

Puerto Rico

SMALL BUSINESS SURVEY 2017



FEDERAL RESERVE BANK *of* NEW YORK

Puerto Rico

SMALL BUSINESS SURVEY 2017

FEDERAL RESERVE BANK OF NEW YORK

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The views presented here are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

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EXECUTIVE SUMMARY

The Federal Reserve Bank of New York conducts an annual survey of Puerto Rico small businesses¹ to fill data gaps and to provide stakeholders, including policymakers, relevant and timely information on this important economic sector. This survey was completed in May 2017, prior to hurricanes Irma and Maria, which caused extensive damage across Puerto Rico. We therefore do not expect the results of this year's survey to accurately reflect the current state of the sector post storms. Where these and last year's results may prove useful is in establishing benchmarks, both point-in-time and trends, as the Island and the small business sector recover. The New York Fed will continue to monitor this and other economic developments in Puerto Rico, recognizing that the top priority remains meeting the immediate humanitarian needs of the people of Puerto Rico.

TAKEAWAYS FROM THE 2017 SURVEY

The share of micro firms declined - While the overall number of firms in the sector is essentially unchanged from 2015 to 2016,² the share of micro firms (\leq \$50K in annual revenues) declined. Micro firms used to be 36% of the sector in 2015 and were 31% in 2016. As a result, the share of medium sized firms has increased.

Profits were under pressure - The percent of firms that were profitable declined to 31% in 2016 as compared to 44% in 2015. Firms experienced pressures from both sides of the ledger: rising operating expenses and decreasing revenues. In general, firms with flat or growing revenues were almost twice as likely to be profitable than firms with flat or decreasing operating costs (20% of the sector versus 11%).

Loan demand was weaker in 2016 - 32% of firms applied for credit in 2016 as compared to 55% in 2015. There was also a decline in demand for micro loans (\leq \$25K), which may reflect the compositional shift of the sector away from micro-sized firms. Consistent with this shift, fewer firms reported applying for credit to start a business in 2016 than in 2015.

Loan approvals declined in 2016 - The decline took two forms: Overall, only 30% of firms received full funding as compared to 39% in 2015. In addition, more firms (40%) received zero funding as compared to 33% in 2015. The reasons for the financing shortfall were little changed and a major impact was to delay or pass on a business opportunity.

¹ Small businesses have fewer than 500 paid full- or part-time employees.

² The Bureau of Labor Statistics' Quarterly Census of Employment and Wages estimates there were 44197 and 44162 small business establishments in the first quarters of 2015 and 2016, respectively.

EXECUTIVE SUMMARY

Weak firm performance contributed to depressed loan demand – While non-applicants continue to be debt averse or have sufficient funding for their needs, more of them were too discouraged to apply for credit (18% in 2016 as compared to 14% in 2015). They cited weak business performance, low credit scores and insufficient credit histories as reasons for discouragement.

Workforce pressures were noted – 6% of all firms reported finding or retaining qualified workers as a top business challenge for 2016. Also, 12% of all firms reported that the shortage of qualified workers may threaten their competitiveness in 2017.

Firms planned to invest in their businesses in 2017 – 36% of all firms plan to hire more workers or increase worker hours in 2017. 43% of all firms plan to increase investment in worker training and skills building. 56% of all firms plan to increase investments in technology, and 50% of all firms plan to upgrade equipment and facilities, which may contribute to worker productivity.

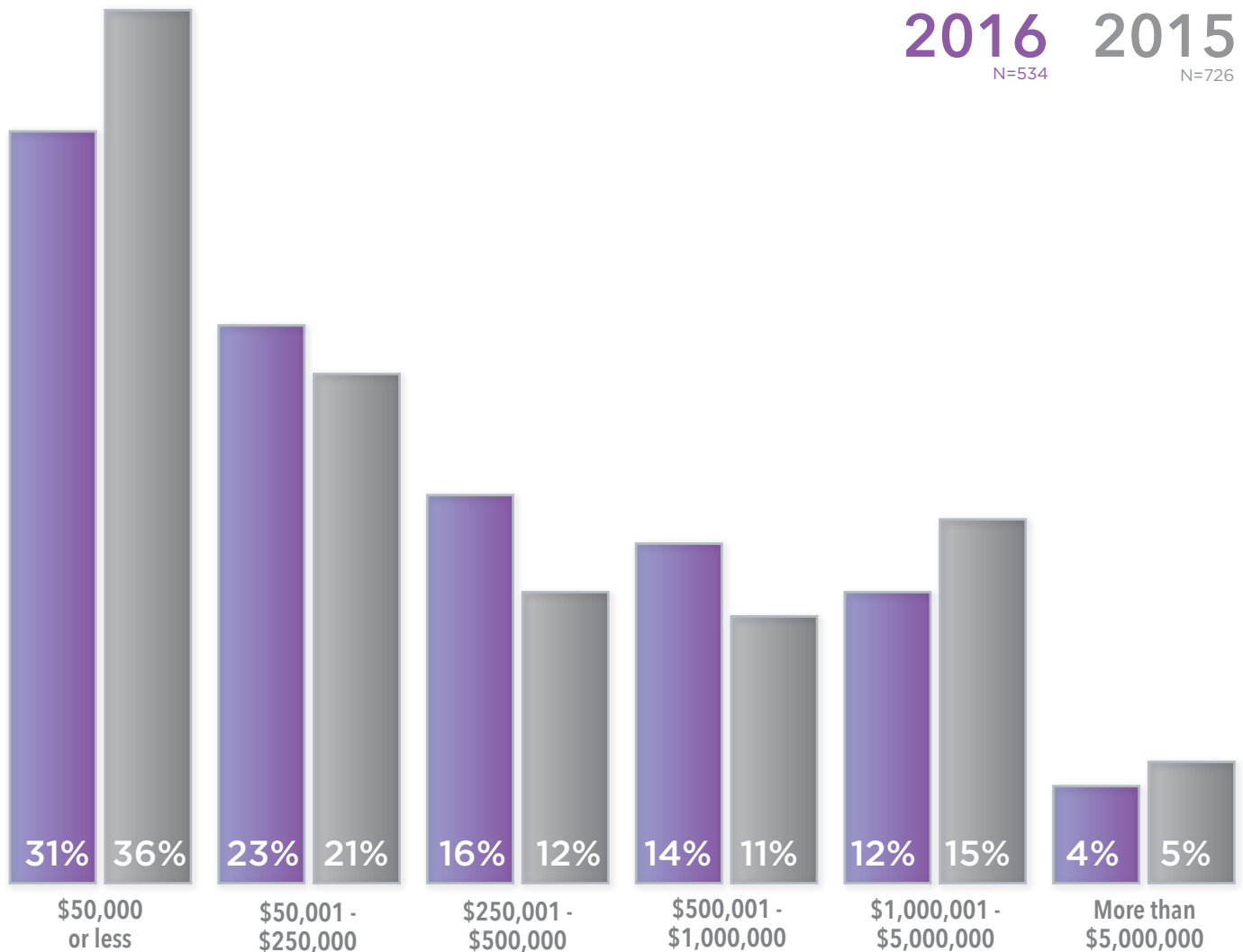
Job creators were thriving – 38% of all firms either created new jobs on the island in 2016 or plan to expand employment in 2017. These firms are mostly newly established (zero to 5 years) and over a third are profitable. Of the 30% of job creators that sought credit, almost half did so in order to expand their business, possibly explaining their demand for more workers. A majority (60%) of them were successful in receiving all or some of the credit they applied for. Workforce issues were a key business concern for them.

About the Sector

Macro data from the Bureau of Labor Statistics indicate that the overall number of Puerto Rico small business establishments (about 44,000) remained relatively unchanged from 2015 to 2016.³ Even so, is the underlying composition of the sector changing? The *Puerto Rico Small Business Survey* provides micro data to examine the size composition of the sector between 2015 and 2016.

ANNUAL REVENUES

Using annual revenues as a measure of firm size, the survey data show that the share of micro firms, or firms with annual revenues of \$50,000 or less, has declined. In 2015, the share of micro firms was 36%. In 2016, it had declined to 31%, or 5 percentage points below the 2015 share. Put another way, given that the overall size of the sector is essentially unchanged, the composition of the sector has shifted and become more midsized in annual revenues, as compared to the composition of the sector in 2015.

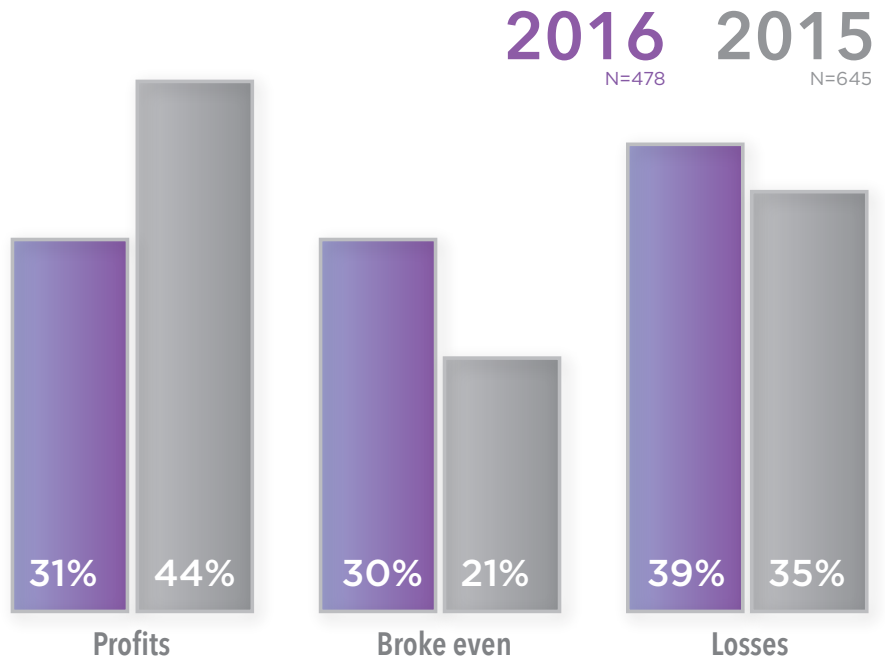


³ Bureau of Labor Statistics, Quarterly Census of Employment and Wages. Number of small business establishments is based on Q1 estimates.

About the Sector

PROFITABILITY

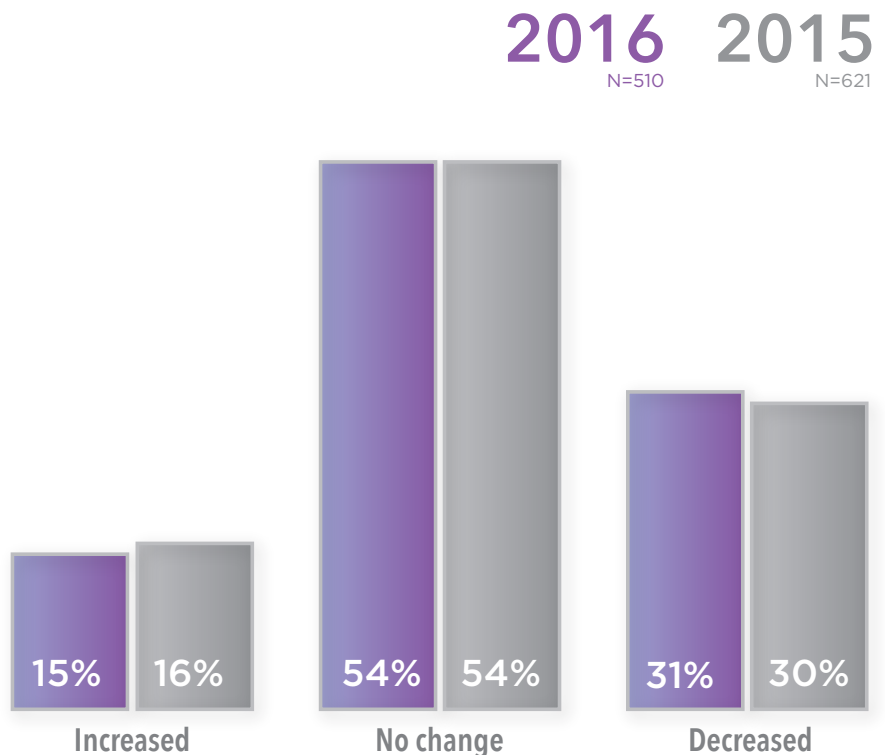
The share of profitable firms in the sector has also declined from 2015 to 2016. In 2015, 44% of all firms reported being profitable; in 2016, 31% reported profits. The share of firms that broke even increased to 30% in 2016 from 21% in 2015. The data suggest some of the firms that were profitable in 2015 may have slipped to just breaking even in 2016.



EMPLOYMENT

Bureau of Labor Statistics data suggest small business employment on the island declined by about 1.4% from 2015 to 2016.⁴ What was the composition of firms that were hiring, laying off workers, or leaving employment levels unchanged?

The survey data show that the pattern for 2016 was very similar to the pattern for 2015.⁵ In both years, 54% of small firms reported unchanged staffing levels. In 2016, another 15% of firms created new jobs by hiring more full-time employees, and 31% downsized the number of their employees.



⁴ Bureau of Labor Statistics, Quarterly Census of Employment and Wages. Percent change is based on the average small business employment of the first three months in 2016 compared to the average of the first three months in 2015.

⁵ Questions differ by survey year. The 2016 survey (reporting on data for 2015) asked about overall employment. The 2017 survey (reporting on data for 2016) asked about full-time employment, specifically.

About the Sector

TOP BUSINESS CHALLENGE

- 37%** of firms reported their top business challenge was maintaining liquidity, whether by accessing credit or collecting on accounts receivable.
- 29%** of firms reported their top challenge was finding or maintaining customers, or containing their energy or operating costs.
- 23%** of firms reported government regulations as their top challenge. The underlying data indicate this challenge was top-ranked primarily by firms that may be characterized as mid-sized in terms of their annual revenues; this mid-sized group comprised a larger share of the small business sector in 2016 than it did in 2015, as noted earlier.
- 6%** of firms reported finding and retaining qualified workers as their top challenge. This workforce challenge will be discussed in more detail in a later section of the report.



Pressure on Profits

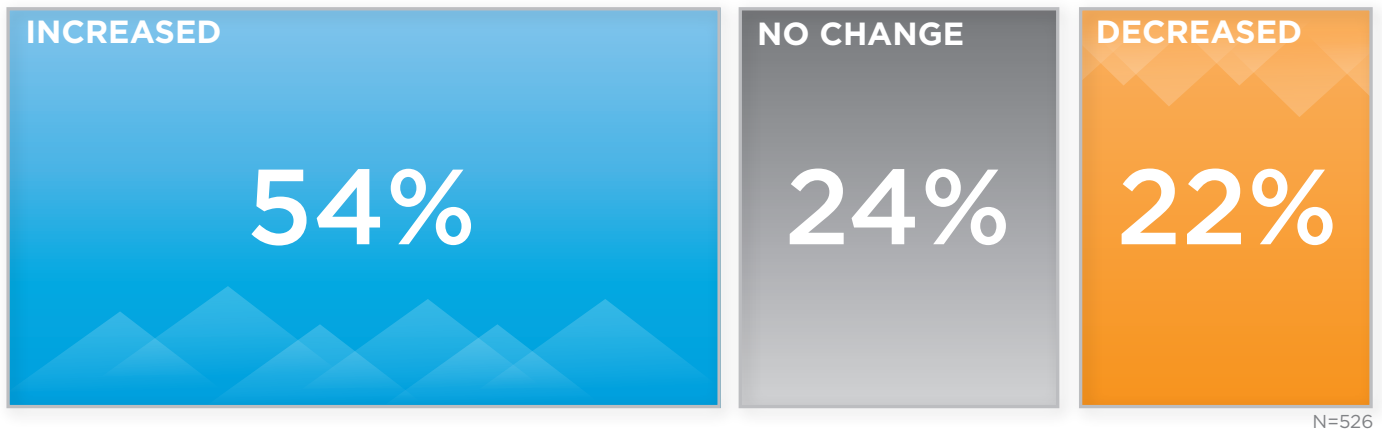
OPERATING EXPENSES, 2015-2016

As shown earlier, fewer firms were profitable in 2016 as compared to 2015. Were firms under pressure from rising costs, declining revenues, or some combination of both? The survey asked firms two cost-related questions: Did operating costs change from 2015 to 2016? If so, by how much?

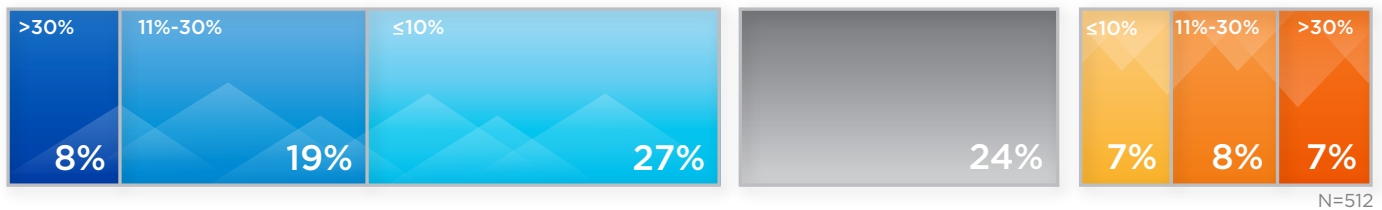
As the chart shows, rising operating expenses were widely experienced by the sector.

54% of firms reported increased operating expenses in 2016 over a year prior.

CHANGE



MAGNITUDE OF CHANGE



However, some firms were more severely affected than others:

8% of all firms reported extreme cost increases in excess of 30%. The next most severely affected, or **19%** of all firms, reported cost increases from 11% to 30%.

7% of firms reported extreme (>30%) expense decreases in 2016.

Pressure on Profits

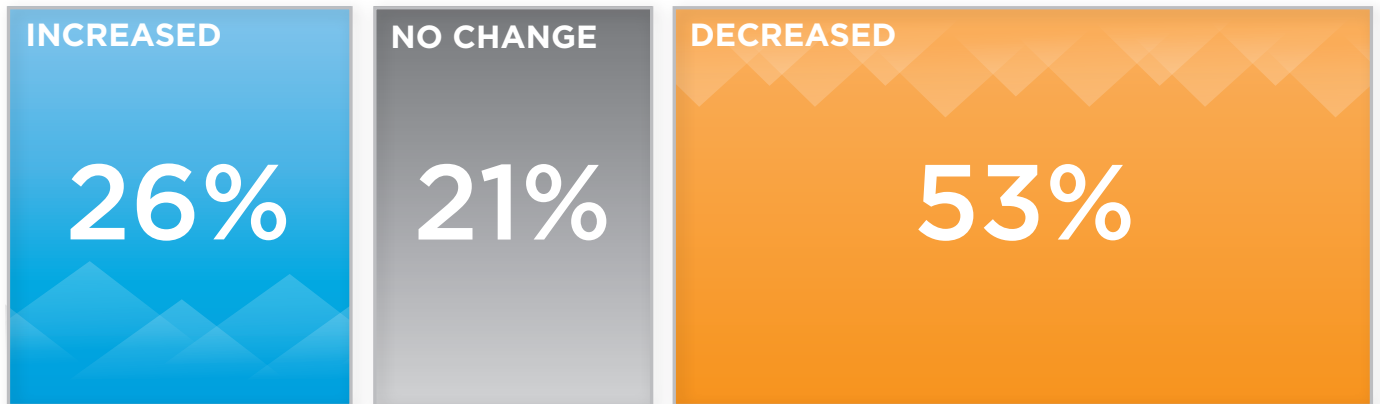
REVENUES, 2015-2016

Revenues are the other major component affecting profitability. The survey asked firms two revenue-related questions: Did annual revenues change from 2015 to 2016? If so, by how much?

The survey data show that the sector widely experienced decreased revenues in 2016 from their 2015 levels.

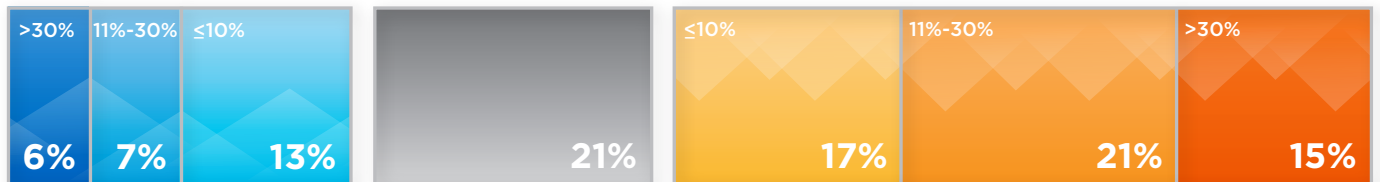
53% of all firms reported decreased revenues in 2016.

CHANGE



N=533

MAGNITUDE OF CHANGE



N=527

Again, some firms were more severely affected than others:

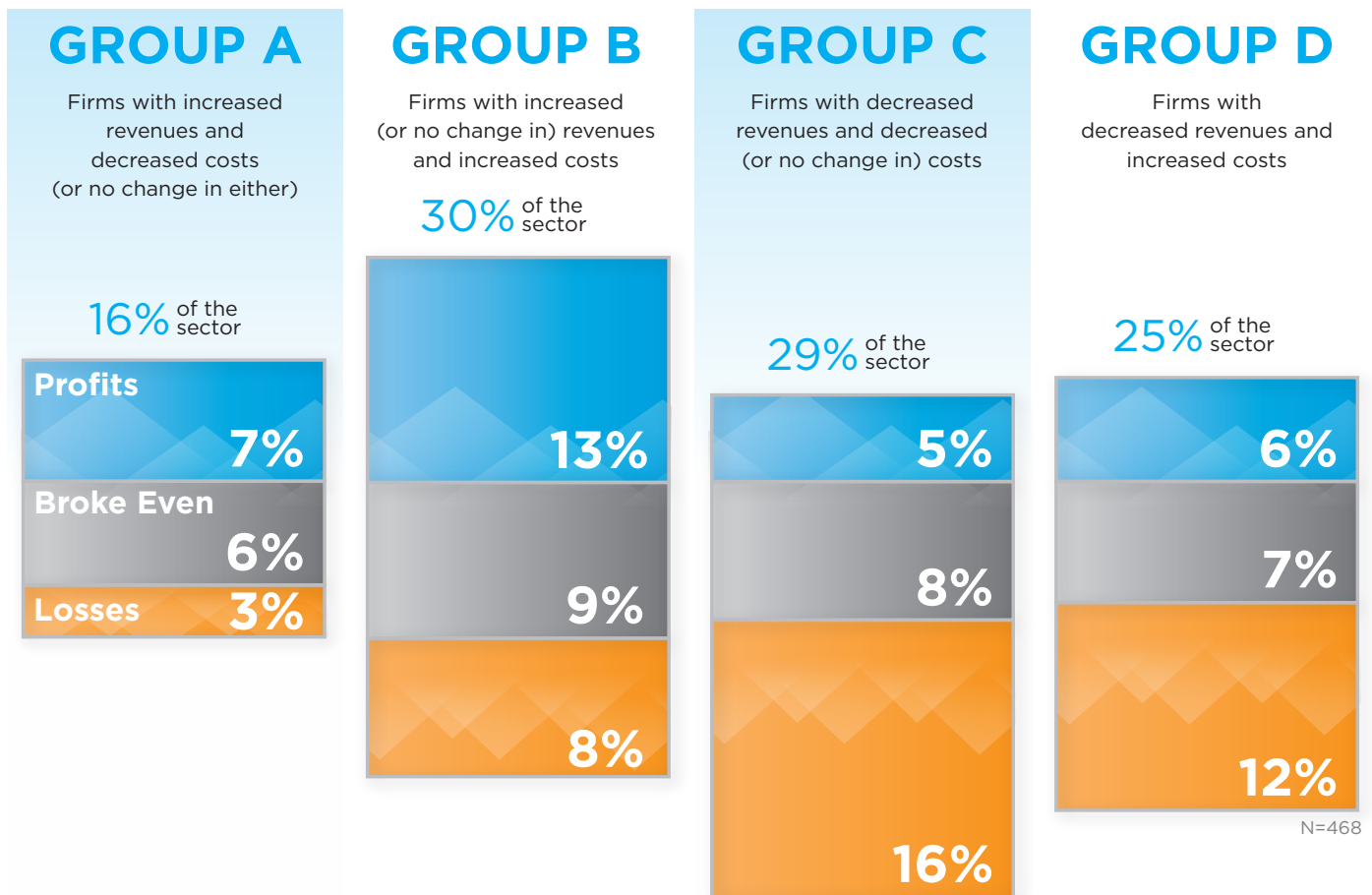
15% of all firms experienced extreme decreases in excess of 30% of their revenues. The next level of severe declines in annual revenues (from 11% to 30%) was reported by 21% of all firms.

6% of all firms reported extreme (>30%) revenue increases in 2016.

Pressure on Profits

NET IMPACT ON PROFITS

The survey data and previous charts show that the Puerto Rico small business sector experienced pressure in 2016 from both sides – declining annual revenues and rising operating expenses. To examine the net impact of the cost/revenue pressures on profitability, we sorted survey respondents into four groups based on their revenues and operating costs.⁶



There are profitable firms in all groups (i.e. with all combinations of cost and revenue dynamics), even Group D, which reported both decreased revenues and increased costs.

7% of the sector is thriving. These firms, in Group A, saw increased or static revenues, decreased or static business costs and were profitable in 2016.

12% of the sector is struggling. These firms, in Group D, saw decreased revenues, increased costs and were not profitable in 2016.

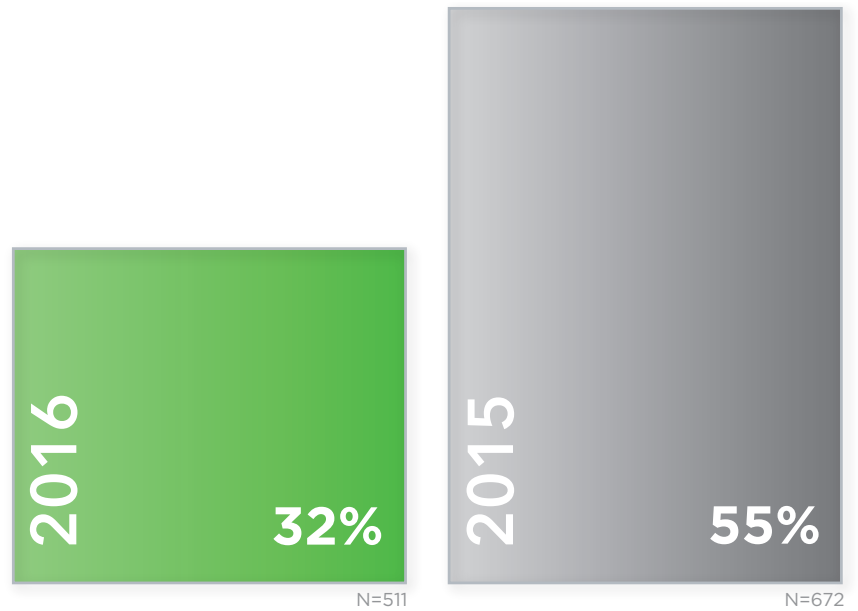
59% of the sector used a mix of business strategies. Group B, with increased revenues and costs, had 13% of the sector's profitable firms, while Group C, with decreased revenues and costs, had 5% of the sector's profitable firms. This comparison suggests that a business strategy that prioritizes revenue growth is more often profitable than a strategy that prioritizes decreasing business costs.

⁶ Those that did not answer both questions about changes in revenues and operating expenses or the question on profitability are excluded from the analysis.

Demand for Credit

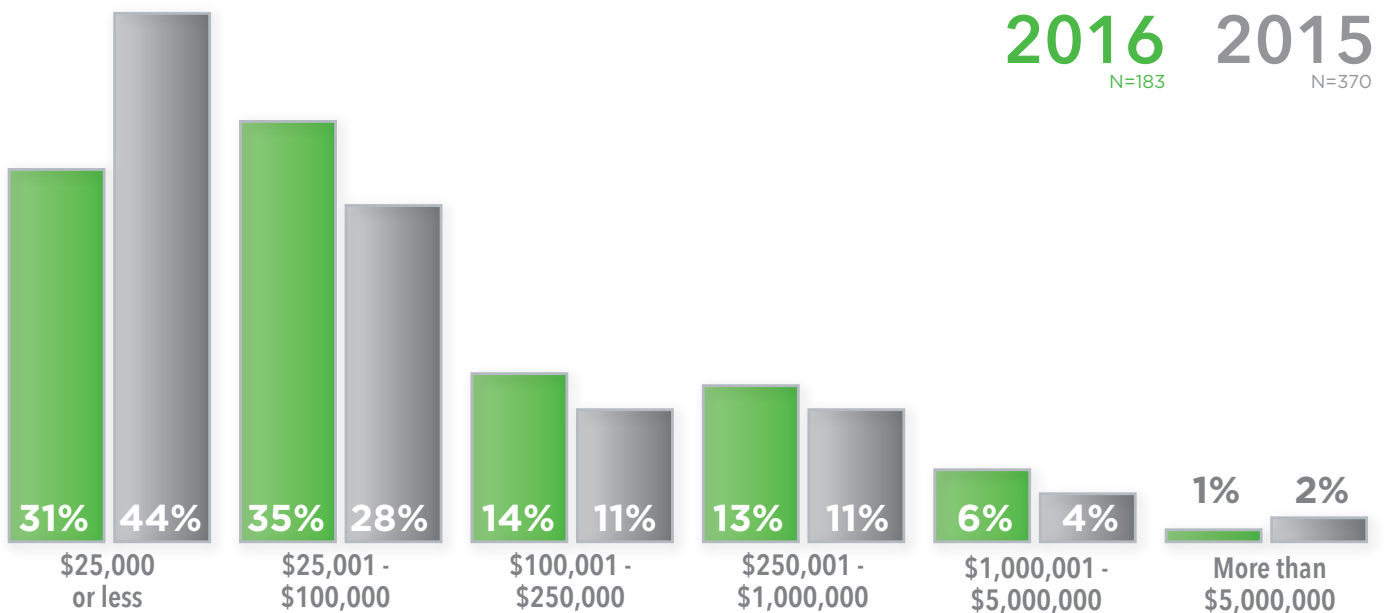
DEMAND FOR CREDIT

This section examines the sector's demand for credit. The survey shows that credit demand declined from 2015 to 2016. Only 32% of firms applied for credit in 2016, as compared to 55% in 2015. This decline suggests that an underlying shift in sector behavior may be occurring between the two years.



AMOUNT APPLIED FOR

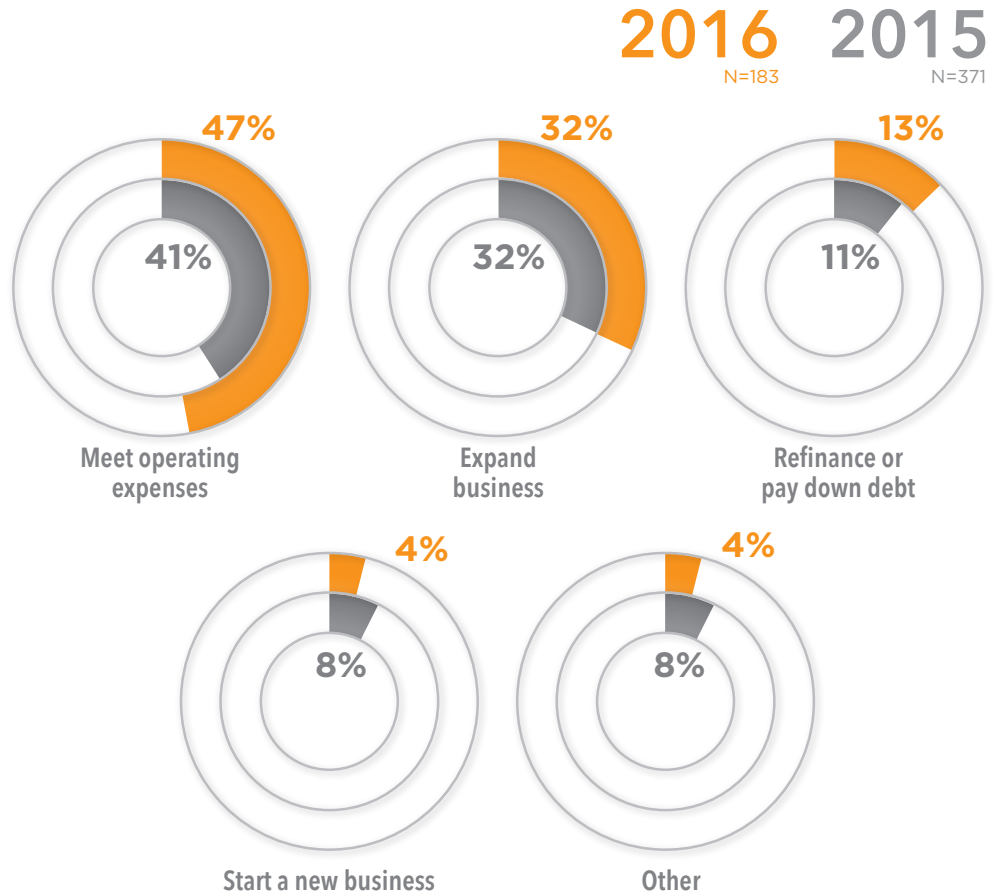
In addition to fewer firms seeking credit, there was a shift away from small dollar loans. Among the firms that applied for credit, there was a drop in the share requesting micro loans (\$25K or less) in 2016 relative to 2015. This decline is likely associated with the decline in the share of micro firms (\$50K or less in annual revenues) in the sector, as reported earlier.



Applicants

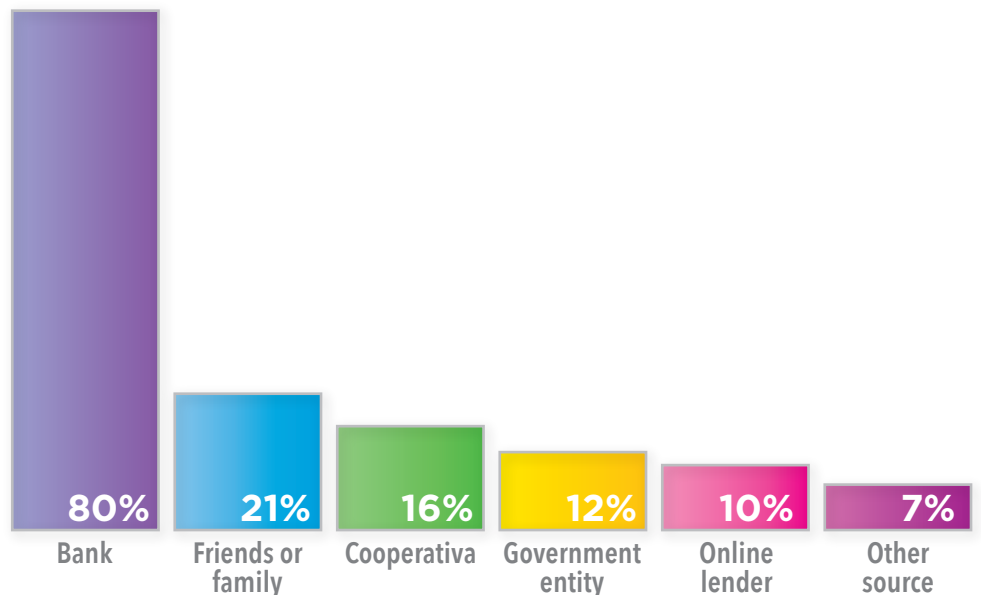
PRIMARY REASON TO APPLY

Only 32% of firms applied for credit in 2016, which was significantly lower than 55% in 2015. The reasons no doubt vary across firms, and the survey asked firms for their primary reason to apply for credit. A new question in this year's survey also asked firms what type of institution they had applied to. Overall, among those that did apply, the reasons to apply were similar in 2015 and 2016.



CREDIT SOURCES⁷

Banks are an important source of financial services for the sector: 80% of firms applied to them for funding and 92% of firms have a commercial checking account (N=511). It is worth noting that the survey is mostly reaching firms in the formal economy, given our network of distribution partners, which may influence the response pattern to this question.



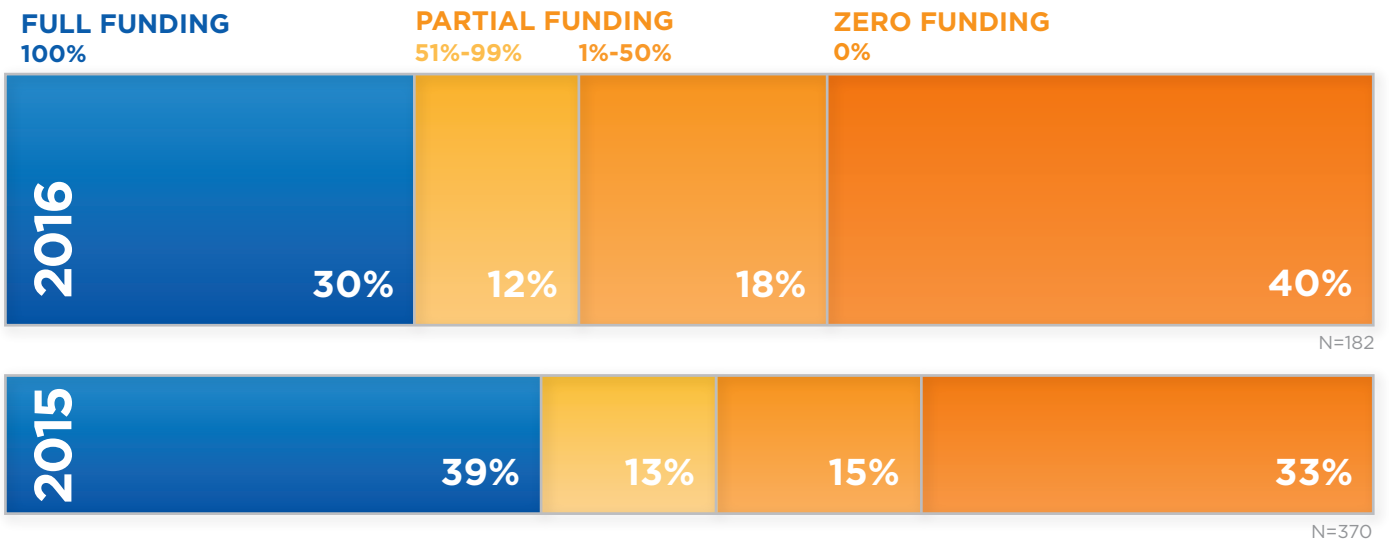
N=183

⁷ The question asked respondents to select all credit sources they applied to. Respondents could select multiple options.

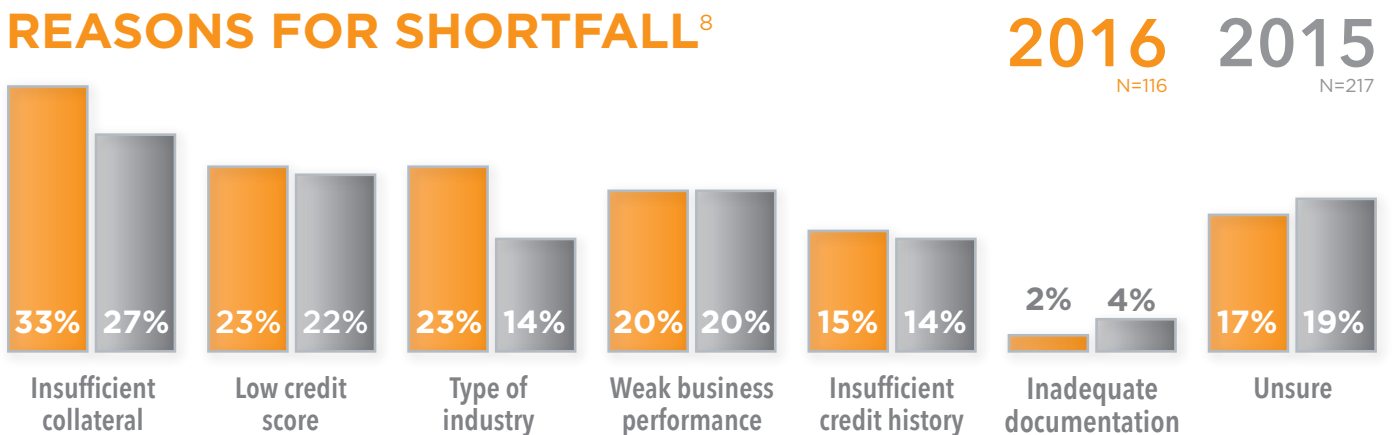
Applicants

FINANCING APPROVED

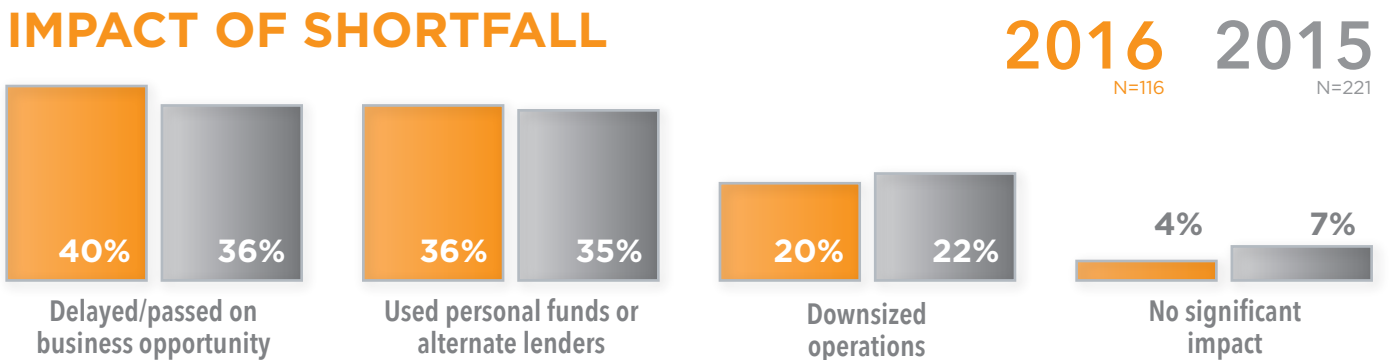
Credit approvals also declined in 2016 relative to 2015. The decline occurred in two forms: In 2016, fewer firms (30%) received full, or 100%, of the funding they requested in 2016, compared to 39% in 2015. Also, more firms (40%) received zero funding than in 2015.



REASONS FOR SHORTFALL⁸



IMPACT OF SHORTFALL

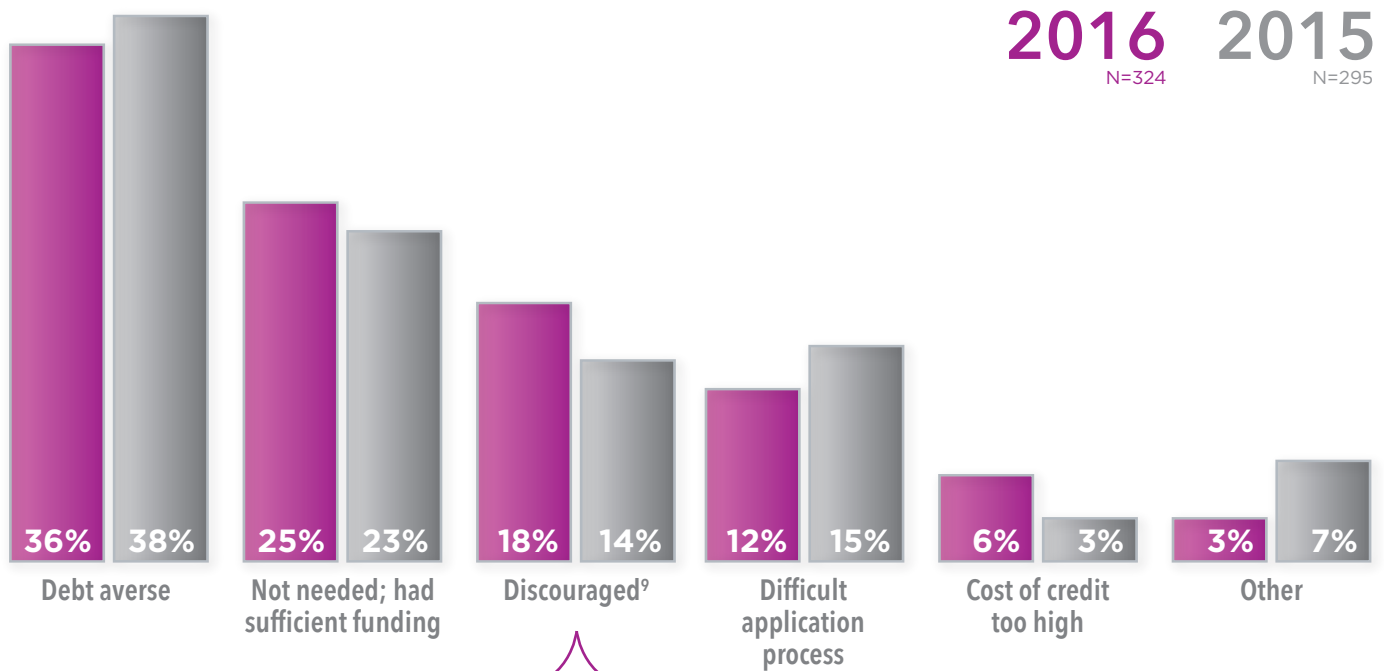


⁸ Respondents could select multiple options.

Non-applicants

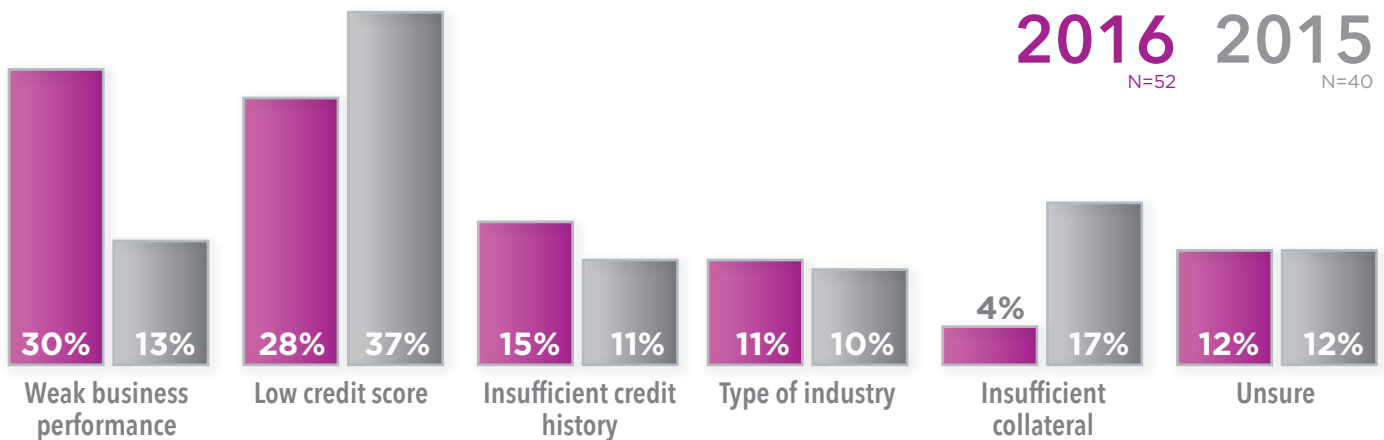
68% of small firms did not apply for credit in 2016, compared to 45% in 2015. The survey asked non-applicants to identify their primary reason for not applying. As the chart shows, debt aversion was again the most frequently mentioned reason in 2016 as in 2015. Overall, the pattern was about the same between the two years.

PRIMARY REASON FOR NOT APPLYING



REASON FOR BEING DISCOURAGED⁹

Non-applicants most commonly reported being discouraged from applying for credit because of weak business performance in 2016. In contrast, low credit scores were more important in 2015.



⁹ Discouraged firms are those that did not apply because they believed they would be turned down.

Competitiveness

ISSUE AFFECTING COMPETITIVENESS IN 2017

Firms were asked to identify issues that posed the greatest impact to their business' competitiveness. While government regulations and workforce issues were identified as top business challenges by several firms, as noted earlier, these issues were even more widely flagged as future competitiveness issues.

30% of firms indicated that regulatory compliance requirements posed the greatest impact to their business' competitiveness. Looking at the underlying data, there were no distinguishing traits to describe this group of firms, whether by size, profitability, age, or industry.

13% of firms pointed to online competitors as their most significant competitiveness issue in 2017.

12% of firms reported that finding or retaining qualified workers is the greatest threat to business competitiveness in 2017.

33% of the sector indicated 'none of the above' as their response. Despite our best efforts, we did not adequately capture their concerns in the survey. We hope to learn more about their issues in our outreach conversations with small business owners, and we welcome feedback and comments from readers of this report.



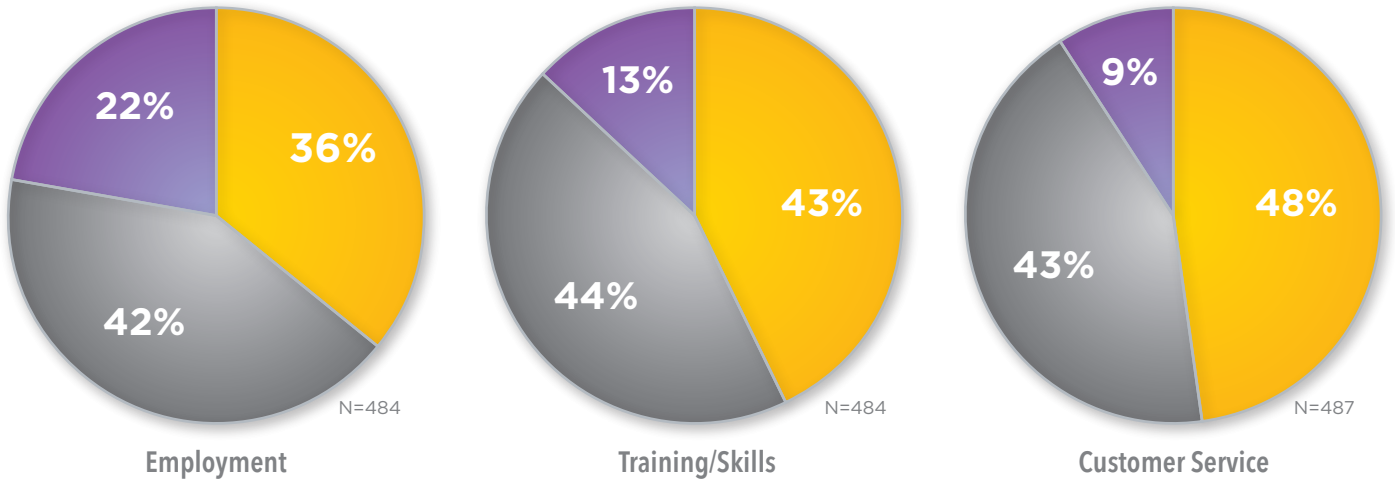
2017 Business Plans

FIRM INVESTMENTS

Looking to the future, worker productivity may be enhanced by business plans for 2017:

36% of firms plan to hire more workers or increase worker hours.

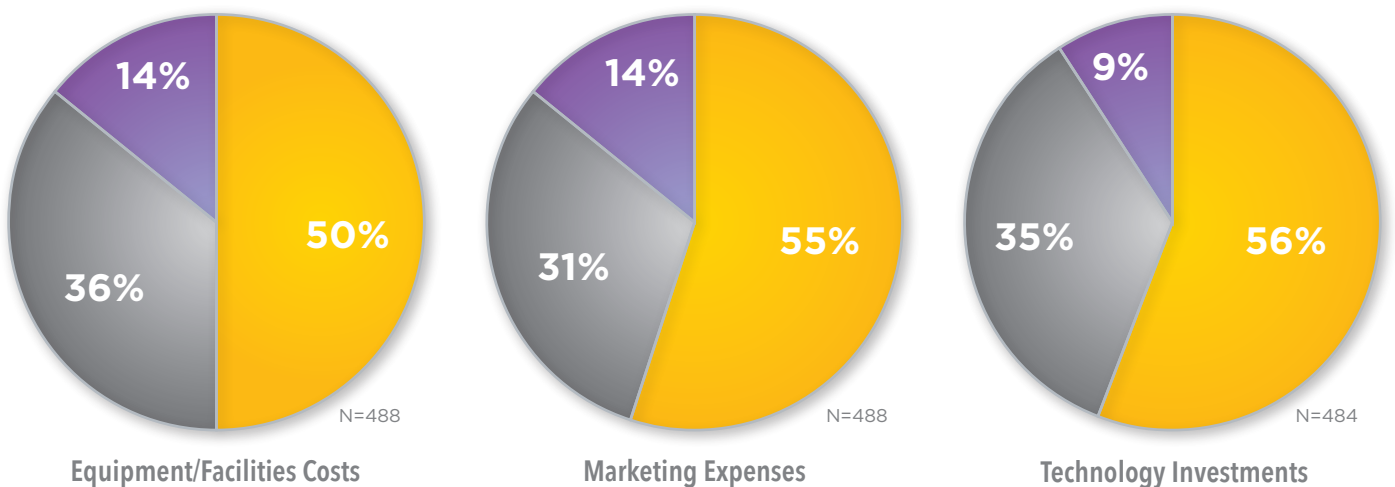
43% of firms plan to increase investment in worker training and skills building.



In addition, firms plan to make other business improvement investments, which may also contribute to worker productivity:

50% of firms plan to upgrade equipment and facilities.

56% of firms plan to increase investments in technology.



Workforce

What evidence does the survey provide about small business job creation on the island? We used three approaches:

First, we look at firms that increased employment. As reported earlier, **15%** of all firms hired more full-time workers in 2016.

Second, we examine firm plans for 2017. **36%** of firms plan to hire more workers or increase worker hours. After allowing for the 22% of firms expecting to decrease employment, on net, 14% of the sector plans to increase, than decrease, jobs and employment opportunities in 2017.

Third, we analyze the micro data, where **38%** of the sector may be described as optimistic regarding employment, whether through actual hires or future plans to hire. We identify this group as the 'job creators.'

JOB CREATORS

'Job creators' are different from other firms in a few ways:



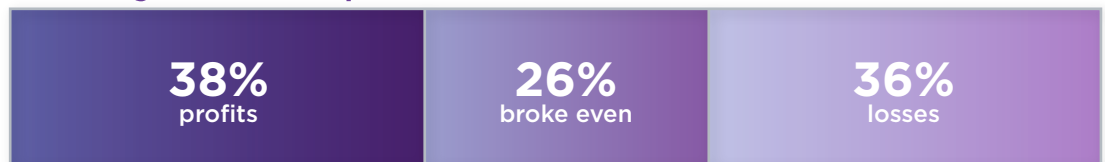
Most are newly established



N=184



Likely to be profitable



N=171



Likely to receive full or partial funding¹⁰



N=65



Finding and retaining qualified workers is a top challenge (9%, N=184) and may affect their competitiveness (18%, N=181).

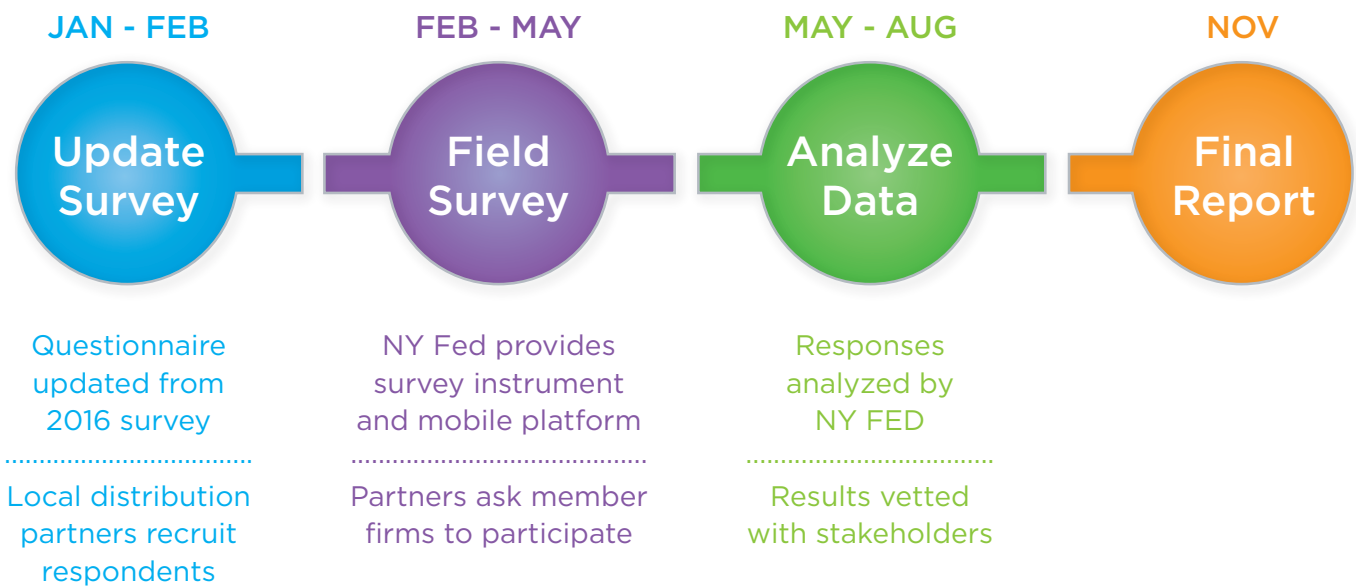
More 'job creators' (46%, N=65) sought credit in order to expand their business, possibly explaining their demand for more workers.

¹⁰ The application rate for 'job creators' is similar to that of the overall sector, with 30% having applied for credit in 2016 (N=183).

About the Survey

OVERVIEW

In 2016, we consulted with diverse Commonwealth thought leaders to scope out the first *Puerto Rico Small Business Survey*.¹¹ Following last year's reports, we took the opportunity to discuss with this group the results and new opportunities for the 2017 survey. These discussions helped focus the survey questionnaire on issues most relevant to the Puerto Rico small business community and encouraged us to use a mobile platform (33% of respondents used a mobile device or tablet to take the survey this year). The survey was designed to provide new and timely data that will fill knowledge gaps, most likely on the formal economy, given our distribution process.



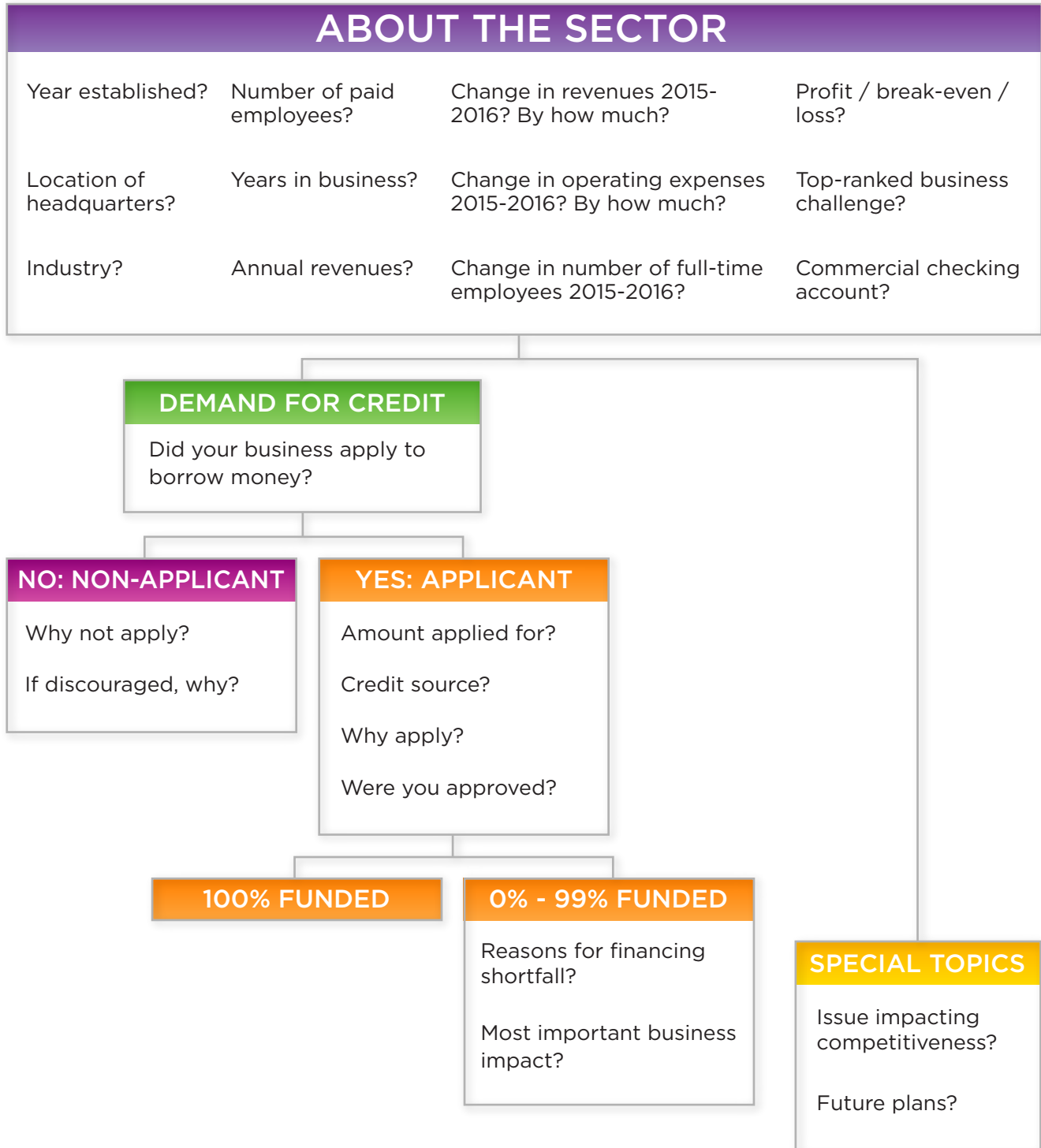
The unique aspect of the *Puerto Rico Small Business Survey* is that it is a volunteer effort. The New York Fed fields the survey and undertakes the data analysis. But local organizations—our network of distribution partners—circulate the survey to their membership and encourage members to participate by filling out the questionnaire. Without them, this survey would not be possible. See Acknowledgments for a list of our 2017 partners.

¹¹ See <https://www.newyorkfed.org/outreach-and-education/puerto-rico> for a series of reports and community briefs using the data.

About the Survey

ARCHITECTURE OF SURVEY QUESTIONS

The survey questionnaire focused on three broad areas: information about the respondents; demand for credit; and a special topics section addressing current issues and future plans. See the 2017 Survey Questionnaire for specific questions.



Survey Questionnaire

INTRODUCTION

The Puerto Rico Small Business Survey asks about your firm's general business conditions and financing experiences **in 2016**. The questions are best answered by the **business owner or a key decision maker**. The survey takes approximately 10 minutes to complete.

The survey is conducted by the Federal Reserve Bank of New York, working in collaboration with local business and civic groups. Your survey responses will be anonymous. The answers you provide will be combined with other responses to this survey and only used to provide information on Puerto Rican small businesses that will support research and publish reports. This anonymous survey data may be shared with third parties for research purposes.

By taking this survey, you agree to these uses.

Section 1: General Questions About Your Business

We would like to start with some general questions about your business, sales, and employees. Please answer to the best of your ability.

1. Which zip code is your headquarters located in? _____

2. In what year was your business established? _____

3. Which of the following BEST describes your business' primary activity?

- a) Retail Trade
- b) Health Care and Social Services
- c) Accommodation and Food Services (For example: hotels and restaurants)
- d) Wholesale Trade
- e) Construction
- f) Manufacturing
- g) All other industries
- h) Unsure

If Q3 g) or h) is selected, go to Q4. Otherwise, go to Q5.

4. Do any of the following best describe your business activities?

- a) Real Estate & Rental
- b) Agriculture, Forestry, Hunting, Fishing
- c) Arts, Entertainment, and Recreation
- d) Information Services (For example: publishing, video, telecommunications, and data processing)
- e) Professional Services (For example: legal, accounting, engineering, finance and insurance)
- f) Business Operations (For example: facilities support & landscaping, security, employment services, waste collection & disposal)
- g) All other

Survey Questionnaire

5. Regardless of your answer to the previous question, please describe what your business does in your own words (for example: barber shop, law firm, insurance agency, construction, etc.):

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6. In 2016, how many people did your business employ, including owners?

Type of employees	Number of employees
a) Owners	
b) Non-owner full-time employees (30+ hours per week)	
c) Non-owner part-time employees (less than 30 hours per week)	
d) Unsure. Please explain: _____	

Section 2: Firm Performance in 2016

Now, we would like to ask you some specific questions about your business' experience over the past year and how it compares to previous years.

7. In 2016, approximately what were your business' total revenues?

- a) \$50,000 or less
- b) \$50,001 - \$250,000
- c) \$250,001 - \$500,000
- d) \$500,001 - \$1,000,000
- e) \$1,000,001 - \$5,000,000
- f) More than \$5,000,000

8. From 2015 to 2016, how did your revenues change?

- a) Increased
- b) No change
- c) Decreased

If Q8 a) or c) is selected, go to Q9. Otherwise, go to Q10.

9. From 2015 to 2016, by how much did your revenues increase/decrease?

- a) Less than 6%
- b) 6% - 10%
- c) 11% - 20%
- d) 21% - 30%
- e) More than 30%

Survey Questionnaire

10. From 2015 to 2016, how did your operating expenses change?

- a) Increased
- b) No change
- c) Decreased

If Q10 a) or c) is selected, go to Q11. Otherwise, go to Q12.

11. From 2015 to 2016, by how much did your operating expenses increase/decrease?

- a) Less than 6%
- b) 6% - 10%
- c) 11% - 20%
- d) 21% - 30%
- e) More than 30%

12. From 2015 to 2016, how did the number of non-owner full-time employees change?

- a) Increased
- b) No change
- c) Decreased

13. In 2016, did your business make a profit or have a loss?

- a) Profits
- b) Broke even
- c) Losses
- d) Unsure or decline to answer

14. In 2016, what was your **BIGGEST business challenge?**

- a) Collecting on accounts receivable
- b) Finding or retaining qualified workers and/or managers
- c) Complying with government regulations
- d) Accessing credit for your business
- e) Identifying export opportunities
- f) Dealing with rising energy costs
- g) All other. Please specify: _____

Section 3: Firm Credit Needs in 2016

Businesses often need credit to cover expenses or to make investments. We would like to ask you about your experiences with credit over the past year. Even if you did not apply for any credit, please answer all of the questions.

15. Does your business have a commercial checking account?

- a) Yes
- b) No

Survey Questionnaire

16. In 2016, did your business APPLY to borrow money?

- a) Yes
- b) No

If Q16 a) is selected, go to Q17. If Q16 b) is selected, go to Q23.

17. In 2016, from which of the following sources did your business apply for credit? Check all that apply.

- a) Bank
- b) Credit union (Cooperativa)
- c) Government entity
- d) Online lenders (For example: 1st Global Capital, One Park Financial)
- e) Loan from friends and/or family
- f) Other (For example: title loan, pawnshop). Please specify: _____

18. In 2016, how much TOTAL funding, from all sources, did your firm APPLY for?

- a) \$25,000 or less
- b) \$25,001 - \$100,000
- c) \$100,001 - \$250,000
- d) \$250,001 - \$1,000,000
- e) \$1,000,001 - \$5,000,000
- f) More than \$5,000,000

19. In 2016, what was the PRIMARY PURPOSE for your firm seeking credit?

- a) Meet operating expenses
- b) Expand business (For example: new products or services, new location, purchase of equipment, etc.)
- c) Refinance
- d) Pay down debt
- e) Start a new business
- f) Other. Please specify: _____

20. In 2016, of the total dollar amount of funding that your firm applied for, what percentage was approved?

- a) All (100%)
- b) More than half (51%-99%)
- c) Half or less than half (1%-50%)
- d) Zero (0%)

If Q20 b), c), or d) is selected, go to Q21. Otherwise, go to Q25.

Survey Questionnaire

Section 4: Less than 100% of Credit Approved

21. In 2016, what was the MOST important business impact, if any, of not receiving the full amount of funding for which your business applied?

- a) Downsized business operations (For example: cut staff, reduced products and services, or reduced commercial space, etc.)
- b) Delayed or passed on a business opportunity (For example: new products or services, new location, purchase of equipment)
- c) Funded business from personal sources, friends and/or family, pawnshops, or high cost lenders, etc.
- d) No significant impact

22. In 2016, what were the MOST likely reasons your business did not receive 100% of the funding applied for? *Check all that apply.*

- a) Low credit score
- b) Insufficient credit history
- c) Insufficient collateral
- d) Inadequate documentation
- e) Type of Industry
- f) Weak business performance (For example: uneven cash flow, poor revenue)
- g) Unsure

[Go to Q25.](#)

Section 5: Firms that Did Not Apply for Credit in 2016

23. What was the PRIMARY reason your business DID NOT apply for credit in 2016?

- a) Not needed; had sufficient funding
- b) Did not think application would be approved
- c) Did not want to accrue debt
- d) Credit cost was too high
- e) Loan search/application process was too difficult or confusing
- f) Other. Please specify: _____

[If Q23 b\) is selected, go to Q24. Otherwise, go to Q25.](#)

Survey Questionnaire

24. What is the most likely reason that your credit application would not be approved?

- a) Insufficient credit history
- b) Low credit score
- c) Insufficient collateral
- d) Inadequate documentation
- e) Type of Industry
- f) Weak business performance (For example: uneven cash flow, poor revenue)
- g) Unsure

Section 6: Special Topics for 2017

Finally, we have some questions regarding impacts to your business' competitiveness and your business plans for 2017.

25. In 2017, which issue poses the greatest impact to your business' competitiveness?

- a) Regulatory compliance requirements (For example: permits, taxes, licensing, etc.)
- b) Finding/retaining skilled workers
- c) Labor laws
- d) Reliability of utility services (electricity, water, broadband, etc.)
- e) Online competitors
- f) None of the above

26. In 2017, how do you expect the following to change?

	Increase	No change	Decrease
Number of workers or hours			
Investment in employee skills/training			
Marketing expenses			
Equipment & facilities expenses			
Expenditures for customer service			
Technology investments			

On behalf of the Federal Reserve Bank of New York, thank you for taking this survey. Feel free to visit the New York Fed website at www.nyfed.org/puertorico to find out how we are using the information.

About the Data

The *Puerto Rico Small Business Survey* is modeled after the Federal Reserve Bank of New York's Small Business Credit Survey for the U.S. mainland,¹² and is customized to address local issues and interests in the Commonwealth. See About the Survey for details.

DATA COLLECTION

The survey is a voluntary collaboration that results in a convenience sample of business establishments with fewer than 500 employees. The New York Fed fields the survey and undertakes the data analysis. Puerto Rico organizations—our network of distribution partners (see Acknowledgments for the list)—distribute the survey to their members and ask them to participate. The New York Fed may also contact businesses directly through publicly available email lists. The survey is conducted online and the number of responses varies according to the number of firms that receive and complete a particular question.

826 firms responded to the survey, which was fielded between February 2016 and May 2016. Of the respondents, 549 businesses answered the four questions associated with the weighting dimensions—industry, employment size, year established, and geographic location—and are therefore included in the report analysis.

DATA WEIGHTING

To control for biases and to ensure the survey closely matches the distribution of the small business population in Puerto Rico, we weight the survey responses on four dimensions: industry, employment size, age of firm, and geographic location of establishments. As with all surveys, there may remain some degree of selection, recall, and non-response bias.

The Federal Reserve Bank of New York collaborated with the National Opinion Research Center (NORC), a nationally recognized survey organization, in order to calculate the weights. For the 2017 survey, the weighting data for industry and geography come from the US Census Bureau's County Business Patterns (CBP) Series, 2015. The CBP excludes most government employees, railroad employees, and self-employed persons. Weighting data for employment size come from the Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW), 2016Q1, and data for firm age come from the Bureau of Labor Statistics' Business Employment Dynamics (BED), 2016Q1. Because age of small firms (less than 500 employees) data are not currently available, the BED data used for weighting represent all private sector establishments in Puerto Rico. Although not optimal, we do not anticipate a deleterious effect from including the large firms, as we estimate they account for 0.3% of all Puerto Rican private sector establishments.¹³ All other weighting variables are specific to the small firm population in Puerto Rico.

In order to provide the most accurate time-series comparisons, we have applied a time-consistent weighting approach to the 2016 survey data. In the 2016 *Puerto Rico Small Business Survey* Report, 2014 Census data were used to weight the survey sample. Because 2015 Census data are now available, we have updated our weighting scheme to more closely reflect the time in which respondents completed the survey.¹⁴ We also include age of business as a weighting dimension, which was not included in the methodology last year. For these reasons, **the data in this report are not directly comparable to that presented in the 2016 report.** Instead, we provide new estimates of the 2016 survey data where time-series comparisons are possible and appropriate.

¹² See www.newyorkfed.org/smallbusiness/small-business-credit-survey-employer-firms-2016. Mainland includes Hawaii and Alaska.

¹³ Using data from the Bureau of Labor Statistics' QCEW, we estimate the share of large firms (500+ employees) was 0.31% in 2015 and 0.34% in 2016.

¹⁴ For 2016 survey data, we use the US Census Bureau's CBP Series, 2015 for industry and geography, the Bureau of Labor Statistics' QCEW, 2015Q1 for employment size, and the Bureau of Labor Statistics' BED, 2015Q1 for age of firm.

About the Data

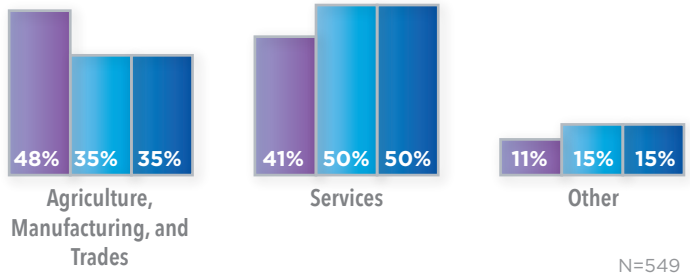
Data for both survey years are weighted using the following categories:

- For the industry weights, respondents are sorted into one of three major categories: *Agriculture, Manufacturing, and Trades* (NAICS: 11, 23, 31-33, 42, 44-45); *Services* (NAICS: 51, 52, 53, 54, 55, 61, 62, 71, 72); and *Other*.
- For the employment size weights, respondents were asked to provide the number of full- and part-time employees, and are sorted into one of three size categories: *Fewer than 10*, *10 to 49*, and *50 to 499* full- and part-time employees.
- For the age weights, respondents were asked to provide the year their business was established, and are sorted into one of three age categories: *0 to 5 years*, *6 to 10 years*, and *11 or more years*.
- For the geographic location weights, respondents were asked to provide a business ZIP code, and are sorted into one of two categories: the greater *North Central Metro* area, defined as the San Juan municipio and the 22 surrounding municipios (Aguas Buenas, Barranquitas, Bayamón, Caguas, Canóvanas, Carolina, Cataño, Cayey, Cidra, Comerío, Corozal, Dorado, Guaynabo, Gurabo, Loíza, Naranjito, San Juan, San Lorenzo, Toa Alta, Toa Baja, Trujillo Alto, Vega Baja, Vega Alta); and the *Rest of Puerto Rico*, or the 55 Puerto Rican municipios not included in the *North Central Metro* area.

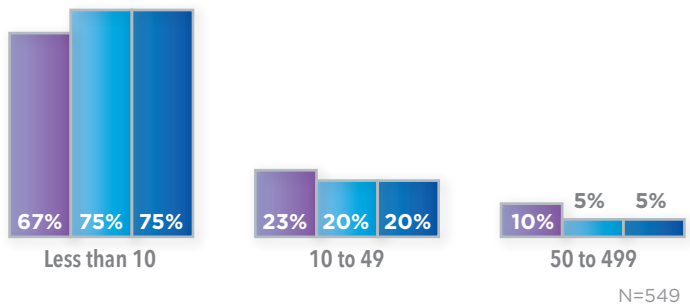
As population totals are not consistent across the four weighting dimensions, counts by employment size, age of firm, and geographic location are calibrated to the count by industry.

The charts to the right show how the 2017 survey responses compare, before and after the adjustments.

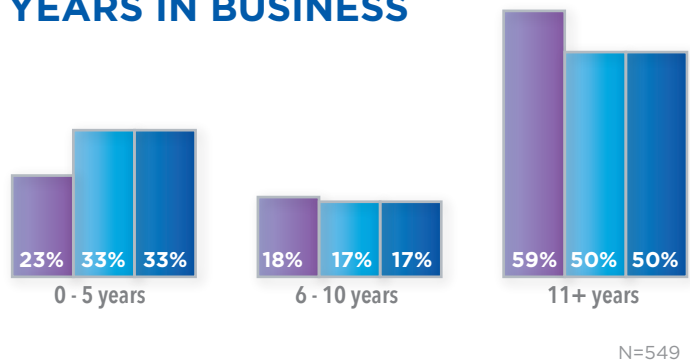
GENERAL INDUSTRY



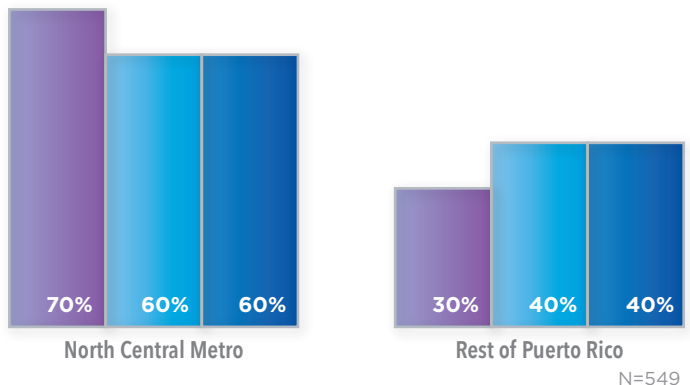
NUMBER OF EMPLOYEES



YEARS IN BUSINESS



GEOGRAPHIC LOCATION



● Raw Survey Responses
 ● Census
 ● Adjusted Survey Responses

About the Data

CREDIBILITY INTERVALS

The analysis in this report is aided by the use of credibility intervals. Where there are large differences in estimates between survey years, we perform additional checks on the data to determine whether the difference appears significant. The results of these tests help guide our analysis and help us decide what ultimately is included in the report.

In order to determine whether a difference is significant, we develop credibility intervals using a balanced half-sample approach.¹⁵ Because this survey 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.¹⁶ Ninety-five percent credibility intervals for key statistics are listed in Table 1. More granular results with smaller observation counts will generally have larger credibility intervals.

Table 1: Credibility Intervals for Key Statistics				
	2017 Survey		2016 Survey	
	Percent	Credibility Interval	Percent	Credibility Interval
Percent of “microfirms” (\$50K or less in annual revenues)	31.1%	+/-1.4%	35.8%	+/-2.5%
Percent with increased revenues	26.0%	+/-3.9%	26.3%	+/-2.3%
Percent profitable	30.9%	+/-3.5%	43.9%	+/-5.8%
Percent that applied	32.3%	+/-5.8%	55.4%	+/-4.9%
Percent that applied for small dollar loans (\$25K or less) ¹	30.9%	+/-3.1%	43.9%	+/-4.2%
Seeking credit to cover operating expenses ¹	46.9%	+/-6.3%	40.8%	+/-5.2%
Percent approved for all credit requested ¹	30.5%	+/-3.9%	39.0%	+/-4.4%
Percent of nonapplicants that were discouraged ²	17.9%	+/-7.4%	13.9%	+/-5.6%

Table notes:
¹Percent of applicants
²Discouraged firms are those that did not apply for credit because they believed they would be turned down.

¹⁵ Wolter (2007), “Introduction to Variance Estimation.”

¹⁶ AAPOR (2013), “Task Force on Non-probability Sampling.”

About the Data

DATA PRESENTATION & DEFINITIONS

The data in this report are presented as whole numbers, rounded based on the first decimal place. For example, a value of 5.49% would be reported as 5%, whereas a value of 5.51% would be reported as 6%.

As a result, the rounded values will, in some cases, not sum exactly to 100%. When this occurs, we scale up or down the number with a decimal place nearest to 0.5 so that the shares of each answer choice sum to 100%. For example, respondents may be distributed within one variable as follows: 15.49% select Option A, 30.21% select Option B, and 54.30% select Option C. The sum of the rounded whole numbers is 99%, even though the actual percentages sum to 100%. In this case, 15.49% would be scaled up to 16% (instead of rounded down to 15%) because its decimal place is the closest to 0.5. When respondents are asked to select all options that apply, such an adjustment is not made.

Number of employees: The sum of full-time employees plus part-time employees.

Change in employment: In the 2017 survey, it is the increase, decrease, or lack thereof in a firm's number of full-time employees in 2016 relative to 2015; in the 2016 survey, it is the increase, decrease, or lack thereof in a firm's overall employment in 2015 relative to 2014.

Change in operating expenses: The increase, decrease, or lack thereof in a firm's operating expenses in the year in question relative to the prior year.

Revenue change: The increase, decrease, or lack thereof in a firm's revenue in the year in question relative to the prior year.

Applicant: A firm that applied for any type of credit in the year in question.

Fully funded: A firm that applied for any type of credit in the year in question and received all of the funding requested.

Partially funded: A firm that applied for any type of credit in the year in question and received some, but not all, of the funding requested.

Zero funded: A firm that applied for any type of credit in the year in question, but did not receive any of the funding requested.

Financing shortfall: When applicants were either not approved for any of the funding requested or were approved for some, but not all, of the funding requested.

Non-applicant: A firm that did not apply for any type of credit in the year in question.

Discouraged borrower: A firm that did not apply for any type of credit in the year in question because the prospective applicant did not think the application would be approved.

Issue affecting competitiveness: Respondents were asked which issue posed the greatest impact to the competitiveness of the business.

Future plan: A firm's expected increase, decrease, or lack thereof in a given expense or investment for 2017.

Job creator: A firm that either increased its number of full-time employees in 2016 relative to 2015 or planned to expand employment (by number of employees or worker hours) in 2017.

Acknowledgments

We wish to thank the many individuals in Puerto Rico who helped make the Puerto Rico Small Business Survey a reality. They generously shared their time and expertise to sharpen the focus on local needs, and helped recruit respondents from their membership, whom without, this survey would not have been possible. The conversations allowed us to deepen our knowledge of the island; make new friends and partners; and better understand the challenges being faced by the business community. That said, in no way do these individuals or their organizations bear responsibility for any remaining shortcomings.

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The views presented here are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.