



# North Carolina's Veteran-Owned Firms:

Assessing Current Research and  
Examples for Evaluating CDFI Impacts

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**Carolina  
Small Business**  
DEVELOPMENT FUND



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## For More Information

For more information about the work and services offered by the Carolina Small Business Development Fund, please see our website at [carolinasmallbusiness.org](http://carolinasmallbusiness.org). For questions about this report, please contact Jamie McCall at 919-921-8039 or [jmccall@carolinasmallbusiness.org](mailto:jmccall@carolinasmallbusiness.org).



## Key Findings and Executive Summary

### **Insufficient Research Exists on Veteran Small Businesses**

- Sparse research exists on the types of challenges faced by veteran small firm owners. Data on barriers to capital access for this subpopulation is even more limited.
- There has been little assessment of community programs and public policies which target veterans. Effectiveness is difficult to measure without systemic evaluation.
- An lack of research and program evaluation severely inhibits empirical assessments of how community organizations can meet the needs of veteran entrepreneurs.

### **NC's Veteran-Owned Firms Mostly Small in Size, but Big in Impact**

- North Carolina's veteran-owned firms are predominately smaller in size. Over 4 in 5 veteran firms employ less than 19 people.
- Compared to non-veteran firms, small veteran firms in the state account for a disproportionately large share of employment and payroll across veteran firms of all sizes.
- Data which assess capital access across veteran firm size is limited at the state level. Though more research is needed, data suggest veteran startups may face unique challenges.

### **Benchmarking and Portfolio Data Analysis is Key**

- Existing data provides a few benchmarks that economic development researchers should consider when assessing impact. Suggested measures include veteran small firm share, veteran-owned start-up firm share, and veteran population share.
- Assessing how veteran borrowers are different from non-veteran borrowers can yield important insights. For example, CSBDSF's veteran borrowers are more likely to be startups than non-veteran borrowers.
- Descriptive statistics of veteran data is useful, but only a starting point. Of note, CSBDSF's data show that average loan amounts to veteran borrowers were higher than non-veteran borrowers. But further analysis revealed no statistically significant differences between these two groups



### Why Veteran Lending is Important

For decades, the bulk of existing research has demonstrated that entrepreneurship and small business growth is the foundation of economic development.<sup>1</sup> Scholars have demonstrated that new and expanding<sup>2</sup> small businesses are the primary fuel for private sector job creation.<sup>3</sup> Across both rural<sup>4</sup> and urban<sup>5</sup> areas, public policies which promote small firm innovation have shown to be effective mechanisms for economic growth. States with robust small business communities enjoy an array of positive economic outcomes like higher productivity growth, higher gross state product growth, lower wage inflation, and lower unemployment.<sup>6</sup> Communities with large numbers of small businesses are strongly associated with future job growth when compared to communities with less firm size diversity.<sup>7</sup> In sum, there is a great deal of evidence that fostering small business creation and expansion is a vital component to building a prosperous economy.

Although a sundry array of research demonstrates the importance of small businesses, evidence also shows entrepreneurs and firm owners often lack the resources to be successful. A persistent theme in economic development research is how small business owners lack access to affordable capital.<sup>8</sup> Of note, the negative effects of insufficient financing on both minority<sup>9</sup> and low-income<sup>10</sup> small business owners have been well documented. However, there is a relative lack of research on veteran small businesses –

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<sup>1</sup> Aquilina, M., Klump, R., & Pietrobelli, C. (2006). Factor substitution, average firm size and economic growth. *Small Business Economics*, 26: 203-214.

<sup>2</sup> Neumark, D., Zhang, J., & Wall, B. (2006). Where the jobs are: Business dynamics and employment growth. *Academy of Management Perspectives*, 20(4): 79-94.

<sup>3</sup> Birch, D.L. (1981). Who creates jobs? *Public Interest*, 65(3): 3-14.

<sup>4</sup> Olfert, M.R., & Partridge, M.D. (2010). Best practices in twenty-first-century rural development and policy. *Growth and Change: A Journal of Urban and Regional Policy*, 41(2): 147-164.

<sup>5</sup> Sutton, S.A. (2010). Rethinking commercial revitalization: A neighborhood small business perspective. *Economic Development Quarterly*, 24(4): 352-371.

<sup>6</sup> Robbins, D.K., Pantuosco, L.J., Parker, D.F., & Fuller, B.K. (2000). An empirical assessment of the contribution of small business employment to US state economic performance. *Small Business Economics*, 15: 293-302.

<sup>7</sup> Shaffer, S. (2006). Establishment size and local employment growth. *Small Business Economics*, 26(5): 439-454.

<sup>8</sup> Lichtenstein, G.A., & Lyons, T.S. (2006). Managing the community's pipeline of entrepreneurs and enterprises: A new way of thinking about business assets. *Economic Development Quarterly*, 20: 377-386.

<sup>9</sup> Peer-reviewed data show small minority firms face disproportionately high rejection rates compared to other small firms with similar characteristics. And even when they receive financing, small minority firms are usually offered terms which are significantly more expensive than small white-owned firms. See Bates, T., & Robb, A. (2016). Impacts of owner race and geographic context on small-business financing. *Economic Development Quarterly*, 30(2): 159-70.

<sup>10</sup> Data show the flow of small business capital financing, even from programs designed to improve capital access to underserved areas, still tends to favor higher income communities. See Immergluck, D., & Mullen, E. (1998). The Intrametropolitan Distribution of Economic Development Financing: An Analysis of SBA 504 Lending Patterns. *Economic Development Quarterly*, 12(4): 372-384.



both in general and in terms of the importance of capital access.<sup>11</sup> We find the dearth of data on this topic to be particularly concerning for several reasons. First, existing data suggest that veteran entrepreneurs may face obstacles to financing which are similar to those encountered by other underserved groups. For example, some data suggest veterans face difficulty in understanding their business financing options and often do not have the resources to obtain capital from traditional sources.<sup>12</sup> Second, there is limited data on whether underrepresented veteran subpopulations (women, minorities, service-disabled) may face additional obstacles to small business success. As these subpopulations may have barriers that need unique financing solutions, lack of literature is a concern.

If data on the scope of veteran small business challenges is limited, research on the effectiveness of programs which support veteran firms is virtually non-existent. This is an important area and should be a priority item for economic development researchers. If veteran capital access programs perform like programs targeted to non-veterans, they may be ineffective. In general, the data suggest existing policy solutions to small business capital access are inadequate at best<sup>13</sup>, and at worst current some policy designs may actually be suppressing job growth.<sup>14</sup> To ensure the veteran entrepreneur community continues to receive adequate support, more research is needed by small business advocates. This brief seeks to help fill the research gap by analyzing veteran loan origination data for the Carolina Small Business Development Fund (CSBDF).<sup>15</sup> As a community development organization which works on behalf of North Carolina's small business community, CSBDF hopes to contribute to the policy dialogue in this arena.

The research brief proceeds in the following manner. The first section gives an overview of the scope and size of North Carolina's veteran small business community. This includes a brief analysis of veteran firm challenges using national-level data, since state data are limited in this area. Next, three example measures are suggested to help benchmark and evaluate veteran lending activities by community development organizations. Finally, the brief concludes with an examination of how CSBDF's veteran borrowers compare to non-veteran borrowers.

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<sup>11</sup> Boldon, N.Y., Maury, R.V., Armstrong, N., Slyke, R.V. (2016, November). The state of entrepreneurship research: What we know and next steps. *Veteran Entrepreneurship Research Series*, Paper 1.

<sup>12</sup> Boldon, N.Y., Maury, R.V., Zahra, N., & Syke, R.V. (2018, May). Bridging the gap: Insights into veteran entrepreneurial ecosystems. *Operation Vetrepreneurship Series*, Research Brief 1.

<sup>13</sup> Servon, L. (2006). Microenterprise development in the United States: Current challenges and new directions. *Economic Development Quarterly*, 20(4); 351-367.

<sup>14</sup> Many existing policy solutions rely on government institutions to directly manage programs for small business capital. However, research shows this can lead to negative economic outcomes compared to partnering with community organizations. See McFarland, C., & McConnell, K. (2012). Small business growth during a recession: Local policy implications. *Economic Development Quarterly*, 27(2): 102-113.

<sup>15</sup> The dataset encompasses 655 total loans, 120 of which were to veteran-owned small business firms. The time period for the analyses is July 2011 to April 2018.



### The Veteran-Owned Business Landscape

Most of North Carolina's veteran-owned firms with paid employees are smaller in size. Over 82% (10,954) of veteran firms employ 19 or less people, compared to 79% of nonveteran firms. But despite being smaller in size, veteran small businesses employ 50,187, which accounts for almost 39% of all veteran firm employment. Nonveteran firms of the same size only account for 33% of total nonveteran business employment. Similarly, small veteran employers contributed \$1.8B in payroll alone to the state's economy in 2015. Small veteran-owned firms make up 38% of all payroll generated by all veteran firms, much higher than the 31% share generated by nonveteran firms of the same size. These data points lend credence to the notion that fostering veteran small business growth may create greater economic impacts when compared to investments in non-veteran firms.

National level data also give some insight into the unique circumstances of veteran-owned enterprises.<sup>16</sup> For example, veteran firms are much less likely (55%) to report a desire to grow their business versus nonveteran firms (64%). The data do not shed any light on why veteran entrepreneurs are less aspirational in their growth goals, but it may be related to capital availability at the early stage of business formation. For example, a great deal of research supports the notion that small businesses fund their early growth through tapping credit cards and home equity.<sup>17</sup> But to varying degrees, veteran firms are all less likely to report utilizing these capital sources to start or acquire their business.<sup>18</sup> The data echo findings found by other research, which suggests veteran entrepreneurs often face challenges (e.g. low personal credit scores<sup>19</sup>) with being able to access personal capital sources.

Notably, Census data may hint at a bifurcation of veteran business financing outcomes. On the one hand, veteran owners report being less likely to use personal sources of capital. Concurrently, veteran firms are slightly more likely (18.7%) in aggregate to seek

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<sup>16</sup> All cited differences between veteran and nonveteran firms in national level data were tested for statistical significance. All figures were found to be statistically significant at the 95% confidence level. Differences were determined using the Census [statistical testing tool](#). Although this tool was designed to be used with American Community Survey datasets, the data analysis methods are applicable to information from the Annual Survey of Entrepreneurs.

<sup>17</sup> Cassar, G. (2004). The financing of business startups. *Journal of Business Venturing*, 19: 261-283.

<sup>18</sup> Veteran-firms are less likely than non-veteran firms to report using home equity (5.9% vs 7.2%) and personal credit cards (9.8% vs 10.5%) to start or acquire their business. Interestingly, there are no statistically significant differences between veteran firms and non-veteran firms (65.7% vs 66.8%) when it comes to using personal/family savings to start a business. At first glance, this may make it seem like veteran small businesses are in a better position than non-veteran firms because they are less likely to use such "boot strap capital." However, qualitative data from other studies suggest this phenomena is simply because veterans are less likely to be able to tap into these personal capital sources.

<sup>19</sup> FINRA Investor Education Foundation. (2017, September). The financial welfare of veteran households. Insights into Financial Capability Series.



capital from financing institutions than non-veteran owners (17.7%). In general, small firms are more likely to draw from personal capital early in their formation and utilize traditional (bank-provided) capital during later expansion periods.<sup>20</sup> Thus, the data might suggest a need better capital access in the business startup stage. Interestingly, there are no statistically significant differences between veteran and non-veteran firms when it comes to not seeking financing. About 7% of both veteran and non-veteran firms report they declined to seek the capital they needed because of concerns over loan approval or financing costs. However, because the data are not available by firm size, we have insufficient information to explain these important nuances. There is need for additional research into capital access for small veteran firms throughout business creation/expansion cycle.

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<sup>20</sup> Ebben, J., & Johnson, A. (2006). Bootstrapping in small firms: an empirical analysis of change over time. *Journal of Business Venturing*, 21: 851-865.



## Benchmarks for Veteran Lending Activity

As a provider of capital and small business services to North Carolina’s veteran community, CSBDF has made a commitment to transparently track lending activities to the state’s veteran population. After assessing a variety of data indicators to measure success, we believe three measures present a basic foundation for assessing community lenders. Although no set of measures will be a perfect fit for every development organization, we consider these to be a starting point. As explained below, we recommend evaluation of veteran community outreach should begin with three benchmark measures.

### Primary Benchmark: Small Business Firms Owned by Veterans

There are about 13,337 veteran-owned businesses in North Carolina, which comprise a sizable 9% of all firms in the state. In order to assess whether CSBDF’s loan activity was reaching the state’s veteran business owners, our primary measure is the percentage North Carolina firms employing 0 to 19 individuals which are owned by veterans. This benchmark serves as a proxy for the percent small business ownership by veterans.<sup>21</sup> About 12,150 (or 91%) of North Carolina’s veteran businesses fall within this size range.

### North Carolina Distribution of Veteran Firms by Employee Size

Veteran Firm Size	Count	Veteran Firm %
No Employees	1,196	9%
1-4 Employees	7,009	53%
5 to 9 Employees	2,579	19%
10 to 19 Employees	1,366	10%
20 to 49 Employees	628	5%
50 to 99 Employees	311	2%
100+ Employees	249	2%
All Sizes	13,337	100%

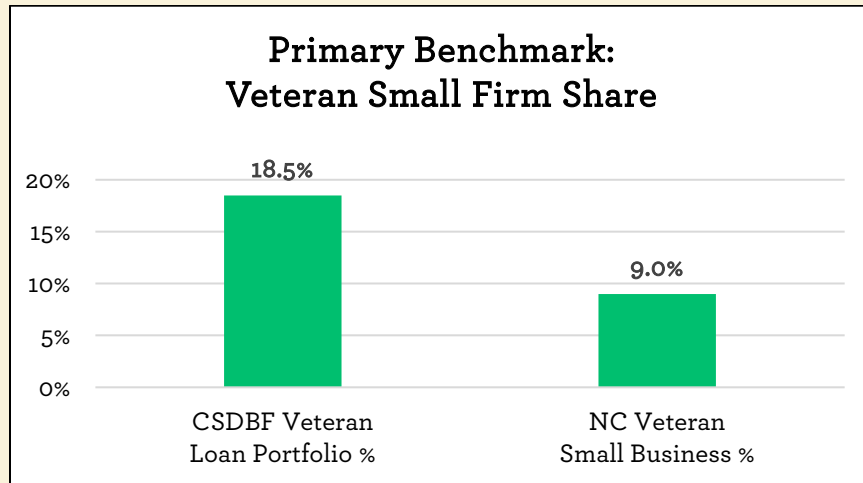
Overall, about 1 in 10 North Carolina’s small firms are owned by veterans. Since 2010, CSBDF has made 118 loans to veteran-owned firms, making veteran borrowers about

<sup>21</sup> Definition of small business vary by agency and organization. CSBDF utilizes a definition emphasizing less than 20 employees to reflect our mission to lend to “Main Street” businesses.



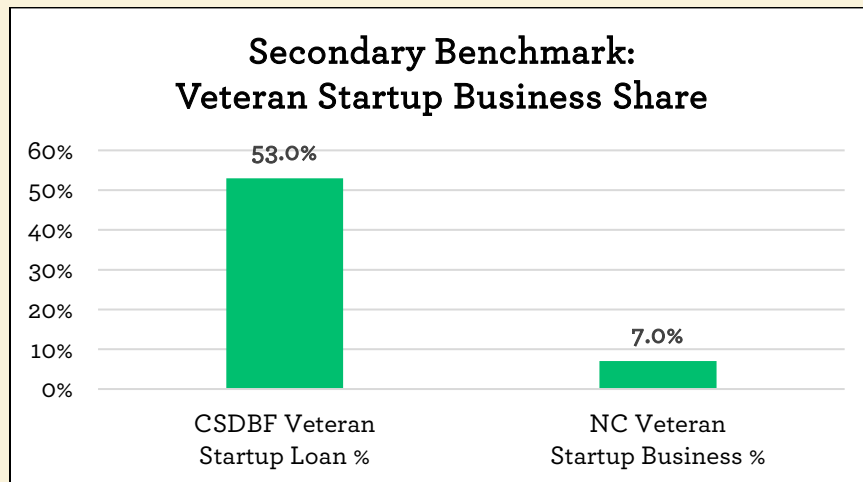


19% of our total loan portfolio.<sup>22</sup> CSDBF's lending activity is about double the share of veteran small business ownership in the state.



## Secondary Benchmark: Veteran-Owned Start-Up Firms

Across all sizes of North Carolina's veteran-owned business community, 931 (7%) are startups and 12,406 (93%) are established firms.<sup>23</sup> Although financing startup businesses can come with more risk for the lender, startup firms are important component of fostering North Carolina's entrepreneurial environment. Over half of CSDBF's loans to veteran-owned firms provide capital to startup small businesses.



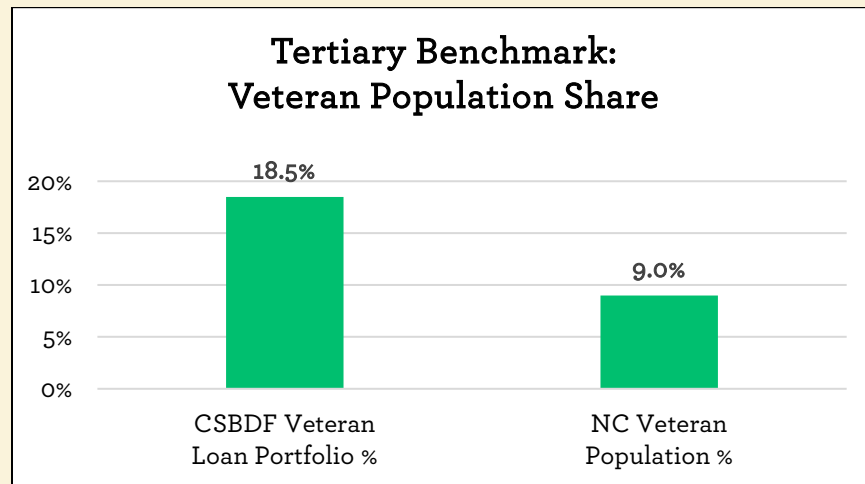
<sup>22</sup> CSDBF defines veteran-owned as firms with 51% or more ownership by veterans. Data on veteran status is collected from borrowers at the time of loan application.

<sup>23</sup> Start-up is defined as a firm which has been in operation for less than 2 years. Includes business of all sizes, start-up numbers for small veteran-owned firms at the state level are not available.



### Tertiary Benchmark: Veterans in the Adult Civilian Population

North Carolina is home to about 683,221 veterans, which is 9% of the state's adult civilian population.<sup>24</sup> The state ranks 8<sup>th</sup> in the nation by total number of veteran residents. Although this benchmark is not without limitations (because it represents *all veterans*, and not just *veteran entrepreneurs*), it is a useful demographic baseline for assessing reach into the market. In terms of demographic representation, the data suggests that CSBDF has made notable progress towards reaching the veteran demographic.



<sup>24</sup> Number of veterans as a percentage of the civilian population aged 18 years or older, American Community Survey, 2016 5-Year averages.

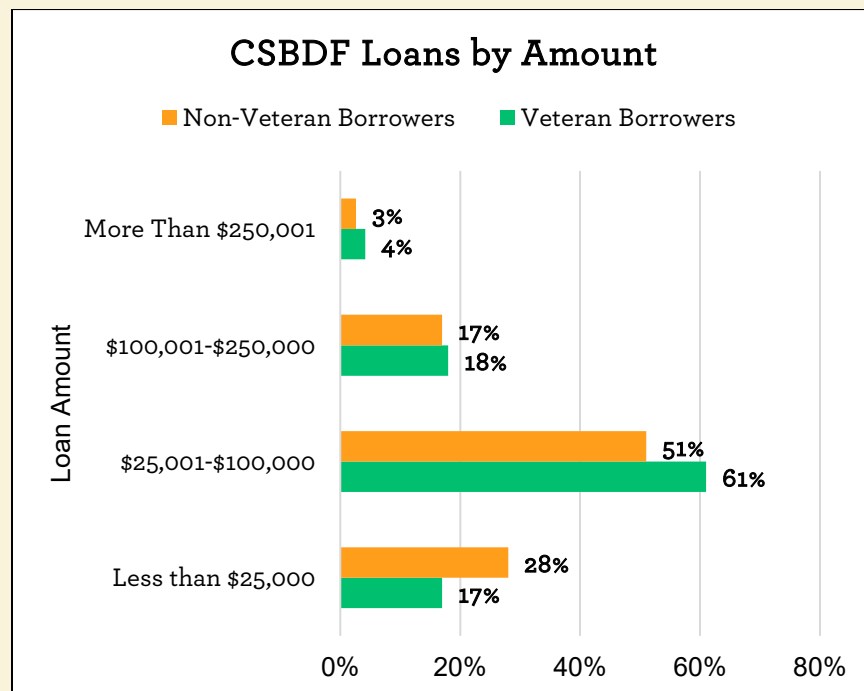


## Comparing CSBDF's Veteran and Non-Veteran Borrowers

In the nearly 10 years since CSBDF started its lending activities, it has collected hundreds of data points on demographics related to our client's firms. Like most community and economic development organizations, data collected on these measures tends to be expressed descriptively (e.g. what percent of a portfolio is comprised of loans to veteran-owned firms). Although it comes with many limitations, we believe appropriate program evaluation requires more detailed statistical analysis to assess impact. In this section, we summarize findings related to some simple statistical testing which compares CSBDF's veteran lending activities to non-veteran lending activities.

### Comparisons of Average Loan Amounts

The average CSBDF loan amount to veteran businesses is \$88,362, notably higher than loan amounts for non-veteran businesses (\$73,419). Descriptive analysis of closed loan data attribute this to veteran borrowers receiving more loan amounts in the \$25,000 to \$100,000 range. Non-veteran borrowers tend to utilize smaller loans (<\$25,000) more frequently than veteran borrowers.



However, while loans to veteran-owned businesses appear higher than average, statistical testing of the data suggest a different picture. An independent samples t-test shows that



differences between loan amounts across veteran and non-veteran borrowers is not statistically significant at  $p < 0.05$ .<sup>25</sup> Thus, it is unclear whether CSBDF's trend of veteran loans being larger than non-veteran loans is a data anomaly or indicative of a larger trend.

### Composition of Primary Borrower Race

The racial composition of CSBDF's closed loans to veterans is more diverse than the state's overall veteran population.<sup>26</sup> The below chart shows the demographic profile for all closed veteran loans since 2010 versus the racial composition of North Carolina's veteran population. CSBDF has engaged in lending at a rate that meets or exceeds each minority group's concentration in the state's overall veteran population.

### CSBDF and North Carolina Racial Composition of Veterans

Demographic	CSBDF Veterans	NC Veterans <sup>27</sup>
<b>Race</b>		
African-American	45%	21%
White	45%	76%
American Indian	3%	1%
Asian	2%	1%
Native Hawaiian	1%	<1%
Other	2%	1%
<b>Ethnicity</b>		
Hispanic	3%	3%
<b>Gender</b>		
Female	27%	10%

*Note: Totals may not equal 100% due to rounding.*

### Differences in Firm-Level Characteristics

Comparing the demographics of veteran borrowers to non-veteran borrowers offers a few insights into the profile of a typical veteran-owned business receiving CSBDF capital. Compared to non-veteran borrowers, loans made to veteran businesses are less

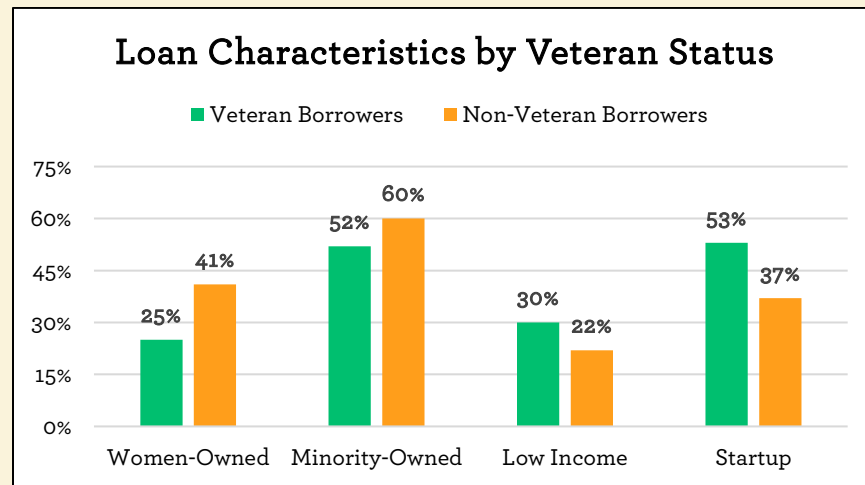
<sup>25</sup> Levene's test for equality of variances is not significant at  $p = 0.129$ , t-test independent samples significance for equal variances not assumed independent samples test is  $p = 0.120$ .

<sup>26</sup> We utilize the racial composition of the state's overall veteran population because the Annual Survey of Entrepreneurs does not publicly disclose state-level data for veteran-owned firms by race.

<sup>27</sup> Racial composition of veterans as a percentage of the civilian population aged 18 years or older, American Community Survey, 2016 5-Year averages.



likely to be owned by women<sup>28</sup> and more likely to be startups.<sup>29</sup> Although the percentage of loans to minorities is lower for veterans (52%) compared to non-veterans (60%), this difference is not statistically significant.<sup>30</sup> Similarly, although the data show 22% of loans to veterans go to low-income individuals versus 30% for non-veteran loans, there is no statistically significant association between these characteristics.<sup>31</sup> The data again illustrate that while descriptive analysis is a starting point, it is important to determine whether observed borrower differences are statistically meaningful.



### Outcome Comparisons for Jobs Created or Saved

On average, veteran businesses report receiving loans from CSBDF helped them create or retain about 4.1 jobs. This is lower than the average amount of 5.3 jobs created or retained by non-veteran borrowers. Part of this discrepancy may be due to the fact that CSBDF's veteran businesses tend to be startups. Reported employment levels before receiving CSBDF capital is also lower for veteran businesses compared to non-veteran businesses. On average, full-time equivalent employment before receiving a loan is 3.7 for veteran borrowers and 4.0 for non-veteran borrowers. However, while veteran borrowers tend to employ fewer people on average and tend to create/retain fewer jobs compared to non-veteran borrowers, the differences are not statistically significant.<sup>32</sup> In other words, although there appear to be differences between veterans and non-veterans on jobs, there is insufficient evidence that the observed variation is meaningful.

<sup>28</sup> A chi-square test between veteran status and women-owned business status is significant at  $p = 0.001$ ,  $\phi = -0.130$ .

<sup>29</sup> A chi-square test between veteran status and startup business status is significant at  $p = 0.001$ ,  $\phi = 0.132$ .

<sup>30</sup> A chi-square test between veteran status and minority-owned business status was not significant at  $p = 0.118$ .

<sup>31</sup> A chi-square test between veteran status and low-income borrower status was not significant at  $p = 0.493$ .

<sup>32</sup> A difference of means between veteran and non-veteran borrowers on both current jobs ( $p = 0.264$ , equality of variances  $p = 0.876$ ) and created/retained jobs ( $p = 0.216$ , equality of variances  $p = 0.269$ ) was not significant.



**Geographic Distribution of Borrowers**

As might be expected, CSDBF tends to make loans to veterans at disproportionately high rates in MSAs that have a high military population. For example, about 20% of all veteran loans are made to the Fayetteville MSA – compared to 5% of all non-veteran loans. One interesting geographic note is that 40% of CSBDF’s loans are made to veterans in rural areas, which is much higher than the percentage of loans made to non-veterans in rural areas (33%).<sup>33</sup>

**Composition of CSBDF Veteran and Non-Veteran Borrowers by MSA**

Metropolitan Statistical Area	Veterans	Non-Veterans
Asheville-Brevard, NC	14%	15%
Charlotte-Concord, NC-SC	13%	22%
Fayetteville-Lumberton-Laurinburg, NC	20%	5%
Greensboro--Winston-Salem--High Point, NC	5%	10%
Greenville-Washington, NC	4%	5%
Hickory-Lenoir, NC	0%	1%
Myrtle Beach-Conway, SC-NC	1%	<1%
New Bern-Morehead City, NC	2%	2%
Raleigh-Durham-Chapel Hill, NC	33%	38%
Rocky Mount-Wilson-Roanoke Rapids, NC	8%	3%
Virginia Beach-Norfolk, VA-NC	0%	<1%

*Note: Totals may not equal 100% due to rounding.*

<sup>33</sup> A chi-square test between veteran status and rural/urban status is significant at p = 0.049, phi = 0.077.



**Industry Sector Distribution of Borrowers**

As a percentage of total active loans, veteran-owned businesses tend to be concentrated in the service, retail, and restaurant sectors.<sup>34</sup> Overall, the industry profile of loans for veteran-owned businesses is similar to non-veteran borrowers.

**Composition of CSBDF Veteran and Non-Veteran Borrowers by Industry**

Industry Sector	Veterans		Non-Veterans	
	Number	Percent	Number	Percent
Service	26	43%	101	33%
Retail	12	20%	46	15%
Restaurant	7	11%	29	9%
Construction	5	8%	29	9%
Trucking	3	5%	19	6%
Technology	2	3%	3	1%
Manufacturing	1	2%	24	8%
Bakery	1	2%	7	2%
Chiropractic Services	1	2%	4	1%
Food Truck	1	2%	1	<1%
Hair Salon	1	2%	6	2%
Janitorial Services	1	2%	2	1%
Agribusiness	0	0%	5	2%
Assisted Living	0	0%	4	1%
Charter School	0	0%	2	1%
Child Care Services	0	0%	19	6%
Landscaping	0	0%	5	2%
<b>Grand Total</b>	<b>61</b>	<b>100%</b>	<b>306</b>	<b>100%</b>

<sup>34</sup> Data for industry sector are only available for active loans. These percentages do not include 59 closed loans for veterans and 224 closed loans for non-veterans. Because of the low levels of variation in industry category, statistical analysis of this data are unreliable and thus not included in this analysis.



### Methodology and Data Limitations

Compared to other areas of community development research, there is a relative lack of state-level data on veteran entrepreneurship and access to small business capital. Use of existing data sources to profile or benchmark veteran small business activity poses a few challenges. State level data of veteran business activity are collected through the Census Bureau's Annual Survey of Entrepreneurs and every 5 years through the Survey of Business Owners.<sup>35</sup> We primarily utilize data from the Annual Survey of Entrepreneurs for this research brief, but this source has some important limitations to keep in mind.<sup>36</sup>

First, to be sampled for the survey, the veteran-owned business must be a nonfarm firm which has filed certain IRS tax forms indicating the business has receipts of \$1,000 or more.<sup>37</sup> Thus, the data will exclude extremely new firms that do not have tax filings. Second, the data are from 2015, which imposes a significant time lag. Third, state-level veteran data on most veteran-owned business demographics are suppressed by the Census Bureau to protect respondent confidentiality. In order to assess the veteran business landscape, a mix of state-level and national-level data must be considered. Although it is important to keep these limitations in mind, we still think the data are a useful starting resource for assessing veteran-owned firm activity.

Data presented on CSBDF's veteran lending activities are gathered from internal data sources. Veteran borrowers are asked to report income, demographic information, and jobs data as part of applying for a small business loan. CSBDF periodically surveys borrowers and updates client profiles when respondents project different job impacts than they did at the time of loan closing. Data about jobs impacts are subject to both non-response bias and social desirability bias. Although CSBDF tries to lower the effect of these biases, they will always be present in data of this type.

Finally, statistical testing presented in this analysis is limited to CSBDF's internal data. If similar analyses were performed on data from other community organizations the results may be different. The statistical analysis are intended to offer insights into what types of borrower and firm-level characteristics are correlated with veteran businesses. The data should not be interpreted as causal modeling and the data are insufficient to make any causal inferences.

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<sup>35</sup> In June 2018, the Census Bureau announced a new product which will replace these data sources: the [Annual Business Survey](#).

<sup>36</sup> See [Annual Survey of Entrepreneurs dataset](#), 2012.

<sup>37</sup> To be counted as a veteran-owned business, [51% or more of the firm's stock or equity ownership must be controlled by veterans](#).





## Data Analysis Appendix

### Loan Amounts by Veteran Status

	Veteran Borrower	N	Mean	Std. Deviation	Std. Error Mean
Loan Amount	False	530	\$73,419.03	\$78,222.02	\$3,397.75
	True	120	\$88,361.67	\$97,748.70	\$8,923.20

	Equality of Variance		t-test for Equality of Means				
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference
Equal variances assumed	2.309	0.129	-1.799	648	0.072	-14942.64	8305.59
Equal variances not assumed			-1.565	155.275	0.12	-14942.64	9548.20

### Relationship between Veteran Status and Minority-Owned Status: Chi-Square

		Veteran Borrower		Total	
		False	True		
Minority Borrower	False	Count	212	57	269
		Expected Count	219.6	49.4	269.0
		Adjusted Residual	-1.6	1.6	N/A
	True	Count	317	62	379
		Expected Count	309.4	69.6	379.0
		Adjusted Residual	1.6	-1.6	N/A

	Value	df	Sig.
Pearson Chi-Square	2.449	1	.118
Continuity Correction	2.137	1	.144
Likelihood Ratio	2.427	1	.119
Linear-by-Linear Association	2.445	1	.118
N of Valid Cases	648		



**Relationship between Veteran Status and Women Business Status**

			Veteran Borrower		Total
			False	True	
Women Borrower	False	Count	311	90	401
		Expected Count	326.9	74.1	401.0
		Adjusted Residual	-3.3	3.3	N/A
	True	Count	218	30	248
		Expected Count	202.1	45.9	248.0
		Adjusted Residual	3.3	-3.3	N/A

	Value	df	Sig.
Pearson Chi-Square	10.885	1	.001
Continuity Correction	10.210	1	.001
Likelihood Ratio	11.419	1	.001
Linear-by-Linear Association	10.869	1	.001
N of Valid Cases	649		

**Relationship between Veteran Status and Low-Income Status: Chi-Square**

			Veteran Borrower		Total
			False	True	
Low Income Borrower	False	Count	351	83	434
		Expected Count	354.2	79.8	434.0
		Adjusted Residual	-.7	.7	N/A
	True	Count	177	36	213
		Expected Count	173.8	39.2	213.0
		Adjusted Residual	.7	-.7	N/A

	Value	df	Sig.
Pearson Chi-Square	.470	1	.493
Continuity Correction	.334	1	.563
Likelihood Ratio	.476	1	.490
Linear-by-Linear Association	.470	1	.493
N of Valid Cases	647		



**Relationship between Veteran Status and Start-Up Status**

			Veteran Borrower		Total
			False	True	
Start-Up Business	False	Count	335	56	391
		Expected Count	318.7	72.3	391.0
		Adjusted Residual	3.4	-3.4	N/A
	True	Count	194	64	258
		Expected Count	210.3	47.7	258.0
		Adjusted Residual	-3.4	3.4	N/A

	Value	df	Sig.
Pearson Chi-Square	11.336	1	.001
Continuity Correction	10.651	1	.001
Likelihood Ratio	11.124	1	.001
Linear-by-Linear Association	11.318	1	.001
N of Valid Cases	649		

**Relationship between Veteran Status and Rural/Urban Status**

			Veteran Borrower		Total
			False	True	
Rural Business	False	Count	355	69	424
		Expected Count	345.7	78.3	424.0
		Adjusted Residual	2.0	-2.0	N/A
	True	Count	175	51	226
		Expected Count	184.3	41.7	226.0
		Adjusted Residual	-2.0	2.0	N/A

	Value	df	Sig.
Pearson Chi-Square	3.878	1	.049
Continuity Correction	3.471	1	.062
Likelihood Ratio	3.792	1	.051
Linear-by-Linear Association	3.872	1	.049
N of Valid Cases	650		



**Current Jobs and Jobs C/R by Veteran Status**

	Veteran Borrower	N	Mean	Std. Deviation	Std. Error Mean
Created/Retained Jobs	False	355	5.2481	10.65034	0.56526
	True	90	4.1030	6.92727	0.73020
Current Jobs	True	159	3.9657	6.19342	0.49117
	False	40	3.6964	5.65065	0.89345

	Equality of Variance		t-test for Equality of Means				
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference
<b>Created/Retained Jobs</b>							
Equal variances assumed	1.223	0.269	0.969	443	0.333	1.14506	1.18183
Equal variances not assumed			1.24	208.78	0.216	1.14506	0.92342
<b>Current Jobs</b>							
Equal variances assumed	0.025	0.876	0.25	197	0.803	0.26926	1.07721
Equal variances not assumed			0.264	64.677	0.793	0.26926	1.01956