Consumer & Community Context

A series examining economic and financial topics affecting consumers and communities

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Access to Financial Services Matters to Small Businesses

Small businesses are vital to the American economy. While there is no single, widely accepted definition, the U.S. Small Business Administration generally classifies businesses with fewer than 500 employees as small.

By this metric, small businesses account for 99.9 percent of all U.S. firms and nearly half of private-sector employment. At the smaller end of the spectrum, about 30 million firms (98 percent of small businesses) have fewer than 20 employees or are sole proprietorships.[1] Small businesses are remarkably diverse, producing products or delivering services in virtually every industry segment and accounting for about 44 percent of the total private-sector output of the economy.[2] Beyond numbers, small businesses are part of the fabric of their communities, employing local residents and supporting civic causes.

Business owners and entrepreneurs need access to a variety of credit sources. Short-term credit matters for day-to-day management of cash flow, while longer-term credit is essential for capital investments. Yet less than half of small businesses report that their credit needs are met.[3]

In This Issue

Note: Charlene van Dijk, Barbara Lipman, and PJ Tabit, of the Federal Reserve Board's Division of Consumer and Community Affairs, contributed to this introduction.

1. U.S. Small Business Administration, "2018 Small Business Profile," https://www.sba.gov/sites/default/files/advocacy/2018-Small-Business-Profiles-US.pdf. For more information on nonemployer firms, see Federal Reserve Banks, *2019 Small Business Credit Survey Report on Nonemployer Firms* (August 2019), https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-nonemployer-firms-report-19.pdf.

2. Kathryn Kobe and Richard Schwinn, *Small Business GDP: Update 1998–2014* (Washington: U.S. Small Business Administration, December 2018), https://s3.amazonaws.com/advocacy-prod.sba.fun/wp-content/uploads/2018/12/21060437/Small-Business-GDP-1998-2014.pdf.

3. Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms* (April 2019), https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-employer-firms-report.pdf.

Supporting Small Businesses

"The Federal Reserve System helps foster growth in local and regional communities by connecting small businesses to research and networks through its Community Development function at the 12 Reserve Banks and the Board of Governors. These connections amplify our understanding of challenges that small businesses and startups can face, and underscore that creditworthy small businesses and startups need adequate and affordable access to credit in order to form, grow, and succeed."

—Federal Reserve Board Vice Chair for Supervision Randal K. Quarles

This issue of *Consumer & Community Context* focuses on small businesses' access to capital. The first article describes what small business owners encounter when searching for financing on the websites of online lenders. The second explores disparities in small business credit approval by race and ethnicity. The third examines small businesses' access to financial services in low- and moderate-income communities.

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Searching for Small Business Credit Online: What Prospective Borrowers Encounter on Fintech Lender Websites

by Barbara J. Lipman, Federal Reserve Board Division of Consumer and Community Affairs, and Ann Marie Wiersch, Federal Reserve Bank of Cleveland Community Development Department[1]

A review of online lender websites finds inconsistencies in the disclosure of cost information, posing difficulties for prospective borrowers.

Nonbank online lenders are a growing source of small-dollar credit for small businesses. As the Federal Reserve Banks' Small Business Credit Survey (SBCS) indicates, nearly one-third (32 percent) of small businesses that applied for credit in 2018 sought it from an online lender, up from 19 percent and 24 percent in 2016 and 2017, respectively.[2]

The fintech lending industry consists of various types of online lenders, offering a variety of products. Some products are lines of credit and term loans structured much like those from traditional banks, with fixed rates and monthly payments. Other short-term products have fixed weekly or daily payments. Still others are merchant cash advance (MCA) products that entail the sale of future receivables for a set dollar amount, repaid with a set percentage of the business's daily sales receipts. For example, a business may be advanced $50,000 and repay $60,000 through 10 percent automatic draws from its daily credit card receipts. Some products are a hybrid in which repayment is based on a share of sales—much like a cash advance product—but regardless of sales, must be fully repaid within a set period—like a term loan.

What these various credit products have in common is that borrowers apply and are largely processed, underwritten, and serviced online. Also, it is important to note that "Truth in Lending" rules that apply to consumer loan and credit

1. The authors thank Scott Colgate and PJ Tabit of the Federal Reserve Board for their assistance with the visitor tracking analysis in this study, as well as Kenny Clark, Carol Evans, Marysol McGee, and Michael Scherzer, also of the Federal Reserve Board, for their thoughtful comments.

2. The Small Business Credit Survey (SBCS) is an annual survey of employer and nonemployer small firms administered by the 12 Federal Reserve Banks; see https://www.fedsmallbusiness.org/about.

products generally do not apply to business credit, so in practice, lenders have more flexibility in their disclosures of product costs and features.[3]

About the Study: Small Businesses' Challenges with Online Lenders

According to the SBCS, financing approval rates are higher at online lenders than at traditional lenders (82 percent at online lenders versus 71 percent at small banks and 58 percent at large banks). However, satisfaction levels with online lenders are far lower (net satisfaction of 33 percent at online lenders versus 73 percent at small banks and 55 percent at large banks).[4] In 2018, 63 percent of online lender applicants reported challenges working with their lender, with more than half saying they experienced high interest rates and almost a third reporting concerns with unfavorable repayment terms.

In two previous studies, both utilizing online focus groups, we suggest why this may be the case. The focus group participants—more than 80 small business owners—completed a "virtual shopping" exercise and compared mock products based on real online product offerings. These studies found that small business owners struggle to understand many of the products offered by online lenders and the unfamiliar terminology that some lenders use in their product descriptions.[5]

Augmenting the findings from the SBCS and focus groups, this article systematically examines the website content of several prominent small business online lenders.[6] It considers

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3. The Truth in Lending Act is implemented through Regulation Z. Regulation Z does impose certain substantive protections applicable to credit card holders, including where the card is issued for business use. Alternative small business lenders, however, do not typically issue credit cards.

4. In the SBCS, approval rate is the share of firms approved for at least some credit, and net satisfaction is the share of firms satisfied minus the share of firms dissatisfied.

5. See Barbara J. Lipman and Ann Marie Wiersch, *Alternative Lending Through the Eyes of "Mom & Pop" Small Business Owners: Findings from Online Focus Groups* (Cleveland, OH: Federal Reserve Bank of Cleveland, 2015), https://www.clevelandfed.org/newsroom-and-events/publications/special-reports/sr-20150825-alternative-lending-through-the-eyes-of-mom-and-pop-small-business-owners.aspx; and Barbara J. Lipman and Ann Marie Wiersch *Browsing to Borrow: "Mom & Pop" Small Business Perspectives on Online Lenders* (Washington: Board of Governors of the Federal Reserve System, 2018), https://www.federalreserve.gov/publications/files/2018-small-business-lending.pdf.

6. This study builds on earlier work by the Federal Trade Commission, "A Survey of 15 Marketplace Lenders' Online Presence," June 2016, https://www.ftc.gov/system/files/documents/public_events/944193/a_survey_of_15_marketplace_lenders_online_presence.pdf, and the U.K. Financial Conduct Authority, Payday Lending Market Investigation, "Review of the Websites of Payday Lenders and Lead Generators," Appendix 6.4, February 2015, https://assets.publishing.service.gov.uk/media/5329df8640f0b60a7600032e/140131_review_of_websites_working_paper.pdf.

- where and how credit products' interest rates, fees, repayment and prepayment terms, and other features are disclosed;
- how much product information is made available before website visitors are asked to supply personal or business information; and
- the extent to which visitors are tracked.

We compiled a list of 10 online lenders by conducting multiple keyword searches and cross-referencing the results with industry lists and estimates of lending volumes of some of the most prominent lenders.[7] In the course of the review, some 15 different aspects of the websites' content were documented, including the language used and where and how information was displayed. Finally, the study used a Chrome browser extension to attempt to identify and quantify the number and types of third-party trackers used by the websites. A discussion of the takeaways follows.

Lenders vary significantly in the level of upfront product information they provide to prospective borrowers. . . . Specifically, details that were important to focus group participants—rates, fees, and repayment information—were absent from several of the websites or hard to find.

Websites Vary in Their Degrees of Transparency

Lenders vary significantly in the level of upfront product information they provide to prospective borrowers. As shown in table 1, of the 10 online lender websites included in this study, 2 provide costs using an annual interest rate (a third company does so for its lines of credit only); 3 show product costs using nonstandard terminology; and 5 provide no cost information about their products. On some sites, particularly those that offer traditional term loans, product descriptions are somewhat detailed. Others—often those that provide MCAs to high-credit-risk borrowers—feature little or no information about the actual products. Virtually all the sites focus on the ease of applying and qualifying for funding, the speed at which applications are approved, and the array of uses for loan proceeds.

Specifically, details that were important to focus group participants—rates, fees, and repayment information—were absent from several of the websites or hard to find. Even on websites with relatively detailed information, specifics about the products were sometimes missing or not readily displayed. For example, one lender featured in prominent bold print the "as low as" rate for a loan product, but in a footnote, disclosed a far higher average rate. In some cases, information

7. Note that the websites participants chose to visit in each of the two focus group studies (see footnote 5) largely overlapped, but did differ somewhat from the websites in the present study. The websites of five banks and two payment processors also were considered. See report on which this article is based, Barbara J. Lipman and Ann Marie Wiersch, *Uncertain Terms: What Small Business Borrowers Find When Browsing Online Lender Websites* (Washington: Board of Governors, forthcoming).

Table 1. Select details from online lender websites

Lender	Location of cost information	Product cost description	Additional fees
Company A	On home page in box, details in footnotes	Rate for business loans described as a Total Annualized Rate; fixed rates ranging from 5.99% to 29.99%	Origination fee: 1.99% to 8.99% of loan amount
Company B	On home page in plain text, details on product pages in feature text and in footnotes	Costs shown as simple interest starting at 9% for short-term loans and Annual Interest Rate (AIR) starting at 9.99% for long-term loans (both rates exclude fees); lines of credit (LOCs) costs shown as Annual Percentage Rate (APR) (starting at 13.99%, weighted average is 32.6%)	Origination fee: up to 4% of loan amount; monthly maintenance fees on LOC
Company C	Not provided	No rates or product costs are described on the site	No info
Company D	On Rates and Terms page in feature text, details in footnotes	Costs for loans and LOCs are described as a monthly fee determined by the fee rate, which ranges from 1.5% to 10%	Third-party partners may charge up to an additional 1.5% per month
Company E	Not provided	No rates or product costs are described on the site	3% origination fee (loans), $395 admin fee (MCAs)
Company F	On product page in plain text	Working capital loans, MCAs—factor rates as low as 1.15; business expansion loans—interest rates starting at 9.99% (not an APR)	Set-up or underwriting fee: 2.5% of loan total; admin. fee up to $50/month
Company G	On home page in feature text, details in tables on Rates and Fees page	Loan costs shown as fixed annual interest rate, ranging from 4.99% to 26.99%	Origination fee: 0.99% to 6.99%; late payment fee: 5% of missed payment
Company H	Not provided	No rates or product costs are described on the site	No info
Company I	Not provided	No rates or product costs are described on the site	No info
Company J	Not provided	No rates or product costs are described on the site	No info

Note: Although all information shown is publicly available, company names have been anonymized, as this analysis is intended to describe typical practices in the marketplace rather than to single out practices of individual companies.
Source: Authors' analysis of company websites, as of May 31, 2019.

such as loan terms and repayment terms were found on terms of use pages or in frequently asked questions (FAQs).

Three of the websites reviewed in the study convey information about product costs using nonstandard terminology, for example, a "factor rate" or "fee rate" or "simple interest." Table 2 presents APR-equivalents for a common scenario in which $50,000 is repaid in six months according to the terms and rates promoted on the lenders' sites.

This variation in the product cost descriptions and terminology is confusing to some prospective borrowers and a possible source of frustration, as evidenced by comments from the focus group participants:

- "It is difficult [to compare when] they are using different models and different terminology."
- "They don't like to use the word 'interest,' and they dress it up in other ways to conceal the real cost of the loan."
- "I don't know what a 'factor rate' is."
- "Full disclosure, like on credit cards or mortgages… is what is necessary. They need to state the actual APR."

Estimating interest rates for purposes of comparing costs of online products with traditional credit products proved difficult for focus group participants. For example, when asked to compare a credit card to a short-term loan that was described using nontraditional language, the majority incorrectly guessed the

Table 2. Estimated APRs for select online products

Rate advertised on website	Product details	Estimated APR equivalent
1.15 factor rate	• Total repayment amount: $59,000 • Fees: 2.5% set-up fee; $50/month administrative fee • Daily payments (assume steady payments 5 days/week) • Term: none (assume repaid in 6 months)	Approximately 70% APR
4% fee rate	• Total repayment amount: $56,500 • Fee rate: 4% (months 1–2), 1.25% (months 3–6) • Fees: none • Monthly payments • Term: 6-month term	Approximately 45% APR
9% simple interest	• Total repayment amount: $54,500 • Fees: 3% origination fee • Weekly payments • Term: 6-month term	Approximately 46% APR

Source: Authors' calculations, based on product descriptions on company websites.

short-term loan to be less expensive. In addition, the estimation of interest rates is further complicated by added fees for online products. The website analysis revealed that lenders may charge sizable origination fees—as high as 8.9 percent—and other fees which were excluded from the interest rates advertised.

Variation in the product cost descriptions and terminology is confusing to some prospective borrowers and a possible source of frustration.

The impact of early repayment on total costs for products with fixed payback amounts (such as MCAs) is not addressed on most websites. Without such information, focus group participants often made the assumption that, as is the case with traditional credit products, they would save money by repaying faster. In fact, there is usually no savings associated with early repayment on these products.[8]

Lack of Information Prompts Solicitation

All of the lenders' websites use forms to gather personal and business information from prospective borrowers. Through these forms, visitors request product information or initiate an application. As noted earlier, five of the lenders provide no upfront cost information; rather, visitors must provide their information to request details on product cost and terms. Many of the focus group participants who encountered such sites during their virtual shopping exercise found this frustrating. As one participant noted, "I hoped to see rates, terms, and what I qualified for," and observed that the lender she visited, "wouldn't provide any information without an email or contact information."

Moreover, when users enter their information on any of the sites, they give consent to be contacted via phone, text, or email by the lender or its third-party affiliates. On some sites, the consent is described explicitly on the form itself. On others, consent is implicitly given, as described in the site's privacy policy or terms of use page.

Participants associated the sharing of their contact or other business information with aggressive marketing tactics used by some lenders. For example, one participant stated, "I don't want to be solicited for the rest of my life just because I was looking for some information." More than three-quarters of the focus group participants reported receiving email, mail, phone calls, or offers from online lenders. Phone calls were described as the most bothersome, with some participants reporting they occur "almost every day" or "twice a week" and some noting, as one participant put it, the callers "won't take 'no' for an answer."

8. See Lipman and Wiersch, *Browsing to Borrow*, 19–20.

Tracking Website Visitors

Asking visitors to provide business and contact information is one tool lenders may use to construct profiles of potential small business borrowers. Third-party trackers are another.

When installed on a lender's website, trackers collect identifying information about website visitors and attempt to match them to known businesses or owners, using data from a variety of sources including Facebook, Amazon, Twitter, LinkedIn, and other common web platforms.[9] The profiles may contain information like company name, address, and internet activity, as well as more sensitive data including financial information and owner demographics. So even when visitors do not share identifying information with the lender, embedded trackers may collect this information as well as data on how visitors navigate the lender's website and other sites they visit. Such details can then be shared with data aggregators to build a more complete profile.

We used Ghostery, an open source (Chrome) browser extension, to estimate the numbers of trackers in five distinct tracker categories on each lender's website (see figure 1).[10] Each of the 10 websites used at least 7 trackers, and most used several in each category.

Lenders use trackers much the way other companies do—to collect as much information as possible about each visitor in order to customize visitors' experiences and reach them through targeted advertising. However, privacy experts as well as small business advocates have suggested that data collected surreptitiously through trackers may be used along with the other alternative data online lenders employ in their underwriting algorithms to underwrite and price offers of credit.[11]

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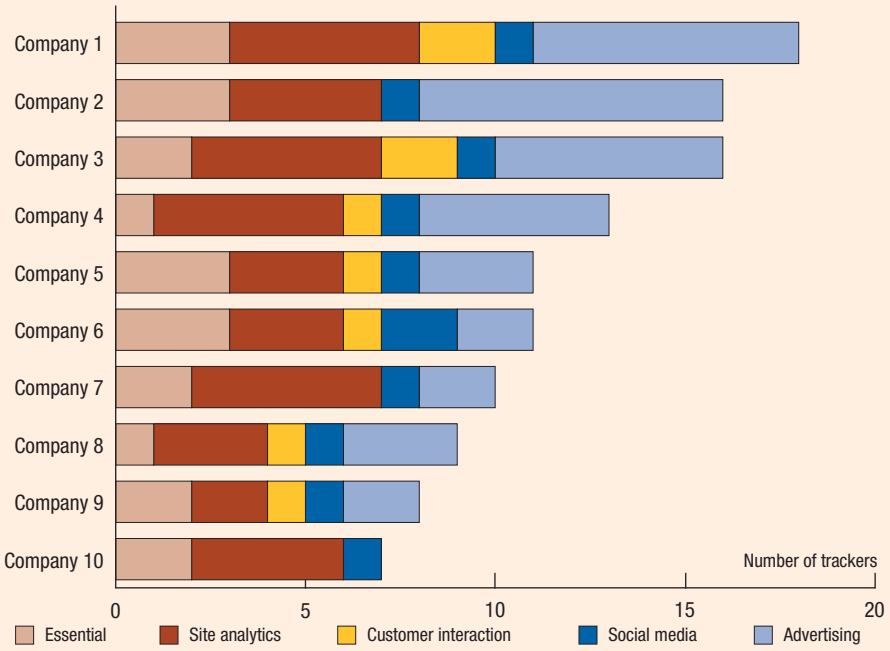
9. See, for example, Wolfie Christl, *Corporate Surveillance in Everyday Life: How Companies Collect, Combine, Analyze, Trade, and Use Personal Data on Billions* (Vienna: Cracked Labs, June 2017), https://monoskop.org/images/b/ba/Cracked_Labs_Corporate_Surveillance_in_Everyday_Life_2017.pdf. See also, Katharine Kemp, "Getting Data Right," blog post, September 27, 2018, Center for Financial Inclusion at Accion, https://www.centerforfinancialinclusion.org/getting-data-right.

10. The analysis does not include websites' use of so-called zero day trackers, which are designed to be undetectable.

11. See Christl, *Corporate Surveillance in Everyday Life,* 53.

Figure 1. Use of trackers on online lender websites



Note: Key identifies bars in order from left to right. Company names have been anonymized and relabeled to indicate that the order in which they are listed here does not correspond with the order in table 1.

Essential includes tag managers, privacy notices, and technologies that are critical to the functionality of a website.

Site analytics collects and analyzes data related to site usage and performance.

Customer interaction includes chat, email messaging, customer support, and other interaction.

Social media integrates features related to social media sites.

Advertising provides advertising or advertising-related services such as data collection, behavioral analysis, or retargeting.

Source: Analysis by Scott Colgate, Federal Reserve Board, as of July 16, 2019.

Disclosures for Small Business Online Credit in the Policy Debate

This analysis finds that some online lenders' websites lack detailed information on product costs, and that there is little consistency of information provided across lender websites. These practices, coupled with relatively low satisfaction rates shown in the SBCS, raise concerns that some borrowers may be opting for credit products that are not well-suited for their businesses—in some cases, putting their businesses at risk.[12] Indeed, debate about small business borrower protections and product disclosures has accelerated recently with California

12. Record of Meeting, Community Advisory Council and the Board of Governors, October 5, 2018, https://www.federalreserve.gov/aboutthefed/files/cac-20181005.pdf, 7: "The Council notes a growing trend among small business owners getting into trouble with expensive online small business loans, such as merchant cash advances (MCA). Oftentimes, the pricing and structure of these

enacting truth in lending legislation covering small business online lenders—an action under consideration by other states.[13]

At the national level, legislators, regulators, online lenders, and small business advocates continue discussions about whether and how to address disclosure and data concerns in small business lending.[14] Meanwhile, industry trade groups continue efforts to promote standardization of disclosures, including a revised version of a voluntary disclosure box.[15]

As part of the focus group studies, participants were shown a stylized disclosure table and asked their impressions of the content and format. Among the metrics included in the table were the APR, total cost of capital, the term, payment frequency, average payment amount, and basic information about prepayment.

Participants reacted favorably to the clear presentation of information in a standard format, noting it would be very useful for product comparisons—especially if provided early in the search process rather than at loan closing. A majority of participants commented that APR was among its most helpful details.[16] However, required disclosure of APR for online products, especially those without a fixed term, is a point of contention in the industry.[17]

Small business advocates argue that the clear disclosure of product costs and terms, including APR, could help these business owners make informed decisions about the amounts they borrow, managing their cash flow, repaying early, and repeat borrowing. Standardized disclosures would enable comparison across not only online lenders' products but also online and more traditional products such as home equity lines of credit and credit cards.

Standardized disclosures would enable comparison across not only online lenders' products but also online and more traditional products such as home equity lines of credit and credit cards.

loans is deliberately obscured, and small business owners take on debt burdens and fees that they are not able to sustain."

13. California SB-1235, "Commercial Financing Disclosures," was signed into law on September 30, 2018. It has not yet been implemented, as the California Department of Business Oversight is adopting regulations. The New York and New Jersey legislatures are considering similar bills.

14. See, for example, U.S. House of Representatives, Committee on Small Business, "Financing through Fintech: Online Lending's Role in Improving Small Business Capital Access," hearing held October 26, 2017, https://www.govinfo.gov/content/pkg/CHRG-115hhrg27255/html/CHRG-115hhrg27255.htm.

15. See SMART Box Model Disclosure Initiative, https://innovativelending.org/smart-box/.

16. The total cost of capital, repayment amount, payment frequency, and prepayment penalties also were cited as important.

17. APR aside, debates are ongoing about whether already-regulated commercial bank lenders would be subject to disclosure rules, should rules be implemented. See, for example, the Bipartisan Policy Commission report *Main Street Matters: Ideas for Improving Small Business Financing* (August 2018), https://bipartisanpolicy.org/report/main-street-matters-ideas-for-improving-small-business-financing/.

Unanswered Questions and Future Research

This study includes only the content of lender websites and does not compare formal credit offers and loan agreements with terms advertised on the sites. It also does not address the extent to which data collected by trackers may be used in lenders' credit decisions. Future research could consider the impact of standardized disclosures on satisfaction with online lenders, as well as whether they lead to borrowing decisions that help small businesses thrive and grow.

Mind the Gap: Minority-Owned Small Businesses' Financing Experiences in 2018

by Mels de Zeeuw, Federal Reserve Bank of Atlanta Community and Economic Development Department, and Brett Barkley, Federal Reserve Bank of Cleveland Supervision and Regulation Department

Black-owned firms are less likely than white-owned firms to be approved for financing at banks, even taking into account firm characteristics.

U.S. Census estimates project that by 2060, racial minorities will comprise some 56 percent of the U.S. population, compared with about 39 percent in 2017. However, business ownership rates among most minority groups continue to lag those of non-Hispanic whites.[1] Increasing minority-business ownership can benefit not just individual entrepreneurs and their households—such as through wealth-building—but also communities and the U.S. economy as a whole—such as through job creation and innovation, and it could alleviate economic disparities.

A critical component of many small businesses' success is adequate, accessible, and affordable financing. In a previous paper, using data from the Federal Reserve's 2016 Small Business Credit Survey (SBCS), we found evidence that black-owned firms are less likely than white-owned firms to receive approval for financing and are more likely to be discouraged from applying for financing.[2] We also found that Hispanic- and black-owned firms are

1. For instance, in 2016, 81.6 percent of small employer firms classifiable by the race and ethnicity of the owner(s) were owned by non-Hispanic whites, though this group made up 60.7 percent of the U.S. population that year. In contrast, blacks represented 2.2 percent of small employer firms, compared to 12.5 percent of the population, and Hispanics made up 5 percent of small business owners, compared to their 18.1 percent share of the U.S. population. See U.S. Census Bureau's Population Estimates Program: July 1, 2016 and U.S. Census Bureau's 2016 American Survey of Entrepreneurs.

2. See Alicia Robb, Brett Barkley, and Mels de Zeeuw, "Mind the Gap: How Do Credit Market Experiences and Borrowing Patterns Differ for Minority-Owned Firms?" Community and Economic Development Discussion Paper 03-18 (Atlanta: Federal Reserve Bank of Atlanta, September 2018), https://www.frbatlanta.org/-/media/documents/community-development/publications/discussion-papers/2018/03-mind-the-gap-how-do-credit-market-experiences-and-borrowing-patterns-differ-for-minority-owned-firms-2018-09-14.pdf. For more information on the Small Business Credit Survey (SBCS), visit fedsmallbusiness.org.

more likely than white-owned firms to seek financing at nonbank online lenders such as OnDeck Capital, CAN Capital, and Kabbage.[3]

This article revisits that analysis, using 2018 SBCS data.[4] First, we describe the profiles of minority-owned firms and consider their need for, and access to, credit. We then compare application patterns and approval rates by race and ethnicity of a business's ownership across lender types.

We find differences in the financing experiences of minority-owned firms compared with white-owned firms in several respects:

- First, black-owned firms are less likely overall to be approved for financing, or to be approved at large or small banks, compared with white-owned firms.
- Second, a relatively large share of minority-owned firms face potentially large unmet financing needs, as black-, Asian-, and Hispanic-owned firms are less likely than white-owned firms to report having sufficient levels of financing in place.
- Finally, black- and Hispanic-owned firms are less likely to turn to small banks and, contrary to previous analysis of 2016 SBCS data, are just as likely to turn to online lenders compared with white-owned firms after controlling for other firm characteristics—likely driven by the growth of online lender applicants among white-owned firms.

Why Increasing Minority Small Business Ownership Matters

Closing the gap in minority small business ownership presents opportunities for policymakers to expand the benefits of economic growth and economic mobility to a broader cross-section of the U.S. population who, historically, have faced barriers to fully participating in the country's prosperity. For example, increased

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3. The survey questionnaire asks about a range of nonbank online providers, including retail/payments processors, peer-to-peer lenders, merchant cash advance lenders, and direct lenders. For purposes of this article, nonbank online lenders are grouped into one category, "online lenders."

4. The SBCS contains self-reported data on firm characteristics, credit application, approval, and other experiences in the market for small business financing. The SBCS yielded 6,614 responses from small employer firms in 2018 with race/ethnicity of the owner identified. The sample size will vary from question to question based on how many firms responded to a given question (for instance, firms that did not apply for financing will not answer questions on financing approval). While the survey is based on a convenience sample of respondents, the data are weighted by the race and/or ethnicity of firm ownership, gender of the firm's owner(s), geographic location (census division, and rural or urban location), firm size, firm age, and industry to attempt to ensure it is representative of the U.S. small employer firm population. In places where we reference estimates based on all three years of SBCS survey data from 2016 to 2018, estimates are based on a sample of 24,651 small employer firms, allowing for some overlap in firms responding from year to year. Also note that the primary SBCS reports (https://www.fedsmallbusiness.org/survey) adopted a name change in 2019. While previous reports were titled for the year the survey was conducted, starting in 2019, the report title reflects the calendar year the report is released.

minority-business ownership could help alleviate certain economic disparities that exist along racial lines; research suggests there is a relationship between the race or ethnicity of a business owner—or an individual with hiring authority—and the race or ethnicity of employees hired. Therefore, an increased share of black-owned businesses could contribute to narrowing the differential in unemployment rates that exists between blacks and whites.[5]

Increased minority-business ownership could also lead to a reduction in wealth gaps that exist between white and black households and white and Hispanic households. An analysis of the 2008 Survey of Income and Program Participation data show that the wealth gap between black and white business owners shrinks to a factor of 3, from a factor of 13, between white and black households overall.[6]

However, a lack of wealth or startup capital contributes to lower rates of small business ownership among minorities, in turn enabling the racial wealth gap to persist. Black and Hispanic entrepreneurs, in particular, tend to rely disproportionately on external sources of capital due to their lower personal wealth levels.[7]

The small business financing environment, therefore, is critically important to their success and ultimately to the long-term health of the U.S. economy.[8]

Firms' General Traits and Performance

Basic characteristics and performance (age, revenue size, profitability, and so on) of minority- and nonminority-owned firms have remained largely consistent with the dynamics discussed in our previous research and in the *2016 Small Business Credit Survey: Report on Minority-Owned Firms*.[9] In general, black- and Hispanic-owned firms tend to be younger, smaller, and less profitable. They also have lower credit scores than white- and Asian-owned firms.

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5. Michael A. Stoll, Steven Raphael, and Harry J. Holzer, "Why Are Black Employers More Likely Than White Employers to Hire Blacks?" Institute for Research on Poverty, Discussion Paper 1236-01, https://www.irp.wisc.edu/publications/dps/pdfs/dp123601.pdf.

6. Association for Enterprise Opportunity, *The Tapestry of Black Business Ownership in America: Untapped Opportunities for Success* (Washington: Association for Enterprise Opportunity, 2017), https://www.aeoworks.org/wp-content/uploads/2019/03/AEO_Black_Owned_Business_Report_02_16_17_FOR_WEB.pdf.

7. Robert W. Fairlie and Alicia Robb, *Race and Entrepreneurial Success: Black- Asian- and White-Owned Businesses in the United States* (Cambridge, MA: MIT Press, 2008).

8. See the discussion in Robb et al., "Mind the Gap."

9. Federal Reserve Banks, *2016 Small Business Credit Survey: Report on Minority-Owned Firms* (November 2017), https://www.fedsmallbusiness.org/survey/2017/report-on-minority-owned-firms.

Black-Owned Firms Face Greater Challenges Raising Capital

Creditworthy black-owned firms experience greater challenges raising capital than creditworthy white-owned firms. [Even controlling] for firm characteristics and performance . . . approval rates for black-owned firms still remain lower.

Our analysis finds that creditworthy black-owned firms experience greater challenges raising capital than creditworthy white-owned firms.

According to 2018 SBCS data, only 64 percent and 65 percent of black- and Hispanic-owned applicant firms, respectively, were approved for some financing, compared with 80 percent and 76 percent among white- and Asian-owned firms, respectively (estimates without controls not shown in figures).

However, it is important to control for firm characteristics and performance when comparing approval rates of firms across race and ethnicity of the owner. When doing so, approval rates for black-owned firms still remain lower, consistent with our previous analysis of 2016 survey data. Compared with similar white-owned firms in terms of profitability, credit risk, and other factors, black-owned businesses that applied for financing were 7 percent less likely to obtain credit overall, and they were 20 percent and 17 percent less likely to do so at large and small banks, respectively (see figure 1).[10]

This indicates that even creditworthy black-owned firms experience relatively large challenges raising capital. Notably, compared with their experience at traditional institutions, black-owned firms appear to have a better chance at approval from online lenders.[11] While there is some evidence to suggest Hispanic-owned firms also face relatively large challenges obtaining approval for financing in the small business credit market, results are much less definitive than estimates for black-owned firms.[12]

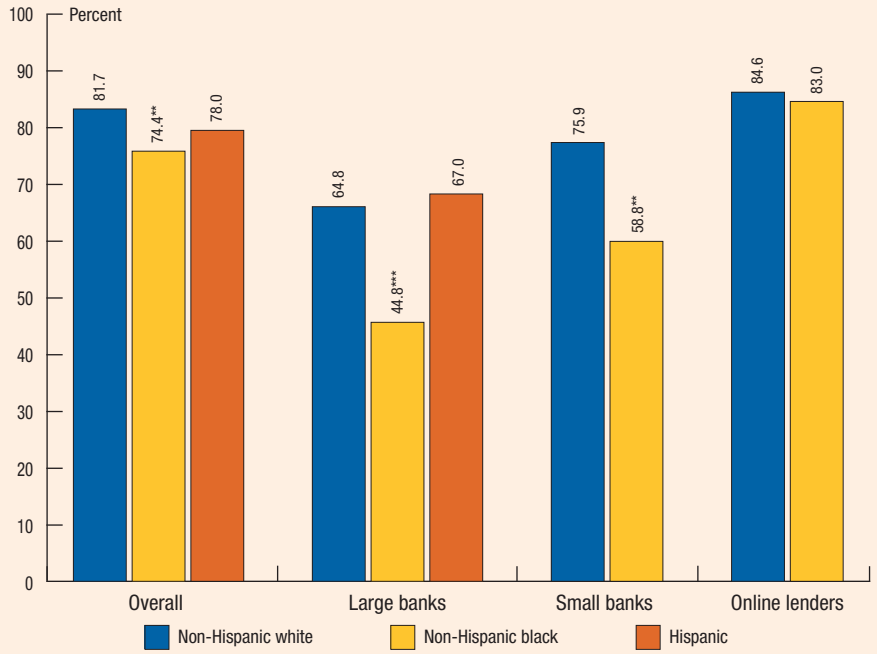
The results on financing approval are consistent with recent research on discrimination in mortgage lending markets using millions of loan records, which suggests that while online lenders have not eliminated discrimination for black and Hispanic borrowers, they may have reduced it compared with traditional lenders through a combination of competition and more impersonal application

10. The results hold when estimating on all years of survey data (2016, 2017, and 2018) at 99 percent confidence intervals. The likelihood of approval overall refers to approval at any lender source for all types of credit. The likelihood of approval at each respective lender refers to approval only for loan or line-of-credit products.

11. While point estimates show black-owned firms are still around 3 percent less likely to be approved than white-owned firms at an online lender, this result is not statistically significant.

12. For Hispanic-owned firms, a robustness check using 2016 through 2018 data shows a -5 percent difference in overall approval rates and a -6 percent difference in large bank approval rates between Hispanic- and white-owned firms at the 95 percent and 90 percent significance level, respectively; the likelihood of approval between Hispanic- and white-owned firms at small banks and online lenders is statistically similar.

Figure 1. Likelihood of approval for at least some financing at lending source, by race/ethnicity of firm ownership (2018)



Note: Key identifies bars in order from left to right. The likelihood of approval overall refers to approval at any lender source for all types of credit. The likelihood of approval at each respective lending source refers to approval only for loan or line-of-credit products. Results are from a series of logistic regressions controlling for revenue size, credit score, profitability, urban/rural location, age, industry, state, veteran-owned, woman-owned, and employee size. Estimates are displayed as average adjusted predictions. Results for Asian-owned firms, and for Hispanic-owned firms that applied at small banks or online lenders, have been omitted from this figure due to a limited number of observations. Asterisks on minority-owned firm estimates denote statistical differences from white-owned firms: *** p<0.01, ** p<0.05, * p<0.1

Source: The authors' analysis based on 2018 Small Business Credit Survey (SBCS) data.

processes.[13] However, both small business applicants and debt holders at online lenders are significantly more likely to report encountering high interest rates or less favorable repayment terms than they are at small or large banks.[14]

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13. Robert Bartlett, Adair Morse, Richard Stanton, and Nancy Wallace, "Consumer-Lending Discrimination in the FinTech Era," University of California Berkeley Working Paper (presented at the FDIC-Duke Financial Technology Conference, February 2019), https://www.fdic.gov/bank/analytical/fintech/papers/stanton-paper.pdf. For analysis of personal consumer loans, see Julapa Jagtiani and Catharine Lemieux, "The Roles of Alternative Data and Machine Learning in Fintech Lending: Evidence from the LendingClub Consumer Platform," Federal Reserve Bank of Philadelphia Working Paper 18-15 (January 2019), https://philadelphiafed.org/-/media/research-and-data/publications/working-papers/2018/wp18-15r.pdf. While not accounting for race/ethnicity specifically, findings suggest that LendingClub's use of alternative data has enabled some consumers to obtain lower-priced credit than would otherwise be possible based on a traditional credit score used by brick-and-mortar banks.

14. Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms* (April 2019), https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2019/sbcs-employer-firms-report.pdf. Fifty-three percent of small business applicants to online lenders report

Given the above results, this could indicate that a relatively large share of minority-owned businesses face higher borrowing costs, on average, which could offset the benefits of obtaining credit in the first place. Analysis on larger data sets is recommended. Additional due diligence by policymakers would be beneficial in order to better evaluate the potential positive and negative consequences associated with online small business credit products and the alternative underwriting models sometimes associated with them.[15]

Minority-Owned Firms Are Equally Likely to Be Discouraged from Applying for Credit; Less Likely to Have Sufficient Funding in Place

Although minority-owned firms that did not apply for financing were 10 to 15 percentage points more likely to report discouragement (that is, they did not apply because they expected to be turned down) than white-owned firms in 2018, the differences—with the exception of Asian-owned firms—largely disappear after controlling for firm characteristics like age, revenue size, profitability, and credit score, among other variables (see figure 2).[16] This finding diverges from our analysis of the 2016 data, in which we found black-owned firms were significantly more likely to report "discouragement."

Combined with a drop of the share of black-owned firms that report discouragement between 2016 and 2018, from 37 to 27 percent, this could indicate that racial bias against black business owners has decreased. A more cautious interpretation is that business sentiment measures like "discouragement" could be prone to more variation than more objective measures focused on business performance and credit outcomes.

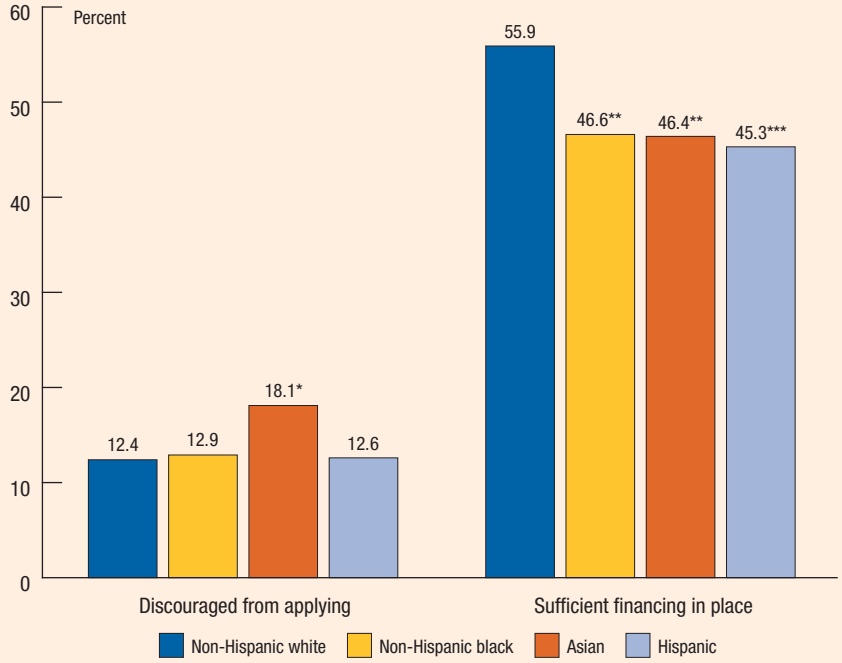
In contrast to findings on firm discouragement, black-, Hispanic-, and Asian-owned firms that did not apply for credit were each less likely to report that their firms have sufficient financing compared with white-owned firms (see

high interest rates as a challenge, compared to 19 percent at large banks and 14 percent at small banks. Additionally, 32 percent of applicants to online lenders report facing unfavorable repayment terms, compared to just 12 percent of applicants at large banks and 7 percent at small banks.

15. Such due diligence could perhaps be similar to the Consumer Financial Protection Bureau's recent No-Action Letter (NAL) to Upstart Network, Inc. (https://www.consumerfinance.gov/about-us/blog/update-credit-access-and-no-action-letter/), which reported positive results in terms of the ability of alternative credit models employed by some online lenders to expand credit access and reduce discriminatory pricing. The NAL with Upstart was focused on consumer lending, but similar evaluations could be beneficial for small business lending.

16. The differences between Asian- and white-owned firms based on all years of survey data (2016, 2017, and 2018) are consistent with previously reported results, albeit at smaller magnitudes. Asian-owned firms did not report statistically different levels of discouragement compared with white-owned firms.

Figure 2. Likelihood of reporting reason for not submitting credit application, by race/ethnicity of firm ownership (2018)



Note: Key identifies bars in order from left to right. The results are from a series of logistic regressions controlling for revenue size, credit score, profitability, urban/rural location, age, industry, state, veteran-owned, woman-owned, and employee size. Estimates are displayed as average adjusted predictions. Asterisks on minority-owned firm estimates denote statistical differences from white-owned firms: *** p<0.01, ** p<0.05, * p<0.1

Source: The authors' analysis based on 2018 SBCS data.

figure 2). These firms were around 10 percent less likely to say they had sufficient financing in place compared with white-owned firms. The dynamics are largely consistent with our original analysis of 2016 survey data. Among firms that did file applications for financing and were approved, a significantly larger share of minority-owned firms received less than half the financing they applied for compared to white-owned firms.[17] Taken together, these findings indicate that minority-owned firms in particular are facing potentially large unmet financing needs.

17. Among approved applicants, 62 percent of white-owned firms were approved for all the financing they sought, compared to 49 percent of black-owned, 51 percent of Asian-owned, and 52 percent of Hispanic-owned firms. Inversely, just 23 percent of white-owned firms were approved for less than half of the financing amount they applied for, compared to 37 percent of black-owned, 31 percent of Asian-owned, and 32 percent of Hispanic-owned firms.

Black-, Hispanic-, and Asian-owned firms that did not apply for credit were each less likely to report that their firms have sufficient financing compared with white-owned firms.

Minority-Owned Firms Less Likely to Apply to Small Banks, Equally Likely to Apply to Online Lenders

Online lenders continue to experience strong growth among small business credit applicants. According to the *Small Business Credit Survey: 2019 Report on Employer Firms,* the share of all applicants applying for credit from an online lender has increased from 19 percent in 2016 to 32 percent in 2018—growth driven primarily by white-owned firms (estimates not shown in figures).[18] In contrast to our previous analysis of 2016 survey data, black- and Hispanic-owned firms now appear no more likely to turn to online lenders compared with white-owned firms when controlling for other firm characteristics (see figure 3).[19]

Large banks remain the most common source of credit across all races and ethnicities. Small banks are also an important source of credit, especially for white- and Asian-owned firms, but significantly less so for black- and Hispanic-owned firms. Community development financial institutions (CDFIs),[20] on the other hand, are particularly important to black-owned firms, which are 16 percent more likely to turn to these lenders than white-owned firms (see figure 3).[21]

Taken together, these dynamics suggest that online lenders are gaining currency with a wider cross-section of borrowers, which could eventually pose a strategic risk to traditional lenders in the small business credit market. Notwithstanding these trends, however, online lenders still appear to inhabit a somewhat niche market, with a focus on credit applicants that have traditionally been underserved by banks, such as firms with little or no credit history.

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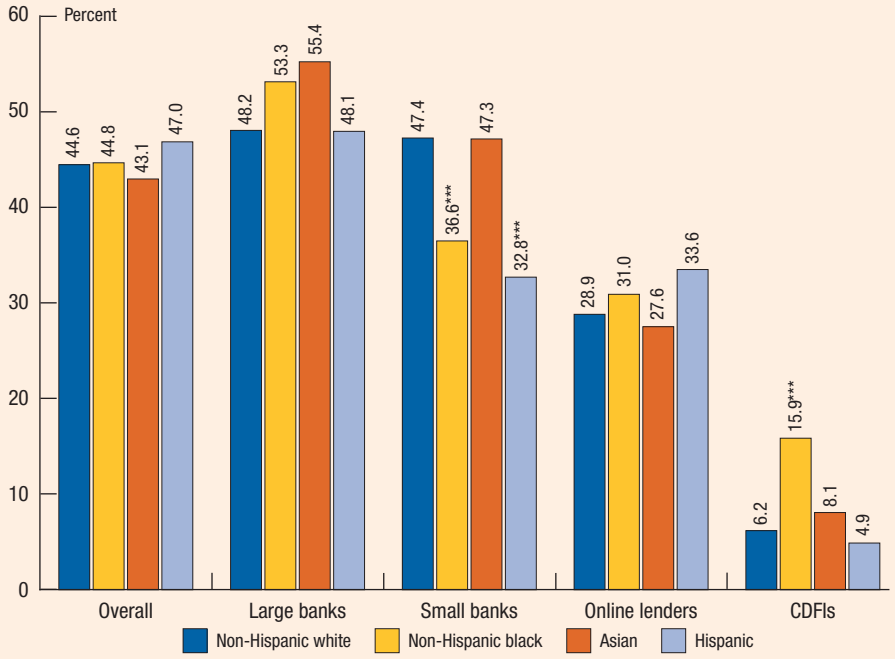
18. Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms*. The share of black- and Hispanic-owned businesses applying to an online lender increased by around 7 and 11 percentage points, respectively, from 2016 to 2018 (from 34 percent to 41 percent, and from 31 percent to 43 percent, respectively) whereas the share of white-owned businesses applying to an online lender increased by around 15 percentage points (from 17 percent to 32 percent). As noted in footnote 4, starting in 2019, Small Business Credit Survey report titles reflect the calendar year in which a report is released, rather than the year the survey was conducted. Therefore, the 2019 report is based on the 2018 data, which is the primary dataset used in this article.

19. To be clear, a larger share of black- and Hispanic-owned firms still report applying to an online lender compared with white-owned firms; but when estimating the likelihood that a given firm will apply to an online lender, the race/ethnicity of the owner is not a significant predictor. Our estimates show that having a poor credit score and low profitability are the strongest predictors for applying to an online lender.

20. Community development financial institutions (CDFIs) are financial institutions that provide credit and financial services to underserved markets and populations. CDFIs are certified by the CDFI Fund at the U.S. Department of the Treasury.

21. The sample size of CDFI applicants is insufficient to report estimates for financial approval, which is why we did not include it in figure 1.

Figure 3. Likelihood of applying at lending source, by race/ethnicity of firm ownership (2018)



Note: Key identifies bars in order from left to right. Results are from a series of logistic regressions controlling for revenue size, credit score, profitability, urban/rural location, age, industry, state, veteran-owned, woman-owned, and employee size. Estimates are displayed as average adjusted predictions. Asterisks on minority-owned firm estimates denote statistical differences from white-owned firms: *** p<0.01, ** p<0.05, * p<0.1

CDFIs Community development financial institutions.

Source: The authors' analysis based on 2018 SBCS data.

Conclusion

Overall, our analysis finds that minority-owned firms—particularly black-owned firms—experience greater challenges obtaining or accessing financing and have potentially large, unmet financing needs. Although it is beyond the scope of this analysis to identify underlying causal factors, we have provided updated insight on how the different financing experiences of minority-owned firms continue to evolve. Such understanding, informed by ongoing data collection efforts, will continue to be important to inform efforts that promote small business formation and economic growth and mobility more broadly, as well as to reduce economic inequalities where they persist.

Growing Pains: Examining Small Business Access to Affordable Credit in Low-Income Areas

by Claire Kramer Mills, Jessica Battisto, and Scott Lieberman, Federal Reserve Bank of New York Outreach & Education Function

Since the end of the last recession, low-income neighborhoods have experienced larger declines in the number of banks and larger increases in the number of alternative financial services companies compared to higher-income areas.

The Great Recession hit small businesses especially hard, resulting in sizable numbers of business closures and accompanying job losses.[1] Businesses in low- and moderate-income (LMI) areas continue to face challenges, as bank consolidation and the growth of costly alternative financial services (AFS) have reduced the number of affordable credit providers.[2] Several studies find that bank consolidation negatively affects small business access to capital, specifically through the cost of bank loans.[3] Additionally, lenders in less competitive loan markets offer less favorable loan terms to borrowers than those in competitive markets.[4] Researchers also find that "areas in which large banks acquire small banks subsequently experience faster growth in [high cost] nonbank financial services such as check-cashing facilities."[5]

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1. See Aysegul Sahin, Sgiri Kitao, Anna Cororaton, and Sergiu Laiu, "Why Small Businesses Were Hit Harder by the Recent Recession," *Current Issues in Economics and Finance* 17, no. 4.

2. As defined by the Federal Financial Institutions Examination Council (FFIEC), low- and moderate-income areas correspond to census tracts where the median family income is less than 80 percent of the median family income in the associated metropolitan statistical area.

The banking landscape has changed considerably in recent decades. Between 1990 and March 2019, the number of institutions insured by the Federal Deposit Insurance Corporation fell precipitously, with a loss of nearly 10,000 institutions, or 65 percent. This pace increased after the most recent recession and shows little sign of abating.

3. See, for example, G. Steven Craig and Pauline Hardee, "The Impact of Bank Consolidation on Small Business Credit Availability," *Journal of Banking and Finance* 31, no. 4 (2007): 1237–63; James H. Rauch and Jill M. Hendrickson, "Does Bank Consolidation Hurt the Small Business Borrower?" *Small Business Economics* 23, no. 3 (2004): 219–26; Robert B. Avery and Katherine A. Samolyk, "Bank Consolidation and Small Business Lending: The Role of Community Banks," *Journal of Financial Services Research* 25, no. 2-3 (2004): 291–325; and Andrew C. Chang, "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), http://dx.doi.org/10.17016/FEDS.2016.029.

4. See Yili Lian, "Bank Competition and the Cost of Bank Loans," *Review of Quantitative Finance and Accounting* 51, no. 1 (2018): 253–82.

5. Vitaly M. Bord, "Bank Consolidation and Financial Inclusion: The Adverse Effects of Bank Mergers on Depositors" (Cambridge, MA: Harvard University, December 1, 2018), https://scholar.harvard.edu/files/vbord/files/vbord_-_bank_consolidation_and_financial_inclusion_full.pdf.

In this article, we examine shifts in small businesses' proximity to banks, credit unions, and AFS, as well as levels of bank-originated small business loans in LMI areas. Alternative financial service providers are defined by NAICS codes 522390 and 522298, which encompass check cashing, payday lending, loan services, money order/transmission, and pawnshops. Small business loans are defined here as business loans under $1 million, as reported by the Federal Financial Institutions Examination Council (FFIEC) Community Reinvestment Act lending data.

Small business loan volumes in LMI communities, though proportionate to the number of small businesses, remain a fraction of loan volumes in upper-income areas.

Drawing on data from several financial regulators and the U.S. Census Bureau, we find that since the last recession, the number of banks operating in lower-income neighborhoods declined the most and stands at the lowest level among neighborhood income quartiles. At the same time, the number of costlier AFS providers in lower-income areas has grown and is large relative to business density.[6] We also find that small business loan volumes in LMI communities, though proportionate to the number of small businesses, remain a fraction of loan volumes in upper-income areas.

These figures also likely underplay the relatively higher need for external capital in low-income areas, as businesses in these communities may have limited personal savings and "friends and family" networks with savings to invest in the business; a low or nonexistent credit score; and/or insufficient collateral, such as limited guarantors, limited real estate, or limited personal property equity.[7]

Small Businesses' Financial Needs

Because of their size, many small businesses closely resemble consumers in their financing needs and behaviors, seeking small loans and relying heavily on personal credit scores and collateral to obtain financing. These firms are also likely to have personal and business financing intertwined.[8] This is particularly true of small businesses in LMI areas, which tend to be smaller than firms in

6. Based on the growth in business establishments providing these services.

7. See Martin Hahn, "Business Loans to Low-Income Entrepreneurs," *Communities & Banking* (March 2014).

8. See Federal Reserve Banks, *2018 Small Business Credit Survey Report on Nonemployer Firms* (December 2018), https://www.fedsmallbusiness.org/survey/2018/report-on-nonemployer-firms; 70 percent of nonemployers use their personal credit score exclusively, while 65 percent use a personal guarantee or personal collateral to secure financing. Nearly half of nonemployer firms that applied for credit (46 percent) sought less than $25,000.

higher-income areas.[9] Although small businesses often seek small-dollar loans, banks may be less willing to make such loans due to their typically higher underwriting costs.[10] As a result, when rejected from traditional sources of credit, small businesses often turn to consumer AFS providers, such as payday lenders and check cashers, which offer small loans with minimal underwriting.[11]

AFS can be attractive to firms seeking relatively small and quickly disbursed credit, but AFS credit is more expensive than the credit offered by traditional lenders and can often lead to a pernicious cycle of small businesses taking out debt to fulfill payments on additional debt.[12] Recent studies find average APRs on payday loans in the range of 300 percent to 600 percent.[13]

While banks generally have stricter underwriting standards, they offer more favorable interest rates than AFS providers. For a bank loan, the average annual interest rate charged is between 4 percent and 6 percent.[14]

Bank Consolidation and Financial Services in Low-Income Communities

Banks are a common source of small business financing.[15] Yet, recent data show that the number of bank branches is declining in low-income areas, likely due to bank branch consolidation.

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9. Maude Toussaint-Comeau, Robin Newberger, and Mark O'Dell, "Small Business Performance in Industries after the Great Recession," *Profitwise News and Views* no. 3 (2019), https://www.chicagofed.org/publications/profitwise-news-and-views/2019/small-business-performance-in-industries-in-lmi-neighborhoods-after-the-great-recession.

10. Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms* (April 2019), https://www.fedsmallbusiness.org/medialibrary/fedsmallbusiness/files/2018/sbcs-employer-firms-report.pdf.

11. The Center for Financial Services Innovation found that "limited availability of bank microloans means that many…seek credit from alternative sources, such as the quickly growing Marketplace Loan segment or Merchant Cash Advances. Others turn to sources of credit intended for personal use." In addition, 49 percent of small business owners used personal credit cards for business purposes. See the "2016 Financially Underserved Market Size Study," https://www.finhealthnetwork.org/wp-content/uploads/2016/11/2016-Financially-Underserved-Market-Size-Study_Center-for-Financial-Services-Innovation.pdf.

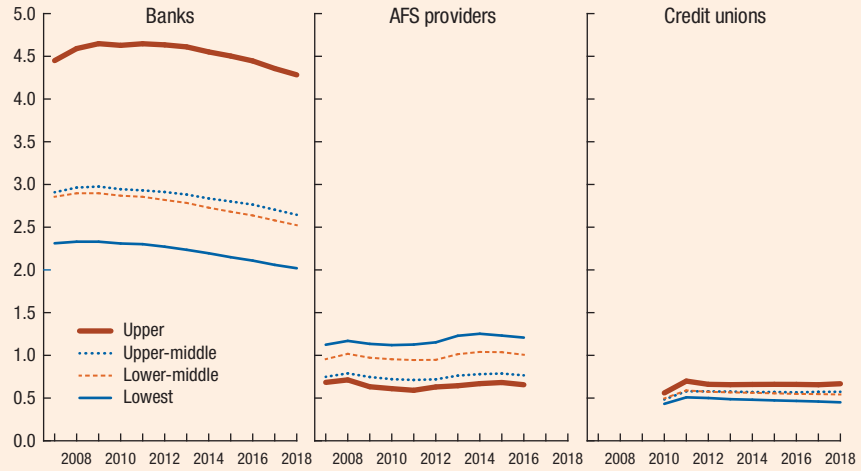
12. See https://www.bloomberg.com/graphics/2018-confessions-of-judgment/ and https://www.urban.org/sites/default/files/alfresco/publication-pdfs/410935-Analysis-of-Alternative-Financial-Service-Providers.pdf.

13. See "Banking and Poverty: Why the Poor Turn to Alternative Financial Services," *Berkeley Economic Review* (April 15, 2019), https://econreview.berkeley.edu/banking-and-poverty-why-the-poor-turn-to-alternative-financial-services/.

14. See "Average Small Business Loan Interest Rates in 2019: Comparing Top Lenders," ValuePenguin (web page), https://www.valuepenguin.com/average-small-business-loan-interest-rates.

15. Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms*.

Figure 1. Average number of financial service providers by income level of zip code



Note: "Average number of financial institutions" includes main and branch locations. Only zip codes with an associated geographic area are included in the analysis.

Source: Federal Deposit Insurance Corporation, Summary of Deposits, Branch Office Deposits for June of given year; National Credit Union Administration, Call Report Quarterly Data for June of given year except 2010 and 2013, where September data were used due to data unavailability; U.S. Census Bureau, 2007 through 2016 County Business Patterns Complete ZIP Code Industry Detail Files; and U.S. Census Bureau, 2013–17 American Community Survey 5-Year Estimates, Table S1901.

To examine the impact of bank consolidation on local access to financing, we segment zip codes into quartiles based on their median household income.[16] We find differences in banking access between low- and upper-income communities post-2008, a continuation of differences that existed in 2008. Low-income zip codes continue to have the fewest number of bank branches and greatest number of AFS providers, on average, among income groups.

Figure 1 illustrates that the average lower-income zip code had 2.0 banks in 2018 (down from 2.3 banks in 2007), the fewest among the income quartiles. Lower-income zip codes also had 1.2 AFS providers on average in 2016, the greatest among income quartiles, and 0.5 credit unions in 2018. In contrast, the

16. Zip code median household income retrieved from U.S. Census Bureau, 2013–17 American Community Survey 5-Year Estimates, Table S1901. Only zip codes in the 50 U.S. states and the District of Columbia were included in the quartiles.

The lowest income quartile includes all zip codes with at most $41,563 in median household income; the lower-middle-income quartile includes all zip codes with between $41,564 and $51,964 in median household income; the upper-middle-income quartile includes all zip codes with between $51,965 and $65,981 in median household income; and the upper-income quartile includes all zip codes with at least $65,982 in median household income. It is important to note that the quartiles are not analogous to the FFIEC's classifications of neighborhoods by income—low, moderate, middle, and upper—which are calculated as a comparison between the census tract and associated metropolitan area. Quartiles presented here are also not weighted by population.

average upper-income zip code had 4.3 banks in 2018 (down from 4.5 banks in 2007 and 4.6 banks in 2009), the greatest bank average among income quartiles. Upper-income zip codes also had, on average, 0.7 AFS providers in 2016, the fewest among income quartiles, and 0.7 credit unions in 2018.

Both lower- and upper-income zip codes had similar per-business bank densities. However . . . lower-income zip codes have a higher ratio of costly AFS providers to small businesses than upper-income zip codes.

While these differences are notable, it is important to consider bank and AFS densities in proportion to the density of small businesses located in low-/moderate- and middle-/upper-income areas. Considered from this perspective, we find that each zip code income quartile has 0.01 banks per small business. That is, both lower- and upper-income zip codes had similar per-business bank densities. However, it is equally important to highlight that lower-income zip codes have a higher ratio of costly AFS providers to small businesses than upper-income zip codes. As previously mentioned, small businesses often turn to potentially higher cost, alternate providers if they are turned down by traditional sources for financing.

The zip codes in the lowest income quartile have 0.007 AFS per small business, whereas the zip codes in the upper-income quartile have 0.002.[17] Over time, the ratio of banks to AFS providers in low-income areas has declined and is the lowest among income quartiles. In real terms, this means that low-income areas have experienced relative growth in more expensive financing channels.

Bank Loans under $1 Million to Businesses, by Business Location

LMI areas accounted for just 23 percent of bank small business loans in 2017; this figure is proportionate to the number of small businesses in those areas. As shown in figure 2, small business loan volumes across income categories have grown since 2010, the low point for small business lending. In fact, the growth rate in business loans under $1 million, a proxy for small business lending, between 2010 and 2017 was highest in LMI areas—165 percent in low-income areas and 90 percent in moderate-income areas, compared to 34 percent in middle-income areas and 61 percent in upper-income areas.[18]

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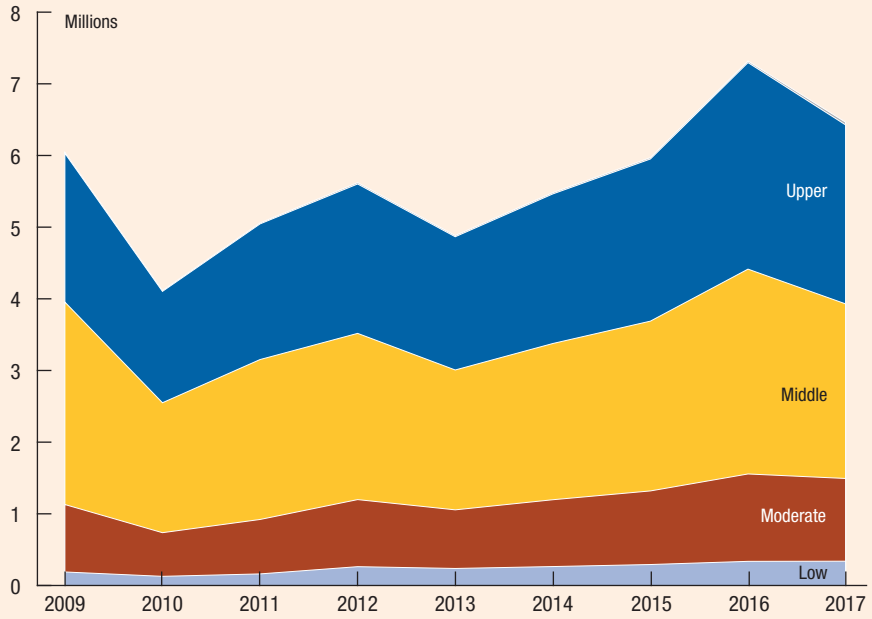
17. The ratio of AFS providers to small businesses by zip code income quartile are: 0.007 for lowest-income zip codes, 0.005 for lower-middle-income zip codes, 0.003 for upper-middle-income zip codes, and 0.002 for upper-income zip codes. Number of small businesses by zip code sourced from U.S. Census Bureau, 2016 County Business Patterns Complete Zip Code Industry Detail File. Only zip codes with an associated geographic area are included in the analysis.

18. Loans under $1 million are a useful proxy for small business lending, since this characterizes the majority of small business loan demand; see Federal Reserve Banks, *Small Business Credit Survey: 2019 Report on Employer Firms*. Growth rate is computed as the change between 2010 and 2017 and is not annualized.

Figure 2. Number of small loans to businesses by FFIEC income designation of business's census tract (Loans under $1M)



Source: Federal Financial Institutions Examination Council (FFIEC) Community Reinvestment Act lending data, National Aggregate Reports.

Though possibly surprising, this is likely because low- and moderate-income areas began the period with such a low level of loans that a similar investment level as that in higher-income areas is a larger percentage. These results may also reflect gentrification trends in lower-income areas.

Areas for Future Research

These findings shed light on the challenges that small businesses in lower-income areas face in accessing affordable financial services. Bank branch consolidation as well as the growth of costlier AFS providers and their sizeable presence relative to business density are trends that, on average, could raise borrowing costs for small businesses. While this article focuses on proximity to different brick-and-mortar financial services, we do not examine the extent to which capital availability is matched with the amount or type of capital that businesses are seeking. Future research should examine how these supply factors interact with business-specific demand factors to influence loan access and affordability in low-income communities.