Minority-Owned Enterprises and Access to Capital from Community Development Financial Institutions

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Abstract

Small businesses are pivotal to local economic development in the United States. Among small businesses, minority-owned enterprises (MOEs) are noteworthy because they create a significant share of the jobs in majority-minority neighborhoods nationwide. MOEs are relatively more likely to encounter constraints in obtaining access to capital from financial institutions. Community Development Financial Institutions (CDFIs) provide a means to bridge limited access to capital between financial institutions and MOEs. The purpose of this study is to examine the likelihood of MOEs applying for CDFI loans. We also aim to investigate whether MOEs are more likely to have their application for a loan or line of credit accepted from CDFIs. Overall, we found no significant difference in application rates between Asian-, and White-owned businesses. However, in line with our expectations, the odds of Black- and Hispanic-owned firms applying to CDFIs were about 1.6 and 1.7 times greater, respectively, than that of similar White-owned businesses. We also found some weak evidence that the odds of Black-owned firms getting approved for financing at a CDFI are about half those of White-owned firms.

Introduction

Small businesses are pivotal to local economic development in the United States and to the U.S. economy as a whole (Porter, 2000). For instance, small businesses, defined as those with fewer than 500 employees, added approximately 1.4 million net new jobs in 2017, compared to 600,000 net new jobs added by medium- and large-sized enterprises (Robb, Barkley, & de Zeeuw, 2018). And, small firms employed almost half of the U.S. workforce (48 percent) in 2016 (U.S. Census Bureau's Business Dynamics Statistics, 2016).

Among small businesses, minority-owned enterprises (MOEs) are noteworthy because their number has seen rapid growth in recent years, increasing by 11 percent to 1.1 million employer firms between 2014 and 2016, compared to just 1 percent growth among non-MOEs during that same time period (Esposito, 2019). MOEs make up about 18 percent of businesses with fewer than 500 employees. They create a significant share of the jobs in majority-minority neighborhoods nationwide (Bates & Robb, 2014). On average, MOEs tend to be less profitable, smaller in terms of employees, and younger than non-minority owned businesses (de Zeeuw & Barkley, 2019). These firms also tend to have lower average value; white-owned firms have an average value of $656,000 compared to $224,530 among MOEs (Wiedrich et al., 2017).

MOEs are broadly defined as firms whose owners are not non-Hispanic or Latino[1] Whites, and include businesses owned by Black, Hispanic, Asian, and other ethnic and racial minority groups.[2] This subgroup of small firms is especially important due to demographic changes in the U.S. Minorities comprise a fast-growing share of the U.S. population, growing from 33.9 percent in 2007 to 39 percent in 2017 (Robb et al., 2018). Although minority groups encompass a substantial share and despite the fast-growing rate of MOEs, business ownership rates among minorities are lower than those of non-Hispanic whites. For instance, in 2016, minority business owners owned 18.4 percent of small employer businesses with less than 500 employees (U.S. Census Bureau's Annual Survey of Entrepreneurs, 2016).

Focusing on minority small business ownership presents opportunities to expand the benefits of economic growth and mobility to groups of the U.S. population who, historically, were prevented from fully participating in the economy due to explicitly racist policies. For example, Black, Indigenous, and people of color were barred from accessing programs and resources that allowed White individuals to build wealth, such as VA and FHA mortgages, or other mortgage programs (Rothstein, 2017; Gordon, 2005).

Increased minority-owned enterprises may alleviate existing economic disparities along racial lines. Research suggests there is a relationship between the race or ethnicity of a business owner or hiring authority and employees hired (Stoll, Raphael, & Holzer, 2005). Additionally, an analysis of 2008 Survey of Income and Program Participation shows a smaller discrepancy in wealth between Black- and White-business owners, compared to the overall population wealth gap (Association for Enterprise Opportunity, 2017). This may indicate that an increased share of MOEs could contribute to both narrowing the differential unemployment rates, as well as wealth gaps that exist between White and minority households.

Much previous research has established positive links between (access to) capital and business startup rates, and business performance outcomes like greater sales, profits, employment, and higher survival rates (Black & Strahan, 2002; Evans & Jovanovic, 1989; Servon, Fairlie, Rastello, & Seely, 2010). However, MOEs are relatively more likely to encounter constraints in obtaining access to capital from financial institutions.

Several studies have documented these constraints as well as unobservable differences, including structural barriers and racial discrimination. Constraints include higher interest rates (Blanchard, Yinger, & Zhao, 2008), lower levels of wealth among minorities, lower access to capital among small businesses located in inner-city minority communities (Bates & Robb, 2016; Robb et al., 2018), as well as higher loan-application rejection rates of MOEs in comparison with equally creditworthy White-owned businesses, particularly at small and large banks (Blanchflower, Levine, & Zimmerman, 2003; de Zeeuw & Barkley, 2019; Mitchell & Pearce, 2011; Robb et al., 2018). Heavy concentration of Black-owned businesses in Black residential areas has contributed to their more limited access to bank credit (Bates, 1993; Immergluck, 2004). Findings consistently indicate that MOEs (particularly Black- and Hispanic-

1 Hispanic or Latino is hereafter simplified to 'Hispanic'.
2 We hereafter use the same definition for the terms minority- or non-minority.

owned enterprises) are more likely to have their application for capital rejected than White-owned businesses with identical risk-related traits (Blanchflower, 2009; Blanchflower et al., 2003; Cavalluzzo, Cavalluzzo, & Wolken, 2002; Cavalluzzo & Wolken, 2005).

When MOEs do receive bank financing, they receive, on average, lower loan amounts, pay higher interest rates, and have lower levels of satisfaction with their lenders than do their White counterparts (Bates & Robb, 2013; Federal Reserve Banks, 2019b). Additionally, owners of Black- and Hispanic-owned firms relied more frequently on their personal credit scores compared to owners of White-owned businesses but had lower average personal credit scores (de Zeeuw, 2019); and MOEs that did not apply for capital were significantly less likely than White-owned business owners to indicate they did so because they already had sufficient capital in place (de Zeeuw and Barkley, 2019). Finally, Hispanic-owned firms in particular, were more likely to turn to higher cost and less transparent financing products like cash advances and factoring (Federal Reserve Banks, 2019b)

Ensuring that MOEs have adequate access to capital is thus of increasing importance to job creation, economic growth and opportunity, and local economic development across the U.S. Community Development Financial Institutions (CDFIs) are mission-oriented lenders that promote financial inclusion in underserved communities and provide a means to bridge limited access to capital between financial institutions and MOEs. They include community development banks, credit unions, business and microenterprise loan funds, and venture capital funds. CDFIs' main social objectives include supporting job growth in low- and moderate-income neighborhoods and providing access to financial services for groups that are often excluded from entering loan contracts, such as minority-owned businesses (Affleck & Mellor, 2006). CDFIs aim to provide access to finance for small enterprises at affordable rates and thus contribute to revitalizing economic conditions in low- and moderate-income communities (Harger, Ross, & Stephens, 2019; Marshall, 2004)

CDFIs offer financial products and services, including lines of credit and term loans that are designed to support business needs, such as working capital and investments in fixed assets. In addition, many CDFIs provide pre- and post-investment technical assistance to help potential borrowers qualify for capital and help them prioritize projects with positive net present value.

Given the need for affordable capital for MOEs and the important role of CDFIs in this space, our overarching two research questions are as follows:

1) Are MOEs more likely to apply for a loan from CDFIs than non-MOEs?
2) Are MOEs more likely to have their loan application accepted by CDFIs than non-MOEs?

We hypothesize that MOEs, predominantly comprised of Black-owned, Hispanic-owned, and Asian-owned businesses, will be more likely to both apply for loans and have their loan application approved from CDFIs due to their mission of improving access to capital for minority-owned businesses.

Little quantitative research exists examining the impact of CDFIs providing access to capital for small minority-owned firms. One study found that in 2012, CDFIs made the majority of their loans to low-income or minority borrowers (Swack, Hangen, & Northrup, 2014). This includes 58 percent of business loans and 60 percent of business loan volume, and 83 percent of microfinance loans and 79 percent of microfinance loan volume. Additionally, CDFIs are much more likely to direct their business loans to economically distressed Census tracts compared to Community Reinvestment Act (CRA)-reported business loans, though the same study finds no difference in business loan volume to areas with a high concentration of minority inhabitants. However, the study does not make it clear to what extent minority-owned businesses are the beneficiaries of these trends, as it is limited to observations about the communities in which the businesses were located.

Another study that relies on data from the Federal Reserve's Small Business Credit Survey indicates that Black-owned enterprises are significantly more likely to apply to a CDFI for loans or lines of credit than White-owned firms. No significant difference in application rates was found for Asian- or Hispanic-owned businesses. The study, however, does not capture whether Black-owned businesses are more likely to have at least part of their loan application approved by a CDFI, due to low observation counts (de Zeeuw & Barkley, 2019).

Our study contributes to a better understanding of the relationship between minority-owned firms and access to CDFI loans, by taking into account the main characteristics of firms that are both more likely to apply for loans at CDFIs and more likely to be approved. This allows for an initial assessment of CDFIs' impact in increasing the availability of affordable capital for MOEs. Our study differs from the aforementioned studies by specifically focusing on CDFI loans rather than including other sources, such as loans from banks, credit unions, nonbank online lenders as well as relying on personal savings, family and friends, and other types of alternative financial sources.

Methods

Small Business Credit Survey (SBCS) Data

To gain a better understanding of the financing experiences of small businesses that turn to CDFIs, we use 2016 through 2019 data from the Federal Reserve Banks' Small Business Credit Survey (SBCS). Each survey samples both nonemployer and employer businesses with less than 500 full- or part-time employees and poses questions on their performance and experiences in obtaining financing. One advantage of using SBCS data over, for instance, the transaction data from the CDFI Fund, is that it provides information on small business applicants that did not pursue financing at a CDFI, but rather turned elsewhere. This allows us to draw clearer distinctions between small businesses that did apply at a CDFI for a loan or line of credit and those that did not. This allows us to create a clearer picture of the population of small businesses that turn to CDFIs.

Empirical Analysis

In order to evaluate whether MOEs are more likely to both apply for and obtain a loan from CDFIs, we performed two separate logistic estimations through the following equations:

$$Apply_i = \beta_0 + \beta_1 Size_i + \beta_2 CreditRisk_i + \beta_3 Rural_i + \beta_4 WomenOwned_i + \beta_5 Profitability_i + \beta_6 FirmAge_i + \beta_7 Industry_i + \beta_8 Race_i + \beta_9 ZipCode_i + \beta_{10} VeteranStatus_i + \beta_{11} year_i \quad (1)$$

$$Approval_i = \beta_0 + \beta_1 Size_i + \beta_2 CreditRisk_i + \beta_3 Rural_i + \beta_4 WomenOwned_i + \beta_5 Profitability_i + \beta_6 FirmAge_i + \beta_7 Industry_i + \beta_8 Race_i + \beta_9 ZipCode_i + \beta_{10} Collateral + \beta_{11} Debts_i + \beta_{12} VeteranStatus_i + \beta_{13} year_i \quad (2)$$

Our estimations do not use survey weights, following the discussion outlined in Solon and colleagues (Solon, Haider, & Wooldridge, 2013). Our main empirical specifications focus on two dichotomous dependent variables. Our first outcome variable, apply, measures whether a small business that applied for a loan, line of credit, or cash advance did so at a CDFI; it is coded as 1 if an applicant firm filed an application at a CDFI, and 0 if it did so at another type of financial institution,[3] such as a bank, online lender, or a credit union. The second dependent variable, approval, indicates whether firms obtained at least part of a loan, line of credit, or cash advance application at a CDFI. It is coded as 1 if a small business received approval for at least some (more than 0 percent) of the financing amount it sought, and 0 if the application was rejected in its entirety.

Explanatory Variables

The main explanatory variable of interest is race, a categorical variable for the race/ethnicity of the owner of the firm. We include three categories, Black- or African- American-owned,[4] Asian-owned and Hispanic-owned businesses (White-owned firms are the base group, as these are most numerous, and this allows us to address the central research question). In addition, we separately performed logistic estimation for the White- and Black-owned firm categories, to examine within-group differences. We do not provide this analysis for other racial and ethnic groups due to an insufficient number of observations.

Consistent with previous literature, the estimated econometric models utilized several independent variables, derived from the SBCS, that represent firm characteristics (Robb et al., 2018).

Size is a categorical variable that measures the number of full- or part-time employees (this does not include contractors) that are employed by a firm. The categories were 1-4, 5-9, 10-19, 20-49 and 50-499 employees. The models utilize observations for both nonemployer and businesses with employees, with nonemployers as the base group. Previous work has

found significant relationships between firm size and various aspects of small business borrowers' experiences and outcomes (Robb, Barkley, & de Zeeuw, 2018).

CreditRisk is a categorical variable that groups together firms based on their self-reported credit scores. Firms in the low credit risk category (the base group in the regression models) have either owners with personal FICO credit scores of 720 or above, or a business credit score of 80 through 100, which aligns with a methodology employed in Federal Reserve System Small Business Credit Survey reports. Firms in the 'medium risk' category have business credit scores of between 50 and 80, or owners' personal scores of between 620 and 720. Firms in the 'high risk' category have business scores of between 0 and 50, or owners' personal scores of below 620. Finally, this variable includes firms that did not report either credit score, to attempt to control for non-response bias. Credit scores are a key indicator lenders use in assessing the risk applicants pose to default on a loan or other debt instrument, and as such are crucial to include in any model that examines credit applications or approval. One caveat here is that some researchers have noted that after controlling for various firm characteristics, credit scores themselves are subject to upward racial bias (Henderson et al., 2015), though others have found no such bias exists, or have even found a downward bias since expectations-based credit score models under predicted payment delinquency among minority-owned businesses (Robb & Robinson, 2018).

Rural is a binary variable where 1 measures a firm located in a rural zip code, and 0 means a firm is situated in an urban zip code. This is based on a definition issued by the U.S. Centers for Medicare and Medicaid Services. Firms located in rural areas tend to have access to fewer bank branches, and such areas have seen an outsized share of bank branch closures, complicating access to credit for some firms (Federal Reserve Board of Governors, 2019). Overall, however, rural firms have been found to be more stable financially than firms in urban locations, more likely to report not applying for financing because of enough financing already in place, and more frequently receive approval for the entirety of their requested financing; all factors that may affect their interactions with CDFIs (McKay, Terry, & Corcoran, 2017).

WomenOwned is a binary variable as well, where 0 indicates a firm is male-owned, or ownership is equally shared, and 1 means a business is majority women-owned. A variety of factors related to the gender of a firm's ownership might also relate to these firms' interactions with CDFI lenders. For instance, women-owned firms have been found to have lower startup capital, lower profitability, fewer employees, lower business survival rates, and lower sales than businesses owned by men (Fairlie & Robb, 2009; Coleman & Robb, 2009). Additionally, women-owned businesses more frequently report not receiving all of the financing they applied for, more frequently turn to large banks for financing, and more frequently receive approval for their financing application from small banks (Battisto, Gines, & Mills, 2017).

Profitability is 0 if a firm operated at break-even or at a loss at the end of the previous calendar year, and 1 if a firm operated at a profit at that point. Profitability might affect the likelihood or reasons for a firm's financing application, as well as lenders' judgement of default risk.

FirmAge is a categorical variable that measures how long firms have been in business. The models use startups, or firms less than 3 years old as the base category, with older firms grouped as firms between 3 and 6 years, 6 and 11 years, 11 and 16 years, 16 and 21 years, and 21 years and older. Industry consists of eight categories of firms, including non-manufacturing goods production and associated services (Agriculture, Forestry, Fishing, and Hunting; Mining, Quarrying, and Oil and Gas Extraction; Utilities; Construction; Wholesale Trade; Transportation and Warehousing), manufacturing, retail, leisure and hospitality (Arts, Entertainment, and Recreation; Accommodation and Food Services), finance and insurance, healthcare and education, professional services and real estate (Information; Real Estate and Rental and Leasing; Professional, Scientific, and Technical Services; Management of Companies and Enterprises), and business support and consumer services (which includes firms in Administrative and Support and Waste Management and Remediation Services and Other Services).[5]

LowIncome is a binary variable that indicates whether a zip code was considered a low- or moderate- income area by the U.S. Centers for Medicare and Medicaid Services for the purpose of Qualified Health Plan (QHP) certification. Zip code is the most granular level of geographic data accessible to analysis in the SBCS. This variable is included since, as previously discussed, previous research has found that CDFIs have been more likely to direct business loans to more economically distressed geographies (Swack, Hangen, & Northrup, 2014).

Collateral is a 0 when a firm offered no collateral to secure debt, which is used as the base group. 1 indicates a firm put up business assets as collateral, and 2 means a firm put up a different type of collateral, such as personal assets, a personal guarantee, portions of future sales, or another type. Debts is a categorical variable that measures the level of outstanding debt a firm has, which could affect how risky lenders perceive a firm as. The base group is a firm with no outstanding debt, and the other categories for comparison are: $1-$25,000; $25,000-$100,000; $100,000-$250,000; $250,000-$1 million; and more than $1 million.

Finally, *VeteranStatus* is a categorical variable that measures the extent to which a firm's ownership is comprised of veterans. Veterans have access to specialized small-business loan and grant programs, such as the Small Business Administration's Veterans Advantage loan program, which can affect how veteran-owned small businesses interact with different types of lenders. Previous research has found that the financing experiences of small veteran-owned firms differ from others in some aspects, including a lower likelihood of receiving approval for financing, and a greater likelihood of reporting dissatisfaction with their lenders (Robb, Barkley, & de Zeeuw, 2018).

Results

Based on SBCS data, in 2019, about 3 percent of small employer firms that applied for financing did so at a CDFI (see table 1). This would represent about 74,000 employer firms, and 215,000 non-employer firms across the U.S. While much less prevalent than the role played by banks, online lenders, or credit unions, this still makes CDFIs a player in the

5 For greater clarity on these industries and their two-digit NAICS codes, please see the appendix to Small Business Credit Survey Employer Firm, available at reports on www.fedsmallbusiness.org.

small-business financing landscape (Federal Reserve Banks, 2019a). This is particularly the case for Black-owned firms; in 2019, about 5 percent of Black non-employer firm applicants applied at a CDFI for financing, and about 6 percent of those with employees did so. The shares of Black-owned employer firms that apply at a CDFI are significantly greater than that among White-owned employer firms for all years that the SBCS was deployed nationally (2016 through 2019). The share of nonemployer firms that apply to CDFIs is slightly higher than that among employer firms.

Table 1: Share of Small Business Financing Applicants that Applied at a CDFI (by owner's race and survey year)

	Employer Firms			Nonemployer Firms		
Year	Overall	White-owned	Black-owned	Overall	White-owned	Black-owned
2016	4.3%	3.6%	10.3%	7.1%	7.2%	12.2%
2017	5.1%	4.2%	10.9%	6.1%	5.3%	6.4%
2018	5.2%	5.2%	17.0%	6.6%	6.0%	8.9%
2019	2.7%	2.5%	6.4%	4.0%	4.1%	5.3%

Source: Authors' calculations based on weighted SBCS data.

Application Rates at CDFIs

Using SBCS data, we uncover differences in CDFI application rates by firm type, owner's race and ethnicity, and income of neighborhood surrounding the business. Table 2 reports the four models. The first two examine differences between firm types for White-owned (N = 314 for CDFI applicants, 8,202 for non-CDFI applicants), and Black-owned (N = 127 for CDFI-applicants, and 1,227 for non-CDFI applicants) firms. The third model examines all firms, and includes the racial/ethnic breakdown of a firm's ownership as an independent variable (N = 512 for CDFI applicants, 10,500 for non-CDFI applicants). The fourth model adds a binary variable that measures whether an applicant firm was located in a low-income zip code (N = 339 for CDFI applicants, 6,521 for non-CDFI applicants).[6]

Due to the problem of small-sample bias in maximum likelihood estimation, and to adjust for this bias inherent in rare events, we employ penalized maximum likelihood estimation, and report results as odds ratios. These indicate the relative likelihood of an outcome for a particular variable. Coefficients greater than 1 mean a higher relative likelihood, and those below 1 indicate a lower relative likelihood. The results for the models are displayed in table 2. All include pooled data for 2016 through 2019, and controls were added to account for differences over time.

6 Based on data from the Centers for Medicare and Medicaid Services (CMS).

For the first key variable; firm size, the findings suggest that there is no significant pattern of differences between small-business applicants in terms of firm size among Black-owned firms. However, among White-owned firms, the odds of businesses with more than 20 employees applying at a CDFI were about half that of non-employer firms. We find no significant differences in application rates between firms with less than 20 employees and non-employers. In these results, we see some evidence that CDFIs cater more to micro businesses. In line with previous research, we find that CDFIs are at least somewhat successful in reaching small businesses in communities that are facing economic challenges. The odds of businesses in low-income zip codes[7] applying to a CDFI for financing were about 1.3 times as great as those for similar businesses located in higher-income neighborhoods.

A notable insight from the results is that among Black-owned firms, those located in rural areas have significantly lower odds of applying for financing at a CDFI. Their odds are just 0.2 percent those of Black-owned firms located in urban areas. This indicates that rural Black-owned firms could be facing particular capital access issues. Overall, rural firms are somewhat less likely to apply to CDFIs. The odds of rural firms applying at a CDFI are just 0.76 those of firms in urban areas. Indeed, this conforms with previous findings on CDFI activities in rural areas. For instance, 20 percent of CDFIs solely serve rural areas (Wavering Corcoran, 2019); and CDFIs in rural geographies face lagging bank investment compared to peers in urban locales (Opportunity Finance Network, 2019). The results point to an opportunity for CDFIs to better reach businesses in rural areas, particularly rural Black-owned firms, as well as an opportunity for the CRA to work as a policy lever to increase the level of bank investment in rural CDFIs.

7 The sample size drops considerably on the last column of table 2 due to missing information regarding low-income zip codes.

Table 2: Probability of Small Business Applicants Applying at a CDFI for a Loan, Line of Credit, or Cash Advance (Odds Ratios)

Key Covariates	White-Owned Firms	Black-Owned Firms	All Firms	All Firms (with LMI zip code)
Size of Firm (Nonemployer is base group)				
1-4 employees	0.845	1.321	1.010	1.043
5-9 employees	0.773	1.095	0.938	0.905
10-19 employees	0.876	1.233	0.943	0.798
20-49 employees	0.470***	0.492	0.523***	0.504***
50-499 employees	0.455**	0.584	0.568**	0.608*
Credit Risk (low risk is base group)				
Medium risk	1.583***	1.458	1.587***	1.608***
High risk	1.470*	1.275	1.449**	1.504**
Did not respond	1.212	1.406	1.134	1.070
Rural (urban is base group)	0.994	0.244*	0.887	0.758*
Female-owned (male-owned is base group)	1.406***	1.168	1.416***	1.494***
Profitable (unprofitable is base group)	0.881	0.893	0.932	1.062
Age of Firm (0-2 years is base group)				
3-5 years	0.958	1.337	0.968	0.882
6-10 years	0.651**	1.410	0.783*	0.823
11-15 years	0.574**	0.899	0.598***	0.595**
16-20 years	0.803	0.946	0.715*	0.760
21+ years	0.327***	1.075	0.364***	0.467***
Industry (Non-manufacturing goods production and associated services is base group)				
Manufacturing	2.189***	1.098	1.800***	1.515**
Retail	1.343	1.319	1.265	1.317
Leisure and hospitality	1.770**	1.662	1.463**	1.422
Finance and insurance	0.529	1.575	0.790	0.776
Healthcare and education	1.955***	0.383**	1.146	1.037
Professional services and real estate	0.885	0.754	0.844	0.703*
Business support and consumer services	0.866	0.763	0.818	0.746
Race/Ethnicity of Firm Ownership (White-owned is base group)				
Black			1.859***	1.677***
Asian			1.377	1.270
Hispanic			1.420**	1.562**
Low Income Zip Code				1.355**
Other Controls: Owner's Veteran Status, Survey Year (2016 through 2019)				
Observations	8,516	1,354	11,012	6,860

*** p<0.01, ** p<0.05, * p<0.1

Note: Applicants applied for a loan, line of credit, or cash advance. Coefficients are displayed as odds ratios.

Another interesting finding are the significant and positive coefficients on women-owned businesses. Among White-owned firms, women-owned businesses are significantly more likely to apply at a CDFI. Overall, the odds of women-owned businesses applying at a CDFI are about 1.5 times greater than those for similar male-owned businesses. Notably, we find no such significant differential among women- and male-Black-owned firms.

In addition, firms that are in the middle of the risk distribution, meaning firms with business credit scores of between 50 and 80, or owners' personal scores of between 620 and 720 have significantly greater odds of turning to CDFIs for financing. We also find some evidence that those businesses with the most challenging credit profiles, meaning owners' personal scores of below 620, or business scores of 0 to 50 have somewhat greater odds for applying at CDFIs. These findings provide some evidence that CDFIs are serving firms that may have a harder time obtaining credit at other types of financial institutions.

Overall, we found no significant difference in application rates between Asian- and White-owned businesses. However, in line with our expectations, the odds of Black-owned firms applying to CDFIs were about 1.7 times greater than that of similar White-owned businesses. Additionally, the odds of Hispanic-owned businesses applying to a CDFI were 1.6 times greater than White-owned firms. This indicates that businesses' access to financing through CDFIs differs by race and ethnicity, and that CDFIs with a mission to serve racial and ethnic minority borrowers could expand their reach among Asian business owners.

Approval Rates at CDFIs

Again using SBCS data, we then modeled CDFI approval rates by the race and ethnicity of a business' ownership, as well as the income-level of the neighborhood surrounding the business. The first model examines approvals for White-owned businesses (N = 208 for firms with approval, and 50 for those rejected). The second examines only Black-owned firms (N = 58 for those with approval, and 36 for those rejected). The third examines all firms (N = 311 for those with approval, and 97 for those rejected), and the final model adds a binary control for whether a firm's zip code is low-income (N = 205 for firms with approval, and 67 for those rejected). The results for these models are displayed in table 3.

Table 3: Likelihood of Applicants Receiving Approval at a CDFI for at Least Part of the Loan, Line of Credit, or Cash Advance Requested (Odds Ratios)

Key Covariates	White-Owned Firms	Black-Owned Firms	All Firms	All Firms (with LMI zip code)
Size of Firm (Nonemployer is base group)				
1-4 employees	1.075	3.680*	1.666	1.620
5-9 employees	0.664	0.884	1.133	1.321
10-19 employees	0.681	1.242	1.081	1.310
20-49 employees	0.190**	0.454	0.492	0.846
50-499 employees	0.715	0.263	2.183	1.986
Credit Risk (low risk is base group)				
Medium risk	0.440*	0.364	0.917	0.963
High risk	0.135***	0.192*	0.252***	0.233***
Did not respond	2.265	0.332	2.046	1.363
Rural	1.961	0.294	1.576	1.288
Female-owned	1.307	1.162	1.278	1.191
Profitable	1.458	3.233*	1.649*	1.477
Age of Firm (0-2 years is base group)				
3-5 years	0.450	0.238	0.362**	0.340**
6-10 years	0.667	0.481	0.453*	0.430
11-15 years	0.246**	0.267	0.255***	0.188***
16-20 years	0.359	0.107	0.305**	0.245**
21+ years	0.388	0.480	0.492	0.417
Industry (Non-manufacturing goods production and associated services is base group)				
Manufacturing	0.468	2.165	1.118	0.656
Retail	1.147	0.466	0.794	0.597
Leisure and hospitality	0.984	2.059	1.580	1.350
Finance and insurance	2.406	0.394	1.267	0.984
Healthcare and education	0.914	0.489	0.895	0.629
Professional services and real estate	0.985	1.022	0.872	0.729
Business support and consumer services	0.526	1.575	1.008	0.508
Collateral Used to Secure Debt (no collateral is base group)				
Business Collateral	4.512**	3.796	3.224**	2.862*
Other type of collateral	1.680	1.575	1.660	1.347
Race/Ethnicity of Firm Ownership (White-Owned is base group)				
Black			0.634	0.485*
Asian			1.051	0.487
Hispanic			1.370	0.961
Low Income Zip Code				1.009
Other Controls: Owner's Veteran Status, Outstanding Debt, Survey Year				
Observations	258	94	408	272

*** p<0.01, ** p<0.05, * p<0.1

Note: Applicants applied for a loan, line of credit, or cash advance. Coefficients are displayed as Odds Ratios.

Here as well, we employ penalized maximum likelihood estimation, given the relatively low sample sizes, and we report results as odds ratios. We find no significant difference in approval rates between similar firms located in- or outside of low-income zip codes.

Notably, we find some weak evidence that the odds of Black-owned firms getting approved for financing at a CDFI are about half those of White-owned firms, all else being equal. Given the mission of CDFIs, this finding is surprising and requires deeper investigation. One potential explanation might be found in the type of collateral firms offer. We find strongly significant relationships between firms that offer business assets as collateral and approval rates across almost all models, the notable exception being Black-owned businesses. We find that offering other types of collateral, such as personal guarantees, is not significantly related to loan approval outcomes. Black-owned firms are significantly less likely to offer business assets as collateral compared to White-owned firms among both employer and non-employer firms. In 2018, 50 percent of White-owned employer and 74 percent of White-owned non-employer firms with outstanding debt used business assets as collateral compared to just 29 and 16 percent of Black-owned firms, respectively (Federal Reserve Banks, 2019a). Unfortunately, the SBCS does not offer data on the size of the collateral offered, which, similar to the incidence, may differ between these types of firms as well. As described previously, differences in collateral may be a result of racial barriers to economic mobility and credit access that have contributed to a wealth gap between Whites and Blacks, on average. This could hamper minority entrepreneurs both directly and indirectly; in terms of more limited personal assets, and potentially more limited assets among the network of family and friends of minority-entrepreneurs, an important source of support for many small business startups. This requires further investigation.

Conclusion

Although MOEs create a significant share of the jobs in majority-minority neighborhoods nationwide, they are relatively more likely to encounter constraints in obtaining access to capital from financial institutions. CDFIs can provide a means to bridge limited access to capital between financial institutions and MOEs. CDFIs' mission is to serve low- and moderate-income communities and individuals, and they aim to provide access to finance for small enterprises at affordable rates, and technical assistance. CDFIs are often well positioned to utilize relationships in the local community they serve, and are frequently able to operate more nimbly than larger financial institutions, which well-suits smaller businesses that need a more hands-on approach to become borrowers, or that lack application experience or networks at larger banks (Smith et al., 2008).

The purpose of this study was to examine the likelihood of MOEs applying for CDFI loans. We also aimed to investigate whether MOEs are more likely to have their application for a loan or line of credit accepted by CDFIs. Overall, we found no significant difference in application rates between Asian- and White-owned businesses. However, in line with our expectations, Black- and Hispanic-owned firms were more likely to apply for CDFI loans than similar White-owned businesses, though this relationship is reversed for Black-owned firms in rural areas.

However, we also found some weak evidence that Black-owned enterprises were less likely to get approved for a CDFI loan than similar White-owned firms. A potential explanation for this finding is that Black-owned firms are significantly less likely to pledge collateral guarantees, which may be related to aforementioned racial wealth disparities. Unfortunately, one of the limitations in the SBCS data is that the value of such collateral offered, or a business owners' personal assets is unknown. This requires further analysis. Given this result, CDFIs could expand their financial and entrepreneurship coaching and technical assistance, and better target this at minority-entrepreneurs, and at Black-owned businesses in particular.

Better collaboration between CDFIs and larger financial institutions or Minority Depository Institutions (MDIs) could contribute to more extensive credit provision for MOEs. In low-wealth neighborhoods, business credit needs frequently exceed the capacity of CDFIs operating there, particularly given the greater resource demands that more extensive relationship-based lending combined with technical assistance to less experienced small business borrowers requires.

Large banks could develop more extensive partnerships with CDFIs, to better leverage their ability to act as agile and innovative lenders on the front line in low-wealth areas and expand their ability to develop more flexible loan products and programs. The CRA in particular could act as a policy lever to aid CDFIs to address apparent access gaps for Black-owned firms in rural areas. MDIs could be particularly well-positioned to expand the reach of MOE financing by CDFIs, or in general. To investigate this potential, future research could examine the experiences of minority-owned small business borrowers at such institutions.

Finally, policymakers that aim to increase the flow of financing for MOEs could further subsidize CDFI operations and capital pools, such as by increasing the amount of capital made available through the CDFI fund, and could earmark at least parts of such capital for programs that increase small business lending to MOEs (Smith et al., 2008).

References

Affleck, A. & Mellor, M. (2006). Community development finance: A neo-market solution to social exclusion? *Journal of Social Policy*, *35*(2), 303–319. Retrieved from https://doi.org/10.1017/S0047279405009542

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

Bates, T. (1993). Banking on Black Enterprise: The Potential of Emerging Firms for Revitalizing Urban Economies. Joint Center for Political and Economic Studies.

Bates, T. & Robb, A. (2013). Greater Access to Capital Is Needed to Unleash the Local Economic Development Potential of Minority-Owned Businesses. *Economic Development Quarterly*, 27(3), 250–259. Retrieved from https://doi.org/10.1177/0891242413477188

Bates, T. & Robb, A. (2014). Small-business viability in America's urban minority communities. *Urban Studies*, *51*(13), 2844–2862. Retrieved from https://doi.org/10.1177/0042098013514462

Bates, T. & Robb, A. (2016). Impacts of Owner Race and Geographic Context on Access to Small-Business Financing. *Economic Development Quarterly*, *30*(2), 159–170. Retrieved from https://doi.org/10.1177/0891242415620484

Battisto, J., Gines, D., & Kramer Mills, C. (2017). Small Business Credit Survey: Report on Women-Owned Firms. Federal Reserve System.

Black, S. E. & Strahan, P. E. (2002). Entrepreneurship and Bank Credit Availiability. *Journal of Finance*, *57*(6), 2807–2833.

Blanchard, L., Zhao, B., & Yinger, J. (2008). Do lenders discriminate against minority and woman entrepreneurs? *Journal of Urban Economics*, 63(2), 467-497.

Blanchflower, D. G. (2009). Minority self-employment in the United States and the impact of affirmative action programs. *Annals of Finance*, *5*(3–4), 361–396. Retrieved from https://doi.org/10.1007/s10436-008-0099-1

Blanchflower, D. G., Levine, P. B., & Zimmerman, D. J. (2003). Discrimination in the small-business credit market. *Review of Economics and Statistics*, *85*(4), 930–943. Retrieved from https://doi.org/10.1162/003465303772815835

Cavalluzzo, K. S., Cavalluzzo, L. C., & Wolken, J. D. (2002). Competition, Small Business Financing, and Discrimination: Evidence from a New Survey. *The Journal of Business*, *75*(4), 641–679. Retrieved from https://doi.org/10.1086/341638

Cavalluzzo, K. & Wolken, J. (2005). Small business loan turndowns, personal wealth, and discrimination. *Journal of Business*, *78*(6), 2153–2177. Retrieved from https://doi.org/10.1086/497045

Coleman, S. & Robb, A. M. (2009). A comparison of new firm financing by gender: evidence from the Kauffman Firm Survey data. Small Business Economics, 33, 397-411. Retrieved from https://doi.org/10.1007/s11187-009-9205-7

de Zeeuw, M. (2019). Small Business Credit Survey: 2019 Report on Minority-Owned Firms. Federal Reserve Bank of Atlanta.

de Zeeuw, M. & Barkley, B. (2019). Mind the Gap: Minority-Owned Small Businesses' Financing Experiences in 2018. *Consumer & Community Context*, *1*(2), 13–21.

Esposito, N. (2019). Small Business Facts: Spotlight on Minority-Owned Employer Businesses. U.S. Small Business Administration: Office of Advocacy.

Evans, D. S. & Jovanovic, B. (1989). An Estimated Model of Entrepreneurial Choice under Liquidity Constraints. *Journal of Political Economy*, *97*(4), 808. Retrieved from https://doi.org/10.1086/261629

Fairlie, R. W. & Robb, A. M. (2009). Gender Differences in Business Performance: Evidence from the Characteristics of Business Owners Survey. *Small Business Economics*, *33*(4), 375-395.

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

Federal Reserve Banks (2019b). *Small Business Credit Survey: Report on Minority-Owned Reports*.

Federal Reserve Board of Governors (2019). *Perspectives from Main Street: Bank Branch Access in Rural Communities*.

Gordon, A. (2005). The Creation of Homeownership: How New Deal Changes in Banking Regulation Simultaneously Made Homeownership Accessible to Whites and Out of Reach for Blacks. *The Yale Law Journal*, 115, 186.

Harger, K. R., Ross, A., & Stephens, H. M. (2019). What matters the most for economic development? Evidence from the Community Development Financial Institutions Fund. *Papers in Regional Science*, *98*(2), 883–904. Retrieved from https://doi.org/10.1111/pirs.12396

Henderson, L., Herring, C., Horton, H. D., & Thomas, M. (2015). Credit Where Credit is Due?: Race, Gender, and Discrimination in the Credit Scores of Business Startups. *The Review of Black Political Economy*, 42, 459-479.

Immergluck, D. (2004). Credit to the Community: Community Reinvestment and Fair Lending Policy in the United States. M.E. Sharpe: New York, NY.

Marshall, J. N. (2004). Financial Institutions in Disadvantaged Areas: A Comparative Analysis of Policies Encouraging Financial Inclusion in Britain and the United States. *Environment and Planning A: Economy and Space*, *36*(2), 241–261. Retrieved from https://doi.org/10.1068/a3664

McKay, S., Terry, E., & Corcoran, E. W. (2017). Small Business Credit Survey: Report on Rural Employer Firms.

Mitchell, K. & Pearce, D. K. (2011). Lending technologies, lending specialization, and minority access to small-business loans. *Small Business Economics*, 37(3), 277–304. Retrieved from https://doi.org/10.1007/s11187-009-9243-1

Opportunity Finance Network (2019). Bank Investment Falls Short in Rural America: Reforms to the Community Reinvestment Act (CRA) Could Help. Retrieved from https://ofn.org/sites/default/files/resources/PDFs/Policy%20Docs/2019/OPP_054%20-%20One%20Pager%20Handout%20CRA_FINAL%20Feb%202019.pdf

Porter, M. E. (2000). Location, Competition, and Economic Development: Local Clusters in a Global Economy. *Economic Development Quarterly*, *14*(1), 15–34. Retrieved from https://doi.org/10.1177/089124240001400105

Robb, A., Barkley, B., & de Zeeuw, M. (2018). Mind the Gap: How Do Credit Market Experiences and Borrowing Patterns Differ for Minority-Owned Firms? Federal Reserve Bank of Atlanta, Community and Economic Development Discussion Papers. Retrieved from https://doi.org/10.29338/dp2018-03

Robb, A. & Robinson, D. T. (2018). Testing for Racial Bias in Business Credit Scores. *Small Business Economics*, 50, 429-443.

Rothstein, R. (2017). The Color of Law: A Forgotten History of How Our Government Segregated America. Liveright Publishing Corporation: New York, NY.

Servon, L. J., Fairlie, R. W., Rastello, B., & Seely, A. (2010). The five gaps facing small and microbusiness owners: Evidence from New York City. *Economic Development Quarterly*, *24*(2), 126-142. Retrieved from https://doi.org/10.1177/0891242409354899

Smith, G., Newon, J., Zielenbach, S. & Duda, S. (2008). Collaborators or Competitors? Exploring the Relationships between Community Development Financial Institutions and Conventional Lenders in Small Business Finance. CDFI Fund.

Solon, G., Haider, S. J., & Wooldridge, J. M. (2013). What Are We Weighting For. *NBER Working Paper*. Retrieved from http://www.nber.org/papers/w18859

Stoll, M. A., Raphael, S., & Holzer, H. J. (2005). Why are Black employees more likely than white employers to hire Blacks? (No. 1236–01). *Institute for Research on Poverty Discussion Paper* (Vol. 25). Madison. Retrieved from https://doi.org/10.1177/0003122410363563

Swack, M., Hangen, E., & Northrup, J. (2014). *CDFIs Stepping into the Breach : An Impact Evaluation – Summary Report*.

Wavering Corcoran, E. (2019). Community Development Financial Institutions (CDFIs) by the Numbers. Federal Reserve Bank of Richmond.

Wiedrich, K., Rice, S., Sims, L., & Weisman, H. (2017). On Track or Left Behind? Findings from the 2017 Prosperity Now Scorecard.