4,999	$5,000–$9,999	$10,000–$24,999	$25,000–$49,999	$50,000–$99,999	$100,000–$249,999	$250,000 or more
All firms	**65.4**	**5.8**	**7.2**	**19.1**	**12.7**	**14.5**	**14.5**	**25.7**
Age of firm (years)								
Less than 2	68.1	7.8	9.1	21.6	13.5	12.9	12.5	22.6
2 to 3	68.0	7.8	9.4	21.3	13.4	14.7	12.5	21.3
4 to 5	66.8	6.6	8.1	20.5	13.3	14.5	14.5	22.3
6 to 10	64.2	6.4	7.5	20.7	12.6	14.8	14.5	23.5
11 to 15	65.0	5.1	6.6	18.3	12.9	15.1	15.1	26.9
16 or more	59.7	2.5	2.5	10.9	9.2	10.9	13.6	50.4
Gender, race, and ethnicity of owners								
Female	68.1	8.5	10.0	22.6	13.2	13.5	12.2	20.4
Male	64.9	5.4	6.8	18.5	12.8	14.8	15.1	26.5
Hispanic	64.3	7.8	9.8	22.1	12.9	15.1	11.8	20.2
White	64.8	5.7	7.4	19.6	13.4	14.8	14.5	24.7
Black or African American	63.9	9.4	9.7	21.3	13.3	15.2	10.5	20.8
American Indian and Alaska Native	61.9	8.1	7.3	20.7	13.9	13.1	13.9	23.1
Asian	68.7	7.0	7.3	17.9	10.2	13.4	15.3	28.8
Minority	66.5	7.5	8.4	19.7	11.3	14.3	13.7	24.8
Industry								
Accommodation and food services	66.3	6.8	8.0	19.6	11.6	13.6	13.4	27.0
Admin, support & waste management, and remediation svcs	63.1	7.6	8.1	23.0	14.1	15.7	12.2	19.0
Agriculture, forestry, fishing, and hunting	50.6	4.0	4.3	10.1	9.9	15.6	18.2	37.9
Arts, entertainment, and recreation	70.9	7.2	7.6	19.2	15.1	10.7	16.5	23.7
Construction	60.1	4.5	7.3	19.8	13.8	16.5	15.0	23.1
Educational services	71.8	9.6	12.8	26.2	11.3	11.3	9.6	19.1
Finance and insurance	75.4	7.7	8.1	22.4	13.4	13.0	10.6	24.4
Health care and social assistance	66.9	6.0	6.9	19.0	12.7	15.4	15.7	23.6
Industries not classified	48.3	2.3	1.5	8.7	7.0	11.8	20.9	47.6
Information	71.4	7.0	8.0	21.3	12.2	12.6	12.2	26.2
Management of companies and enterprises	59.5	0.7	0.5	2.7	4.2	4.7	8.1	79.0
Manufacturing	57.4	3.5	5.2	14.3	10.1	13.8	16.4	36.9
Mining, quarrying, and oil and gas extraction	66.9	3.6	3.9	8.8	11.5	13.3	14.8	44.4
Other services (except public administration)	64.2	8.4	10.1	24.0	14.8	14.5	10.6	17.6
Professional, scientific, and technical services	72.8	8.1	9.2	22.4	14.0	14.0	12.9	19.9
Real estate and rental and leasing	74.3	6.6	7.0	14.4	10.5	9.7	13.6	38.5
Retail trade	60.4	4.8	6.3	18.7	13.4	15.2	15.7	26.3
Transportation and warehousing	53.5	3.2	5.4	15.7	12.5	17.0	17.4	28.8
Utilities	64.3	3.6	0.0	13.7	9.2	15.1	4.2	53.8
Wholesale trade	61.4	3.4	4.1	11.4	9.1	12.2	17.4	42.5

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

Among the firms that received a loan from family and friends, a smaller share of American Indian– and black-owned businesses received loans of $100,000 or more, while Asian-owned businesses were slightly more likely to receive those large loans.

By industry, firms in accommodation and food services were most likely to have received a loan from family and friends, while firms in utilities were the least likely. In general, the firms that were unlikely to have received loans from their owners were also the types of firms that were unlikely to have received loans from family and friends.

Outside Investors and Grants

The ASE also asked firms how much they received from outside investors such as angel investors, venture capitalists, and other investment businesses. Less than 1 percent of businesses across all categories

Table 4. Use of owner funding, 2014

Category of firm	Percent	Percent, conditional on using any						
	$0	$1– $4,999	$5,000–$9,999	$10,000–$24,999	$25,000–$49,999	$50,000–$99,999	$100,000–$249,999	$250,000 or more
All firms	**45.3**	**11.2**	**9.9**	**23.0**	**10.8**	**13.0**	**12.6**	**19.6**
Age of firm (years)								
Less than 2	29.2	10.9	9.9	23.7	11.2	12.9	12.1	19.2
2 to 3	35.6	11.0	10.2	23.0	11.0	13.4	12.4	19.1
4 to 5	39.7	11.1	10.1	22.7	10.9	12.9	12.3	19.6
6 to 10	44.1	11.8	10.2	23.1	10.9	12.3	12.0	19.7
11 to 15	51.6	11.2	9.5	23.1	10.5	13.2	13.0	19.2
16 or more	56.3	8.0	7.3	18.3	10.3	11.9	17.2	26.8
Gender, race, and ethnicity of owners								
Female	43.7	14.0	11.9	23.3	11.5	11.9	10.1	17.2
Male	46.1	10.6	9.1	22.8	10.4	13.2	13.5	20.4
Hispanic	35.1	10.5	11.4	25.1	12.2	12.3	9.7	18.8
White	47.1	11.7	10.0	23.1	11.0	12.9	12.5	18.9
Black or African American	26.5	10.6	9.4	24.9	12.9	12.8	10.5	19.0
American Indian and Alaska Native	37.0	11.7	10.3	20.3	13.0	16.3	10.0	18.1
Asian	33.4	7.8	8.4	20.9	9.3	14.0	15.3	24.2
Minority	33.5	9.0	9.5	22.7	10.7	13.4	12.9	21.8
Industry								
Accommodation and food services	36.7	7.7	9.6	22.1	10.7	13.4	13.9	22.4
Admin, support & waste management, and remediation svcs	45.2	15.0	12.6	25.7	10.6	10.9	9.1	16.1
Agriculture, forestry, fishing, and hunting	43.0	9.6	6.7	20.5	10.7	14.6	18.1	19.6
Arts, entertainment, and recreation	42.3	12.3	10.2	20.5	10.2	13.3	11.3	22.0
Construction	45.7	12.2	11.6	27.3	11.4	12.7	10.1	14.9
Educational services	41.3	16.9	11.9	23.7	11.4	11.1	9.2	16.0
Finance and insurance	44.1	9.8	7.5	19.3	11.3	15.6	15.6	20.9
Health care and social assistance	44.7	10.3	8.5	21.7	10.7	13.9	14.5	20.3
Industries not classified	22.6	6.7	2.8	16.7	7.5	12.8	20.5	32.9
Information	49.5	12.3	8.5	22.0	9.5	11.5	13.7	22.4
Management of companies and enterprises	66.2	4.7	2.4	8.6	4.7	12.4	24.3	42.9
Manufacturing	51.3	8.4	8.0	20.3	10.9	13.6	14.8	24.0
Mining, quarrying, and oil and gas extraction	52.6	9.7	5.3	14.3	8.9	14.3	21.7	25.9
Other services (except public administration)	40.2	13.2	11.7	26.1	12.0	11.5	9.7	15.9
Professional, scientific, and technical services	51.9	15.6	11.9	23.7	9.8	11.2	10.4	17.5
Real estate and rental and leasing	47.2	12.1	9.3	21.6	10.8	13.3	12.3	20.6
Retail trade	42.3	8.0	8.8	22.0	11.3	13.7	14.4	21.7
Transportation and warehousing	42.0	8.8	8.1	23.1	12.4	15.7	13.8	18.4
Utilities	53.4	21.5	4.7	30.7	6.7	4.3	10.7	21.7
Wholesale trade	51.1	8.8	6.3	18.0	9.0	13.5	17.6	26.8

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

reported having received such funding. Similarly, almost no firms reported receiving funding from government grants such as the Small Business Innovation Research and the Small Business Technology Transfer programs.[18]

[18] Outside investors and government grants are very rare among small businesses.

Summary of Credit Use

The use of credit products exhibits some clear patterns. Among all of the types of financing small businesses were asked about, owner financing was the most commonly used type, followed by financing from banks and other finance companies. While grants and outside investors provide vital financing for certain small businesses, this type of funding is only given to a very small share of firms.

Table 5. Use of credit from friends and family, 2014

Category of firm	Percent	Percent, conditional on using any						
	$0	$1– $4,999	$5,000–$9,999	$10,000–$24,999	$25,000–$49,999	$50,000–$99,999	$100,000–$249,999	$250,000 or more
All firms	**87.5**	**19.2**	**12.0**	**23.2**	**10.4**	**11.2**	**9.6**	**14.4**
Age of firm (years)								
Less than 2	80.8	16.7	13.0	23.4	9.9	11.5	9.4	16.1
2 to 3	82.7	18.5	12.7	24.3	10.4	11.6	9.2	13.9
4 to 5	85.1	18.1	11.4	24.8	9.4	10.7	10.1	14.8
6 to 10	87.7	19.5	13.0	22.8	9.8	10.6	9.8	14.6
11 to 15	90.1	20.2	11.1	22.2	10.1	12.1	10.1	14.1
16 or more	90.1	17.2	8.1	23.2	8.1	12.1	11.1	20.2
Gender, race, and ethnicity of owners								
Female	85.6	19.4	14.6	24.3	9.7	10.4	8.3	13.2
Male	87.9	19.0	11.6	23.1	9.9	11.6	9.9	14.9
Hispanic	82.4	21.0	13.6	23.9	9.1	10.8	8.0	14.2
White	89.0	20.0	12.7	23.6	10.0	10.9	9.1	13.6
Black or African American	81.4	21.5	14.0	25.3	9.7	9.1	4.8	15.1
American Indian and Alaska Native	88.2	15.3	14.4	25.4	11.0	17.8	4.2	11.9
Asian	73.7	14.1	10.3	24.0	10.3	12.5	12.2	16.7
Minority	77.9	16.3	11.8	24.0	10.0	11.8	10.4	15.8
Industry								
Accommodation and food services	79.1	15.8	12.4	23.4	11.5	12.0	10.5	14.8
Admin, support & waste management, and remediation svcs	89.6	24.0	16.3	23.1	8.7	8.7	5.8	13.5
Agriculture, forestry, fishing, and hunting	88.0	21.7	8.3	26.7	10.0	10.0	13.3	10.0
Arts, entertainment, and recreation	86.3	22.6	12.4	20.4	8.8	10.2	13.1	11.7
Construction	89.3	22.4	15.0	25.2	9.3	10.3	6.5	11.2
Educational services	84.7	22.2	14.4	22.9	8.5	9.2	8.5	14.4
Finance and insurance	91.2	21.6	11.4	19.3	8.0	11.4	10.2	18.2
Health care and social assistance	89.0	20.0	11.8	21.8	9.1	13.6	10.0	13.6
Industries not classified	90.3	28.9	12.4	15.5	8.2	7.2	10.3	16.5
Information	89.2	17.6	9.3	24.1	7.4	9.3	13.0	20.4
Management of companies and enterprises	93.2	7.4	7.4	5.9	7.4	19.1	22.1	30.9
Manufacturing	88.4	14.7	9.5	21.6	11.2	12.1	12.1	19.8
Mining, quarrying, and oil and gas extraction	89.7	14.6	11.7	12.6	4.9	16.5	15.5	23.3
Other services (except public administration)	83.9	21.1	12.4	25.5	11.8	9.9	7.5	11.8
Professional, scientific, and technical services	91.2	22.7	13.6	23.9	8.0	9.1	9.1	14.8
Real estate and rental and leasing	90.3	20.6	9.3	20.6	9.3	13.4	11.3	17.5
Retail trade	82.8	15.1	10.5	23.8	11.6	12.8	11.0	15.1
Transportation and warehousing	86.1	18.7	11.5	26.6	10.8	12.2	7.9	12.2
Utilities	94.8	19.2	11.5	36.5	0.0	0.0	0.0	30.8
Wholesale trade	88.1	13.4	8.4	19.3	8.4	13.4	16.8	19.3

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

There is a clear relationship between firm age and credit use. Young small businesses are more likely to tap into informal sources of credit such as funding from owners or family and friends, while older firms are more likely to receive funding from more traditional sources. This difference is likely tied to the greater informational opacity of new firms. This opacity might make evaluating creditworthiness more difficult for lenders, which could reduce the supply of more formal credit available to young firms.

Credit Application Experience

In some cases, small businesses may have wanted more credit than they received but were unable to obtain it.

Types of Credit Used

The ASE collects information on whether the business sought to establish new funding relationships in 2014 by whether such applications were attempted

Table 6. Credit application experience: Banks, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**13.0**	**87.0**	**73.5**	**26.5**
Age of firm (years)				
Less than 2	14.5	85.5	61.5	38.5
2 to 3	13.8	86.2	65.7	34.3
4 to 5	14.6	85.4	69.3	30.7
6 to 10	13.7	86.3	72.0	28.0
11 to 15	11.8	88.2	79.3	20.7
16 or more	15.8	84.2	84.9	15.1
Gender, race, and ethnicity of owners				
Female	11.1	88.9	67.4	32.6
Male	13.7	86.3	74.5	25.5
Hispanic	14.5	85.5	60.7	39.3
White	13.1	86.9	75.3	24.7
Black or African American	17.7	82.3	46.6	53.4
American Indian and Alaska Native	16.5	83.5	68.3	31.7
Asian	12.0	88.0	65.1	34.9
Minority	13.5	86.5	60.9	39.1
Industry				
Accommodation and food services	12.3	87.7	69.2	30.8
Admin, support & waste management, and remediation svcs	15.4	84.6	74.5	25.5
Agriculture, forestry, fishing, and hunting	21.7	78.3	86.9	13.1
Arts, entertainment, and recreation	10.9	89.1	69.0	31.0
Construction	16.2	83.8	76.1	23.9
Educational services	10.2	89.8	61.0	39.0
Finance and insurance	8.2	91.8	70.9	29.1
Health care and social assistance	12.4	87.6	77.0	23.0
Industries not classified	18.3	81.7	84.7	15.3
Information	10.3	89.7	71.6	28.4
Management of companies and enterprises	20.2	79.8	86.1	13.9
Manufacturing	17.5	82.5	77.3	22.7
Mining, quarrying, and oil and gas extraction	15.1	84.9	82.7	17.3
Other services (except public administration)	12.6	87.4	68.3	31.7
Professional, scientific, and technical services	9.1	90.9	70.1	29.9
Real estate and rental and leasing	10.0	90.0	79.5	20.5
Retail trade	13.2	86.8	69.9	30.1
Transportation and warehousing	22.9	77.1	78.9	21.1
Utilities	12.1	87.9	84.0	16.0
Wholesale trade	15.2	84.8	74.3	25.7

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

and, if attempted, were fully funded for several types of credit. As with credit received, the survey does not distinguish between business versus personal credit card or loan applications. Nor does it distinguish between banks and other types of finance companies. In addition, it does not collect information on the amount of funding sought. Patterns for each product application are discussed in the following.

Banks and Other Financial Institutions

Table 6 indicates that the majority of firms (87 percent) did not apply for a new loan with a bank in 2014.[19] Among the firms that did apply, nearly three-fourths received the full amount for which they applied. By age, the oldest firms were the most likely to apply and the most likely to have their application fully funded. There is no clear pattern in the share of the other age categories of firms that applied for

[19] The question groups together banks, credit unions, and "other financial institutions." For ease of exposition, such loan applications will be referred to as bank loan applications.

bank funding, but the share of firms that received full funding increases with age.

There are also interesting patterns by race and ethnicity of the firm owners. While black-owned firms were the most likely to have applied for bank financing, less than 47 percent of these applications were fully funded. This rate of failure to receive full financing is the highest among all categories by more than 10 percentage points. Additionally, female-owned firms were slightly less likely to apply than their male counterparts but more likely to be turned down.

Generally, there is variation across industries in the probability of applying for a bank loan and, conditional on applying, of being fully funded. Firms in finance and insurance were the least likely to have applied for a bank loan, with fewer than 10 percent of such firms applying. About 30 percent of such firms that did apply did not receive full funding. Firms engaged in agriculture, forestry, fishing, and hunting had the second highest rates of application (21.7 percent), with the lowest rate of failure.

Credit Cards

Credit cards can serve as a convenient alternative to paying expenses by cash or check if a business pays balances on time and in full each month. They can also be a substitute for traditional forms of credit when balances are carried month to month. Survey evidence from earlier periods suggests that credit cards are used by small business owners primarily for convenience.[20]

Credit cards used for business purposes can be issued to the firm itself or to the owners of the firm, who may also use their personal credit cards for business expenses. While the ASE does not specify whether the application is for a personal card or a business card, one assumes that the application for a credit card refers to one to be used for business purposes. Table 7 indicates that credit card applications were slightly less frequent than bank loan applications, although a bit more likely to have been approved. Older businesses are less likely to apply for a credit card but have higher approval rates.

[20] Data from the Survey of Small Business Finances for 1998 and 2003 indicate that in 1998, 76 percent of small businesses that used either business or personal credit cards paid off their balances each month; in 2003, this figure was 70.7 percent. For more information, see Mach and Wolken (2006) and Bitler, Robb, and Wolken (2001).

By race, black-owned firms were the most likely group to have applied for a credit card and experienced the highest turn-down rate. Asian-owned firms were the least likely minority-owned type to have applied and also experienced an elevated denial rate. Hispanic-owned firms were more likely than any racial category to have applied and also experienced elevated denial rates. By gender, male-owned firms were slightly less likely to have applied than female-owned firms, although approval rates were similar.

Application behavior varies by industry. Nearly 1 in 7 firms in transportation and warehousing applied for a credit card in 2014, and 80 percent were approved. At the same time, fewer than 1 in 10 firms engaged in finance and insurance applied for a credit card, and almost 80 percent were approved.

Home Equity Loans

Business owners sometimes tap into home equity loans to finance their companies, as home loans are typically easier to obtain than uncollateralized personal loans or business loans. In 2014, only a small fraction of owners attempted to seek a new home equity loan for their businesses (table 8). Among applicants, slightly more than 30 percent did not receive all of the funding they sought from this source.

By age, there is little variation in the share of firms that sought home equity loans, with only ½ percentage point difference between the oldest and youngest firms' application rates. However, approval rates do rise with the age of the business, from less than 63 percent among firms in business less than 4 years to almost 80 percent among firms in business 16 or more years.

There is a bit more variation in application rates by the race and ethnicity of the owners. White-owned firms were the least likely to have applied for a home equity loan, while Asian-owned firms were the most likely. American Indian firms experienced the highest approval rate, with 77 percent of their home equity loans being successfully funded, while black-owned firms experienced the lowest approval rate, with less than half of their applications being fully funded.

Firms engaged in retail trade were the most likely to have applied for a home equity loan, and firms engaged in the management of companies were the least likely. Approval rates ranged from 55 percent

Table 7. Credit application experience: Credit cards, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**10.4**	**89.6**	**81.4**	**18.6**
Age of firm (years)				
Less than 2	15.3	84.7	76.7	23.3
2 to 3	14.2	85.8	77.0	23.0
4 to 5	12.4	87.6	78.6	21.4
6 to 10	11.2	88.8	81.7	18.3
11 to 15	7.9	92.1	85.2	14.8
16 or more	7.3	92.7	88.3	11.7
Gender, race, and ethnicity of owners				
Female	11.1	88.9	78.7	21.3
Male	10.4	89.6	81.6	18.4
Hispanic	15.7	84.3	74.6	25.4
White	10.1	89.9	83.0	17.0
Black or African American	15.6	84.4	62.1	37.9
American Indian and Alaska Native	14.1	85.9	79.8	20.2
Asian	12.7	87.3	74.8	25.2
Minority	14.1	85.9	73.3	26.7
Industry				
Accommodation and food services	9.8	90.2	77.0	23.0
Admin, support & waste management, and remediation svcs	13.1	86.9	81.0	19.0
Agriculture, forestry, fishing, and hunting	9.7	90.3	83.6	16.4
Arts, entertainment, and recreation	9.2	90.8	80.3	19.7
Construction	13.7	86.3	83.1	16.9
Educational services	12.0	88.0	80.9	19.1
Finance and insurance	6.8	93.2	78.4	21.6
Health care and social assistance	8.6	91.4	83.3	16.7
Industries not classified	5.9	94.1	78.9	21.1
Information	9.3	90.7	83.2	16.8
Management of companies and enterprises	5.3	94.7	91.8	8.2
Manufacturing	10.2	89.8	83.5	16.5
Mining, quarrying, and oil and gas extraction	6.4	93.6	93.6	6.4
Other services (except public administration)	11.8	88.2	76.9	23.1
Professional, scientific, and technical services	8.7	91.3	82.7	17.3
Real estate and rental and leasing	6.9	93.1	83.2	16.8
Retail trade	11.4	88.6	80.8	19.2
Transportation and warehousing	13.9	86.1	81.8	18.2
Utilities	7.3	92.7	97.7	2.3
Wholesale trade	9.8	90.2	82.3	17.7

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

for firms in educational services to approximately 84 percent among firms in utilities and agriculture.

Trade Credit

Trade credit arises when a business purchases goods or services for which payment is deferred. Like credit cards, firms can use trade credit either as a form of credit or as a convenient alternative to paying cash each time a purchase is made. Less than 3 percent of firms applied for trade credit in 2014, with more than 80 percent receiving all of the credit they applied for (table 9).

The youngest firms were the most likely to have applied for trade credit. The likelihood decreases with age until the firm is 15 years old, after which it increases a bit. The approval rate is lowest for the youngest firms and increases with age.

Minority-owned firms were more likely to have sought new trade credit arrangements than white-

Table 8. Credit application experience: Home equity, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**2.2**	**97.8**	**68.4**	**31.6**
Age of firm (years)				
Less than 2	2.2	97.8	61.7	38.3
2 to 3	2.5	97.5	62.4	37.6
4 to 5	2.3	97.7	66.8	33.2
6 to 10	2.5	97.5	67.3	32.7
11 to 15	2.0	98.0	71.9	28.1
16 or more	1.7	98.3	78.5	21.5
Gender, race, and ethnicity of owners				
Female	2.2	97.8	63.1	36.9
Male	2.2	97.8	69.2	30.8
Hispanic	2.6	97.4	59.4	40.6
White	2.1	97.9	70.4	29.6
Black or African American	2.8	97.2	46.3	53.7
American Indian and Alaska Native	2.4	97.6	77.3	22.7
Asian	4.0	96.0	64.6	35.4
Minority	3.4	96.6	61.7	38.3
Industry				
Accommodation and food services	2.7	97.3	63.8	36.2
Admin, support & waste management, and remediation svcs	2.1	97.9	67.2	32.8
Agriculture, forestry, fishing, and hunting	1.9	98.1	83.5	16.5
Arts, entertainment, and recreation	1.9	98.1	68.1	31.9
Construction	2.7	97.3	74.0	26.0
Educational services	1.6	98.4	54.9	45.1
Finance and insurance	1.7	98.3	63.0	37.0
Health care and social assistance	2.0	98.0	62.3	37.7
Industries not classified	1.8	98.2	81.3	18.7
Information	1.7	98.3	71.6	28.4
Management of companies and enterprises	0.6	99.4	80.0	20.0
Manufacturing	2.0	98.0	65.7	34.3
Mining, quarrying, and oil and gas extraction	0.9	99.1	76.1	23.9
Other services (except public administration)	2.7	97.3	65.9	34.1
Professional, scientific, and technical services	1.6	98.4	69.8	30.2
Real estate and rental and leasing	1.5	98.5	71.5	28.5
Retail trade	3.0	97.0	71.3	28.7
Transportation and warehousing	2.2	97.8	69.8	30.2
Utilities	2.4	97.6	84.5	15.5
Wholesale trade	2.2	97.8	67.8	32.2

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

owned firms. Minority-owned firms also experienced higher turn-down rates than white-owned firms. Small differences by the gender of the owners of the firm can also be observed, with male-owned firms more likely to have both applied and been approved.

By industry, trade credit applications varied a bit. Construction firms, wholesale and retail trade firms, and manufacturing firms were the most likely to have sought new trade credit relationships, while finance and insurance firms were the least likely. Approval rates ranged from 99 percent of utilities firms to about 70 percent for firms in the education services and the health-care and social assistance industries.

Family and Friends

About 3 percent of firms reported seeking funding from family and friends, with nearly 70 percent successfully receiving the full amount requested (table 10). This form of financing was sought more frequently by younger firms, with the likelihood of applying declining with the age of the firm. Approval rates generally increase with the age of the

Table 9. Credit application experience: Trade credit, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**2.9**	**97.1**	**81.6**	**18.4**
Age of firm (years)				
Less than 2	3.8	96.2	74.3	25.7
2 to 3	3.7	96.3	78.3	21.7
4 to 5	3.3	96.7	79.4	20.6
6 to 10	2.9	97.1	79.7	20.3
11 to 15	2.5	97.5	85.6	14.4
16 or more	3.0	97.0	91.9	8.1
Gender, race, and ethnicity of owners				
Female	2.5	97.5	78.8	21.2
Male	3.1	96.9	82.1	17.9
Hispanic	3.7	96.3	72.2	27.8
White	2.9	97.1	83.1	16.9
Black or African American	3.6	96.4	65.7	34.3
American Indian and Alaska Native	4.4	95.6	71.5	28.5
Asian	3.4	96.6	73.9	26.1
Minority	3.5	96.5	72.8	27.2
Industry				
Accommodation and food services	2.2	97.8	74.2	25.8
Admin, support & waste management, and remediation svcs	3.2	96.8	82.1	17.9
Agriculture, forestry, fishing, and hunting	2.2	97.8	83.7	16.3
Arts, entertainment, and recreation	1.3	98.7	74.2	25.8
Construction	5.9	94.1	86.7	13.3
Educational services	1.0	99.0	69.9	30.1
Finance and insurance	0.6	99.4	71.7	28.3
Health care and social assistance	1.1	98.9	69.7	30.3
Industries not classified	1.3	98.7	86.3	13.7
Information	2.0	98.0	91.4	8.6
Management of companies and enterprises	4.3	95.7	91.8	8.2
Manufacturing	4.5	95.5	86.7	13.3
Mining, quarrying, and oil and gas extraction	3.1	96.9	83.7	16.3
Other services (except public administration)	2.7	97.3	79.5	20.5
Professional, scientific, and technical services	1.4	98.6	82.4	17.6
Real estate and rental and leasing	1.4	98.6	81.5	18.5
Retail trade	4.6	95.4	80.7	19.3
Transportation and warehousing	2.7	97.3	77.6	22.4
Utilities	4.5	95.5	99.1	0.9
Wholesale trade	5.2	94.8	80.1	19.9

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

firm but experience a substantial drop-off with the oldest of firms.

Minority-owned firms were much more likely to have sought funding from family and friends than white-owned firms. They were also much less likely to have been successful, with black-owned firms particularly unlikely to receive the full amount of funding. Female-owned firms were more likely than male-owned firms to have attempted to get funding from family and friends, but had similar success rates.

Accommodation and food services firms were the mostly likely type of firm to have sought funding from family and friends, and about one-third of the requests were unsuccessful. Utilities firms were the least likely to have sought funding from family and friends, and only 20 percent of requests were successful.

Other Applications

As mentioned previously, angel investors and venture capital investments are very important to the financing of a small number of businesses. However,

Table 10. Credit application experience: Family, friends, and employees, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**2.6**	**97.4**	**69.6**	**30.4**
Age of firm (years)				
Less than 2	5.3	94.7	68.1	31.9
2 to 3	4.3	95.7	66.1	33.9
4 to 5	3.5	96.5	67.0	33.0
6 to 10	2.6	97.4	71.8	28.2
11 to 15	1.6	98.4	73.3	26.7
16 or more	1.7	98.3	58.5	41.5
Gender, race, and ethnicity of owners				
Female	3.2	96.8	69.3	30.7
Male	2.6	97.4	69.4	30.6
Hispanic	4.0	96.0	66.9	33.1
White	2.1	97.9	73.4	26.6
Black or African American	5.8	94.2	60.5	39.5
American Indian and Alaska Native	1.9	98.1	75.7	24.3
Asian	7.5	92.5	63.3	36.7
Minority	6.0	94.0	64.0	36.0
Industry				
Accommodation and food services	5.2	94.8	68.4	31.6
Admin, support & waste management, and remediation svcs	2.1	97.9	75.2	24.8
Agriculture, forestry, fishing, and hunting	1.5	98.5	94.5	5.5
Arts, entertainment, and recreation	2.5	97.5	77.6	22.4
Construction	2.2	97.8	73.4	26.6
Educational services	4.2	95.8	64.3	35.7
Finance and insurance	1.5	98.5	67.9	32.1
Health care and social assistance	2.1	97.9	65.1	34.9
Industries not classified	1.2	98.8	71.4	28.6
Information	2.9	97.1	71.9	28.1
Management of companies and enterprises	2.1	97.9	44.3	55.7
Manufacturing	2.4	97.6	70.2	29.8
Mining, quarrying, and oil and gas extraction	2.2	97.8	88.3	11.7
Other services (except public administration)	3.4	96.6	68.6	31.4
Professional, scientific, and technical services	1.7	98.3	70.6	29.4
Real estate and rental and leasing	1.7	98.3	74.2	25.8
Retail trade	3.7	96.3	65.9	34.1
Transportation and warehousing	2.8	97.2	75.2	24.8
Utilities	0.5	99.5	18.2	81.8
Wholesale trade	2.9	97.1	69.8	30.2

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

as can be seen in tables 11 and 12, very few firms seek out such funding. In both cases, younger firms are much more likely to apply than older firms, with the share applying decreasing strongly by age.

Discouraged Borrowers

Some firms that may have wanted additional credit avoided applying for it because they anticipated that their applications would be denied. Such firms are known as "discouraged borrowers." The ASE asks firms whether there were times during 2014 when the business needed additional financing but the owner chose not to apply. Respondents who responded affirmatively were asked to provide a reason or reasons for avoiding applying.

Table 13 indicates that almost 10 percent of firms fell into the discouraged borrower category. The reason most commonly stated for not applying for additional credit was that the firm did not want to accrue debt, with nearly two-thirds of discouraged firms responding so. Half of firms that did not apply felt

that their application would not be approved. About 30 percent of discouraged firms felt that the cost was too high. Approximately 15 percent of such borrowers also reported forgoing credit because they felt the process was too time consuming, because they decided to invest firm profits instead of getting a loan, or because they were waiting until funding conditions improved.

The share of firms that did not apply for additional funding, although the firm needed it, decreased with age. There is also a similar relationship with the share of firms that did not apply because they felt the firm would be turned down or because the firm was waiting for a particular milestone so that the company would be in a better position to raise funds.

Slightly more female-owned firms than male-owned firms indicated they did not apply for credit even though the firm needed the funding. The female-owned firms were more likely to indicate that they did not want to accrue debt, felt that they would be turned down, felt that the costs were too high, felt that the process was too time consuming, or were waiting for the firm to hit a milestone. Male-owned firms were more likely to indicate that they had reinvested profits, that they no longer needed the financing, or that they were waiting for better financing conditions. White-owned firms were the least likely to have forgone applying for credit, closely followed by Asian-owned firms. One in four black-owned firms reported forgoing applying for credit, with 56 percent of those firms stating that they did not want to accrue debt and 60 percent indicating they felt like they would be turned down if they applied. Only 3 percent of firms engaged in the management of companies did not apply for credit that they needed, while nearly 13 percent of firms in other services and retail trade reported forgoing applying for credit. Utilities firms were the most likely to have believed that their application would be denied, while educational services and unclassified businesses were the most likely to report not wanting to accrue debt. Educational services firms were also the most likely to report that the cost was too high, while agriculture firms were the least likely to report so. The largest disparity in the share of firms providing a reason is in firms reporting that they reinvested firm profits rather than taking on a new loan, where 8 percent of agricultural firms did so compared with 73 percent of utilities firms.

Overall, small business owners report using a variety of sources to fund the day-to-day operations of their firms. These patterns vary by the age and industry of the firm as well as by the gender, race, and ethnicity of the owners. However, the usage represents the intersection of what the firms would like to use to finance their firms with what the providers are willing to supply. The additional questions in the ASE on loan applications and forgone applications would indicate that—at least for some firms—demand exceeds supply. But it is worth keeping in mind that not all credit applications *should* necessarily be approved. As discussed earlier, there is a great deal of fluctuation in the small business population, and determining which businesses are a good credit risk is a challenge that small business credit providers need to carefully evaluate.

Table 11. Credit application experience: Angel investors, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**0.5**	**99.5**	**45.1**	**54.9**
Age of firm (years)				
Less than 2	1.3	98.7	49.3	50.7
2 to 3	1.0	99.0	40.3	59.7
4 to 5	0.6	99.4	44.1	55.9
6 to 10	0.5	99.5	47.6	52.4
11 to 15	0.2	99.8	44.1	55.9
16 or more	0.3	99.7	53.0	47.0
Gender, race, and ethnicity of owners				
Female	0.5	99.5	46.2	53.8
Male	0.6	99.4	45.1	54.9
Hispanic	0.7	99.3	61.3	38.7
White	0.4	99.6	43.7	56.3
Black or African American	0.8	99.2	28.7	71.3
American Indian and Alaska Native	0.5	99.5	82.4	17.6
Asian	1.3	98.7	49.7	50.3
Minority	1.0	99.0	49.5	50.5
Industry				
Accommodation and food services	0.7	99.3	51.2	48.8
Admin, support & waste management, and remediation svcs	0.4	99.6	43.3	56.7
Agriculture, forestry, fishing, and hunting	0.2	99.8	100.0	0.0
Arts, entertainment, and recreation	0.3	99.7	52.6	47.4
Construction	0.3	99.7	53.8	46.2
Educational services	0.5	99.5	53.3	46.7
Finance and insurance	0.4	99.6	46.7	53.3
Health care and social assistance	0.3	99.7	48.4	51.6
Industries not classified	0.1	99.9	100.0	0.0
Information	2.2	97.8	37.7	62.3
Management of companies and enterprises	0.2	99.8	8.1	91.9
Manufacturing	0.8	99.2	24.0	76.0
Mining, quarrying, and oil and gas extraction	0.3	99.7	39.3	60.7
Other services (except public administration)	0.5	99.5	45.0	55.0
Professional, scientific, and technical services	0.7	99.3	39.6	60.4
Real estate and rental and leasing	0.3	99.7	47.4	52.6
Retail trade	0.6	99.4	56.3	43.7
Transportation and warehousing	0.4	99.6	42.1	57.9
Utilities	1.1	98.9	0.0	100.0
Wholesale trade	0.6	99.4	44.8	55.2

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

Table 12. Credit application experience: Venture capital, 2014

Category of firm	Percent of firms		Percent, conditional on applying	
	Applied for credit	Did not apply	Approved	Turned down
All firms	**0.5**	**99.5**	**41.9**	**58.1**
Age of firm (years)				
Less than 2	1.1	98.9	44.1	55.9
2 to 3	0.9	99.1	41.3	58.7
4 to 5	0.6	99.4	45.9	54.1
6 to 10	0.5	99.5	37.9	62.1
11 to 15	0.2	99.8	41.2	58.8
16 or more	0.3	99.7	55.8	44.2
Gender, race, and ethnicity of owners				
Female	0.4	99.6	40.3	59.7
Male	0.5	99.5	41.3	58.7
Hispanic	0.6	99.4	39.7	60.3
White	0.4	99.6	39.1	60.9
Black or African American	0.8	99.2	21.2	78.8
American Indian and Alaska Native	0.1	99.9	0.0	100.0
Asian	1.2	98.8	47.3	52.7
Minority	0.9	99.1	44.2	55.8
Industry				
Accommodation and food services	0.6	99.4	48.3	51.7
Admin, support & waste management, and remediation svcs	0.3	99.7	32.8	67.2
Agriculture, forestry, fishing, and hunting	0.1	99.9	100.0	0.0
Arts, entertainment, and recreation	0.1	99.9	20.0	80.0
Construction	0.3	99.7	49.3	50.7
Educational services	0.4	99.6	49.7	50.3
Finance and insurance	0.4	99.6	44.3	55.7
Health care and social assistance	0.3	99.7	47.5	52.5
Industries not classified	0.2	99.8	100.0	0.0
Information	2.1	97.9	32.2	67.8
Management of companies and enterprises	1.0	99.0	57.0	43.0
Manufacturing	0.8	99.2	24.5	75.5
Mining, quarrying, and oil and gas extraction	1.0	99.0	34.6	65.4
Other services (except public administration)	0.4	99.6	43.0	57.0
Professional, scientific, and technical services	0.7	99.3	38.5	61.5
Real estate and rental and leasing	0.2	99.8	40.5	59.5
Retail trade	0.5	99.5	49.1	50.9
Transportation and warehousing	0.4	99.6	44.9	55.1
Utilities	2.7	97.3	31.3	68.8
Wholesale trade	0.7	99.3	47.6	52.4

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

Table 13. Reasons for forgoing applying for credit, 2014

Category of firm	Percent		Percent, conditional on forgoing applying for credit								
	Did not forgo applying	"Discouraged borrowers" (avoided applying)	Would not be approved	Did not want to accrue debt	Costs too high	Reinvested profits instead	Too time consuming	Financing no longer needed	Wait for better conditions	Wait for milestone	Other reason
All firms	**90.4**	**9.6**	**47.9**	**63.5**	**29.2**	**14.6**	**15.6**	**5.2**	**14.6**	**13.5**	**6.3**
Age of firm (years)											
Less than 2	87.3	12.7	52.8	60.6	29.9	15.7	15.7	4.7	13.4	17.3	7.1
2 to 3	87.9	12.1	52.1	59.5	32.2	17.4	17.4	5.0	15.7	17.4	6.6
4 to 5	88.8	11.2	51.8	61.6	30.4	16.1	17.0	5.4	13.4	14.3	5.4
6 to 10	89.7	10.3	48.5	64.1	31.1	13.6	17.5	4.9	14.6	13.6	5.8
11 to 15	92.0	8.0	42.5	65.0	27.5	13.8	15.0	6.3	13.8	11.3	7.5
16 or more	93.5	6.5	43.1	56.9	24.6	10.8	12.3	4.6	12.3	9.2	10.8
Gender, race, and ethnicity of owners											
Female	88.2	11.8	50.0	64.4	32.2	13.6	16.1	5.1	13.6	14.4	7.6
Male	91.1	8.9	47.2	61.8	29.2	15.7	15.7	5.6	14.6	13.5	5.6
Hispanic	85.2	14.8	52.7	56.1	31.8	17.6	15.5	4.7	16.9	13.5	6.1
White	90.6	9.4	46.8	63.8	29.8	14.9	16.0	5.3	13.8	13.8	6.4
Black or African American	74.3	25.7	58.8	56.4	31.5	15.2	16.0	3.9	17.5	16.7	3.9
American Indian and Alaska Native	82.8	17.2	45.3	62.8	32.6	15.7	16.3	5.2	11.6	17.4	9.3
Asian	90.2	9.8	43.9	59.2	32.7	15.3	16.3	7.1	14.3	13.3	5.1
Minority	86.8	13.2	50.0	57.6	31.8	15.9	15.9	6.1	15.9	14.4	5.3
Industry											
Accommodation and food services	88.9	11.1	49.5	60.4	31.5	13.5	13.5	5.4	13.5	13.5	7.2
Admin, support & waste management, and remediation svcs	89.5	10.5	52.4	61.0	26.7	14.3	16.2	3.8	14.3	13.3	4.8
Agriculture, forestry, fishing, and hunting	92.6	7.4	41.9	62.2	12.2	8.1	10.8	9.5	16.2	8.1	6.8
Arts, entertainment, and recreation	91.0	9.0	52.2	61.1	27.8	13.3	17.8	3.3	11.1	14.4	8.9
Construction	89.3	10.7	48.6	64.5	29.9	14.0	15.0	6.5	15.0	13.1	5.6
Educational services	88.4	11.6	50.0	67.2	38.8	13.8	16.4	5.2	9.5	16.4	6.9
Finance and insurance	94.5	5.5	47.3	52.7	18.2	14.5	16.4	3.6	14.5	12.7	10.9
Health care and social assistance	92.0	8.0	43.8	66.3	32.5	13.8	15.0	5.0	15.0	12.5	6.3
Industries not classified	93.8	6.2	37.1	69.4	29.0	11.3	14.5	12.9	14.5	8.1	3.2
Information	90.2	9.8	50.0	62.2	32.7	18.4	17.3	3.1	14.3	21.4	6.1
Management of companies and enterprises	97.0	3.0	43.3	43.3	13.3	16.7	16.7	0.0	6.7	13.3	10.0
Manufacturing	89.2	10.8	44.4	65.7	30.6	14.8	17.6	4.6	16.7	17.6	6.5
Mining, quarrying, and oil and gas extraction	94.6	5.4	40.7	61.1	25.9	9.3	5.6	7.4	20.4	14.8	7.4
Other services (except public administration)	87.4	12.6	46.0	65.9	31.0	11.9	14.3	6.3	15.9	11.9	7.1
Professional, scientific, and technical services	92.4	7.6	46.1	64.5	28.9	15.8	19.7	5.3	14.5	15.8	6.6
Real estate and rental and leasing	94.6	5.4	50.0	53.7	25.9	16.7	18.5	7.4	11.1	11.1	7.4
Retail trade	87.6	12.4	47.6	65.3	29.8	15.3	16.1	4.8	12.9	12.9	7.3
Transportation and warehousing	89.7	10.3	48.5	58.3	28.2	12.6	13.6	5.8	16.5	15.5	4.9
Utilities	95.5	4.5	55.6	31.1	28.9	73.3	24.4	0.0	0.0	0.0	0.0
Wholesale trade	90.7	9.3	47.3	55.9	28.0	16.1	17.2	5.4	12.9	15.1	7.5

Note: Totals may sum to more than 100 percent, as firms were allowed to choose more than one reason.

Source: 2014 Annual Survey of Entrepreneurs, U.S. Census Bureau.

Providers of Credit to Small Businesses

This section examines providers of small business credit, which include commercial banks, savings institutions, credit unions, finance companies, nonfinancial firms, and individuals such as family members or friends.[21] Because commercial banks traditionally have been the leading source of credit to small businesses, the analysis focuses primarily on their activities. This section explores the relationship between bank size and small business lending and discusses the concentration of small business lending by commercial banks. The section also presents a more modest analysis of small business lending by savings institutions, credit unions, and some nondepository institutions, which account for substantially less small business credit than commercial banks. Together, these analyses can provide insight into the availability of credit to small businesses.

Past survey data highlighted the importance of depository institutions to small business credit availability. According to the 2003 Survey of Small Business Finances (SSBF), more than 60 percent of small businesses had outstanding credit lines, loans, or leases.[22] Commercial banks provided credit lines, loans, or leases to 41.1 percent of small firms, a proportion that corresponds to about 68 percent of the small firms that obtained a traditional form of credit from any source. In addition, 5.5 percent of small businesses obtained traditional credit from a savings bank or a savings and loan association, and 3.9 percent obtained it from a credit union. In total, depository institutions supplied credit to more than three-fourths of the businesses that reported having outstanding credit.

Nondepositories, which include both financial and nonfinancial firms, provided credit to about one-third of small businesses in 2003. The key sources of credit among nondepository financial firms were finance companies (22.2 percent of firms) and leasing companies (4.3 percent). Family and individuals (6.5 percent) were the most important nonfinancial source of credit.

Commercial banks were, by a wide margin, the most common source of virtually every credit product included in the survey. They supplied more small businesses with lines of credit, mortgage loans, and equipment loans than any other type of provider. They were also the second most common supplier of motor vehicle loans and "other" loans.[23] Finance companies were the most important sources of motor vehicle loans and leases, whereas family and friends were the most important sources of other loans.

More-current data suggest the continued importance of commercial banks to small businesses in recent years. According to the 2013 Survey of Consumer Finances (SCF), 73.2 percent of households that owned small businesses indicated that the primary institution for their business was a commercial bank.[24] Similarly, in 2011, more than 85 percent of small businesses in the most recent NFIB finance survey reported that their primary financial institution was a commercial bank.[25] According to both surveys, nondepository institutions are rarely the firm's primary institution.

[21] Savings institutions (or thrifts) consist of savings banks and savings and loan associations.

[22] Although dated, the 2003 SSBF provides the most recent available information on all sources of outstanding credit delineated by individual loans, amounts, and sources.

[23] The majority of other loans were loans that could not be classified as credit lines, mortgages, vehicle loans, equipment loans, or capital leases. Such loans were most likely term loans (loans that typically carry a fixed interest rate and a fixed maturity, generally repaid in monthly installations) or signature loans (fixed-term unsecured loans secured by a personal signature and promise to repay), and roughly 70 percent were unsecured.

[24] The 2010 SCF was expanded to elicit additional information from households that owned small businesses with fewer than 500 employees. For more information on the survey, see Bricker and others (2012). "Primary" was determined by the respondent. The percentage reported is based on households with a small business that reported using a financial institution for their business.

[25] For more information on the 2009, 2010, and 2011 surveys, see Dennis (2010), Dennis (2011), and Dennis (2012), respectively.

Beyond survey data, an important source of information on the small business lending activities of commercial banks and savings institutions is the small business loan data collected by the Federal Reserve and other regulatory agencies on the Consolidated Reports of Condition and Income (Call Reports).[26] These data, which have been collected annually since June 1993 and quarterly since March 2010, include information on outstanding small C&I loans and loans secured by nonfarm nonresidential properties.[27] The number of loans and amount outstanding are collected for loans with original amounts of $100,000 or less, more than $100,000 but less than $250,000, and more than $250,000 but less than $1 million.[28]

These data are used to estimate the amount of credit extended to small firms. Because firm characteristics are not reported on Call Reports, loan size is often used as a proxy for the size of the firm receiving credit. However, this approach to measuring small business lending introduces two sources of inaccuracy in the measurement of the number and dollar amount of loans to small businesses. First, the data likely include loans equal to or less than $1 million extended to large firms, and, second, the data exclude loans of more than $1 million made to small firms.[29] According to the 2003 SSBF, only about 3.5 percent of credit-line extensions to small businesses were associated with commitments greater than $1 million. However, these relatively few loan extensions accounted for roughly two-thirds of the dollar value of credit-line commitments to small businesses. Although a large share of the total dollar value of small business loans may be excluded from what is considered a small business loan on the Call Report and Thrift Financial Report data, these loans are not typical of the credit obtained by the majority of small firms.[30] According to data from Community Reinvestment Act (CRA) reporters, a little more than one-third of the loan dollar volume of loans with initial values of less than $1 million is directed to firms with revenues of less than $1 million. This volume is likely to be an understatement because many reporters do not collect or submit information on the revenues of the firms to which they lend. This result does indicate, however, that a significant portion of loans included in the less than $1 million category are made to larger businesses. It is not possible to tell which inaccuracy is likely to be larger.

Lending by Depository Institutions

Commercial Banks

Commercial banks are important providers of credit to small firms.[31] Lending to small businesses involves unique challenges that banks appear particularly well suited to meet. Of particular significance, information on the financial condition, performance, and prospects of small firms may not be readily available, so lending is often based more heavily on information gathered through established relationships than is true for other types of loans. Commercial banks continue to maintain local branch networks, which aid them in nurturing relationships and gathering firm-specific information. Commercial banks also provide credit to small businesses through business

[26] Another source of data on small business loans is the information reported pursuant to the regulations (such as the Federal Reserve Board's Regulation BB) that implement the Community Reinvestment Act (CRA). The data collected include information on credit extensions for small businesses, small farms, and community development. The data are not analyzed in this report because the regulations that implement the CRA were modified in 2005 to eliminate mandated reporting for institutions with assets less than $1 billion. As a result, the number of institutions providing data has fallen sharply. In 2006, only about 1,000 banks and thrifts, or 11 percent of the total, reported data. For CRA reporters, the CRA data on loan originations are highly correlated with the June Call Report data on outstanding loans. However, most CRA reporters are very large institutions, which may differ significantly from smaller ones. More information on CRA-related small business lending is available on the Federal Financial Institutions Examination Council's website at https://www.ffiec.gov/cra/default.htm.

[27] Analysis in this section is based on Call Report data from June 2016.

[28] For loans drawn down under lines of credit or loan commitments, the original amount of the loan is the size of the line of credit or loan commitment when it was most recently approved, extended, or renewed before the report date. If the amount currently outstanding exceeds this size, the original amount is the amount currently outstanding as of the report date. For loan participations and syndications, the original amount is the entire amount of the credit originated by the lead lender. For all other loans, the original amount is the total amount of the loan at origination or the amount currently outstanding as of the report date, whichever is larger.

[29] Other unreported small business loans include home mortgage and other consumer loans that are used by small business owners for commercial purposes. Such loans are not in statistics from the Call Reports or Thrift Financial Reports.

[30] According to the 2003 SSBF, the median line of credit commitment was $50,000. In contrast, the 3.5 percent of commitments that were larger than $1 million had a median of $3.3 million.

[31] Except where indicated, bank data are aggregated to the banking organization level by summing data for all commonly owned commercial banking institutions. The organization is considered a single entity. Data for affiliated nonbank subsidiaries are excluded. Savings institution data are treated in the same manner.

Table 14. Structural measures and the size of the U.S. commercial banking industry, 2000–16 (selected years)

Year (as of June 30)	Number		Total assets held by insured U.S. commercial banks (billions of dollars)	Share of domestic commercial banking assets held by the largest organizations (percent)			
	Commercial banking organizations[1]	Insured U.S. commercial banks		Top 10	Top 25	Top 50	Top 100
2000	6,636	8,298	5,019	41.3	58.4	70.1	77.4
2004	6,320	7,542	6,719	47.4	62.0	71.9	78.3
2008	6,066	7,064	9,255	53.6	69.5	76.4	80.8
2012	5,589	6,155	11,101	56.6	71.0	78.4	82.9
2016	4,824	5,202	13,768	55.4	70.2	78.5	83.9

Note: Includes insured domestically chartered U.S. banks, excluding credit card institutions.

[1] Commercial banking organizations include bank holding companies and independent banks.

Source: Call Reports (June 30); the National Information Center database.

credit cards, which rely on business or consumer credit ratings rather than established relationships.

Bank Size

The relationship between bank size and the extent to which banks engage in small business lending may have implications for the availability of credit to small firms. Substantial consolidation in the banking industry over the past 30 years has dramatically reduced the number of banks, increasing the importance of large banks and the concentration of industry assets.[32] For example, more than 3,800 bank and savings institution mergers involving acquired assets in excess of $6.7 trillion were completed between 2000 and 2016.[33] Even though more than 1,400 new banks were granted charters over this period, the total number of banking organizations fell more than 27 percent to 4,824 (table 14).

One merger-related structural development that has raised concerns about the availability of credit to small businesses stems from the fact that large banks tend to be proportionately less committed than smaller banks to small business lending. As seen in table 15, the average banking organization with $1 billion or less in total assets held over 14 percent of its portfolio as small business loans in June 2016.[34] In contrast, organizations with assets between $1 billion and $10 billion held just over 10 percent of their assets as small business loans, and the largest organizations—those with assets greater than $10 billion—held less than 5 percent of their assets as such loans. Small business loans play a larger role in the portfolios of small banks than they do in the portfolios of large institutions.

[32] A thorough discussion of merger activity in the banking industry is in Adams (2012). Other relevant research includes Avery and Samolyk (2004); Group of Ten (2001); Pilloff (2001, 2004); Rhoades (2000); Berger, Demsetz, and Strahan (1999); and Akkus, Cookson, and Hortasu (2016).

[33] Data on bank mergers and acquisitions between 2000 and 2010 are from Adams (2012). Data for the years from 2011 through 2016 were updated with information from Call Reports, Summary of Deposit statistics, and data from SNL Financial. Dollar lending to small business is available in table 20.

[34] As discussed previously, bank Call Reports do not provide information on the size of the business obtaining the loan. For ease of exposition, loans of less than $1 million at origination will be referred to as small business loans.

Table 15. Average microloan and small business loan holdings as a share of assets for U.S. commercial banking organizations of different sizes, 2016

Percent, except as noted

Asset class	Number of banking organizations[1]	Small business loans to assets	Microloan holdings to assets
All organizations	**4,824**	**14.1**	**3.0**
$250 million or less[2]	2,806	15.0	3.9
$250 million to $1 billion[2]	1,456	14.0	2.0
$1 billion to $10 billion[2]	474	10.2	1.2
More than $10 billion	88	4.8	0.8

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. U.S. commercial banking organizations are insured domestically chartered U.S. banks excluding credit card institutions and U.S. branches and agencies of foreign banks.

[1] Banking organizations include bank holding companies and independent banks.

[2] Banks with assets of $250 million are included in the $250 million or less size class, banks with assets of $1 billion are included in the $250 million to $1 billion asset class, and banks with assets of $10 billion are included in the $1 billion to $10 billion asset class.

Source: Call Report (June 30); the National Information Center database.

Table 16. Share of small business loan and microloan holdings of U.S. commercial banking organizations, by asset class, 2012 and 2016
Percent

Asset class	Share of banking organizations[1]	Share of industry assets	Share of holdings		Share of loans extended	
			Small business loans	Microloans	Small business loans	Microloans
2012						
$250 million or less[2]	65.1	3.6	12.8	12.4	4.2	3.3
$250 million to $1 billion[2]	26.2	6.1	18.3	11.2	4.8	3.2
$1 billion to $10 billion[2]	7.4	9.5	19.9	10.9	6.1	4.3
More than $10 billion	1.3	80.8	49.1	65.4	84.8	89.2
2016						
$250 million or less[2]	58.2	2.4	9.1	8.2	2.8	2.2
$250 million to $1 billion[2]	30.2	5.0	16.9	9.9	4.3	2.9
$1 billion to $10 billion[2]	9.8	9.5	21.9	10.0	5.6	3.8
More than $10 billion	1.8	83.1	52.0	72.0	87.3	91.1

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. U.S. commercial banking organizations are insured domestically chartered U.S. banks excluding credit card institutions and U.S. branches and agencies of foreign banks. Details may not sum to totals because of rounding.

[1] Banking organizations include bank holding companies and independent banks.

[2] Banks with assets of $250 million are included in the $250 million or less size class, banks with assets of $1 billion are included in the $250 million to $1 billion asset class, and banks with assets of $10 billion are included in the $1 billion to $10 billion asset class.

Source: Call Reports (June 30); the National Information Center database.

The pattern for holdings of microloans, which are defined as business loans of $100,000 or less, is even stronger, with smaller banks maintaining an even more disproportionate share of their asset portfolios in such loans when compared with larger banks. While only about 4 percent of the loan portfolio of the smallest banks is in small business microloans, this figure is about 1 percent for banks larger than $1 billion in assets.

The smallest banks tend to be proportionately more invested in the smallest business loans for two primary reasons. First, many small banks provide banking services to a particular local area. As a result, these banks are likely to accumulate knowledge of their local markets, which is often important in making risky, relationship-dependent small business loans. Difficulties in evaluating and monitoring loans likely become more severe as firms, and therefore loans, decrease in size. Second, bank regulations limit the amount that a bank can lend to a single borrower to 25 percent of the bank's capital; by definition, small banks are limited by their assets in their ability to make very large loans. Small banks can also maintain a more diversified portfolio by making many smaller loans, rather than fewer larger loans.

Even though small business lending represents a smaller share of banking activity by the largest banking organizations, these banks are still significant providers of small business loans. Banking organizations with assets greater than $10 billion accounted for 1.8 percent of all commercial banking organizations in June 2016 but held 83.1 percent of the banking assets in the industry (table 16). These large organizations held a smaller but nonetheless substantial share of small business loans, as they held 52.0 percent of small business loan dollars outstanding and 72.0 percent of microloan dollars outstanding. They also account for a substantial portion of the number of loans granted, extending 91.1 percent of all microloans and 47.2 percent of business loans greater than $100,000 but less than $1 million.

Despite their declining numbers and a fall in their share of industry assets, small banks continue to account for a sizable share of small business loans. In 2016, banks with assets of $250 million or less accounted for 58.2 percent of all banking organizations but only 2.4 percent of all banking assets (table 16). However, they held 9.1 percent of all small business loans and 8.2 percent of microloans. Similarly, the 30.2 percent of banks with between $250 million and $1 billion in assets held 5.0 percent of industry assets, but 16.9 percent of small business loans and 9.9 percent of microloans.

The lending shares of the smallest banks—those with assets of $250 million or less—decreased between 2012 and 2016. Some of this decrease was

Table 17. Growth of small business loan and microloan holdings of U.S. commercial banking organizations, by asset class, 2008–12 and 2012–16
Percent

Asset class	2008-12			2012-16		
	Microloan growth	Small loan growth	Total loan growth	Microloan growth	Small loan growth	Total loan growth
All banks	**-4.2**	**-3.8**	**1.9**	**4.2**	**1.4**	**6.5**
$250 million or less[1]	-8.7	-5.1	-4.1	-5.8	-6.2	-3.5
$250 million to $1 billion (includes $1 billion)[1]	-7.2	-3.5	-2.2	0.7	-0.6	2.3
$1 billion to $10 billion (includes $10 billion)[1]	-6.4	-3.4	-1.8	1.7	4.1	9.8
More than $10 billion	-2.0	-3.7	3.3	7.2	2.9	6.9

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. U.S. commercial banking organizations are insured domestically chartered U.S. banks excluding credit card institutions and U.S. branches and agencies of foreign banks. There are no adjustments made for banks that change asset classes during the period.

1 Banks with assets of $250 million are included in the $250 million or less size class, banks with assets of $1 billion are included in the $250 million to $1 billion asset class, and banks with assets of $10 billion are included in the $1 billion to $10 billion asset class.

Source: Call Reports (June 30); the National Information Center database.

due to the reduction in the share of banking organizations and bank assets that, because of bank consolidation, were accounted for by this class of institutions. The decrease in the share of small loan holdings at the smallest banks was comparable with the decrease experienced by banks with assets between $250 million and $1 billion. Banks with assets of $1 billion to $10 billion increased their share of small business loans but, like smaller banks, lost share in the market for business microloans. Conversely, increases in the share of small loans and microloans extended were observed for the largest banks.

In terms of loan growth, the volumes of small business loans and of microloans decreased for the smallest of the four size classes of banks—those with less than $250 million in assets—between 2012 and 2016 (table 17). In fact, total lending decreased for these small banks over this period, but at a slower rate than the decline in small business loans. The three larger size classes of banks saw positive growth in total lending and business microloans. However, banks with between $250 million and $1 billion in assets saw a slight decline in total small business lending. Still, growth of both small business and microlending was much more rapid among banks with more than $1 billion in assets than among smaller banks.

The growth in the share of business microloans reflects the increasing importance of large banking organizations in providing the smallest loans. Increased use of sophisticated technological and analytical tools, particularly credit-scoring techniques, has likely contributed to the rise in the share of microloans held and originated by large banking organizations. The largest banks may also have expertise in credit card programs and may have leveraged this experience to provide business credit cards that typically have low balances (Brevoort and Hannan, 2006).

Numerous research studies directly analyze the relationship between consolidation activity and the availability of credit to small firms.[35] Although mergers and acquisitions sever existing bank–firm relationships and may introduce some short-term uncertainty (Berger and Udell, 1998), the results of the research generally suggest that, overall, they have not materially reduced credit availability.

One issue that has been addressed is the effect of mergers on the small business lending activities of the banks directly involved in those mergers. The results of these studies generally indicate that deals involving at least one large bank tend to reduce small business loans as a share of assets, whereas deals between two small banks tend to increase small business loans as a share of assets (for example, Critchfield and others, 2004; Avery and Samolyk, 2000,

35 A general review is in Ou (2005). Other recent research includes Jagtiani, Kotliar, and Maingi (2016); Chang (2016); and Reichow (2017). Studies typically have focused on small business credit supplied by commercial banks. Credit obtained from other financial or nonfinancial firms usually has not been included in the analyses. Such studies provide a somewhat incomplete picture of small business lending, but because banks are a very important supplier of credit to small businesses, findings based on bank lending are likely to be relevant to the overall provision of small business credit.

2004; Samolyk and Richardson, 2003; Peek and Rosengren, 1998; and Strahan and Weston, 1998).

Both results are relevant to assessing the influence of consolidation on the availability of small business credit from banks and savings institutions. On the one hand, about 90 percent of the assets acquired between 2000 and 2016 belonged to institutions with at least $1 billion in total assets. Therefore, a large majority of the assets that have changed hands have been purchased in deals in which a decline in small business loans, as a share of assets, typically takes place at the consolidated firm.

On the other hand, even though relatively few assets have been purchased in mergers of small institutions, deals involving target firms with total assets of $250 million or less accounted for nearly two-thirds of all transactions completed between 2000 and 2016. About 18 percent of these deals involved an acquirer that had assets of $250 million or less, and roughly 25 percent involved an acquirer with assets between $250 million and $1 billion. Although relatively few assets have been acquired in a deal typically associated with an increase in small business lending ratios, nearly three-fifths of all deals have occurred with small- or medium-sized acquirers. Therefore, after merger activity, many banks have had an overall increase in the share of their asset portfolios dedicated to small business lending.

Another issue that has been studied is the "external" effect of mergers—that is, what happens to small business lending at banks that compete directly with recently merged institutions. Evidence suggests that banks competing with recent merger participants tend to increase their lending (Berger and others, 1998; and Berger, Goldberg, and White, 2001). Two other empirical findings suggest that a growing amount of credit may be supplied by banks that compete with recently merged banks. First, consolidation increases the likelihood of new entry into a market (Adams and Amel, 2007; Berger and others, 2004; Seelig and Critchfield, 2003; and Keeton, 2000). Second, younger banks tend to make more small business loans than similar, but more mature, institutions (DeYoung, Goldberg, and White, 1999). These two empirical findings suggest that a common response to merger activity is greater entry of new banks into affected markets, which tend to be active lenders to small businesses.

From the perspective of small firms, the effect of banking consolidation on credit availability may not be especially substantial, given that the size of the banks operating in a market does not appear to affect the availability of credit. Small businesses in areas with few small banks are no more credit constrained than small businesses in areas with many small banks (Jayaratne and Wolken, 1999). In addition, the likelihood that a small business will borrow from a bank of a given size is roughly proportional to the local presence of banks of that size, although some evidence shows that small banks are more likely to make very small loans (Berger, Rosen, and Udell, 2001). In sum, the potential gap in credit availability to small businesses due to bank consolidation by the largest banks is usually attenuated by competition from small- and medium-sized banks, by the entry of new banks, and by the substitution of credit extended by nonbank financial institutions for that extended by commercial banks (Ou, 2005; and Craig and Hardee, 2007).[36]

Industry Structure

As large banks have acquired other institutions, especially other large ones, the number of banks has declined, and the size of the largest banks has increased. These developments may enable the most active lenders to account for a growing share of all small business lending. In this section, the distribution of small business loan holdings at the industry level is analyzed to assess the importance of the leading small business lenders in the overall provision of small business credit.

Data on industry structure in table 18 indicate that the leading small business loan holders account for a small share of loans relative to the share of total assets they hold. For instance, in 2016, the 10 leading holders of small business loans held 28.3 percent of all such loans and 55.4 percent of all banking assets. Similar differences between the share of small business loans and the share of total assets are observed among the 25, 50, and 100 leading small business loan holders.

These data also show that the shares of small business loans held by the most active small business

[36] Data from the 2003 SSBF indicate that between 1998 and 2003, the share of credit obtained by small businesses from nonbank financial institutions increased from 27 percent to 35 percent. During the same period, the share of credit obtained by small businesses from commercial banks fell from 65 percent to 57 percent. Nonbank financial institutions include savings institutions; credit unions; and finance, insurance, leasing, and mortgage companies. Related data are in table A.5 of Board of Governors (2007) and table A.5 of Board of Governors (2002).

Table 18. Share of assets and microloan and small business loan holdings of leading U.S. commercial banking organizations, 2012 and 2016
Percent

Leading banking organizations[1]	Share held by leading holders of small business loans		Share held by leading holders of microloans	
	Small business loans	Assets	Microloans	Assets
2012				
Top 10	27.2	56.6	52.3	54.9
Top 25	37.0	71.0	60.8	65.6
Top 50	45.6	78.4	65.5	72.3
Top 100	52.8	82.9	69.5	75.5
2016				
Top 10	28.3	55.4	57.5	53.4
Top 25	36.3	70.2	66.4	61.2
Top 50	44.4	78.5	71.5	69.2
Top 100	53.9	83.9	75.6	74.8

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. U.S. commercial banking organizations are insured domestically chartered U.S. banks excluding credit card institutions and U.S. branches and agencies of foreign banks. For each category of loan activity, leading banking organizations account for the greatest share of that category.

[1] Banking organizations include bank holding companies and independent banks.

Source: Call Reports (June 30); the National Information Center database.

lenders increased a bit since 2012, as have the shares of banking assets for these firms. The 100 most active small business bank lenders accounted for just over one-half of the outstanding small business loans and about five-sixths of total assets in both 2012 and 2016. Microloan lending became slightly more concentrated, with the top 100 most active small business bank lenders accounting for more than 75 percent of microloans in 2016, up from slightly less than 70 percent in 2012.

This pattern has two implications for the availability of bank credit to small businesses. First, because the share of small business lending activity attributable to the 100 most active lenders is smaller than their share of total assets, the relatively less active small lenders remain a key source of credit for small firms. Second, although the share of small business lending attributable to the leading banks has increased, particularly with respect to microloans, the industry has not moved toward one in which a relatively few large banking organizations are the dominant providers of credit to small businesses.

Although large banking organizations are proportionately less active in small business lending than smaller banks, the leading small business lenders nonetheless typically include the largest banking organizations. For example, in 2012 and 2016, the top 10 holders of small business loans were among the 31 and 24 largest banking organizations in the industry, respectively.

Local Lending Patterns

The relevant market for many small business loans remains local. The structure of the local banking market is particularly important because changes in concentration could affect the level of competition for small business lending, which, in turn, could influence the cost of borrowing and the quantity of credit demanded. To address some key issues associated with the availability of credit to small businesses, one must shift the analysis from lending at the industry level to the local level. Analysis of bank structure within smaller geographic areas is likely to capture more accurately the relevant market conditions that small firms face when seeking credit, and that influence competition in the market for small business loans.

Previous data from the SSBFs indicate that small businesses tend to obtain loans, leases, and lines of credit from nearby providers.[37] In 2003, the median distance between a small business and its lender was 11 miles, and in 66 percent of all business-lending relationships, the lender was located within 30 miles of the firm's headquarters. For depository institutions and banks, the major suppliers of small business credit, lenders were located even closer—the median distance was 4 miles, and 83 percent of lenders were located within 30 miles of the firm's headquarters. More-recent data from the 2013 SCF reinforce this pattern. Among households that report owning businesses with fewer than 500 employees, the median distance to their firm's primary financial institution was 2 miles.

[37] Other sources showing the importance of proximity for small business lenders are CRA data and surveys conducted by the NFIB. The CRA data indicate that the vast majority of small business loan originations are made by in-market lenders (Board of Governors, 2002, p. 46). Brevoort and Hannan (2006, p. 4), using CRA data, report that distance is negatively associated with the probability of a small business loan being made and that "there has been no discernible increase in the distance between lenders and their local borrowers . . . in recent years." NFIB surveys indicate that the majority of small business financial institutions are located within 10 minutes of borrowers' offices (Amel and Brevoort, 2005; and Scott, Dunkelberg, and Dennis, 2003).

This proximity offers small firms convenient access to their lenders. Also, banks have traditionally preferred to extend loans to small businesses near their branches. The importance of relationships in small business lending suggests that credit providers concentrate their lending activities in geographic areas with which they are familiar (Berger and Udell, 1998; Brevoort and Hannan, 2006; Critchfield and others, 2004; and Scott, Dunkelberg, and Dennis, 2003).

Local Market Concentration

Conventional economic theory predicts, and empirical evidence suggests, that highly concentrated markets exhibit less competition, which results in higher prices and the provision of less credit. Some theories, however, predict that a less competitive lending environment may increase credit availability to at least some firms by allowing local banks more flexibility in structuring loan programs over time to promote longer-term relationships (for example, Petersen and Rajan, 1995). Long-term relationships, which facilitate loans to many small businesses, may be more difficult to maintain in highly competitive markets because businesses that are earning good profits will likely seek out the lender offering the most favorable, low-cost loan terms. A bank in a less competitive market might offer a below-market interest rate on a loan to help a new business or an ongoing firm experiencing hard times with the expectation that the bank will receive above-market returns on loans when the business is operating successfully. To date, tests of these theories have produced mixed results.[38]

Data from the annual Summary of Deposits, which reports the location and deposit level of every commercial bank, savings bank, and savings and loan branch as of June 30, are used to examine bank market structure and competition in local areas.[39] The primary measure used by antitrust authorities to assess market concentration is the deposit-based Herfindahl-Hirschman Index (HHI), which is computed as the sum of the squared market shares (that is, the shares of total deposits) of each firm in a market. These measures are shown in table 19, along with information on the number of banks and banking offices.[40] The data show that in 2016, about 25 banks with 193 offices provided banking services in the average metropolitan statistical area (MSA). The average level of the HHI with 50 percent weighting of savings institution deposits was 1,694.[41] In the average micropolitan area, 9 banks with 19 branches provided services. The average HHI with 50 percent weighting of savings institution deposits was 2,396. Rural areas are much more highly concentrated with respect to their deposits and, on average, have fewer banks and banking offices. In 2016, the average rural market had about 4 banks with 7 offices. The average rural market HHI with 50 percent weighting of savings institution deposits was 4,254.

Comparing these indexes with those of earlier years, we find that despite the significant amount of consolidation in the banking industry, local banking markets do not appear to have become more concentrated. Generally, in rural, micropolitan, and MSA markets, the number of banks and offices increased slightly until a point during the recent recession (2008 to 2010), then decreased slightly, but there remain more banks and offices, on average, in each of the three types of market than there were in 2000. As would be expected, the trends in the average HHI for local markets followed the opposite pattern: decreasing slightly until 2007 or 2008, then increasing a bit. Metropolitan and rural markets had lower levels of the HHI in 2016 than in 2000, but micropolitan markets ended with higher average concentration levels because of large increases in the past three

[38] Thorough summaries of the literature on relationship lending are in Boot (2000) and Berger and Udell (1998).

[39] In assessing the likely competitive effects of proposed bank mergers and acquisitions, both the Federal Reserve Board and the Department of Justice use local deposits as a proxy for a banking organization's capacity to provide a cluster of commercial banking products and services within a banking market.

[40] In its initial review of bank merger applications, the Federal Reserve Board typically computes HHIs that give deposits of commercial banks full weight and deposits of savings institutions a weight of 50 percent. This "downweighting" of savings institutions reflects the fact that they are generally less active in commercial lending than commercial banks and hence should not be considered "full competitors" in the provision of banking services. On a case-by-case basis, the deposits of those savings institutions that are active commercial lenders are given full weight in the Federal Reserve Board's calculations.

[41] A value of 10,000 indicates perfect monopoly, and a value approaching zero indicates perfect competition. Under the 1992 *Horizontal Merger Guidelines* of the U.S. Department of Justice and the Federal Trade Commission, a market in which the HHI is less than 1,000 is considered unconcentrated, one in which it ranges from 1,000 to 1,800 is considered moderately concentrated, and one in which it is greater than 1,800 is considered highly concentrated (see U.S. Department of Justice and Federal Trade Commission, 1992). The *Horizontal Merger Guidelines* were updated in 2010. Under the 2010 guidelines, a market in which the HHI is less than 1,500 is considered unconcentrated, one in which it ranges from 1,500 to 2,500 is considered moderately concentrated, and one in which it is greater than 2,500 is considered highly concentrated (see U.S. Department of Justice and Federal Trade Commission, 2010). However, in the commercial banking industry, antitrust enforcement still relies on the 1992 guidelines.

Table 19. Average structural measures of U.S. commercial banking and thrift organizations, by metropolitan statistical area, micropolitan area, and rural county, 2000–16

Year	MSA				Micropolitan area				Rural county			
	Number of banks	HHI50	Number of offices	Population per office	Number of banks	HHI50	Number of offices	Population per office	Number of banks	HHI50	Number of offices	Population per office
2000	24.79	1,723	173.73	3,479	8.28	2,363	20.02	2,802	4.24	4,273	7.13	2,188
2001	24.82	1,695	174.89	3,496	8.31	2,348	20.17	2,784	4.27	4,238	7.18	2,150
2002	24.68	1,702	175.76	3,514	8.33	2,341	20.18	2,787	4.30	4,229	7.22	2,145
2003	24.91	1,699	179.00	3,503	8.39	2,327	20.27	2,785	4.31	4,214	7.24	2,140
2004	25.12	1,705	184.22	3,471	8.50	2,306	20.43	2,776	4.34	4,209	7.26	2,136
2005	25.31	1,726	189.85	3,429	8.55	2,299	20.68	2,748	4.36	4,187	7.29	2,135
2006	26.07	1,694	196.61	3,372	8.68	2,282	20.94	2,733	4.39	4,134	7.35	2,122
2007	26.60	1,684	202.72	3,325	8.80	2,269	21.32	2,703	4.41	4,130	7.39	2,109
2008	27.44	1,625	209.16	3,277	9.00	2,281	21.57	2,681	4.44	4,131	7.43	2,094
2009	27.31	1,664	210.24	3,291	9.07	2,281	21.62	2,683	4.44	4,114	7.44	2,087
2010	26.89	1,636	207.88	3,379	9.10	2,281	21.51	2,738	4.43	4,124	7.40	2,146
2011	26.76	1,664	207.58	3,416	9.08	2,285	21.36	2,773	4.42	4,137	7.35	2,157
2012	26.64	1,677	206.20	3,470	9.06	2,292	21.09	2,810	4.40	4,157	7.27	2,171
2013	26.31	1,671	204.30	3,539	9.00	2,301	20.80	2,856	4.38	4,194	7.18	2,190
2014	25.44	1,684	197.95	3,674	8.82	2,340	20.23	2,941	4.31	4,237	7.02	2,239
2015	25.46	1,671	196.34	3,753	8.78	2,364	19.88	2,997	4.30	4,238	6.92	2,270
2016	25.02	1,694	192.77	3,867	8.65	2,396	19.49	3,085	4.27	4,254	6.85	2,307

Note: U.S. commercial banking organizations and thrifts are insured domestically chartered U.S. banks and insured U.S. domestically chartered savings banks and savings and loan associations excluding credit card institutions (derived from the National Information Center) and U.S. branches and agencies of foreign banks. MSA/Micropolitan area refers to metropolitan/micropolitan statistical area (2004 definition), and HHI50 refers to the deposit-based Herfindahl-Hirschman index with 50 percent thrift inclusion. Offices are those with deposits greater than or equal to 0.

Source: Call Reports (June 30); Thrift Financial Reports (June 30); Summary of Deposits; National Information Center database; U.S. Census Bureau area definitions.

years. Modest effects on concentration, in conjunction with a small increase in the number of banks, suggest that a reduction in competition from commercial banking organizations is not likely to have been a major contributing factor in the availability of credit in recent years.

Overall, small business loans outstanding from commercial banks fell during the recent recession but have increased in every year since 2013 (table 20). Despite significant industry consolidation, concentration in local banking markets—the geographic units that are most relevant for small business lending—did not increase, on average, over the past decade. This lack of change in concentration suggests that the observed decline in small business loans outstanding was not due to reduced competition among commercial banks in the provision of credit to small businesses. Rather, the decline in small business lending by commercial banks was likely caused by a combination of a reduction in demand for credit on the part of small businesses, an increase in competition from nonbank commercial lenders, a decline in the credit quality of many potential small business borrowers, and a tightening of terms and standards on the part of commercial banks. In addition, some of the decrease was likely due to deterioration in the financial condition of many banks during and after the recent recession.[42]

Savings Institutions

Savings institutions, defined as savings banks and savings and loan associations, provide much less credit to small businesses than do commercial banks. The primary lines of business for these institutions, often referred to as thrifts, tend to involve providing retail financial services, such as residential mortgage loans, savings accounts, and negotiable order of

[42] Kiser, Prager, and Scott (2016) find that the distribution of banks' supervisory ratings shifted toward worse ratings between 2007 and 2010 and that those ratings downgrades were associated with significantly lower rates of growth in small business lending over this period.

Table 20. Small business loan and microloan holdings of U.S. commercial banking organizations, by type of loan, 2012–16

Size of loan and year	All	Commerical & industrial (C&I)	Nonfarm nonresidential
Small business loans ($1 million or less)			
Amount outstanding, June 30 (in billions)			
2012	522.5	246.4	276.1
2013	518.8	252.2	266.6
2014	524.4	260.8	263.6
2015	533.6	272.1	261.5
2016	551.1	291.6	259.5
Change[1] (in percent)			
2013	-0.7	2.3	-3.4
2014	1.1	3.4	-1.1
2015	1.7	4.3	-0.8
2016	3.3	7.2	-0.8
Microloans ($100,000 or less)			
Amount outstanding, June 30 (in billions)			
2012	113.4	97.2	16.2
2013	115.6	100.3	15.3
2014	118.8	104.4	14.4
2015	122.4	108.6	13.8
2016	132.6	119.5	13.1
Change[1] (in percent)			
2013	1.9	3.2	-5.7
2014	2.8	4.1	-5.9
2015	3.1	4.1	-4.1
2016	8.3	10.0	-5.1

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. U.S. commercial banking organizations are insured domestically chartered U.S. banks excluding credit card institutions and U.S. branches and agencies of foreign banks. Details may not sum to totals because of rounding.

[1] Change is from June of preceding year to June of year indicated.

Source: Call Reports (June 30).

withdrawal (or NOW) accounts, to households.[43] As of June 30, 2016, there were 4,824 commercial banking organizations and 763 thrifts (tables 15 and 21).[44] The value of small business loans held by savings institutions was slightly less than one-tenth of the value held by banks, while the value of microloans held by savings institutions was less than one-fifth the value of commercial bank holdings. Savings institutions held $54.8 billion in small business loans and $25.1 billion in microloans, compared with $551.6 billion and $132.8 billion, respectively, held by commercial banks.

Table 21. Average microloan and small business loan holdings as a share of assets for U.S. savings institutions and thrifts of different sizes, 2016

Percent, except as noted

Asset class	Number of savings institutions	Small business loans to assets	Microloan holdings to assets
All organizations	**763**	**7.8**	**1.1**
$250 million or less[1]	378	7.7	1.3
$250 million to $1 billion[1]	256	8.7	0.9
$1 billion to $10 billion[1]	113	6.5	0.6
More than $10 billion	16	4.0	3.2

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. Insured U.S. savings institutions includes insured domestically chartered U.S. savings banks and savings and loan associations excluding credit card institutions.

[1] Banks with assets of $250 million are included in the $250 million or less size class, banks with assets of $1 billion are included in the $250 million to $1 billion asset class, and banks with assets of $10 billion are included in the $1 billion to $10 billion asset class.

Source: Call Reports (June 30); Thrift Financial Reports (June 30); the National Information Center database.

These differences between commercial banks and savings institutions reflect both the disparity in overall size between the two groups of institutions and the lower proportion of small business lending conducted by the typical savings institution. In terms of overall size, in 2016, roughly $14.9 trillion in total domestic assets were held by commercial banks and savings institutions, with the latter holding about 7 percent of the total, or $1.1 trillion (tables 14 and 22). In terms of small business lending intensity, the average thrift held roughly 7.8 percent of its asset portfolio in small business loans and 1.1 percent in microloans in 2016 (table 21). In contrast, the average commercial bank held 14.1 percent of its portfolio in small business loans and 3.0 percent in microloans (table 15). These substantial differences in small business lending activity between banks and thrifts clearly indicate that the typical savings institution has been much less active than the typical commercial bank in providing credit to small firms.[45]

[43] Savings institutions also make loans to businesses. Unlike commercial banks, federal savings institutions have statutory restrictions on the type of lending they may do; in the case of business lending, they may hold no more than 20 percent of their assets in commercial loans, and any amounts in excess of 10 percent must be used only for small business loans.

[44] Table 22 gives the number of savings institutions, while table 21 gives the number of organizations owning savings institutions. For example, in 2016 there were 770 savings institutions but only 763 organizations owning savings institutions because 5 firms own 2 savings institutions and 1 firm owns 3 savings institutions.

[45] The 2003 SSBF data corroborate these findings. Thrifts accounted for about 6 percent of total outstanding small business loans, whereas banks accounted for 56.8 percent. Nearly three-fourths of the small business dollars outstanding at thrifts were mortgage loans. In contrast, almost one-half of such dollars outstanding at commercial banks were lines of credit.

Table 22. Structural measures and the size of insured U.S. savings institutions, 2000–16 (selected years)

Year (as of June 30)	Number	Total assets held by insured U.S. commercial banks (billions of dollars)	Share of domestic savings institution assets held by the largest organizations (percent)			
	Insured U.S. thrifts and savings banks		Top 10	Top 25	Top 50	Top 100
2000	1,545	1,167	38.4	52.7	63.4	72.4
2004	1,311	1,583	40.9	57.6	70.3	79.3
2008	1,188	1,851	47.0	64.2	75.1	81.9
2012	989	1,127	42.6	59.6	68.7	77.0
2016	770	1,087	48.7	62.7	72.4	81.1

Note: Insured U.S. savings institutions includes insured domestically chartered U.S. savings banks and savings and loan associations excluding credit card institutions.

Source: Call Reports (June 30); Thrift Financial Reports (June 30); the National Information Center database.

Among savings institutions, the most active lenders to small businesses were not necessarily the largest institutions in terms of assets. In 2016, the 10 most active thrifts accounted for 42.9 percent of thrift small business lending (table 23). These 10 firms held 48.7 percent of all thrift assets. Both of these numbers were about 6 percentage points greater than comparable statistics for 2012.

Thrift microloan lending is more highly concentrated. In 2012, the 10 most active lenders accounted for 84.5 percent of thrift microloans outstanding. By 2016, the top 10's share had increased to 88.9 percent. However, unlike commercial banks, the most active microloan lenders are not necessarily the largest institutions. In 2016, while the 10 most active lenders accounted for almost nine-tenths of thrift microloan dollars outstanding, they held only about one-sixth of total thrift assets.

Credit Unions

A credit union is a not-for-profit financial cooperative, owned and controlled by the people who use its services. Credit unions offer many of the same financial services that banks do. Like savings institutions, credit unions historically have not provided a great deal of credit to small businesses. According to the 2003 SSBF, credit unions provided less than 1 percent of aggregate dollars outstanding to small businesses. However, credit unions have become a more important source of small business loans in recent years. In a 2009 NFIB survey, fewer than 4 percent of firms reported using a credit union as their primary financial institution. By 2010, this figure had increased to just less than 5 percent, and it was near 7 percent by 2011, the last time these data were reported. Similarly, 9.6 percent of households that owned small businesses in the 2013 SCF reported using a credit union as the firm's primary financial institution.

Although outstanding small loans to businesses by credit unions remain a small fraction of those by commercial banks, they have increased rapidly throughout the post-recession period, while commercial banks' small loans to businesses have increased much more slowly (table 24). Between 2012 and 2016, credit union outstanding loans to business members increased 53.4 percent, while outstanding

Table 23. Share of assets and microloan and small business loan holdings of leading U.S. savings institutions and thrifts, 2012 and 2016

Leading savings institutions	Share held by leading holders of small business loans		Share held by leading holders of microloans	
	Small business loans	Assets	Microloans	Assets
2012				
Top 10	36.6	42.6	84.5	13.5
Top 25	41.1	59.6	87.3	17.4
Top 50	50.3	68.7	89.5	21.3
Top 100	59.9	77.0	92.1	27.3
2016				
Top 10	42.9	48.7	88.9	17.4
Top 25	48.9	62.7	91.0	24.7
Top 50	58.3	72.4	93.0	31.5
Top 100	67.7	81.1	95.2	38.5

Note: Small business loans are commercial and industrial loans and nonfarm, nonresidential loans of $1 million or less; microloans, a subset of small business loans, are for $100,000 or less. Insured U.S. savings institutions include insured domestically chartered U.S. savings banks and savings and loan associations excluding credit card institutions. For each category of loan activity, leading banking organizations account for the greatest share of that category.

Source: Call Reports (June 30); Thrift Financial Reports (June 30); the National Information Center database.

Table 24. Business loan holdings of federally insured U.S. credit unions, 2012–16

Year	Total business loans (billions of dollars)	Total business loans less unfunded commitments (billions of dollars)	Number of business loans
2012	40.3	38.3	182,800
2013	43.6	41.1	196,964
2014	58.9	46.1	230,546
2015	54.4	51.2	233,387
2016	61.8	58.0	254,014

Note: Business loans include construction and land development loans and agricultural loans regardless of the size of the loan at origination, which differs from the definition for commercial banks and savings banks.

Source: Quarterly Credit Union Reporting Forms (June 30).

small loans to businesses by commercial banks increased only 1.4 percent.[46]

Since 1998, credit union lending to member businesses has been subject to a cap of 12.25 percent of total assets.[47] Before the passage of the Credit Union Membership Access Act of 1998, there was no limit to the amount that credit unions could lend to member businesses. Bills that would have increased this cap have been introduced in recent Congresses, but none have passed. As of June 2016, 5.6 percent of credit unions had outstanding loans to businesses totaling in excess of 80 percent of their cap. Among the largest credit unions—those with assets of more than $1 billion—23.2 percent had outstanding loans to business in excess of 80 percent of their cap. Thus, an increase in the cap has the potential to accelerate the rate of small business lending by credit unions.

[46] The outstanding business loans from credit unions are not directly comparable with those of commercial banks because the credit union Call Reports do not collect the dollar value of unfunded commitments on construction and development and farmland loans. In addition, credit union Call Reports report all business loans regardless of the size of the loan at origination.

Most, but not all, credit unions were federally insured: In June 2016, 124 state-chartered credit unions were privately insured compared with 5,887 federally insured credit unions (FICUs). Therefore, business-loan numbers reported for FICUs slightly understate business lending for the credit-union sector. In addition, FICUs are not required to report business loans to credit union members that do not sum to more than $50,000, which will also tend to understate business lending by credit unions.

[47] The cap is not binding for FICUs with a low-income designation, a long history of business lending, or a charter granted specifically for business lending.

Lending by Nondepository Sources

In this changing financial marketplace, small businesses have been diversifying their providers of financial services. Nondepository institutions have become increasingly important sources of financial services to small businesses. According to the 1998 and 2003 SSBFs, while two-fifths of firms reported using at least one nondepository source for their financial services in 1998, more than one-half of them did so in 2003. However, firms reported receiving most of their credit products (lines of credit, loans, and capital leases) from depository sources. Among nondepository sources, finance companies were the primary provider of credit.[48]

More recently, small firms are turning to alternative nondepository sources for credit products. While a growing share of firms interviewed in the 1998 and 2003 SSBFs indicated using nondepository institutions, less than 2 percent reported that such institutions were their primary source for financial products. The 2009 NFIB survey reported a similar share of businesses using something other than a bank, credit union, or savings and loan association as their primary financial institution. This share more than doubled by 2011, when 5 percent of firms reported having a nondepository primary institution. In addition, firms may receive credit from institutions that are not their primary financial institution, likely making the shares of firms reporting nondepository institutions as a primary institution a lower bound for their total usage. While the fraction of total loans in this category is relatively small, the fact that it is increasing may indicate a growing need for this type of funding. Although there are an ever-growing number of nondepository sources of financing, data are scarce. This section briefly discusses finance company lending, venture capital funding, and online nondepository lending to small businesses.

Finance Companies

Businesses use finance companies primarily for the purchase of motor vehicles or other business equipment.[49] Lending by finance companies for motor

[48] In the 1998 SSBF, 69.1 percent of dollars outstanding were owed to depository institutions, and 13.4 percent were owed to finance companies; in 2003, 63.7 percent of dollars outstanding were owed to depository institutions, and 16.2 percent were owed to finance companies.

[49] According to data from the G.20 Statistical Release, "Finance Companies," loans and leases for motor vehicles and business equipment accounted for 70 to 80 percent of all outstanding

vehicles grew steadily between 2013 and 2016, although at a much slower rate in 2016 (table 25). At the same time, outstanding equipment loans, which were much higher than motor vehicle loans in 2013, declined substantially over this period (particularly between 2015 and 2016) and ended the period in line with motor vehicle loans. Other business receivables grew more than 20 percent over the period, with a substantial fraction of the growth occurring between 2014 and 2015. It is important to note that it is not possible to separate the data according to the size of the business, but if one assumes that the trends broadly hold for both large and small businesses, it would appear that lending to small businesses by finance companies likely increased over the most recent period.

Venture Capital

Venture capital is an important source of financing for the subset of small businesses that are young and have the potential for high growth. Puri and Zarutskie (2012) find that firms financed by venture capital accounted for approximately 0.14 percent of firms between 2001 and 2005. However, these same firms accounted for about 5.3 percent of aggregate employment.

Because of the high risk of investing in these firms, even relative to other small businesses, venture capital investments typically take the form of convertible preferred securities rather than debt (Kaplan and Stromberg, 2003). Broadly speaking, these securities transfer control of the firm to the venture capitalists when the firm does poorly, as is the case with traditional debt, and they transfer control of the firm to management when the firm goes well, as is the case with common equity.

Venture capital investment increased dramatically between 2012 and 2015 before falling off a bit in 2016 and the first quarter of 2017 (table 26 and figure 9). The total amount invested by venture capital firms grew from about $41 billion in 2012 to almost $80 billion in 2015 before declining slightly to about $71 billion in 2016. The number of firms receiving funding from a venture capital firm followed a similar trend, climbing from about 7,900 firms in 2012 to 10,400 in 2015 before declining to 8,400 in 2016.

Venture capitalists tend to invest in a firm relatively early in the firm's life and then continue to finance the firm as it grows. Thus, venture capital includes financing both young, small firms and more mature, large firms. To demonstrate the evolution in venture capital investment in smaller firms, table 26 breaks down investment activity by the stage of the firm's

business loans at these lenders between 2007 and February 2012. The G.20 statistical release is available on the Federal Reserve Board's website at https://www.federalreserve.gov/releases/g20/current/g20.htm.

Table 25. Outstanding loans to businesses by finance companies, 2013–16

Category	2013	2014	2015	2016
Business	401.3	411.5	425.1	417.8
Motor vehicles	143.0	150.9	154.4	155.5
Retail loans	28.1	30.0	26.4	27.3
Wholesale loans[1]	86.2	88.6	95.9	97.9
Leases	28.8	32.4	32.2	30.3
Equipment	172.4	173.9	170.7	157.1
Loans	110.1	115.5	118.2	116.2
Leases	62.3	58.4	52.5	40.9
Other business receivables[2]	85.9	86.7	100.0	105.2
Securitized assets[3]	0.0	0.0	0.0	0.0

1 Credit arising from transactions between manufacturers and dealers, that is, floor plan financing.

2 Includes loans on commercial accounts receivable, factored commercial accounts, and receivable dealer capital; small loans used primarily for business or farm purposes; and wholesale and lease paper for mobile homes, recreation vehicles, and travel trailers.

3 Outstanding balances of pools upon which securities have been issued; these balances are no longer carried on the balance sheets of the loan originator. Detailed historical data on securitized business receivables are available from the Data Download Program.

Source: Federal Reserve Board, Statistical Release G.20, "Finance Companies."

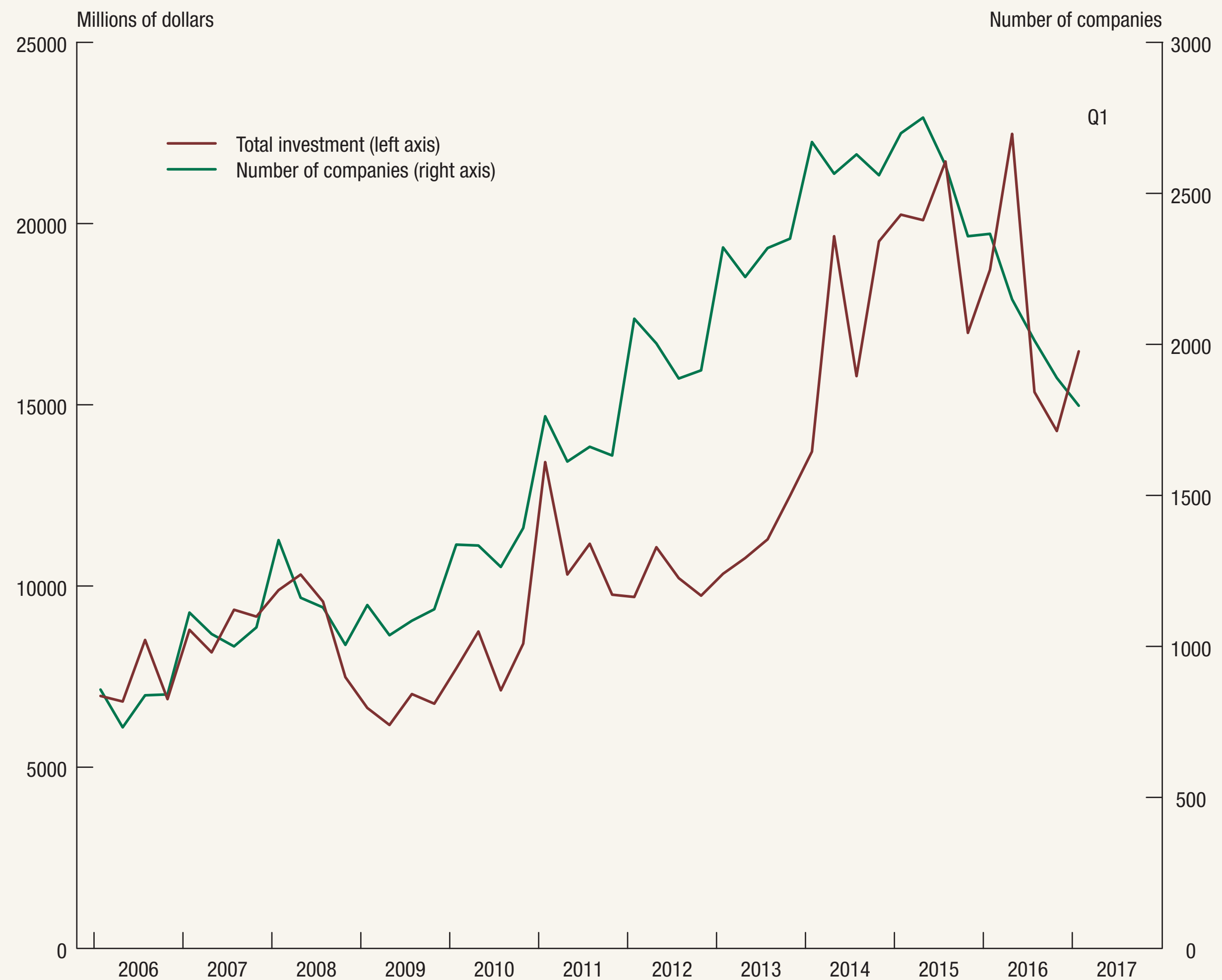
Table 26. Venture capital Investment, 2012–17

Development Stage	2012	2013	2014	2015	2016	2017:Q1
Angel/seed						
Investment	3,577	4,875	6,726	8,094	6,633	1,450
Companies	3,538	4,631	5,459	5,663	4,244	823
Average investment	1.0	1.1	1.2	1.4	1.6	1.8
Early stage						
Investment	12,691	14,405	19,501	23,396	22,988	5,671
Companies	2,624	2,787	3,025	2,946	2,604	549
Average investment	4.8	5.2	6.4	7.9	8.8	10.3
Late stage						
Investment	24,448	25,605	42,431	47,547	41,205	9,353
Companies	1,746	1,819	1,966	1,814	1,576	428
Average investment	14.0	14.1	21.6	26.2	26.1	21.9
Total						
Investment	40,717	44,885	68,658	79,037	70,826	16,474
Companies	7,889	9,213	10,424	10,401	8,417	1,797
Average investment	5.2	4.9	6.6	7.6	8.4	9.2

Note: Dollar values are in millions.

Source: PitchBook Data, Inc., National Venture Capital Association Venture Monitor.

Figure 9. Venture capital investment activity, 2006–17



Source: PitchBook Data, Inc., National Venture Capital Association Venture Monitor.

development. There are a couple of trends to highlight across the three categories. First, angel and seed firms, which represent the youngest and likely smallest set of firms, received the smallest average investment, of approximately $1 million to $1.8 million across the sample, but saw the largest number of firms receiving an investment. Late-stage firms, on the other hand, received much more financing, with an average investment of between $14 million and $26 million, but many fewer firms received such financing. Second, the trends in investment activity were broadly similar for all three groups of firms; investment levels grew rapidly from 2012 to 2015 before falling off in 2016 and early 2017.

Online Lending to Small Businesses

The development of financial technology has enabled small businesses to access credit in ways previously unavailable to them. Specifically, online lenders provide technology-based platforms for matching borrowers and investors. These platforms leverage their web-based and data-driven technologies to provide consumer and business loan products more efficiently than traditional lending platforms.[50]

---

[50] Although online lenders collect a great deal of nontraditional data on borrowers, they report that most of such data are used to confirm identity and prevent fraud rather than for underwriting.

Online lending—also referred to as marketplace or peer-to-peer lending—generally refers to platforms that bring together potential borrowers and lenders to facilitate the provision of loans. Online lending can be broadly characterized as a nonbank entity that uses technology to simplify the loan process—including the application, decision process, funds distribution, and loan repayment—and operates as a two-sided market of consumers and investors. Along with interest, the borrower is typically charged a fee to originate the loan, and investors pay for servicing the loans. In general, marketplace lenders offer uncollateralized low-dollar loans with rapid decision times. The loans are typically funded and repaid via electronic transfers, with the lender and borrower never meeting in person.

The online lending market has continued to evolve and expand. According to a recent report from the Cambridge Centre for Alternative Finance, online alternative finance platforms in the United States facilitated more than $6.9 billion of loans to small and medium enterprises in 2015 (Wardrup and others, 2016). While this amount remains small relative to the small business credit market as a whole, this market has been growing very rapidly over the past few years; the $6.9 billion in loans in 2015 represents a 145 percent increase over 2014, which, in turn, was 147 percent greater than 2013. This high sustained growth rate suggests that online lending is increasingly becoming an important source of credit for small businesses.

Special Issues

This section examines some developments in small business credit markets that have affected the delivery and availability of credit to small businesses and are likely to continue doing so: government initiatives to support credit access for small businesses and securitization of small business loans. First, government initiatives such as the CRA and SBA lending programs are reviewed. These programs focus on the financing needs of small firms in underserved communities and the financing needs of young firms without much, or any, financial history. Second, the securitization market is examined. A well-functioning secondary market increases small businesses' access to credit by providing an efficient funding supplement to direct lending.

Government Initiatives to Support Credit Access for Small Business

Several long-standing government initiatives exist to help support credit access for small businesses, particularly small businesses owned by historically underserved groups such as women and minorities. Two such initiatives of particular importance are the CRA and several loan programs sponsored by the SBA.

Community Reinvestment Act

The Congress enacted the CRA in 1977 to encourage federally insured depository institutions to help meet the credit needs of their local communities, particularly low- and moderate-income (LMI) neighborhoods, consistent with safe and sound operations.[51] These local communities, referred to hereafter as CRA assessment areas, are generally identified as the areas where banking institutions have a physical branch office presence and take deposits. LMI neighborhoods have been defined for regulatory purposes as census tracts with a median family income of less than 80 percent of the median family income of the broader area according to decennial census data.[52]

Under the CRA, the bank regulatory agencies regularly review institutions' performance in this endeavor and prepare publicly available written evaluations, which include ratings. The CRA requires that supervisory agencies consider a financial institution's CRA performance when evaluating an institution's application for expansion or relocation of depository facilities through branching, mergers, or acquisitions. Decisions on these applications are made public.

Although much of the small business lending of financial institutions occurring in LMI areas cannot be directly attributed to the CRA, bankers and community representatives indicate that some of it is the result of individual banks responding to their CRA obligation. Some lending activity also results from interaction with community representatives and government agencies familiar with the CRA and the possible roles that financial institutions can play in community development and reinvestment.

A common type of community reinvestment intermediary used by banks to help finance small businesses in lower-income areas is the bank-owned or bank-affiliated community development corporation. Under certain conditions, bank holding companies, national- and state-chartered commercial banks, and savings institutions may make equity investments in small businesses through a community development corporation or a limited liability company. Generally, these entities can make debt and equity investments in small businesses when the firms are located in LMI areas and the jobs created and services provided benefit primarily LMI persons.

[51] Credit unions are not subject to CRA requirements.

[52] For census tracts in an MSA, the MSA would be considered the broader area. For census tracts outside of an MSA, all non-MSA counties within the same state would be considered the broader area.

Another form of intermediary is the consortium lending organization that specializes in financing young or start-up small and minority businesses. By participating in such consortiums, banks can mitigate the risks and costs of lending to small firms. These loan consortiums are usually organized in corporate form and may be nonprofit or for-profit organizations. Although many are organized primarily by banks, they often have nonbank participants such as insurance companies, utilities, other corporations, religious institutions, and other institutional investors. Other loan consortiums are quasi-public arms of state, regional governments, or local governments.

Because many institutions do not have the expertise or cannot bear the development costs of special small business finance programs, especially those focusing on reinvestment areas, many banks have created or assisted intermediaries that support small businesses in their communities. Indeed, a notable development in bank reinvestment programs has been formal and informal working partnerships among banks, regional or neighborhood nonprofit organizations, and community-based development corporations. These organizations identify prospective borrowers, provide loan counseling, serve as experienced developers in low-income and minority areas, and assist banks in marketing loan programs. These types of partnerships have also been effective in helping reduce the high transaction costs often associated with lending to very small firms. Such organizations also frequently package financial resources for small firms from several public and private sources. Overall, these types of partnerships enable banks to make small business loans that might not otherwise have been financially feasible.

Community Reinvestment Act Data on Lending in Lower-Income and Minority Neighborhoods

CRA regulations require larger commercial banks and savings associations to collect and report data regarding the geographic location of their small business lending. As a consequence of amendments to CRA regulations in 2005, banking institutions with assets less than $1.221 billion are no longer required to report data on their small business and small farm lending. However, many smaller institutions still elect to report these data. Analysis of Call Report data indicates that lenders reporting CRA data account for over two-thirds of the dollar volume of small business loans outstanding at all commercial banks and savings associations.

Each reporting bank makes an annual report on the total number and dollar volume of small business loan originations by census tract. As in the Call Report data, small business loans encompass C&I loans and NNP loans whose original amounts are $1 million or less. However, unlike the Call Report data, the CRA data provide information on originations, or the *flow*, of small business credit rather than the *stock* of outstanding loan balances.[53] The CRA data also provide information on the number and dollar volume of small business loans originated to businesses with revenues of less than $1 million, to the extent that the reporting institution collects such information when making credit decisions.

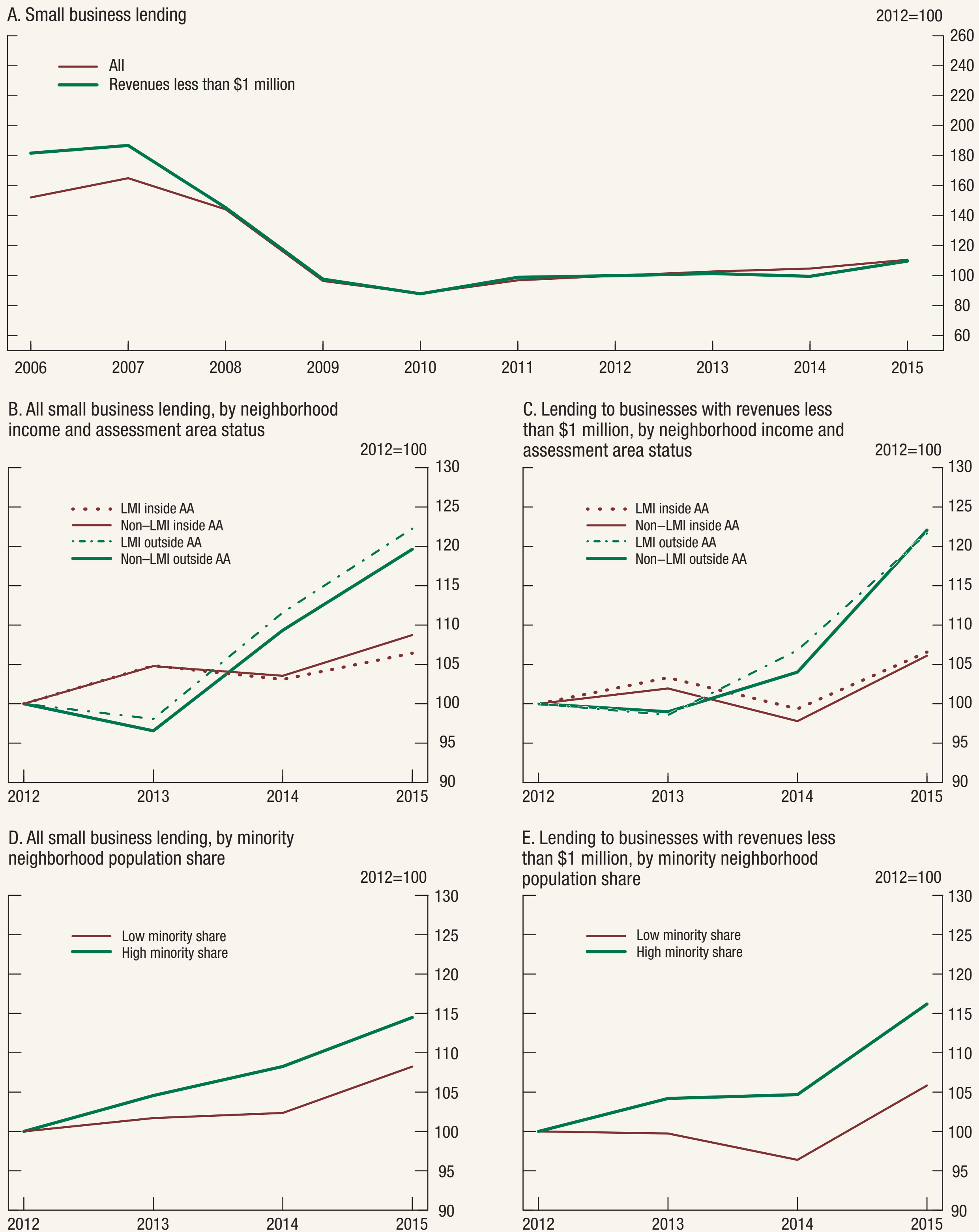
Figure 10, panel A, shows that the dollar volume of small business loan originations has barely recovered from effects of the financial crisis; it grew about 25 percent between 2010 and 2015, the latest year for which data are available, but remains approximately 33 percent below their 2007 high. Similarly, after dropping more than 50 percent between 2007 and 2010, originations to the smallest businesses, those with revenues of less than $1 million, grew approximately 25 percent between 2010 and 2015. Panels B and C disaggregate these two series by whether loans were made in a bank's CRA assessment area and whether loans were made in LMI neighborhoods (see previous section for assessment area and LMI definitions).[54]

Both panels show stronger recovery in small business loan origination volume outside of assessment areas. Origination volumes were about 20 percent higher outside assessment areas in 2015 in comparison with 2012, while they were 8 percent higher inside assessment areas. The disparity was slightly starker for

[53] For credit cards and lines of credit in the CRA data, banks report new and renewed line sizes (the maximum amount of available credit) as the amount originated. More details on CRA reporting requirements and standards are available on the Federal Financial Institutions Examination Council's website at https://www.ffiec.gov/cra/default.htm.

[54] In 2012, there was a switch from using census-tract geographic designations and population data from the 2000 decennial census to using census-tract geographic designations from the 2010 decennial census and census-tract population data from the 2006–10 American Community Surveys. The change complicates the analysis over time, as the number of tracts that are classified as LMI or higher-minority-share changed dramatically between 2011 and 2012. Therefore, only data for 2012 through 2015 are presented.

Figure 10. Community reinvestment, 2006–15



Note: LMI is low and moderate income; AA is assessment area.

Source: Federal Financial Institutions Examination Council, data reported under the Community Reinvestment Act.

originations to firms with revenues less than $1 million. At the same time, it is important to note that the decline in originations during the financial crisis was significantly steeper outside of assessment areas; as a result, some of the higher growth outside of assessment areas may be reversion back to pre-crisis levels. The recovery in lending has been similar across LMI and non-LMI neighborhoods inside and outside of assessment areas.

Panels D and E display the trend in lending across neighborhoods with higher (at least 30 percent) and lower (less than 30 percent) shares of minority residents. Since 2012, higher-minority-share-neighborhoods have experienced higher growth in origination volume; as a result, while the origination amounts in lower-minority-share neighborhoods are approximately 8 percent higher in 2015 than in 2012, they are 14 percent higher for higher-minority-share neighborhoods. The trend is similar for loans to the smallest businesses—those businesses with revenues less than $1 million.

Table 27 provides additional data on small business lending in LMI versus non-LMI neighborhoods, and inside versus outside of CRA assessment areas. The top panel shows data for 2010, while the bottom panel shows data for 2015. Comparing across columns, the volume of lending is considerably higher in non-LMI neighborhoods than in LMI neighborhoods in both years, reflecting, at least in part, that roughly three-fourths of the population reside in non-LMI neighborhoods.

Within each income group, assessment area lending generally exceeds non–assessment area lending in dollar terms, but not in terms of the number of loans. This pattern results from specialized credit

Table 27. Small business lending, by neighborhood income and assessment area status, 2010 and 2015

Category	LMI			Non-LMI			Total[1]
	Inside AA	Outside AA	Total	Inside AA	Outside AA	Total	
2010							
Small business loans							
Dollar volume (millions)	31,080	6,516	37,596	105,254	29,408	134,662	174,818
Share by credit card lender (percent)	0.1	39.3	6.9	0.0	41.5	9.1	8.5
Share by top 10 bank organizations (percent)	36.8	7.8	31.7	35.8	9.9	30.1	30.0
Number of loans (thousands)	268	471	739	1,087	2,263	3,350	4,215
Average loan amount (thousands)	115.8	13.8	50.8	96.8	13.0	40.2	41.5
Loans to businesses with revenues less than $1 million							
Dollar volume (millions)	9,846	1,902	11,748	42,194	9,507	51,701	64,579
Share of all (percent)	31.7	29.2	31.2	40.1	32.3	38.4	36.9
Share by credit card lender (percent)	0.0	20.6	3.3	0.0	22.3	4.1	3.9
Share by top 10 bank organizations (percent)	34.9	10.5	31.0	36.0	13.3	31.9	31.1
Number of loans (thousands)	145	105	249	678	516	1,194	1,490
Average loan amount (thousands)	68.0	18.2	47.1	62.3	18.4	43.3	43.3
2015							
Small business loans							
Dollar volume (millions)	42,220	12,242	54,462	119,931	43,591	163,522	219,703
Share by credit card lender (percent)	11.4	45.3	19.0	12.1	48.9	21.9	21.0
Share by top 10 bank organizations (percent)	33.2	8.8	27.7	34.6	10.2	28.1	27.8
Number of loans (thousands)	538	749	1,287	1,728	2,757	4,485	5,854
Average loan amount (thousands)	78.4	16.3	42.3	69.4	15.8	36.5	37.5
Loans to businesses with revenues less than $1 million							
Dollar volume (millions)	13,507	4,138	17,645	45,553	16,658	62,211	80,608
Share of all (percent)	32.0	33.8	32.4	38.0	38.2	38.0	36.7
Share by credit card lender (percent)	14.0	50.7	22.6	15.4	53.2	25.6	24.7
Share by top 10 bank organizations (percent)	30.5	11.6	26.1	33.3	13.6	28.2	27.5
Number of loans (thousands)	317	330	646	1,087	1,300	2,386	3,064
Average loan amount (thousands)	42.7	12.6	27.3	41.9	12.8	26.1	26.3

Note: LMI is low and moderate income; AA is assessment area.

[1] Includes lending with unknown income and assessment area status.

Source: Federal Financial Institutions Examination Council, data reported under the Community Reinvestment Act.

card lending institutions making up a large portion of non–assessment area lending. A dozen or so such institutions issue business cards nationwide but generally do not have an extensive network of bank branches and therefore have limited CRA assessment areas.[55] Comparing LMI with non-LMI areas, table 27 indicates that credit card lenders made up a larger share of loan origination volume in non-LMI areas than in LMI areas in both 2010 (9.1 percent versus 6.9 percent) and 2015 (21.9 percent versus 19.0 percent).

Finally, table 27 also shows the share of small business lending by banks in the top 10 banking organizations according to total assets, by neighborhood income group. These data reveal that the top 10 organizations accounted for just under one-third of dollars loaned in both LMI and non-LMI neighborhoods in both 2010 and 2015.[56]

Small Business Administration Programs

Support for small business development has been a priority of policymakers for several decades, and federal, state, and local agencies have sponsored programs that assist in channeling capital to small business. At the federal level, the agency with the most direct role in this objective is the SBA, which the Congress created in 1953 to help entrepreneurs form successful small enterprises. The SBA provides financing to young and growing small firms through several channels such as the 7(a) Loan Program and SBA 504 Certified Development Companies (CDCs). Among the policy objectives of the SBA loan programs are the goals of promoting entrepreneurship opportunities for women and minorities.

SBA 7(a) Loan Program

The largest SBA program is the 7(a) Loan Program, which provides lenders with a partial loan guarantee for extending credit to small businesses that meet the SBA's underwriting and eligibility criteria. Participating lenders agree to structure loans according to the SBA's requirements, and they apply for and receive a guarantee from the SBA on a portion of this loan. The SBA does not fully guarantee 7(a) loans—the lender and the SBA share the risk that a borrower will not be able to repay the loan in full. The SBA provides a guarantee of as much as 85 percent for loans less than or equal to $150,000 and a guarantee of as much as 75 percent for loans greater than $150,000. The maximum loan amount is now generally $5 million, increased in 2010 from $2 million under the Small Business Jobs Act of 2010. However, under the Express loan program, which requires less loan documentation and provides quicker turnaround time, only 50 percent of the loan is guaranteed, and the maximum loan amount is $500,000.

Figure 11, panel A, shows that although the dollar volume of SBA 7(a) loans dropped off some in 2012, it grew steadily through 2016 with gross loan approvals increasing from about $15 billion to more than $24 billion. The number of loans grew roughly in parallel with the dollar volume throughout the period, leaving the average 7(a) loan size relatively unchanged over the five-year period.

Panel B shows time trends in the fraction of 7(a) loans reported to have gone to minority- and women-owned businesses as well as the fraction of loans below $150,000, which qualify for a larger guarantee percentage and are more likely to have gone to smaller businesses. The share of loans to women-owned businesses was between 12 and 14 percent between 2010 and 2016. The share of loans to minority-owned businesses ticked up over the period—from 24 percent in 2010 to 30 percent in 2016. This panel also shows that the fraction of loans under $150,000 has decreased slightly since 2010.

SBA 504 Certified Development Companies

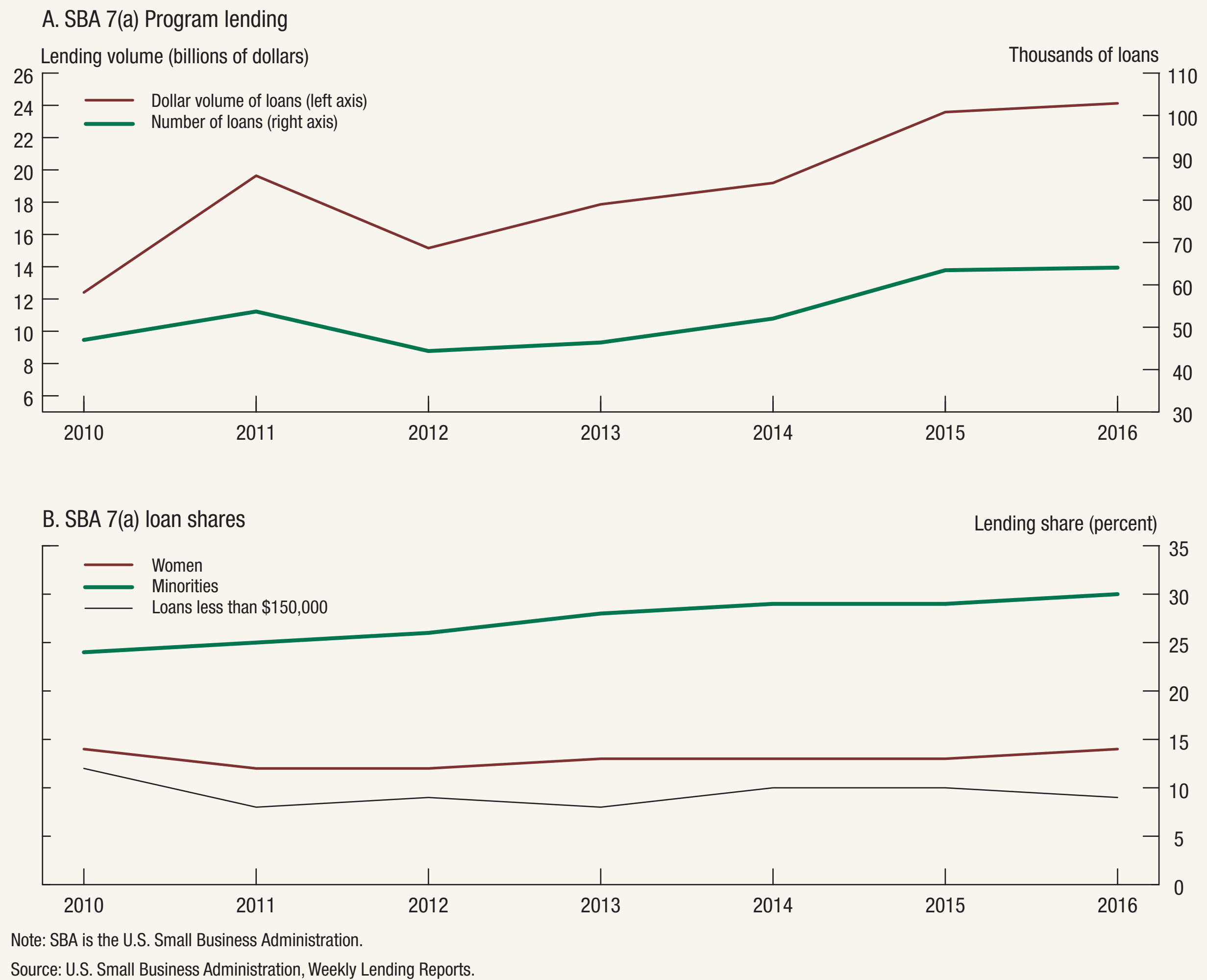
Banks often work with certified development companies (CDCs) to leverage funds for small business financing. CDCs are generally nonprofit corporations specializing in small business finance and are certified by the SBA to participate in the agency's section 504 financing program. The SBA 504 program is intended to help small businesses expand and to create jobs by providing CDCs with the ability to issue SBA-guaranteed long-term debentures to fund small firms' purchase of plant, equipment, or real estate. These loans are typically structured with three components: (1) a first mortgage or lien, which is made by a private commercial lender for 50 percent of the total project and does not come with a government guarantee; (2) a second mortgage or lien, which

---

55 One example is FIA Card Services, which is a subsidiary of Bank of America Corporation and specializes in credit card issuance for the Bank of America organization.

56 It is important to keep in mind that the CRA data exclude a large number of smaller banks that may account for a significant number of loans, and, therefore, the share of lending attributed to the top 10 organizations is overstated in the CRA data.

Figure 11. U.S. Small Business Administration 7(a) Program, 2010–16



Note: SBA is the U.S. Small Business Administration.

Source: U.S. Small Business Administration, Weekly Lending Reports.

is made by a CDC for 40 percent of the total project and is backed by a 100 percent SBA-guaranteed debenture; and (3) borrower equity for the remaining 10 percent of the total project.

The Commercial Real Estate and Economic Development (CREED) Act was passed by the Congress in 2015.[57] Under the CREED Act, an SBA 504 loan may be used to refinance conventional (non-SBA) debt rather than for expansion or job creation. This change allows small businesses to refinance long-term debt taken on with a 25-year amortization schedule with a balloon payment due at the end of 10 years. During the financial crisis, a similar measure was instituted as part of the 2010 Small Business Jobs Act and was quite popular. The CREED Act allows the SBA to offer the refinance program as long as it operates at zero subsidy with fees covering the cost of operating the program.

Figure 12, panel A, shows that funding under the 504 program hit a peak of $6.7 billion in 2012 and fell to $4.7 billion in 2016. The total number of loans followed a pattern similar to the total dollars. Panel B shows that the trends in 504 demographics are similar to those of the 7(a) program. The share of 504 loans issued to female-owned businesses was 13 to 14 percent for the entire period. The share of loans to minorities generally increased over the period, from 24 percent in 2010 to 28 percent in 2016. The share of 504 loans under $150,000 has drifted slowly down over time, accounting for just 1 percent of 504 loans in 2016.

---

[57] Full details are available on the website of Congress.gov at https://www.congress.gov/bill/114th-congress/senate-bill/966.

Figure 12. U.S. Small Business Administration 504 Program, 2010–16

Note: SBA is the U.S. Small Business Administration.

Source: U.S. Small Business Administration, Weekly Lending Reports.

Small Business Investment Companies

The Small Business Investment Company (SBIC) program was initiated in 1957 to provide debt and equity capital to young and growing companies. Although the venture capital market has matured, the SBIC program remains important because many small, growing firms find it difficult to obtain equity financing from venture capital companies. Banks and bank holding companies can own and operate SBICs, which are licensed and regulated by the SBA. SBICs can be organized as separate subsidiaries of one institution or of multiple institutions and other private investors, or they can be controlled by private interests not affiliated with financial institutions. To obtain capital, SBICs often sell long-term debentures that are guaranteed by the SBA. The proceeds of these debentures are used to provide longer-term financing for small businesses, often in conjunction with the issuance of equity interests in the small business to the SBIC. In fiscal year 2016, SBIC's gross approvals were $2.5 billion in 65 debentures. This figure represents about a 30 percent increase over 2012 gross approvals of $1.9 billion.

Microloan Program

SBA's Microloan Program provides small businesses with small short-term loans for working capital or the purchase of inventory, supplies, furniture, fixtures, machinery, or equipment. The SBA makes funds available to specially designated intermediary lenders, which are nonprofit community-based organizations with experience in lending as well as management and technical assistance. These intermediar-

ies make loans to eligible borrowers. The maximum loan amount is $50,000, but the average microloan is about $13,000. In fiscal 2016, gross approvals for the microloan program were $35 million.

Securitization of Small Business Loans

The securitization of small business loans has the potential to substantially influence the availability of credit to small businesses. Potential benefits exist for lenders, borrowers, and investors. However, the obstacles to securitizing small business loans are large.

Process of Securitization

Securitization is the process of packaging individual loans and other debt instruments, converting the package into a security, and enhancing the credit status or rating to further the security's sale to third-party investors (Kendall and Fishman, 1998). This process is generally seen as an efficient funding supplement to direct lending in markets for certain financial assets—notably, agency-backed residential mortgages, commercial mortgages, credit card receivables, and automobile loans.

Active secondary markets in these assets can benefit all parties. Lenders profit from scale economies or from originating and servicing loans without having to add all of the loans to their own balance sheets. They can therefore improve their return on capital by substituting off-balance-sheet, fee-based sources of income for riskier capital-intensive direct lending. This practice potentially results in added liquidity and greater balance sheet diversity. Borrowers whose loans are eligible for securitization typically enjoy lower financing costs. Investors in the securities, while still earning attractive returns, may receive greater liquidity and lower risk than they would by investing directly in the individual loans. Overall, credit risk, in principle, could be allocated more efficiently.

Successful securitization requires that the costs of pooling individual loans and administering the securities collateralized by the loans be less than the spread between the average contract rate on the underlying loans and the yield that investors demand on the securities. Besides various expenses for administration, costs stem from obtaining a high credit rating to reassure investors of the reliability of a security's cash flow. High ratings are often obtained through the provision of "credit enhancements" to the security's purchaser by the originator or others. These enhancements sometimes involve an agreement by the originator or other party to absorb, through the portion of the pool held by them, specified first dollar losses of the pool before any loss falls on the investors in the securitized pool.

Securitization generally has thrived in markets in which the costs of acquiring and communicating information to investors about loans and borrowers are low. These conditions usually occur as a result of standardized loan underwriting criteria; advances in information technology, which make estimating default probabilities and prepayment patterns easier under various economic conditions; and experience in developing and selling loan pools in the secondary market. Most small business loans cannot readily be grouped into large pools that credit agencies and investors can easily analyze: Loan terms and conditions are not homogeneous, underwriting standards vary across originators, and information on historical loss rates is typically limited. The information problems associated with small business loans can be overcome, or offset to a degree, by some form of credit enhancement, as in the case of the SBA's 7(a) loans. However, the more loss protection needed to sell the securities, the smaller are both the net proceeds from the sale of the securities and the incentive for lenders to securitize their loans. Small business loans are an asset for which the high transaction costs of providing credit enhancements have made many potential securitizations unprofitable.

A significant step in encouraging the development of markets for securitized small business loans has been the removal of certain regulatory impediments. The Riegle Community Development and Regulatory Improvement Act of 1994 (Riegle Act) extended some of the regulatory accommodation provided by the Secondary Mortgage Market Enhancement Act of 1984 to issuers of securities backed by small business loans (and commercial mortgages). The 1984 act applied only to issuers of residential mortgage-backed securities. The benefits of the Riegle Act include the elimination of state-level investment restrictions and securities registration requirements as well as the establishment of favorable federal regulatory treatment. Investment restrictions for federally regulated banks, thrifts, and credit unions and for state-chartered thrifts, insurance companies, and pension funds were relaxed as well. Also, risk-based capital requirements for depository institutions that

securitize loans but retain "recourse" on subordinated classes of securities were reduced.

A remaining impediment to the development of markets for securitized small business loans has been the lack of more-uniform standards for underwriting and loan documentation. However, the use of credit-scoring systems in the origination of small business loans could address this problem, at least to some extent, by providing a credible, low-cost measure of the expected performance of small business loans. As a result, the information gap associated with small business lending could be lessened, and the volume of securitizations could increase. To date, however, this practice has not been broadly adopted.[58]

Securitization of SBA Loans

Historically, most of the small business loans that have been securitized involved the guaranteed portion of loans made under the SBA's 7(a) Loan Program. These securitizations have been fairly common because they do not involve the risk and information impediments typically associated with the securitization of small business loans. SBA 7(a) loans tend to be highly standardized because the underlying loans are often backed by similar types of collateral and loan documentation. In addition, the originators are SBA "preferred lenders" and are perceived to have clear and rigorous underwriting standards that are consistently applied.

Between 2012 and 2016, the secondary market volume of the guarantee portion of 7(a) SBA loans grew from around $4.5 billion to about $8.5 billion. Because the guaranteed portions trade with a premium, these sales represent total sales of nearly $5 billion to more than $9 billion, respectively (U.S. Small Business Administration, 2016).

The secondary market for 7(a) SBA loans appears to be healthy and operating well. With no programmatic changes in the foreseeable future, the market should continue to move along smoothly at current levels.

The other large loan program from the SBA is the 504 program, which primarily finances real estate. As noted earlier, 504 loans are typically funded through a combination of funds from a private lending institution, the SBA CDC, and the business owner. CDCs assist small business borrowers in preparing and submitting the SBA 504 loan applications. The debentures are packaged with other debentures into a national pool and sold monthly to investors. As the traditional markets become more volatile, the demand for these safe investments generally increases. The market for the guaranteed portion of SBA 504 loan on the secondary market has traditionally been much smaller than that for the 7(a) program.

Securitization of Non-SBA Guaranteed Loans

The secondary market for non-SBA loans is limited. According to a Moody's report (2014), the sector has had very little issuance since 2008, largely because of the recession and the decline in real estate prices. The outstanding aggregate balance on these securities was roughly $8 billion. As this sector of lending has shown no signs of recovery since the crisis, it is not likely to grow much in the near future. There have been a small handful of marketplace lenders that successfully bundled some of their small business loans to raise additional capital. However, the total over the past five years was only $1.7 billion, and there have been no new securitization packages in the past year. This amount is a very small fraction of total small business loan dollars outstanding.

[58] Although credit scoring has the potential to increase the uniformity of underwriting procedures and standards for small business loans, thereby expanding access to secondary markets, Cowan and Cowan (2006, p. viii) report that "there is no indication of any momentum in the development of secondary markets for small business loans." Their survey finds that respondents generally did not view secondary-market sales as an important reason for adopting small business credit scoring.

References

Adams, Robert M. (2012). "Consolidation and Merger Activity in the United States Banking Industry from 2000 through 2010," Finance and Economics Discussion Series 2012-51. Washington: Board of Governors of the Federal Reserve System, August, https://www.federalreserve.gov/pubs/feds/2012/201251/201251abs.html.

Adams, Robert M., and Dean F. Amel (2007). "The Effects of Past Entry, Market Consolidation, and Expansion by Incumbents on the Probability of Entry," Finance and Economics Discussion Series 2007-51. Washington: Board of Governors of the Federal Reserve System, October, https://www.federalreserve.gov/pubs/feds/2007/200751/200751pap.pdf.

Akkus, Oktay, J. Anthony Cookson, and Ali Hortasu (2016). "The Determinants of Bank Mergers: A Revealed Preference Analysis," *Management Science,* vol. 62 (8), pp. 2241–58.

Amel, Dean F., and Kenneth P. Brevoort (2005). "The Perceived Size of Small Business Banking Markets," *Journal of Competition Law and Economics,* vol. 1 (4), pp. 771–84.

Avery, Robert B., and Katherine Samolyk (2000). "Bank Consolidation and the Provision of Banking Services: The Case of Small Commercial Loans," Working Paper Series 00-1. Washington: Federal Deposit Insurance Corporation, December, https://www.fdic.gov/bank/analytical/working/00-1.pdf.

——— (2004). "Bank Consolidation and Small Business Lending: The Role of Community Banks," *Journal of Financial Services Research,* vol. 25 (April–June), pp. 291–325.

Berger, Allen N., Seth D. Bonime, Lawrence G. Goldberg, and Lawrence J. White (2004). "The Dynamics of Market Entry: The Effects of Mergers and Acquisitions on Entry in the Banking Industry," *Journal of Business,* vol. 77 (October), pp. 797–834.

Berger, Allen N., Rebecca S. Demsetz, and Philip E. Strahan (1999). "The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future," *Journal of Banking and Finance,* vol. 23 (February), pp. 135–94.

Berger, Allen N., Lawrence G. Goldberg, and Lawrence J. White (2001). "The Effects of Dynamic Changes in Bank Competition on the Supply of Small Business Credit," *European Finance Review,* vol. 5 (1–2), pp. 115–39.

Berger, Allen N., Richard J. Rosen, and Gregory F. Udell (2001). "The Effect of Market Size Structure on Competition: The Case of Small Business Lending," Finance and Economics Discussion Series 2001-63. Washington: Board of Governors of the Federal Reserve System, December, https://www.federalreserve.gov/pubs/feds/2001/200163/200163abs.html.

Berger, Allen N., and Gregory F. Udell (1998). "The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle," *Journal of Banking and Finance,* vol. 22 (August), pp. 613–73.

——— (2002). "Small Business Credit Availability and Relationship Lending: The Importance of Bank Organisational Structure," *Economic Journal,* vol. 112 (February), pp. F32–F53.

Bitler, Marianne P., Alicia M. Robb, and John D. Wolken (2001). "Financial Services Used by Small Businesses: Evidence from the 1998 Survey of Small Business Finances," *Federal Reserve Bulletin,* vol. 87 (April), pp. 183–205, https://www.federalreserve.gov/pubs/bulletin/2006/smallbusiness/smallbusiness.pdf.

Board of Governors of the Federal Reserve System (2002). *Report to the Congress on the Availability of Credit to Small Businesses.* Washington: Board of Governors, September, https://www.federalreserve.gov/boarddocs/rptcongress/sbfreport2002.pdf.

——— (2012). *Report to the Congress on the Availability of Credit to Small Businesses.* Washington: Board of Governors, September, https://www.federalreserve.gov/publications/other-reports/files/sbfreport2012.pdf.

——— (2017). *Survey of Consumer Finances,* https://www.federalreserve.gov/econres/scfindex.htm.

Boot, Arnoud W. A. (2000). "Relationship Banking: What Do We Know?" *Journal of Financial Intermediation,* vol. 9 (January), pp. 7–25.

Brevoort, Kenneth P., and Timothy H. Hannan (2006). "Commercial Lending and Distance: Evidence from Community Reinvestment Act Data," *Journal of Money, Credit and Banking,* vol. 38 (December), pp. 1991–2012.

Bricker, Jesse, Arthur B. Kennickell, Kevin B. Moore, and John Sabelhaus (2012). "Changes in U.S. Family Finances from 2007 to 2010: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin,* vol. 98 (June), pp. 1–80, https://www.federalreserve.gov/pubs/bulletin/2012/PDF/scf12.pdf.

Chang, Andrew C. (2016). "Banking Consolidation and Small Firm Financing for Research and Development," Finance and Economics Discussion Series 2016-029. Washington: Board of Governors of the Federal Reserve System, April, http://dx.doi.org/10.17016/FEDS.2016.029.

Cowan, Charles D., and Adrian M. Cowan (2006). "A Survey Based Assessment of Financial Institution Use of Credit Scoring for Small Business Lending," unpublished paper, U.S. Small Business Administration, Office of Advocacy, November.

Craig, Steven G., and Pauline Hardee (2007). "The Impact of Bank Consolidation on Small Business Credit Availability," *Journal of Banking and Finance,* vol. 31 (April), pp. 1237–63.

Critchfield, Tim, Tyler Davis, Lee Davison, Heather Gratton, George Hanc, and Katherine Samolyk (2004). "The Future of Banking in America: Community Banks: Their Recent Past, Current Performance, and Future Prospects," *FDIC Banking Review,* vol. 16 (3), pp. 1–56, https://www.fdic.gov/bank/analytical/banking/2005jan/article1.pdf.

Dennis, William J., Jr. (2010). *Small Business Credit in a Deep Recession.* Nashville, Tenn.: National Federation of Independent Business Research Foundation, February, https://www.nfib.com/Portals/0/PDF/AllUsers/research/studies/Small-Business-Credit-In-a-Deep-Recession-February-2010-NFIB.pdf.

——— (2011). *Financing Small Businesses: Small Business and Credit Access.* Nashville, Tenn.: National Federation of Independent Business Research Foundation, January, www.nfib.com/Portals/0/PDF/AllUsers/research/studies/Small-Business-Credit-Access-NFIB.pdf.

——— (2012). *Small Business, Credit Access, and a Lingering Recession.* Nashville, Tenn.: National Federation of Independent Business Research Foundation, January, https://www.nfib.com/Portals/0/PDF/AllUsers/research/studies/small-business-credit-study-nfib-2012.pdf.

DeYoung, Robert, Lawrence G. Goldberg, and Lawrence J. White (1999). "Youth, Adolescence, and Maturity of Banks: Credit Availability to Small Business in an Era of Banking Consolidation," *Journal of Banking and Finance,* vol. 23 (February), pp. 463–92.

Federal Reserve Bank of New York (2017). *2016 Small Business Credit Survey: Report on Startup Firms* (New York: Federal Reserve Bank of New York, August), https://www.newyorkfed.org/medialibrary/media/smallbusiness/2016/SBCS-Report-StartupFirms-2016.pdf.

Federal Reserve Banks of Atlanta, Boston, Chicago, Cleveland, Dallas, Kansas City, Minneapolis, New York, Philadelphia, Richmond, St. Louis, and San Francisco (2017). *2016 Small Business Credit Survey: Report on Employer Firms.* New York: Federal Reserve Bank of New York, April, https://www.newyorkfed.org/medialibrary/media/smallbusiness/2016/SBCS-Report-EmployerFirms-2016.pdf.

Foster, Lucia, and Patrice Norman (2016). "The Annual Survey of Entrepreneurs: An Introduction," U.S. Census Bureau Center for Economic Studies Paper No. CES-WP-15-40R, https://ssrn.com/abstract=2689868.

——— (2017). "The Annual Survey of Entrepreneurs: An Update," U.S. Census Bureau Center for Economic Studies Paper No. CES-WP-17-46, http://econpapers.repec.org/paper/cenwpaper/17-46.htm.

Group of Ten (2001). *Report on Consolidation in the Financial Sector.* Washington: International Monetary Fund, Bank for International Settlements, and Organisation for Economic Co-operation and Development, January, https://www.imf.org/external/np/g10/2001/01/Eng/pdf/file1.pdf.

Jagtiani, Julapa, Ian Kotliar, and Raman Quinn Maingi (2016). “Community Bank Mergers and Their Impact on Small Business Lending,” *Journal of Financial Stability,* vol. 27 (December), pp. 106–21.

Jayaratne, Jith, and John Wolken (1999). “How Important Are Small Banks to Small Business Lending? New Evidence from a Survey of Small Firms,” *Journal of Banking and Finance,* vol. 23 (February), pp. 427–58.

Kahle, Kathleen M., and Stulz, Renee M. (2017). “Is the U.S. Public Corporation in Trouble?” *Journal of Economic Perspectives,* vol. 31 (3), pp. 67–88.

Kaplan, Steven, and Per Strömberg (2003). “Financial Contracting Theory Meets the Real World: Evidence from Venture Capital Contracts,” *Review of Economic Studies,* vol. 70, pp. 281–316.

Keeton, William R. (2000). “Are Mergers Responsible for the Surge in New Bank Charters?” Federal Reserve Bank of Kansas City, *Economic Review,* vol. 85 (1), pp. 21–41, https://www.kansascityfed.org/~/media/files/publicat/econrev/econrevarchive/2000/1q00keet.pdf.

Kendall, Leon T., and Michael J. Fishman, eds. (1998). *A Primer on Securitization.* Cambridge, Mass.: MIT Press.

Kiser, Elizabeth K., Robin A. Prager, and Jason R. Scott (2016). “Supervisory Ratings and Bank Lending to Small Businesses During the Financial Crisis and Great Recession,” *Journal of Financial Services Research,* vol. 50 (October), pp. 163–86.

Mach, Traci L., and John D. Wolken (2006). “Financial Services Used by Small Businesses: Evidence from the 2003 Survey of Small Business Finances,” *Federal Reserve Bulletin,* vol. 92 (October), pp. A167–A195, https://www.federalreserve.gov/pubs/bulletin/2006/smallbusiness/smallbusiness.pdf.

Moody's Analytics, Inc. (2014). “2015 Outlook—US Commercial & Esoteric ABS,” *Structured Finance Special Report,* December.

National Federation of Independent Business (2017). *Small Business Optimism Index,* https://www.nfib.com/surveys/small-business-economic-trends.

Ou, Charles (2005). “Banking Consolidation and Small Business Lending: A Review of Recent Research,” Working Paper. Washington: U.S. Small Business Administration, Office of Advocacy, March, https://www.sba.gov/advocacy/archived-economic-research-working-papers.

Peek, Joe, and Eric S. Rosengren (1998). “Bank Consolidation and Small Business Lending: It’s Not Just Size That Matters,” *Journal of Banking and Finance,* vol. 22 (August), pp. 799–819.

Petersen, Mitchell A., and Raghuram G. Rajan (1995). “The Effect of Credit Market Competition on Lending Relationships,” *Quarterly Journal of Economics,* vol. 110 (May), pp. 407–43.

Pilloff, Steven J. (2001). “Commercial Banking,” in Walter Adams and James Brock, eds., *The Structure of American Industry.* Upper Saddle River, N.J.: Prentice-Hall.

——— (2004). *Bank Merger Activity in the United States, 1994–2003*, Staff Study 176. Washington: Board of Governors of the Federal Reserve System, May, https://www.federalreserve.gov/pubs/staffstudies/2000-present/176sum.htm.

Puri, Manju, and Rebecca Zarutskie (2012). “On the Lifecycle Dynamics of Venture-Capital- and Non-Venture-Capital-Financed Firms,” *Journal of Finance,* vol. 67 (6), pp. 2247–93.

Reichow, Kelsey (2017). “Small-Business Lending Languishes as Community Banking Weakens,” Economic Letter, vol. 12 (3). Dallas: Federal Reserve Bank of Dallas, February, https://www.dallasfed.org/research/eclett/2017/el1703.aspx.

Rhoades, Stephen A. (2000). *Bank Mergers and Banking Structure in the United States, 1980–98,* Staff Study 174. Washington: Board of Governors of the Federal Reserve System, August, https://www.federalreserve.gov/pubs/staffstudies/2000-present/ss174.pdf.

Samolyk, Katherine, and Christopher A. Richardson (2003). “Bank Consolidation and Small Business Lending within Local Markets,” Working Paper 03-2. Washington: Federal Deposit Insurance Corporation, April, https://www.fdic.gov/bank/analytical/working/wp2003_02/wp2003_02.pdf.

Scott, Jonathan A., William C. Dunkelberg, and William J. Dennis, Jr. (2003). *Credit, Banks and Small Business—The New Century.* Washington: National Federation of Independent Business, January, www.nfib.com/Portals/0/PDF/AllUsers/The%20New%20Century-Credit,%20Banks%20and%20Small%20Business.pdf.

Seelig, Steven A., and Tim Critchfield (2003). "Merger Activity as a Determinant of De Novo Entry into Urban Banking Markets," Working Paper 03-1. Washington: Federal Deposit Insurance Corporation, April, https://www.fdic.gov/bank/analytical/working/wp2003_01/wp2003_01.pdf.

Strahan, Philip E., and James P. Weston (1998). "Small Business Lending and the Changing Structure of the Banking Industry," *Journal of Banking and Finance,* vol. 22 (August), pp. 821–45.

U.S. Census Bureau, Population Division (2016). "Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2016 (NST-EST2016-01)." *National Population Totals Tables: 2010–2016,* https://www.census.gov/data/tables/2016/demo/popest/nation-total.html.

U.S. Census Bureau (2014). *Annual Survey of Entrepreneurs Questionnaire,* https://www2.census.gov/econ2014/SE/sector00/ase_2014_preview.pdf.

——— (2016). *Annual Survey of Entrepreneurs*, https://www.census.gov/programs-surveys/ase.html.

——— (2016). *American Community Surveys*, https://www.census.gov/programs-surveys/acs.

U.S. Congress, House (1994). *H.R.3474 - Riegle Community Development and Regulatory Improvement Act of 1994,* House Report 103–652, 103 Cong., https://www.congress.gov/bill/103rd-congress/house-bill/347.

U.S. Congress, Senate (2015). *S.966 - CREED Act of 2015,* Senate Report 114–266, 114 Cong., https://www.congress.gov/bill/114th-congress/senate-bill/966.

U.S. Department of Justice and Federal Trade Commission (1992). *Horizontal Merger Guidelines.* Washington: DOJ and FTC, https://www.ftc.gov/sites/default/files/attachments/merger-review/hmg.pdf.

——— (2010). *Horizontal Merger Guidelines.* Washington: DOJ and FTC, https://www.justice.gov/atr/horizontal-merger-guidelines-08192010.

U.S. Small Business Administration, Office of Advocacy (2016). *Frequently Asked Questions,* https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2016_WEB.pdf.

Wardrop, Robert, Robert Rosenberg, Bryan Zhang, Tania Ziegler, Rob Squire, John Burton, Eduardo Jr. Arenas Hernandez, and Kieran Garvey (2016). *Breaking New Ground*. United Kingdom: Cambridge Centre for Alternative Finance, https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2016-americas-alternative-finance-benchmarking-report.pdf.

www.federalreserve.gov
0917