Black-Owned Firms, Financial Constraints, and the Firm Size Gap[a]

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Motivation

- Why are Black-owned firms smaller than those owned by Whites?
- Many potential explanations
  - entrepreneur characteristics: demographics, human capital
  - motivations for ownership: pecuniary vs. nonpecuniary
  - firm characteristics: industry, owner's role
- One hypothesis: access to finance
  - wealth, discrimination, asymmetric information
- Focus on number of employees:
  - Black business owners are more likely than White owners to hire Black workers (e.g., Bates 1994).
  - Unemployment much higher among Blacks than Whites (usually about double, currently 7.1 vs. 3.2%, a year ago 10.3 vs. 5.9%).

This Paper: How much do measured financial variables account for the firm-level employment size gap by owner race?

- Newly available data from ASE 2014-2016 (Foster and Norman 2017)
  - 197,000 employer-firms
  - Rich information on firms, owner characteristics and motivations
  - Financial measures
- Regressions of log(number of employees) on these variables by race and pooled
- Decomposition of raw gap into "explained" (composition) and "unexplained" (structure) components (Jann, 2008; Fortin et al. 2011)
  - Purpose is not to infer discrimination from "unexplained" component
  - How much does measured finance account for the gap?
  - Detailed decomposition: types of finance (insider/outsider, startup/recent, subjective measures)

Previous Research: Finance, Business Ownership, and Race

- Lower levels of finance in Black-owned businesses (Bates 1997; Fairlie et al. 2021)

- Lower wealth and less experience in family business (Robb and Fairlie 2007; Fairlie and Robb 2007)

- Self-employment differences by race (Fairlie and Meyer 1996; Fairlie 1999; Hout and Rosen 2000; Fairlie and Meyer 2000)

- Racial disparities in denials of small business loan applications. Cavalluzzo (1998), Blanchflower et al. (2003), and Blanchard et al. (2008) use Survey of Small Business Finances (SSBF) - in 1998 had detailed financial characteristics (credit scores, owner wealth, etc.).

- Similar method to wage gap research: add proxies for unobservables (ability to repay)

Data: Annual Survey of Entrepreneurs (ASE)

- Detailed characteristics of firms, owners, and their motivations for ownership
- Financial measures:
  - amount and sources of startup capital
  - sources in survey reference year
  - subjective measures (discouraged borrower, profits lowered because of financial constraints)
- Sampling frame: all non-farm businesses with at least one paid employee and receipts of $1,000 or more
- Sample restricted to owners who are either Black or White (as defined below) with complete information on all the variables in the regression.
- Final sample: 656,000 owner-firm-year observations of 197,000 firms
  - Whites: 643,000 owner-firm-years for 192,000 firms
  - Blacks: 13,500 owner-firm-years for 6,000 firms

Methods: Estimating Differences in Firm Employment by Owner Race

$$E_{ij}^r = \alpha^r + \boldsymbol{X_{ij}^r}\beta^r + \epsilon_{ij}^r \tag{1}$$

where:

- $E_{ij}^r = \log$ (number of employees) for racial group r (B or W)
- $X_{ij}^r = $ set of all the financial variables and other covariates including firm age, number of owners, owner age, gender, immigrant, ownership team diversity, educational attainment, prior business ownership, veteran, motivations for ownership (income, flexibility, couldn't find job), 4-digit NAICS industry, owner's role(s) in business, average hours per week worked in business, primary source of income from business, and home-based business
- Pooled specification includes a race dummy
- Interpretation of coefficients on financial variables: association with firm size, controlling for many variables that affect the demand for and availability of finance

Methods: Decomposition of Racial Gap

$$\overline{E}^W - \overline{E}^B = \underbrace{[(\overline{X}^W - \overline{X}^B)'\hat{\beta}^*]}_{\text{Composition Effect}} + \underbrace{[(\overline{X}^W)'(\hat{\beta}^W - \hat{\beta}^*) + (\overline{X}^B)'(\hat{\beta}^* - \hat{\beta}^B)]}_{\text{Structure Effect}}$$

(2)

- $\overline{E}^r$ = average employment for firms owned by race group r (B or W)
- $\overline{X}^r$ = vector of covariate means for owner race group r
- $\hat{\beta}^r$ = vector of estimated coefficients from race-specific regressions by race group r
- $\hat{\beta}^*$ = vector of estimated coefficients from the pooled regression
- Yun's (2005) normalization for categorical variables
- Clustered standard errors at the firm-level computed using delta method (Jann 2008)

Descriptive Statistics: Firm-Level Employment and Financial Indicators by Owner Race

	Pooled		Black		White	
	Mean	Coef.	Mean	Coef.	Mean	Coef.
Employment						
Number of Employees	11.99 (124.1)		10.76 (80.81)		12.02 (124.9)	
Ln(Number of Employees)	1.43 (1.21)		1.32 (1.20)		1.43 (1.21)	
Selected Finance Variables						
Startup capital amount $\geq 100k$	0.193	0.306	0.149	0.265	0.194	0.306
Startup capital source: savings	0.647	0.048	0.706	-0.007	0.645	0.049
Startup capital source: bank loan	0.192	0.112	0.150	0.106	0.193	0.112
New funding source: bank	0.349	0.238	0.373	0.229	0.348	0.238
Discouraged borrower	0.033	-0.102	0.111	-0.127	0.032	-0.098
Lack of capital reduces profits	0.127	-0.007	0.269	-0.013	0.124	-0.008

Note: Coefficients from estimates of Eq(1). Standard errors are clustered on firms. All estimated coefficients are statistically significant at the 1% level, except for "Startup capital source: savings" for Blacks, and "Lack of capital" for all samples.

Results: Decomposition of the Firm Employment Size Gap by Owner Race

	Composition Effect	Structure Effect
(A) Aggregate Decomposition	0.110 (0.013)	0.003 (0.016)
(B) Detailed Decomposition of Contributions from Finance		
Finance Total	0.066 (0.004)	0.118 (0.049)
Of which:		
Startup Capital Amount	0.013 (0.002)	0.026 (0.017)
Startup Capital from Insiders	0.003 (0.001)	0.043 (0.029)
Startup Capital from Outsiders	0.004 (0.001)	-0.006 (0.008)
Startup Capital from Other Source	0.009 (0.002)	0.031 (0.009)
New Funding from Insiders	0.034 (0.002)	0.014 (0.022)
New Funding from Outsiders	-0.006 (0.002)	0.006 (0.011)
Subjective Financial Constraints	0.009 (0.001)	0.004 (0.009)

Note: Results from estimating Eq(2). The total gap is 0.113. Standard errors are clustered on firms.

Summary of Findings

- Raw gap in employment between Black- and White-owned firms $=$ 11.3% at mean
- Aggregate decomposition:
  - Observed differences fully account (97%) for this gap
  - Does not imply lack of discrimination
- Detailed decomposition:
  - Composition: Equalizing observed financial measures reduces the size gap by 60%
  - Structure: Equalizing returns to finance reduces the size gap by 103%, but imprecisely estimated
- Equalizing both the levels of finance and their impacts (allowing all other factors to vary):
  - Black-owned firms would be 18.4% larger than their actual size.
  - Firm size gap is reversed: Black-owned firms would be larger than White-owned firms by 7.1%.

Caveats and Questions

- Financial variables are incomplete and not always well-defined
  - startup data are retrospective
  - no information on amounts of startup capital by source
  - yet they are highly correlated with firm size
- Why are returns to using savings at startup positive for Whites but zero for Blacks?
  - Lower wealth implies smaller amount?
  - Maybe personal assets are a complement to external finance for Whites, but a substitute for Blacks?
- Many other factors affect firm size gap; some go the "wrong" way
  - education - Black owners are more likely to have graduate degrees
  - motivations - Black owners more likely to pursue higher income
  - industry - Black owners tend to choose sectors with larger average size
  - commitment to business - Black owners more likely to work long hours

References

- Bates, Timothy. 1994. "Utilization of Minority Employees in Small Business: A Comparison of Nonminority and Black-owned Urban Enterprises." *The Review of Black Political Economy*, 23 (1): 113–121.
- Bates, Timothy. 1997. "Unequal Access: Financial Institution Lending to Black-and White-owned Small Business Start-ups. *Journal of Urban Affairs*, 19 (4): 487–495.
- Blanchard, Lloyd, Bo Zhao, and John Yinger. 2008. "Do Lenders Discriminate against Minority and Woman Entrepreneurs?." *Journal of Urban Economics* 63 (2), 467-497.
- Blanchflower, David G., Phillip B. Levine, and David J. Zimmerman. 2003. "Discrimination in the Small-business Credit Market." *Review of Economics and Statistics*, 85 (4): 930-943.
- Cavalluzzo, Ken S., and Linda C. Cavalluzzo. 1998. "Market Structure and Discrimination: The Case of Small Businesses." *Journal of Money, Credit and Banking*, 771-792.
- Fairlie, Robert W. 1999. "The Absence of the African-American owned Business: An Analysis of the Dynamics of Self-employment." *Journal of Labor Economics*, 17 (1): 80–108.
- Fairlie, Robert W., and Bruce D. Meyer. 1996. "Ethnic and Racial Self-employment Differences and Possible Explanations." *Journal of Human Resources*, 757–793.

References (cont.)

- Fairlie, Robert W., and Bruce D. Meyer. 2000. "Trends in Self-employment among White and Black Men during the Twentieth Century." *Journal of Human Resources*, 643–669.
- Fairlie, Robert W., and Alicia M. Robb. 2007. "Why are Black-owned Businesses less Successful than White-owned Businesses? The Role of Families, Inheritances, and Business Human Capital." *Journal of Labor Economics*. 25 (2): 289-323.
- Fairlie, Robert, Alicia Robb, and David T. Robinson. 2021. "Black and White: Access to Capital Among Minority-Owned Start-ups." *Management Science*.
- Fortin, Nicole, Thomas Lemieux, and Sergio Firpo. 2011. "Decomposition Methods in Economics." In *Handbook of Labor Economics* 4: 1-102.
- Foster, Lucia, and Patrice Norman. 2017. "The Annual Survey of Entrepreneurs: An Update." US Census Bureau. No. CES-WP-17-46.
- Hout, Michael, and Harvey S. Rosen. 2000. "Self-employment, Family Background, and Race." *Journal of Human Resources*, 670–692.
- Jann, Ben. 2008. "The Blinder–Oaxaca Decomposition for Linear Regression Models." *The Stata Journal* 8 (4): 453-479.
- Robb, Alicia M., and Robert W. Fairlie. 2007. "Access to Financial Capital among US Businesses: The Case of African American Firms." *Annals of the American Academy of Political and Social Science*, 613 (1): 47–72.
- Yun, Myeong-Su. 2005. "A Simple Solution to the Identification Problem in Detailed Wage Decompositions." *Economic Inquiry* 43 (4): 766-772.

Appendix: Estimating Regression-Adjusted Firm Size Gaps by Owner Race

$$E_{ij} = \alpha + \delta B_{ij} + \boldsymbol{X_{ij}}\boldsymbol{\beta} + \epsilon_{ij}$$

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\hat{\delta}$	-0.113	0.051	0.058	0.071	0.073	0.124	0.008	-0.004
	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.019)	(0.018)	(0.017)
R^2	0.000	0.106	0.128	0.133	0.147	0.226	0.332	0.405
Other Race/Ethnic Groups	✓	✓	✓	✓	✓	✓	✓	✓
Firm Age & N of Owners		✓	✓	✓	✓	✓	✓	✓
Demographics			✓	✓	✓	✓	✓	✓
Human Capital				✓	✓	✓	✓	✓
Motivations					✓	✓	✓	✓
Finance						✓	✓	✓
4-digit Industry							✓	✓
Other Choices								✓