SMALL BUSINESS CREDIT SURVEY





FEDERAL RESERVE BANKS of

Atlanta • Boston • Chicago • Cleveland • Dallas • Kansas City • Minneapolis New York • Philadelphia • Richmond • St. Louis • San Francisco

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2 For complete information about the survey methodology, please see Methodology.

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¹ For a full list of community partners, please visit www.fedsmallbusiness.org.

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The views expressed in the following pages are those of the report team and do not necessarily represent the views of the Federal Reserve System.

EXECUTIVE SUMMARY

The Small Business Credit Survey (SBCS), a national collaboration of the 12 Federal Reserve Banks, delivers timely information on small business financing needs, decisions, and outcomes to policymakers, lenders, and service providers. The report findings provide an in-depth look at small business performance, debt holdings, and credit experiences, complementing national data on lending volumes and lender perceptions.¹

Fielded in Q3 and Q4 2018, the survey yielded 6,614 responses from small employer firms with 1–499 full- or part-time employees (hereafter "firms"), in the 50 states and the District of Columbia.² In addition to the survey's established measures of business performance and credit outcomes, the 2019 Report on Employer Firms features a detailed look at firms that are adding payroll employees and firms that are facing financing gaps.

Small business respondents recounted a strong end to 2018. A majority of small businesses (57%) reported that their firms had experienced revenue growth in 2018 and more than one-third added employees to their payrolls. The shares of firms with growing revenues and employment represent increases from the 2017 survey; however, the percentage of firms operating at a profit remained unchanged. Looking to 2019, a strong majority of firms expect revenue growth, but the net share of firms that anticipates adding payroll jobs in the next year dipped to 38% from 43% in the prior year's survey.

On the financing front, credit demand held steady in 2018, with 43% of firms seeking

external funds for their businesses. Similar to 2017, more than half of firms that sought new funding—53%—experienced a financing shortfall, meaning they obtained less funding than they sought. Among all small businesses—applicants and nonapplicants—the SBCS finds that nearly half (48%) indicated their funding needs are satisfied, 23% have shortfalls, and another 29%, including debt-averse and discouraged firms, may have unmet funding needs.

Overall, the survey finds

- A larger share of firms reported revenue growth (net 35%, up from 28%) and employment growth (net 23%, up from 19%) in 2018 compared to 2017, and 72% of firms expressed optimism for revenue growth in 2019—the same share as in the prior year.
- A vast majority of firms (73%) reported their input costs had increased in the prior 12 months. More than half of these firms raised the prices they charge. Firms that raised their prices were twice as likely to see profitability growth as firms that did not pass on cost increases.
- More than one-third of firms reported adding payroll employees in the prior 12 months. Payroll employment gains were most common at startups, firms with five or more employees, firms with more than \$1M in annual revenues, and firms with decision makers younger than 46 years of age.
- The share of firms that expects to hire workers in 2019 (44%) is lower than the share of firms that anticipated employment growth in 2018 (48%). Consistent with prior years' findings, the expectations

- for growth exceeded actual growth for the period; the 37% of firms that added employees in 2018 fell short of the 48% share that said they had planned to hire in the 2017 survey.³
- Year-over-year results showed consistent demand for new financing, with 43% of firms applying for new capital in 2018, in line with 40% in 2017.
- Nearly half of applicants (47%) received the full amount of funding sought, similar to the 2017 survey. Of those that did not apply, roughly half reported they had sufficient financing.
- Financing shortfalls were particularly pronounced among firms with weak credit profiles, unprofitable firms, younger firms, and firms in urban areas. Funding gaps were most acute for firms seeking \$100-\$250K.
- Applications to online lenders⁴ continued to trend upward: 32% of applicants turned to online lenders in 2018, up from 24% in 2017, and 19% in 2016.⁵ The growth occurred despite lower applicant satisfaction with online lenders compared to satisfaction levels with large and small banks.
- Medium- and high-credit-risk applicants seeking loan or line of credit financing were as likely to apply to an online lender as to a large bank (54% and 50%, respectively), and more likely to apply to an online lender than to a small bank (41%), CDFI (5%), or credit union (12%). One in five medium- and high-risk applicants sought financing from other sources, including auto/equipment dealers, private investors, or government entities.

See, for example, the SBA Office of Advocacy's Quarterly Lending Bulletin, the Federal Deposit Insurance Corporation's (FDIC) Small Business Lending Survey, the Federal Financial Institutions Examination Council's (FFIEC) Consolidated Reports of Condition and Income ("Call Reports"), the Board of Governors of the Federal Reserve System's Senior Loan Officer Opinion Survey on Bank Lending Practices, and Kansas City Federal Reserve Bank Small Business Lending Survey.
 The Small Business Credit Survey collects information from both employer and nonemployer firms. The 2018 survey yielded 5,841 responses from nonemployers.

³ Includes all firms surveyed, the majority of which did not respond in both 2017 and 2018.

⁴ 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 report, nonbank online lenders are grouped into one category, "online lenders."

⁵ Time series values differ slightly from previous reports as a result of improvements to the weighting scheme. See Methodology section for details.

EXECUTIVE SUMMARY

ABOUT THE SURVEY

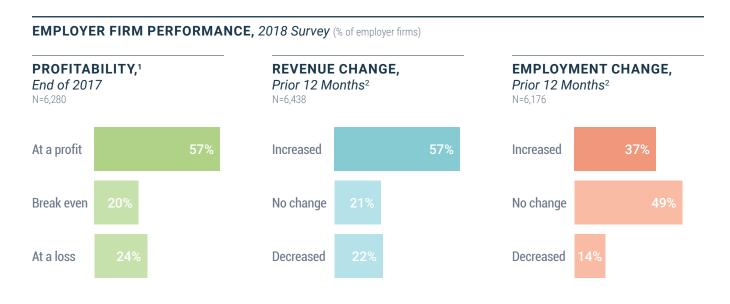
The SBCS is an annual survey of firms with fewer than 500 employees. These types of firms represent 99.7% of all employer establishments⁶ in the United States. Respondents are asked to report information about their business performance, financing needs and choices, and borrowing experiences. Responses to the SBCS provide insights on the dynamics behind lending trends and shed light on noteworthy segments of the small business population. The SBCS is not a random sample; results should be analyzed with awareness of potential biases that are associated with convenience samples. For detailed information about the survey design and weighting methodology, please consult the Methodology section.

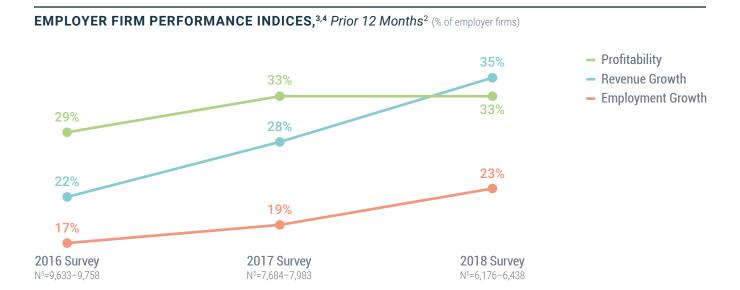
Given the breadth of the 2018 survey data, the SBCS can provide a wealth of information on various segments of the small business population, including startups and growing firms, microbusinesses, minority-owned firms, women-owned firms, firms located in low-and moderate-income communities, and self-employed individuals (nonemployer firms). Future analysis will focus on the financing needs and experiences of these segments.

PERFORMANCE



More firms reported revenue and employment growth in the 2018 survey than in the prior two surveys. Despite revenue growth overall, the share of firms operating at a profit remained flat.





Percentages may not sum to 100 due to rounding.

Approximately the second half of the prior year through the second half of the surveyed year.

For revenue and employment growth, the index is the share reporting growth minus the share reporting a reduction. For profitability, it is the share profitable minus the share at a loss

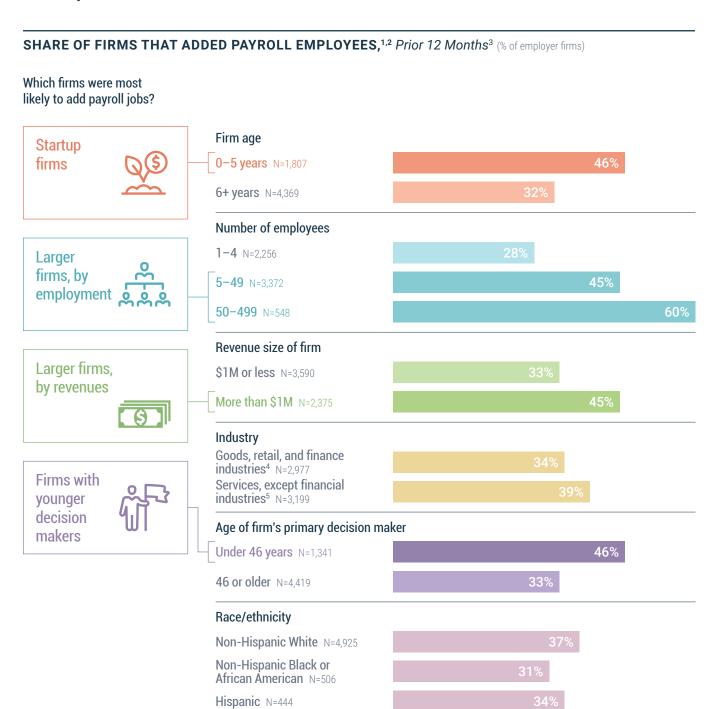
Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

Questions were asked separately, thus the number of observations may differ slightly between questions.

PERFORMANCE (CONTINUED)



37% of all small employer firms increased payroll employment in the prior 12 months.



¹ The characteristics shown in darker bars in the chart are related to employment growth at a significance level of 0.05 using logistic regression. See Methodology for more detail.

3 Approximately the second half of 2017 through the second half of 2018.

² Additional variables were tested for statistical significance, including credit risk, gender, and race/ethnicity including Asian. None of these factors were significantly related to a firm's likelihood of adding payroll employees.

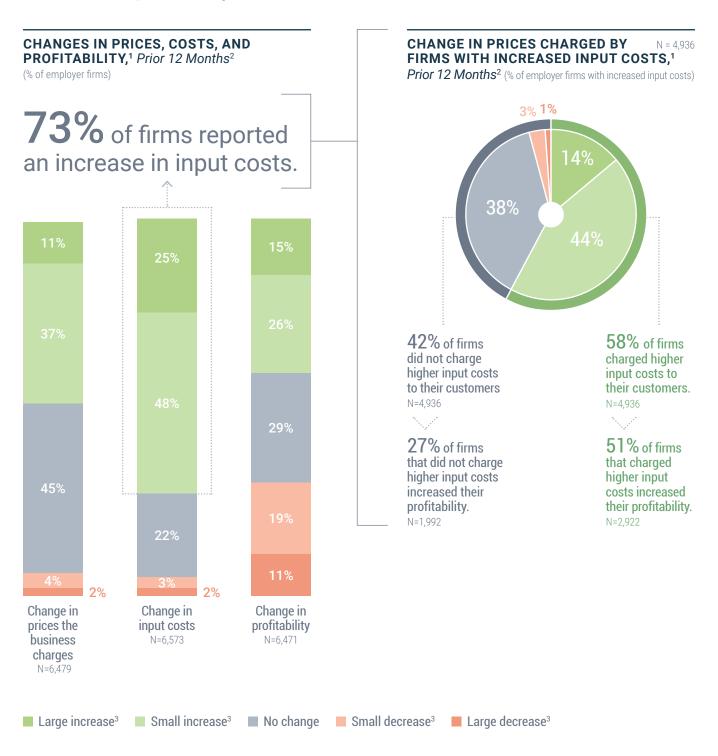
⁴ Includes industries: 'Non-manufacturing goods production and associated services', 'Manufacturing', 'Retail', 'Finance and insurance.'

⁵ Includes industries: 'Leisure and hospitality', 'Healthcare and education', 'Professional services and real estate', 'Business support and consumer services.'

PERFORMANCE (CONTINUED)



Firms that reported increases in their input costs were more likely to increase the prices they charge.



Percentages may not sum to 100 due to rounding. Approximately the second half of 2017 through the second half of 2018.

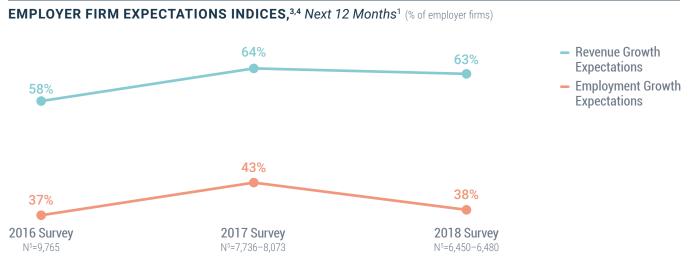
^{&#}x27;Large' refers to a change of 4% or greater. 'Small' refers to a nonzero change that is less than 4%.

GROWTH EXPECTATIONS



A majority of firms anticipate revenue growth in 2019, while employment growth expectations are more modest. These findings represent a flattening of revenue growth expectations and a decline in employment growth projections compared to expectations in last year's survey.





¹ Expected change in approximately the second half of the surveyed year through the second half of the following year.

² Percentages may not sum to 100 due to rounding.

The index is the share reporting expected growth minus the share reporting an expected reduction.

⁴ Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

⁵ Questions were asked separately, thus the number of observations may differ slightly between questions.

GROWTH AMBITIONS



31% of employer firms are **growing**.

Growing firms are defined as those that:

☑ Increased revenues¹

✓ Increased number of employees¹

☑ Plan to increase or maintain number of employees²

N=5,963

A strong majority of firms-80%-would prefer their business to be larger than its current size.



Approximately the second half of 2017 through the second half of 2018. Expected change in the second half of 2018 through the second half of 2019.

³ Percentages may not sum to 100 due to rounding.

FINANCIAL CHALLENGES



64% of employer firms faced financial challenges in the prior 12 months. More than two-thirds addressed these challenges by using the owners' personal funds.

FINANCIAL CHALLENGES, 1 Prior 12 Months²

N=6,490

N=3,990

(% of employer firms)



(% of employer firms with financial challenges) Used personal funds Took out additional debt 45% Cut staff, hours, and/or 32% downsized operations Made a late payment

28%

ACTIONS TAKEN TO ADDRESS FINANCIAL CHALLENGES, 1 Prior 12 Months²

or did not pay Other action

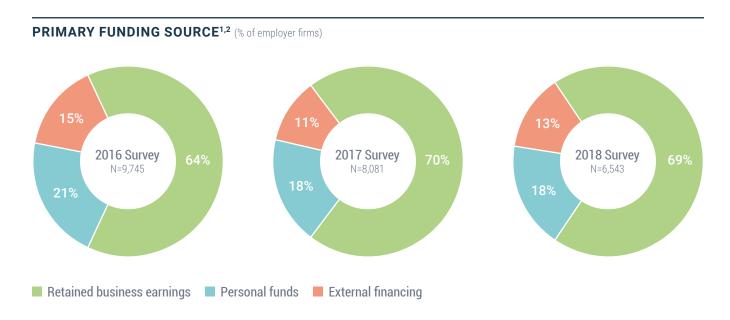
Respondents could select multiple options.

² Approximately the second half of 2017 through the second half of 2018.

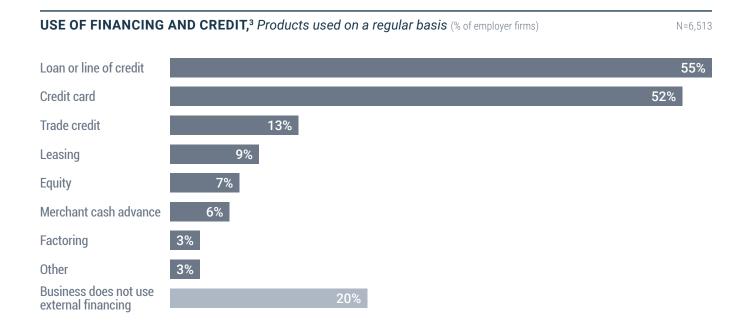
FUNDING BUSINESS OPERATIONS



A majority of employer firms fund their operations using retained business earnings. Reliance on external financing has been stable in recent years.



Loans and lines of credit are the most common types of external financing used by employer firms.



¹ Percentages may not sum to 100 due to rounding.

² Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

³ Respondents could select multiple options.

BUSINESS DEBT



FIRMS' USE OF DEBT (% of employer firms)

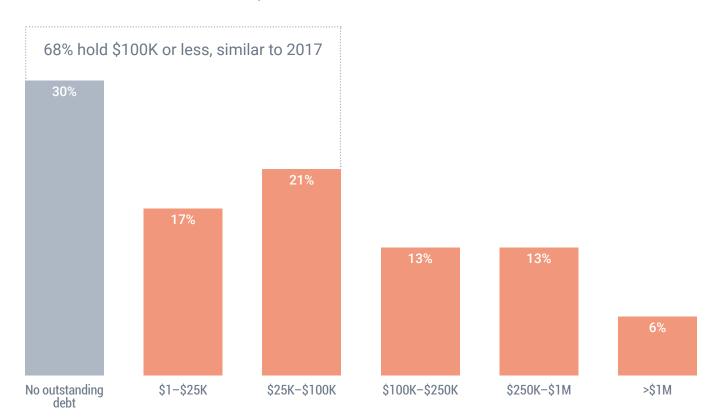
N=6,540

70% of small employer firms have outstanding debt.



AMOUNT OF DEBT, 1,2 At Time of Survey (% of employer firms)

N=6,451



¹ This chart is not comparable to the 'Amount of Debt' chart shown in the Report on Employer Firms (2018) because the shares shown were of employer firms with debt. This chart includes an option for 'no outstanding debt' in order to show the amount of debt for all employer firms.

² Categories have been simplified for readability. Actual categories are: ≤\$25K, \$25,001−\$100K, \$100,001−\$250K, \$250,001−\$1M, >\$1M.

RELIANCE ON PERSONAL FINANCES



86% of employer firms rely on their owners' personal credit scores, similar to 2017 responses.



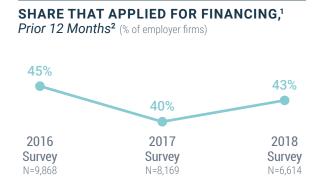
¹ Percentages may not sum to 100 due to rounding.

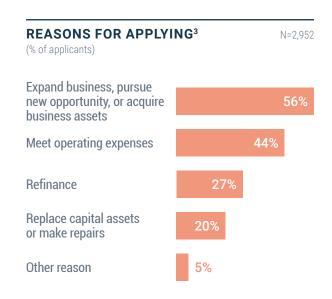
² Respondents could select multiple options. Response option 'other' not shown in chart. See Appendix for more detail.

DEMAND FOR FINANCING



The 2018 survey finds that **43**% of employer firms applied for financing in the prior 12 months.





TOTAL AMOUNT OF FINANCING SOUGHT⁴ (% of applicants)

N=2,899



¹ Due to improvements in weighting methodology, sample counts have changed from the 2018 report. However, time series estimates for this variable have not substantially changed from the 2018 report. See Methodology for details.

² Approximately the second half of the prior year through the second half of the surveyed year.

Respondents could select multiple options. Respondents who selected 'other' were asked to explain their reason for applying. They often indicated that they were looking to start a business or to obtain a credit line in case they needed it.

⁴ Categories have been simplified for readability. Actual categories are: ≤\$25K, \$25,001-\$100K, \$100,001-\$250K, \$250,001-\$1M, >\$1M.

FINANCING NEEDS AND OUTCOMES



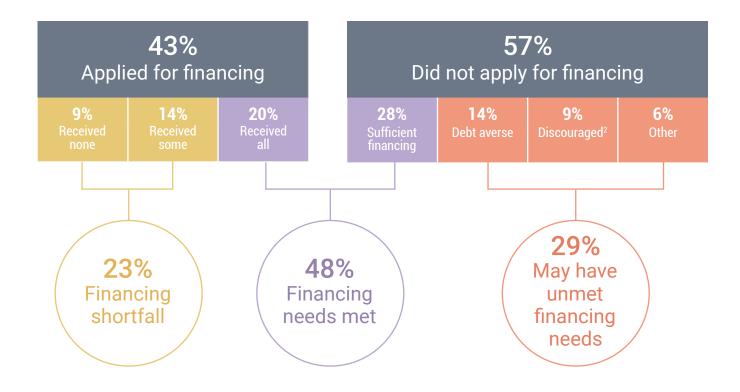
FUNDING NEEDS AND OUTCOMES¹ (% of employer firms)

N=6,410

To gauge funding success and shortfalls, we combine applicants' financing outcomes and nonapplicants' reasons for not applying. There are two types of firms that had their funding needs met:

- 1) Applicant firms that received the full amount of financing sought; and
- 2) Nonapplicant firms that did not apply for financing because they already had sufficient financing.

The remaining firms may or may not have unmet funding needs. When applicant firms did not obtain the full amount of funding sought, we consider them to have a financing shortfall. When nonapplicant firms did not report they had sufficient financing, we consider them to have potentially unmet funding needs.



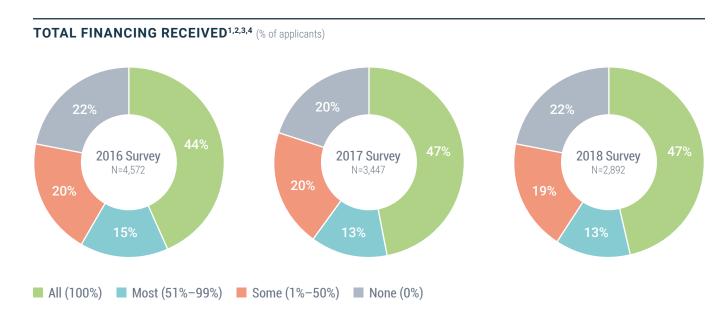
¹ Based on the prior 12 months, which is approximately the second half of 2017 through the second half of 2018.

² Discouraged firms are those that did not apply for financing because they believed they would not be approved.

FINANCING RECEIVED



In the 2018 survey, **47**% of employer firms that applied for credit received all of the financing they sought.



Low credit risk applicants were more likely to receive all of the financing sought, compared to medium or high credit risk applicants.



¹ Percentages may not sum to 100 due to rounding.

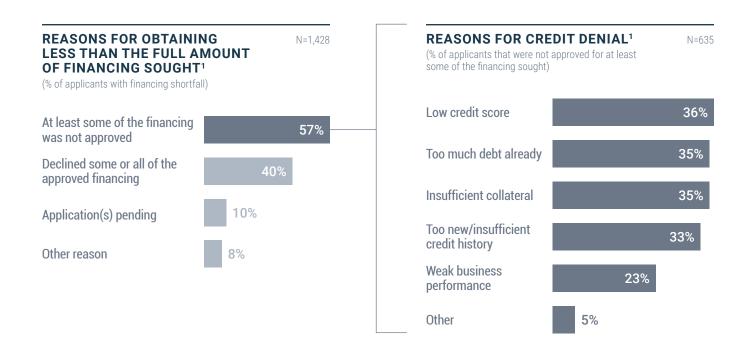
Share of financing received across all types of financing. Response option 'unsure' excluded from chart.

³ Self-reported business credit score or personal credit score, depending on which is used. If the firm uses both, the higher risk rating is used. 'Low credit risk' is a 80–100 business credit score or 720+ personal credit score. 'Medium credit risk' is a 50–79 business credit score or a 620–719 personal credit score. 'High credit risk' is a 1–49 business credit score or a <620 personal credit score.

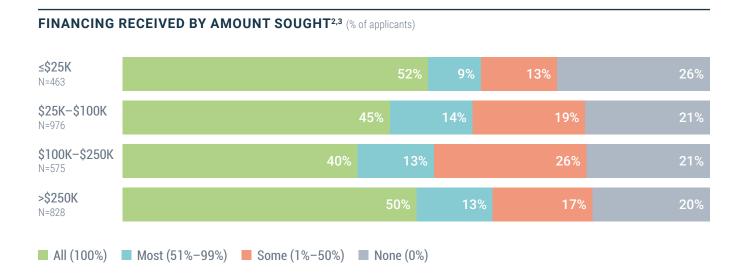
⁴ Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

FINANCING RECEIVED AND SHORTFALLS





Funding shortfalls were most acute for firms seeking \$100K-\$250K, consistent with findings from the 2017 survey.



¹ Respondents could select multiple options.

² Percentages may not sum to 100 due to rounding.

³ Categories have been simplified for readability. Āctual categories are: ≤\$25K, \$25,001−\$100K, \$100,001−\$250K, >\$250K.

FINANCING SHORTFALLS



54% of small employer firms that applied for \$250K or less did not receive the full amount of financing sought.

SHARE OF FIRMS WITH FINANCING SHORTFALLS WHEN APPLYING FOR \$250,000 OR LESS^{1,2} (% of applicants that sought \$250K or less) Which firms most often experienced shortfalls? Credit risk N=1,490 Firms with High credit risk 91% lower credit Medium credit risk scores Low credit risk Profitability N=1,914 Firms that Unprofitable or broke even did not turn Profitable a profit Geographic location N=2,014 Urban **Firms** Rural in urban areas Age of firm N=2,014 0-5 years 6-20 years 21+ years Startup firms Census division N=2,014 **New England** 66% Middle Atlantic 59% South Atlantic **Firms East North Central** in New Pacific **England** West South Central 52% Mountain West North Central 49%

33%

East South Central

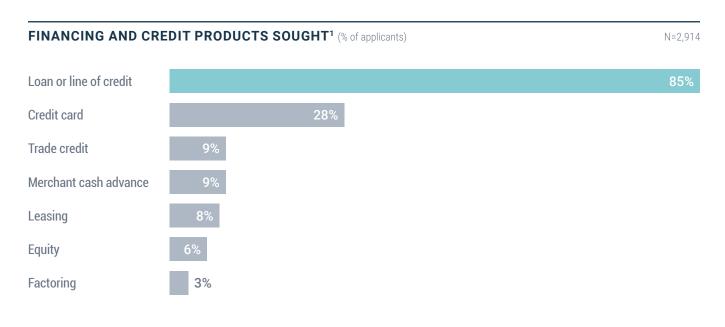
Based on prior 12 months. Approximately the second half of 2017 through the second half of 2018. The following factors were not statistically significant predictors of funding shortfalls for firms seeking \$1-\$250K in financing: minority business ownership, women business ownership, industry, size (employees and revenue). The characteristics shown in darker bars in the chart are related to financing shortfalls at a significance level of 0.05 using logistic regression.

See Methodology for more detail.

APPLICATIONS

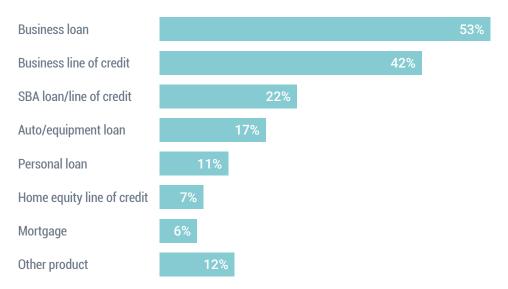


85% of applicants sought loans or lines of credit.



APPLICATION RATE FOR LOANS/LINES OF CREDIT¹ (% of loan/line of credit applicants)

N=2,352

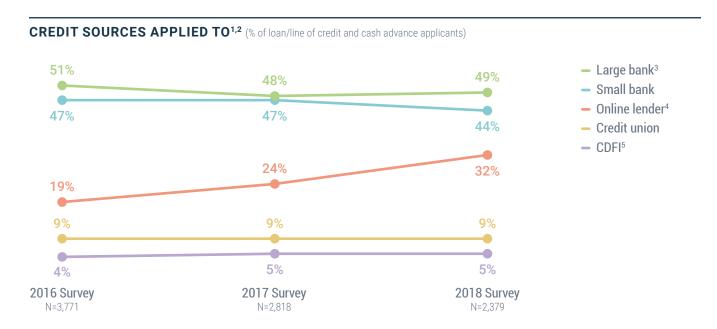


¹ Respondents could select multiple options.

LOAN/LINE OF CREDIT SOURCES



The share of applicants who sought loans, lines of credit, or cash advances from online lenders has grown markedly.



Medium/high credit risk applicants were more likely than low credit risk applicants to apply to online lenders.

CREDIT SOURCES APPLIED TO BY CREDIT RISK OF FIRM^{1,6} (% of loan/line of credit and cash advance applicants)



- Respondents could select multiple options
- 2 Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.
- Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state.
- 4 'Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc.
- 5 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.
- 6 Self-reported business credit score or personal credit score, depending on which is used. If the firm uses both, the higher risk rating is used. 'Low credit risk' is a 80–100 business credit score or 720+ personal credit score. 'Medium credit risk' is a 50–79 business credit score or a 620–719 personal credit score. 'High credit risk' is a 1–49 business credit score or a <620 personal credit score.
- 7 Respondents who selected 'other' were asked to describe the source. They most frequently cited auto/equipment dealers, farm-lending institutions, friends/family/owner, nonprofit organizations, private investors, and government entities.

FACTORS ASSOCIATED WITH LENDER CHOICE



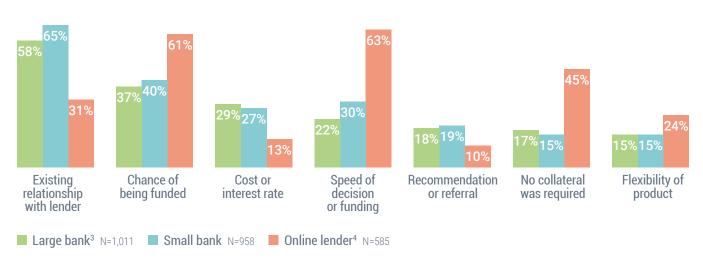
Speed of decisionmaking and perceived chance of funding were the top reasons firms applied to online lenders.

TOP FACTORS INFLUENCING WHERE FIRMS APPLY^{1,2} (% of loan/line of credit and cash advance applicants at source)

Source	Largest Factor	2nd Largest Factor	3rd La	argest Factor
Large bank ³ N=1,011	58%	37%	%	29%
Small bank N=958	65%	40%		30%
Online lender ⁴ N=585	63%	61%		45%
Existing relativith lender	tionship Speed of decision or funding	n S Chance of being funded	Cost or interest rate	No collateral was required

Applicants more often chose a lender based on an existing relationship or their chance of being funded than on costs.

FACTORS INFLUENCING WHERE FIRMS APPLY^{1,2,5} (% of loan/line of credit and cash advance applicants at source)



¹ Select lenders shown. See Appendix for more detail.

² Respondents could select multiple options.

³ Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state.

^{4 &#}x27;Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc.

⁵ Response option 'other' not shown. See Appendix for more detail.

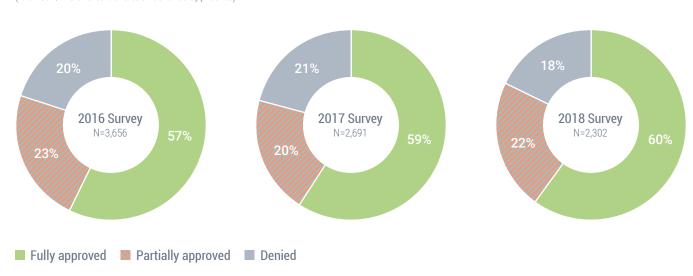
LOAN/LINE OF CREDIT APPROVALS



Loan/line of credit and cash advance applicants reported higher approval rates in the 2018 survey than in previous surveys.

OUTCOMES OF LOAN, LINE OF CREDIT, AND CASH ADVANCE APPLICATIONS¹

(% of loan/line of credit and cash advance applicants)

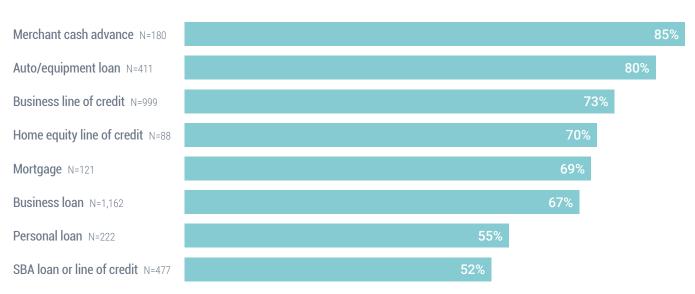


The share of applicants approved for at least some financing is highest for merchant cash advances and auto/equipment loans.

APPROVAL RATE BY TYPE OF LOAN/LINE OF CREDIT OR CASH ADVANCE^{2,3}

N=2,379

(% of loan/line of credit and cash advance applicants)



¹ Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

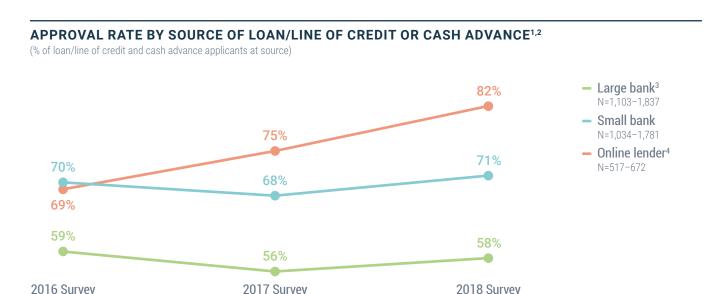
² Product type 'other' not shown.

³ Percent of loan/line of credit/cash advance applicants for each product type that were approved for at least some credit.

LOAN/LINE OF CREDIT APPROVALS (CONTINUED)



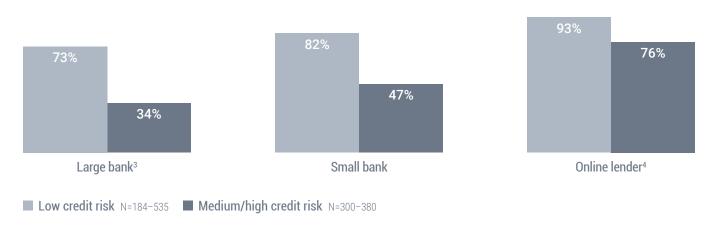
Loan/line of credit and cash advance applicants had higher approval rates at small banks and online lenders.



Medium/high credit risk applicants had higher approval rates at online lenders than at banks.

APPROVAL RATE BY CREDIT RISK OF FIRM AND SOURCE OF LOAN/LINE OF CREDIT OR CASH ADVANCE^{1,2,5}

(% of loan/line of credit and cash advance applicants at source)



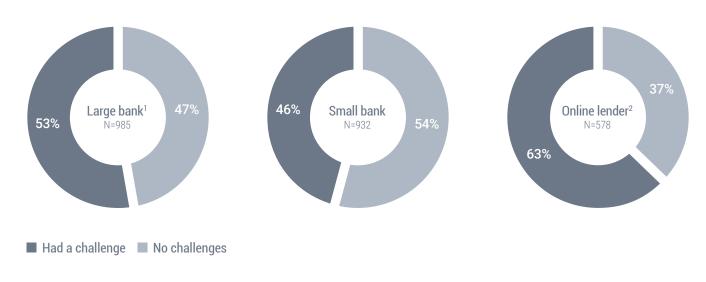
- Select lenders shown. See <u>Appendix</u> for more detail. Approval rate is the share approved for at least some credit.
- Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state.
- 'Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc.
- Self-reported business credit score or personal credit score, depending on which is used. If the firm uses both, the higher risk rating is used. 'Low credit risk' is a 80-100 business credit score or 720+ personal credit score. 'Medium credit risk' is a 50-79 business credit score or a 620-719 personal credit score. 'High credit risk' is a 1–49 business credit score or a <620 personal credit score.

LENDER CHALLENGES

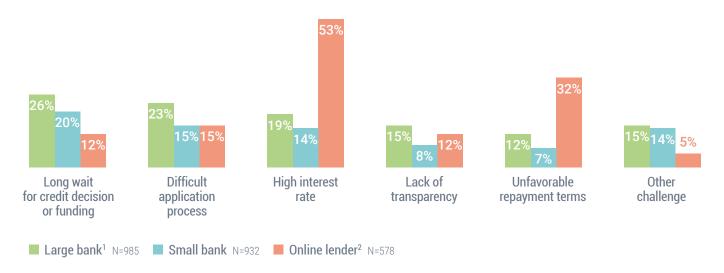


Bank applicants were most dissatisfied with wait times for credit decisions. Online lender applicants were most dissatisfied with high interest rates.

CHALLENGES WITH LENDERS, Select Lenders (% of loan/line of credit and cash advance applicants at source)



CHALLENGES WITH LENDERS,³ Select Lenders (% of loan/line of credit and cash advance applicants at source)



Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state. 'Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc.

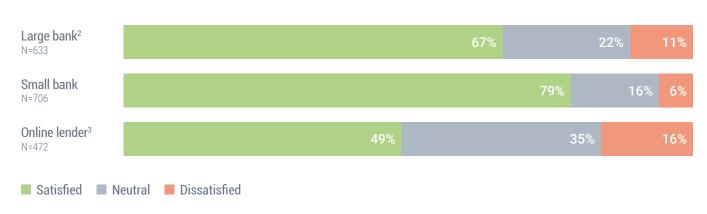
Respondents could select multiple options.

APPLICANT SATISFACTION



Applicant satisfaction is consistently highest at small banks.

LENDER SATISFACTION¹ (% of approved loan/line of credit and cash advance applicants at source)



NET SATISFACTION OVER TIME^{4,5} (% of approved loan/line of credit and cash advance applicants at source)



Percentages may not sum to 100 due to rounding.

Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state.

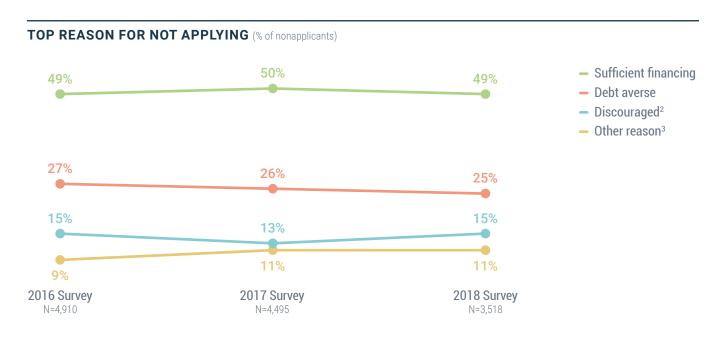
^{&#}x27;Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc. Net satisfaction is the share of firms satisfied minus the share of firms dissatisfied.

Time series values shown here differ from the 2018 report as a result of improvements to the weighting scheme. See Methodology for details.

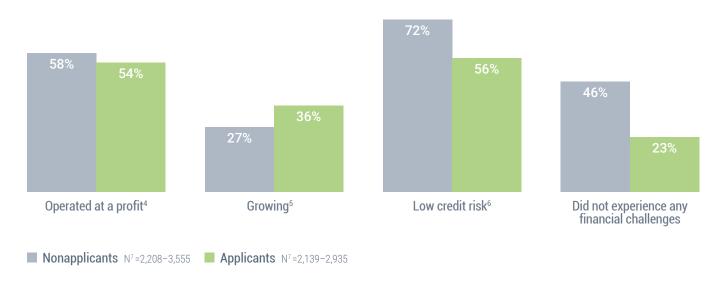
NONAPPLICANTS



57% of small employer firms were nonapplicants, meaning they did not apply for new financing in the prior 12 months.¹



PERFORMANCE OF NONAPPLICANTS AND APPLICANTS (% of nonapplicants and applicants)



¹ Approximately the second half of 2017 through the second half of 2018.

Discouraged firms are those that did not apply for financing because they believed they would not be approved.

4 As of the end of 2017.

^{3 &}quot;Other Reason" includes response options 'credit cost was too high,' 'application process was too difficult or confusing,' and 'other.' See Appendix for more detail.

⁵ Firms that increased revenues and employees in the prior 12 months and that plan to increase or maintain their number of employees.

⁵ Self-reported business credit score or personal credit score, depending on which is used. If the firm uses both, the higher risk rating is used. 'Low credit risk' is a 80–100 business credit score or 720+ personal credit score. 'Medium credit risk' is a 50–79 business credit score or a 620–719 personal credit score. 'High credit risk' is a 1–49 business credit score or a <620 personal credit score.

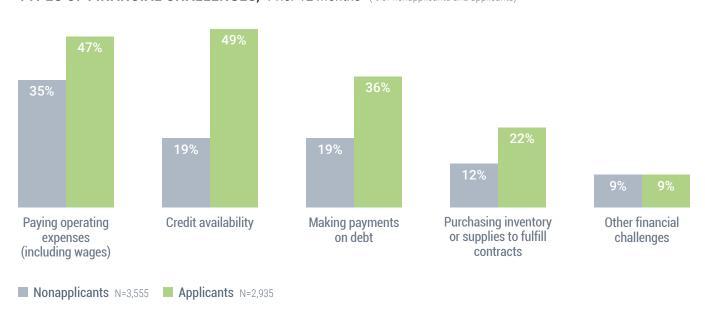
⁷ The observation count varies by question.

FINANCIAL CHALLENGES: NONAPPLICANTS AND APPLICANTS



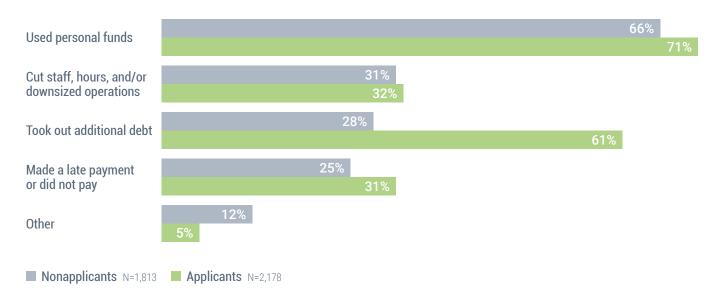
54% of nonapplicants and **77**% of applicants experienced financial challenges in the prior 12 months.





ACTIONS TAKEN AS A RESULT OF FINANCIAL CHALLENGES, 1 Prior 12 Months²

(% of nonapplicants and applicants with financial challenges)



¹ Respondents could select multiple options. Select response options shown.

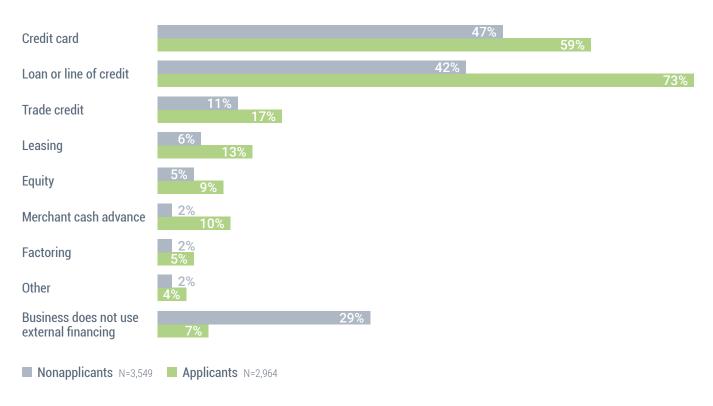
² Approximately the second half of 2017 through the second half of 2018.

NONAPPLICANT USE OF FINANCING AND CREDIT



71% of nonapplicants regularly use external financing. Many regularly use credit cards or loans/lines of credit.

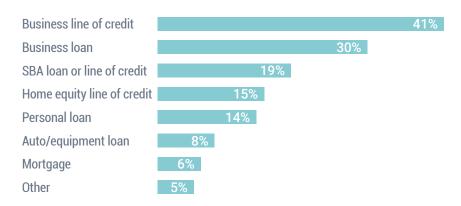




LOAN/LINE OF CREDIT PRODUCTS CURRENTLY HELD OR RECENTLY USED BY NONAPPLICANTS¹

N=1,534

(% of nonapplicants with loan/line of credit)

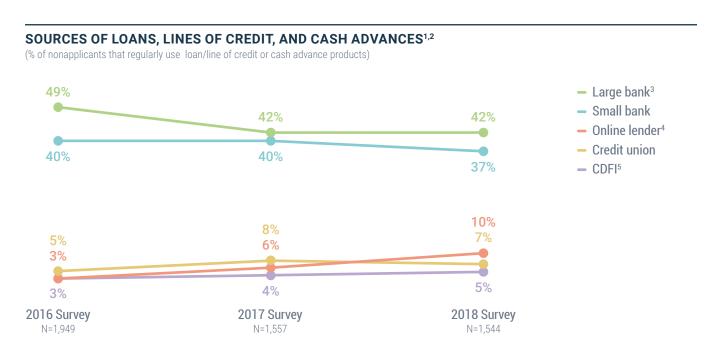


¹ Respondents could select multiple options.

NONAPPLICANT LOAN/LINE OF CREDIT SOURCES

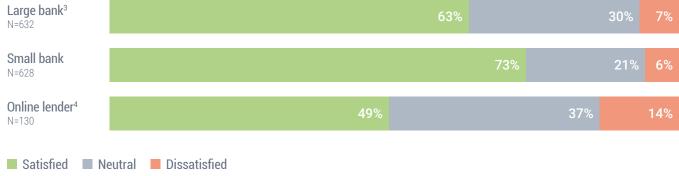


Banks are the most common source of credit for nonapplicant firms that use loan/line of credit or cash advance products.



Like recent applicants, nonapplicants were most often satisfied with their experiences at small banks.





Respondents could select multiple options.

NONAPPLICANT BORROWER SATISFACTION⁶

Response option 'other' not shown in chart. See <u>Appendix</u> for more detail.

Respondents were provided a list of large banks (those with at least \$10B in total deposits) operating in their state.

'Online lenders' are defined as nonbank lenders including Lending Club, OnDeck, CAN Capital, PayPal Working Capital, Kabbage, etc.

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.

CDFI and credit union satisfaction omitted due to small sample size.

METHODOLOGY

DATA COLLECTION

The Small Business Credit Survey (SBCS) uses a convenience sample of establishments. Businesses are contacted by email through a diverse set of organizations that serve the small business community.1 Prior SBCS participants and small businesses on publicly available email lists² are also contacted directly by the Federal Reserve Banks. The survey instrument is an online questionnaire that typically takes 6 to 12 minutes to complete, depending upon the intensity of a firm's search for financing. The questionnaire uses question branching and flows based upon responses to survey questions. For example, financing applicants receive a different line of questioning than nonapplicants. Therefore, the number of observations for each question varies by how many firms receive and complete a particular question.

WEIGHTING

A sample for the SBCS is not selected randomly; thus, the SBCS may be subject to biases not present with surveys that do select firms randomly. For example, there are likely small employer firms not on our contact lists, and this may lead to a noncoverage bias. To control for potential biases, the sample data are weighted so the weighted distribution of firms in the SBCS matches the distribution of the small (1 to 499 employees) firm population in the United States by number

of employees, age, industry, geographic location (census division and urban or rural location), gender of owner(s), and race or ethnicity of owner(s).

For the Employer Firms Report and analysis,3 we first limit the sample in each year to only employer firms. We then post-stratify respondents by their firm characteristics. Using a statistical technique known as "raking," we compare the share of businesses in each category of each stratum4 (e.g., within the industry stratum, the share of firms in the sample that are manufacturers) to the share of small businesses in the nation that are in that category. As a result, underrepresented firms are up weighted, and overrepresented businesses are down weighted. We iterate this process several times for each stratum in order to derive a sample weight for each respondent. This weighting methodology was developed in collaboration with the National Opinion Research Center (NORC) at the University of Chicago. The data used for weighting come from data collected by the U.S. Census Bureau.5

We are unable to obtain exact estimates of the combined racial and ethnic ownership of small employer firms for each state or at the national level. To derive these figures, we assume that the distribution of small employer firm owners' combined race and ethnicity is the same as that for all firms in a given state. Given that small employer firms represent

99.7 percent of businesses with paid employees, we expect these assumptions align relatively closely with the true population.

In addition to the U.S. weight, state- and Federal Reserve District-specific weights are created. While the same weighting methodology is employed, the variables used differ slightly from those used to create the U.S. weight. 7 State weights are generated for states that have at least 100 observations and that remain below a volatility threshold. Estimates for Federal Reserve Districts are calculated based on all small employer firms in any state that is at least partially within a District's boundary. Federal Reserve Districtlevel weights are created for each District using the weighting process described previously, but based on observations in the relevant states.

RACE/ETHNICITY AND GENDER IMPUTATION

Fourteen percent of employer respondents did not provide complete information on the gender, race, and/or the ethnicity of their business' owner(s). This information is needed to correct for differences between the sample and the population data. To avoid dropping these observations, a series of statistical models is used to impute the missing data. Generally, when the models are able to predict with an accuracy of around 80 percent in out-of-sample tests, 8 the

- For more information on partnerships, please visit www.fedsmallbusiness.org/partnership.
- 2 System for Award Management (SAM) Entity Management Extracts Public Data Package; Small Business Administration (SBA) Dynamic Small Business Search (DSBS); state-maintained lists of certified disadvantaged business enterprises (DBEs); state and local government Procurement Vendor Lists, including minority-and women- owned business enterprises (MWBEs); state and local government maintained lists of small or disadvantaged small businesses; and a list of veteran-owned small businesses maintained by the Department of Veterans Affairs.
- 3 Weights for nonemployer firms are computed separately, and a report on nonemployers is also issued annually.
- 4 Employee size strata are: 1–4 employees, 5–9 employees, 10–19 employees, 20–49 employees, and 50–499 employees. Age strata are 0–2 years, 3–5 years, 6–10 years, 11–15 years, 16–20 years, and 21+ years. Industry strata are non-manufacturing goods production and associated services, manufacturing, retail, leisure and hospitality, finance and insurance, healthcare and education, professional services and real estate, and business support and consumer services. Race/ethnicity strata are: non-Hispanic white, non-Hispanic black or African American, non-Hispanic Asian, non-Hispanic Native American, and Hispanic. Gender strata are: men-owned, equally owned, and women-owned. See Appendix for industry definitions, urban and rural definitions, and census divisions.
- 5 State-level data on firm age come from the 2014 Business Dynamics Statistics. Industry, employee size, and geographic location data come from the 2016 County Business Patterns. Data from the Center for Medicare and Medicaid Services are used to classify a business' zip code as urban or rural. Data on the race, ethnicity, and gender of business owners are derived from the 2016 Annual Survey of Entrepreneurs.
- 6 U.S. Census Bureau, County Business Patterns, 2016.
- 7 Both use five-category age strata: 0–5 years, 6–10 years, 11–15 years, 16–20 years, and 21+ years. Both use two-category industry strata: (1) goods, retail, and finance, which consists of non-manufacturing goods production and associated services, manufacturing, retail, and finance and insurance; (2) services, except finance, which consists of leisure and hospitality, healthcare and education, professional services and real estate, and business support and consumer services.
- 8 Out-of-sample tests are used to develop thresholds for imputing the missing information. To test each model's performance, half of the sample of non-missing data is randomly assigned as the test group, while the other half is used to develop coefficients for the model. The actual data from the test group is then compared with what the model predicts for the test group. On average, prediction probabilities that are associated with an accuracy of around 80 percent are used, although this varies slightly depending on the number of observations that are being imputed.

METHODOLOGY (CONTINUED)

predicted values from the models are used for the missing data. When the model is less certain, those data are not imputed and the responses are dropped. After data are imputed, descriptive statistics of key survey questions with and without imputed data are compared to ensure stability of estimates. In the final sample, 12 percent of observations have imputed values for either the gender, race, or ethnicity of a firm's ownership.

To impute owners' race and ethnicity, a series of logistic regression models is used that incorporate a variety of firm characteristics and demographic information on the business headquarters' zip code. First, a logistic regression model is used to predict if business owners are members of a minority group. Next, for firms classified as minority-owned, a logistic probability model is used to predict whether the majority of a business' owners are of Hispanic ethnicity. Finally, the race for the majority of business owners is imputed separately for Hispanic and non-Hispanic firms using a multinomial logistic probability model.

A similar process is used to impute the gender of a business' owner(s). First, a logistic model is used to predict if a business is primarily owned by men. Then, for firms not classified as men-owned, another model is used to predict if a business is owned by women or is equally owned by men and women.

COMPARISONS TO PAST REPORTS

Because previous SBCS reports have varied in terms of the population scope, geographic coverage, and weighting methodology,

the survey reports are not directly comparable across time. Geographic coverage and weighting strategies have varied from year to year. The employer report using 2015 survey data covered 26 states and is weighted by firm age, number of employees, and industry. The employer reports using 2016 and 2017 data included respondents from all 50 states and the District of Columbia. These data are weighted by firm age, number of employees, industry, and geographic location (both census division and urban or rural location). The 2017 survey weight also included gender, race, and ethnicity of the business owner(s), as described previously.

In addition, the categories used within each characteristic have also differed across survey years. For instance, there were three employee size categories in the 2015 survey and five employee size categories in the 2016 and 2017 surveys. Finally, some survey questions have changed over time, limiting question comparisons.

NOTE ON TIME SERIES ESTIMATES

In the employer report using 2017 data, there were two sets of weights: one "main" weight used only for 2017 survey data, which included race/ethnicity and gender; and a "time-consistent" weight, which did not include these variables but allowed for comparison with 2015 and 2016 survey year data. This methodology was employed because 2015 survey year data lacked race/ethnicity and gender information, and 2016 survey data had not been weighted to reflect the race/ethnicity and gender of the U.S. small employer business population.

For this report, we have imputed the race, gender, and ethnicity of a significant share of observations in the 2016 SBCS data that were missing such information and weighted these data using the same methodology employed to weight the 2017 and 2018 survey data. Therefore, a separate time-consistent weight is no longer needed. All years of data presented in this report use the same weighting methodology.

- The time series data in this report supersedes and is not comparable with the time series data (2015–2017 survey years) in the Employer Firms Report published in May 2018. Compared to previous SBCS employer reports, the weighting scheme in this report makes use of a greater number of variables than the time-consistent weights and is more representative of the U.S. small employer firm population.
- Comparisons between this report and the main weights of the employer report using 2017 data can be made, as they use the same weighting scheme, so long as the survey questions and answer choices have not changed. Comparisons to the data in the 2016 survey year report cannot be made in any case, as this 2019 report imputes a substantial share of 2016 observations that were missing information on race, ethnicity, or gender, and employs a different weighting methodology.
- 2015 survey year data are not displayed in this report, as they lack information on business owners' race, ethnicity, and gender, which is necessary for the current weighting methodology.

⁹ For some firms that were originally missing data on the race/ethnicity of their ownership, this information was gathered from public databases or past SBCS surveys.

METHODOLOGY (CONTINUED)

CREDIBILITY INTERVALS AND STATISTICAL TESTS

The analysis in this report is aided by the use of credibility intervals. Where there are large differences in estimates between types of businesses or survey years, we perform additional checks on the data to determine whether such differences are statistically significant. The combination of the results of these tests and several logistic regression models helped to guide our analysis and decide on the variables to include in the report. In order to determine whether differences are statistically significant, we develop credibility intervals using a balanced halfsample approach. 10 Because the SBCS does not come from a probability-based sample, the credibility intervals we develop should be interpreted as model-based measures of deviation from the true national population values.11 We list 95 percent credibility intervals for key statistics in Table 1. The intervals shown apply to all employer firms in the survey. More granular results with smaller observation counts will generally have larger credibility intervals.

Table 1: Credibility Intervals for Key Statistics in the 2018 Report on Employer Firms			
	Percent	Credibility Interval	
Share that applied N=6,614	42.6%	+/-2.0%	
Share with outstanding debt N=6,540	70.3%	+/-1.9%	
Profitability index¹ N=6,280	33.1%	+/-3.6%	
Revenue growth index¹ N=6,438	34.9%	+/-2.5%	
Employment growth index ¹ N=6,176	22.6%	+/-2.8%	
Loan/line of credit and cash advance approval rate ² N=2,302	81.7%	+/-2.2%	
Seeking financing to cover operating expenses ^a N=2,952	43.9%	+/-2.6%	
Seeking financing to expand/pursue new opportunity³ N=2,952	55.7%	+/-2.2%	
Percent of nonapplicants that were discouraged ⁴ N=3,503	15.3%	+/-1.7%	

Table notes:

- 1 For profitability, the index is the share profitable minus the share at a loss at the end of the prior year.
- For revenue and employment growth, it is the share reporting growth minus the share reporting a reduction.

 The share of loan and line of credit applicants that were approved for at least some financing.
- 3 Percent of applicants.
- 4 Discouraged firms are those that did not apply for financing because they believed they would be turned down.

¹⁰ Wolter (2007), Survey Weighting and the Calculating of Sampling Variance.

¹¹ AAPOR (2013), Task Force on Non-probability Sampling.

U.S. SMALL EMPLOYER FIRM DEMOGRAPHICS



SNAPSHOT VIEW OF U.S. SMALL EMPLOYER FIRMS

CENSUS DIVISION	
South Atlantic	20%
Pacific	16%
East North Central	14%
Middle Atlantic	14%
West South Central	11%
Mountain	8%
West North Central	7%
New England	5%
East South Central	5%

GEOGRAPHIC LOCATION	
Urban	83%
Rural	17%

CREDIT RISK	
Low credit risk	64%
Medium credit risk	28%
High credit risk	8%

FIRM AGE ¹	
0-2 years	20%
3-5 years	13%
6-10 years	20%
11-15 years	14%
16-20 years	9%
21+ years	23%

NUMBER OF EMPLOYEES	
1-4	55%
5-9	18%
10-19	13%
20-49	9%
50-499	5%
Share using contractors	41%

RACE/ETHNICITY	
Non-minority	82%
Minority	18%

REVENUE SIZE OF FIRM ¹	
≤\$100K	20%
\$100K-\$1M	51%
\$1M-10M	26%
>\$10M	4%

GENDER ¹	
Men-owned	65%
Women-owned	21%
Equally owned	15%

AGE OF FIRM'S PRIMARY DECISION MAKER	
Under 36	8%
36-45	18%
46-55	31%
56-65	29%
Over 65	14%

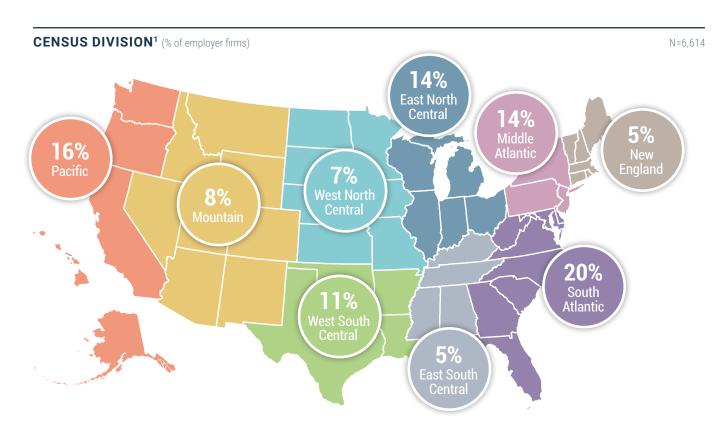
INDUSTRY	
Professional services and real estate	19%
Non-manufacturing goods production and associated services	18%
Business support and consumer services	15%
Retail	14%
Healthcare and education	13%
Leisure and hospitality	11%
Finance and insurance	6%
Manufacturing	4%

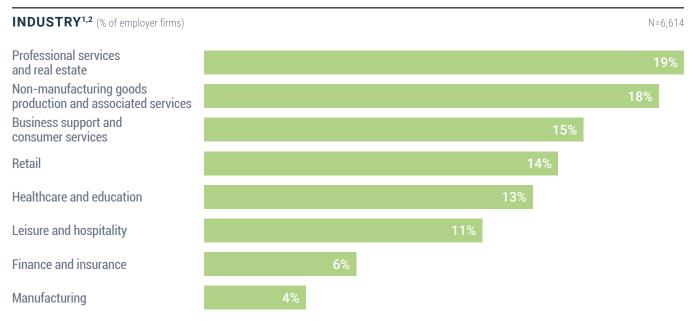
¹ Percentages may not sum to 100 due to rounding.

U.S. SMALL EMPLOYER FIRM DEMOGRAPHICS (CONTINUED)



The following charts provide an overview of the survey respondents.



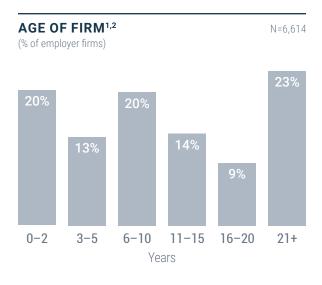


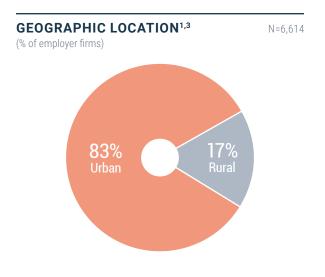
SBCS responses throughout the report are weighted using Census data to represent the U.S. small business population on the following dimensions: firm age, size, industry, geography, race/ethnicity of owner, and gender of owner. For details on weighting, see Methodology.

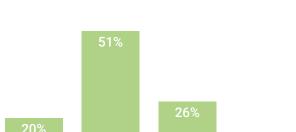
Firm industry is classified based on the description of what the business does, as provided by the survey respondent. See Appendix for definitions

U.S. SMALL EMPLOYER FIRM DEMOGRAPHICS (CONTINUED)



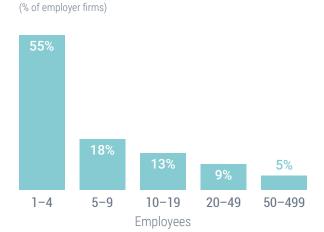






REVENUE SIZE OF FIRM^{2,4}

(% of employer firms)



NUMBER OF EMPLOYEES1,2,5

4% ≤\$100K \$100K-\$1M \$1M-\$10M >\$10M Annual revenue

41% of small employer firms use contract workers.

N=6,556

N=6,614

Percentages may not sum to 100 due to rounding.

N=6,376

SBCS responses throughout the report are weighted using Census data to represent the U.S. small business population on the following dimensions: firm age, size, industry, geography, race/ethnicity of owner, and gender of owner. For details on weighting, see Methodology.

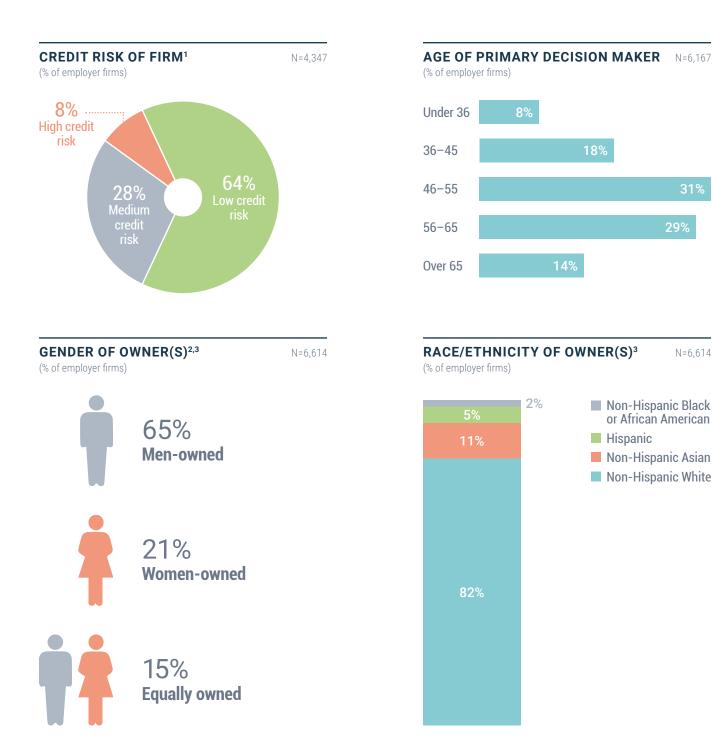
Urban and rural definitions come from Centers for Medicare & Medicaid Services. See Appendix for more detail.

Categories have been simplified for readability. Actual categories are: ≤\$100K, \$100,001-\$1M, \$1,000,001-\$10M.

Employer firms are those that reported having at least one full- or part-time employee. Does not include self-employed or firms where the owner is the only employee.

U.S. SMALL EMPLOYER FIRM DEMOGRAPHICS (CONTINUED)





¹ Self-reported business credit score or personal credit score, depending on which is used. If the firm uses both, the highest risk rating is used. 'Low credit risk' is a 80–100 business credit score or 720+ personal credit score. 'Medium credit risk' is a 50–79 business credit score or a 620–719 personal credit score. 'High credit risk' is a 1–49 business credit score or a <620 personal credit score.

² Percentages may not sum to 100 due to rounding.

³ SBCS responses throughout the report are weighted using Census data to represent the U.S. small business population on the following dimensions: firm age, size, industry, geography, race/ethnicity of owner(s), and gender of owner(s). For details on weighting, see Methodology.