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Applications or Approvals:

What Drives Racial Disparities in the Paycheck Protection Program?

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Applications or Approvals:
What Drives Racial Disparities in the Paycheck Protection Program?

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Racial Disparities in Credit Access

- ▶ Vast literature documenting disparities in access to credit between white and Black Americans (e.g., mortgage lending, personal loans, auto loans, credit cards).
- ▶ Despite posing no credit risk to lenders, Paycheck Protection Program (PPP) lending displayed similar patterns.
  - ▶ **Take-up disparity:** Black-owned firms less likely than observably similar white-owned firms to receive PPP funds (Chernenko and Scharfstein, 2022).
  - ▶ **Reliance on "fintech" lenders:** Conditional on receiving a PPP loan, Black-owned firms less likely to receive their loans from banks and more likely to receive them from nonbanks, largely fintech lenders (Chernenko and Scharfstein, 2022; Howell et al., 2022; Fei, 2022).
  - ▶ **Evidence of discrimination:** Racial bias partly explains why Black-owned firms are less likely to receive PPP loans from banks (Chernenko and Scharfstein, 2022; Howell et al., 2022).

Goals of the Paper

1. Using novel survey data, decompose importance of applications and approvals in explaining disparities in PPP take-up between white- and Black-owned firms.
   - ▶ Are these disparities different at banks and fintech lenders?

2. Analyze the channels underlying racial disparities in applications and approvals.
   - ▶ Firm characteristics? Pre-existing lending relationships? Racial bias?
   - ▶ Consider other factors that may generate approval disparities.
     - ▶ Turning down approved funds?
     - ▶ Less likely to be eligible?
     - ▶ Issues navigating the application process? "Administrative burden" (Herd and Moynihan, 2018). Also see Ko and Moffitt (2022).

Preview of Results

1. Replicate results in literature, qualitatively and quantitatively: take-up disparity, reliance on fintechs, importance of racial bias.

2. Disparities between observably similar white- and Black-owned firms in PPP application rates explain about half of the overall disparity in program take-up, with approval disparities explaining the rest.

3. Application behavior fully explains Black-owned PPP borrowers' lower (higher) reliance on banks (fintechs).
   ▶ Black-owned firms are substantially less (more) likely than white-owned firms to apply to banks (fintechs), but approval disparities are similar at banks and fintechs.

4. Racial bias is related to both application and approval disparities, but other factors – and administrative burdens in particular – are also important drivers of approval disparities.

Contributions

1. Decompose disparities in take-up rates of PPP loans into application and approval rates and understand the respective channels.
   - Knowing where the "bottlenecks" are may tell us about ways of improving program design: promoting outreach (e.g., to improve informational transfer)? Simplifying the application process? Providing technical support?

2. Assess whether/how nonbanks increase credit access for Black-owned firms.
   - While fintech lenders may reduce impact of racial bias through automation (Howell et al., 2022), this does not seem to reduce racial disparities in approval rates.
   - Instead, fintech lenders improve PPP access by attracting more applications.
   - "Limits of automation" consistent with evidence in **?** regarding Medicaid and SNAP.

3. Find evidence consistent with disparate impact of "administrative burdens" in PPP application process.
   - Can be particularly cumbersome for disadvantaged groups seeking access to public programs (Herd and Moynihan, 2018).

Agenda

1. **Data**

2. Replicate the literature's findings in our survey data

3. Racial disparities in application rates and in choice of lender type

4. Racial disparities in approval rates at banks and at fintechs

5. Unpacking approval disparities: mechanisms in addition to racial discrimination?

Data

1. **Federal Reserve's 2020 Small Business Credit Survey (SBCS)**
   - Conducted annually and is a collaborative effort among the 12 Federal Reserve member banks.
   - Convenience sample of small businesses, "snapshot" from fall of 2020. Respondents are likely to be legitimate businesses, given methodology.
   - Respondents provide information on owner characteristics, firm characteristics, and PPP outcomes.

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2. **Measures of racial bias against Black people from Harvard University's Project Implicit**
   - **Explicit:** 1–7 Likert scale: 1 = "I strongly prefer African Americans to European Americans" vs. 7 = "I strongly prefer European American to African Americans"
   - **Implicit:** score on implicit association test
   - County-level averages across white respondents over 2008–2019, standardized to have zero mean and unit variance.

SBCS Representativeness: Geography

▶ SBCS is broadly representative of the overall population of U.S. employer and nonemployer establishments.

▶ Somewhat light in coverage of interior states, but deviations are small in magnitude.

(a) SBCS
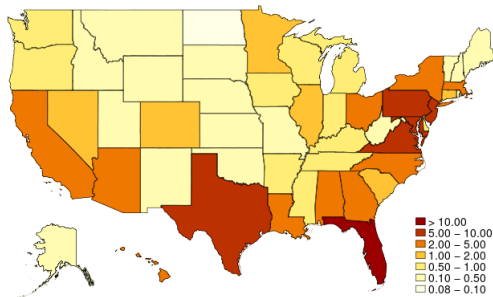
(b) Census (2018 CBP and NES)
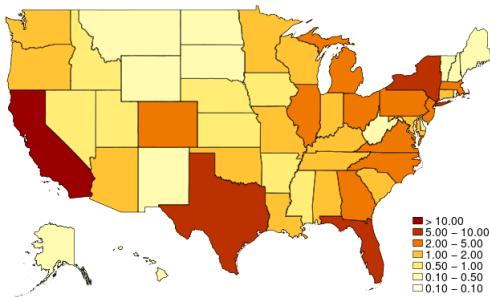
SBCS Representativeness: Industry

▶ Industry categories taken from Federal Reserve's SBCS reports – each category maps to one or more two-digit NAICS codes.

▶ Deviations mainly driven by over-representation of employer firms in SBCS, which tend to concentrate in different industries from nonemployer firms.

Industry Category	SBCS	Census (2018 CBP and NES)
Non-manufacturing goods production & assc. services	15.36%	21.59%
Manufacturing	9.12%	1.88%
Retail	11.25%	9.19%
Leisure and hospitality	13.24%	8.31%
Finance and insurance	1.69%	3.59%
Healthcare and education	10.59%	11.34%
Professional services and real estate	23.35%	24.64%
Business support and consumer services	15.40%	19.47%

Summary Statistics: Firm Characteristics

▶ Statistics in all rows after "# Years in Business" are fractions of respondents in column.

	Total	Race/Ethnicity				Gender	
		White	Black	Asian	Hispanic	Male	Female
$N =$	11,841	8,424	1,654	753	1,010	7,073	4,768
# Owners + Employees	9.12	10.33	4.54	7.73	7.57	11.02	6.31
# Years in Business	16.57	18.83	9.93	12.27	11.83	18.43	13.82
2019 Revenues $0-$25k	0.12	0.09	0.30	0.08	0.13	0.09	0.17
2019 Revenues $25k-$50k	0.09	0.07	0.15	0.07	0.11	0.06	0.12
2019 Revenues $50k-$100k	0.12	0.10	0.17	0.11	0.14	0.10	0.14
2019 Revenues $\geq$ $100k	0.68	0.74	0.37	0.74	0.62	0.74	0.58
2019 Loss	0.20	0.18	0.34	0.20	0.19	0.19	0.22
2019 Break-Even	0.17	0.16	0.22	0.17	0.20	0.17	0.18
2019 Profit	0.62	0.66	0.44	0.63	0.61	0.64	0.60
Owner Age < 45	0.20	0.17	0.30	0.26	0.26	0.18	0.24
Owner Age 45-64	0.60	0.60	0.57	0.62	0.61	0.59	0.61
Owner Age $\geq$ 65	0.20	0.23	0.13	0.12	0.13	0.23	0.15
Employer Business	0.71	0.72	0.63	0.76	0.72	0.74	0.65
Uses Contract Workers	0.46	0.44	0.54	0.41	0.51	0.44	0.48

Summary Statistics: Firm Characteristics

▶ Statistics in all rows after "# Years in Business" are fractions of respondents in column.

	Total	Race/Ethnicity				Gender	
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▶ Statistics in all rows after "# Years in Business" are fractions of respondents in column.

| | Total | Race/Ethnicity | | | | Gender | |
		White	Black	Asian	Hispanic	Male	Female
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Summary Statistics: PPP Outcomes

▶ Statistics are reported as fractions of respondents in column.

	Total	Race/Ethnicity				Gender	
		White	**Black**	**Asian**	**Hispanic**	**Male**	**Female**
$N =$	11,841	8,424	1,654	753	1,010	7,073	4,768
Applied for PPP	0.67	0.71	0.49	0.75	0.62	0.70	0.63
Bank	0.57	0.61	0.34	0.65	0.49	0.61	0.51
Fintech	0.09	0.08	0.14	0.11	0.11	0.09	0.11
CU/CDFI	0.05	0.05	0.07	0.03	0.06	0.05	0.06
Received PPP	0.63	0.67	0.40	0.73	0.56	0.66	0.58
Bank	0.52	0.57	0.28	0.61	0.44	0.56	0.46
Fintech	0.07	0.06	0.08	0.09	0.07	0.06	0.08
CU/CDFI	0.04	0.04	0.04	0.03	0.04	0.04	0.04

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	Total	Race/Ethnicity				Gender	
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CU/CDFI	0.04	0.04	0.04	0.03	0.04	0.04	0.04

Summary Statistics: ZIP Code Characteristics

	Total	Race/Ethnicity				Gender	
		White	**Black**	**Asian**	**Hispanic**	**Male**	**Female**
$N =$	11,841	8,424	1,654	753	1,010	7,073	4,768
Branches Per Capita	0.36	0.38	0.29	0.36	0.32	0.37	0.35
Population (000s)	29.51	27.52	33.70	32.72	36.79	29.19	29.98
Median HH Income ($000s)	71.70	72.37	63.86	85.78	68.36	71.57	71.89
Fraction White	0.59	0.66	0.41	0.47	0.42	0.60	0.58
Unemployment Rate	0.03	0.03	0.04	0.03	0.03	0.03	0.03

Agenda

1. Data

2. **Replicate the literature's findings in our survey data**

3. Racial disparities in application rates and in choice of lender type

4. Racial disparities in approval rates at banks and at fintechs

5. Unpacking approval disparities: mechanisms in addition to racial discrimination?

Racial Disparities in Take-up and in Use of Banks

	Received PPP		Received Bank PPP	Received PPP		
	(1)	(2)	(3)	(4)	(5)	(6)
Black	−0.257***	−0.089***	−0.142***	−0.092***	−0.092***	−0.093***
	(0.013)	(0.012)	(0.018)	(0.018)	(0.019)	(0.019)
Black × Explicit Bias					−0.114***	
					(0.040)	
Black × Implicit Bias						−0.127***
						(0.048)
Asian	0.055***	0.016	0.003	0.015	0.014	0.015
	(0.016)	(0.015)	(0.015)	(0.017)	(0.018)	(0.018)
Hispanic	−0.084***	−0.061***	−0.033*	0.001	0.005	0.002
	(0.016)	(0.014)	(0.018)	(0.018)	(0.020)	(0.020)
Female	−0.054***	0.029***	−0.051***	−0.019**	−0.019**	−0.019**
	(0.009)	(0.007)	(0.009)	(0.009)	(0.009)	(0.009)
N	12,229	12,229	7,607	7,607	7,607	7,607
R^2	0.05	0.38	0.02	0.09	0.09	0.09
Dep. Var. Mean	0.62	0.62	0.83	0.83	0.83	0.83
State & Ind. FEs		✓		✓		✓
Firm & ZIP chars.		✓		✓		✓

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State & Ind. FEs		$\checkmark$		$\checkmark$		$\checkmark$
Firm & ZIP chars.		$\checkmark$		$\checkmark$		$\checkmark$

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						(0.048)
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Hispanic	−0.084***	−0.061***	−0.033*	0.001	0.005	0.002
	(0.016)	(0.014)	(0.018)	(0.018)	(0.020)	(0.020)
Female	−0.054***	0.029***	−0.051***	−0.019**	−0.019**	−0.019**
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R^2	0.05	0.38	0.02	0.09	0.09	0.09
Dep. Var. Mean	0.62	0.62	0.83	0.83	0.83	0.83
State & Ind. FEs		✓		✓		✓
Firm & ZIP chars.		✓		✓		✓

Agenda

Racial Disparities in Application Behavior

| | Apply for PPP | | | Lender type conditional on applying | | | | | |
| | | | | Bank | | | Fintech | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	−0.194***	−0.049***	−0.038***	−0.165***	−0.099***	−0.085***	0.147***	0.078***	0.075***
	(0.013)	(0.013)	(0.012)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Asian	0.049***	0.003	0.008	0.006	0.013	0.029*	0.015	−0.001	−0.006
	(0.016)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
Hispanic	−0.057***	−0.045***	−0.039***	−0.045***	−0.012	−0.001	0.044***	0.007	0.001
	(0.016)	(0.014)	(0.014)	(0.017)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Female	−0.052***	0.022***	0.022***	−0.047***	−0.014*	−0.014*	0.039***	0.011	0.011
	(0.009)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
N	12,229	12,229	12,164	8,187	8,187	8,154	8,187	8,187	8,154
R^2	0.03	0.34	0.35	0.03	0.11	0.17	0.02	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.67	0.84	0.84	0.84	0.14	0.14	0.14
State & Ind. FEs		✓	✓		✓	✓		✓	✓
Firm & ZIP chars.		✓	✓		✓	✓		✓	✓
Bank Reln.			✓			✓			✓

▶ "Bank Reln." – whether the respondent has any relationship with a bank (checking account, outstanding loan, payment processing, etc.) *at time of survey.*

Racial Disparities in Application Behavior

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| | | | | Bank | | | Fintech | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	−0.194***	−0.049***	−0.038***	−0.165***	−0.099***	−0.085***	0.147***	0.078***	0.075***
	(0.013)	(0.013)	(0.012)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Asian	0.049***	0.003	0.008	0.006	0.013	0.029*	0.015	−0.001	−0.006
	(0.016)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
Hispanic	−0.057***	−0.045***	−0.039***	−0.045***	−0.012	−0.001	0.044***	0.007	0.001
	(0.016)	(0.014)	(0.014)	(0.017)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Female	−0.052***	0.022***	0.022***	−0.047***	−0.014*	−0.014*	0.039***	0.011	0.011
	(0.009)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
N	12,229	12,229	12,164	8,187	8,187	8,154	8,187	8,187	8,154
R^2	0.03	0.34	0.35	0.03	0.11	0.17	0.02	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.67	0.84	0.84	0.84	0.14	0.14	0.14
State & Ind. FEs		✓	✓		✓	✓		✓	✓
Firm & ZIP chars.		✓	✓		✓	✓		✓	✓
Bank Reln.			✓			✓			✓

▶ "Bank Reln." – whether the respondent has any relationship with a bank (checking account, outstanding loan, payment processing, etc.) *at time of survey.*

Racial Disparities in Application Behavior

| | Apply for PPP | | | Lender type conditional on applying | | | | | |
| | | | | Bank | | | Fintech | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	−0.194***	−0.049***	−0.038***	−0.165***	−0.099***	0.085***	0.147***	0.078***	0.075***
	(0.013)	(0.013)	(0.012)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Asian	0.049***	0.003	0.008	0.006	0.013	0.029*	0.015	−0.001	−0.006
	(0.016)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
Hispanic	−0.057***	−0.045***	−0.039***	−0.045***	−0.012	−0.001	0.044***	0.007	0.001
	(0.016)	(0.014)	(0.014)	(0.017)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Female	−0.052***	0.022***	0.022***	−0.047***	−0.014*	−0.014*	0.039***	0.011	0.011
	(0.009)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
N	12,229	12,229	12,164	8,187	8,187	8,154	8,187	8,187	8,154
R^2	0.03	0.34	0.35	0.03	0.11	0.17	0.02	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.67	0.84	0.84	0.84	0.14	0.14	0.14
State & Ind. FEs		✓	✓		✓	✓		✓	✓
Firm & ZIP chars.		✓	✓		✓	✓		✓	✓
Bank Reln.			✓			✓			✓

▶ "Bank Reln." – whether the respondent has any relationship with a bank (checking account, outstanding loan, payment processing, etc.) *at time of survey.*

Racial Disparities in Application Behavior

| | Apply for PPP | | | Lender type conditional on applying | | | | | |
| | | | | Bank | | | Fintech | | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	−0.194***	−0.049***	−0.038***	−0.165***	−0.099***	−0.085***	0.147***	0.078***	0.075***
	(0.013)	(0.013)	(0.012)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Asian	0.049***	0.003	0.008	0.006	0.013	0.029*	0.015	−0.001	−0.006
	(0.016)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)	(0.015)	(0.016)	(0.016)
Hispanic	−0.057***	−0.045***	−0.039***	−0.045***	−0.012	−0.001	0.044***	0.007	0.001
	(0.016)	(0.014)	(0.014)	(0.017)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Female	−0.052***	0.022***	0.022***	−0.047***	−0.014*	−0.014*	0.039***	0.011	0.011
	(0.009)	(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)	(0.008)	(0.008)
N	12,229	12,229	12,164	8,187	8,187	8,154	8,187	8,187	8,154
R^2	0.03	0.34	0.35	0.03	0.11	0.17	0.02	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.67	0.84	0.84	0.84	0.14	0.14	0.14
State & Ind. FEs		✓	✓		✓	✓		✓	✓
Firm & ZIP chars.		✓	✓		✓	✓		✓	✓
Bank Reln.			✓			✓			✓

▶ "Bank Reln." – whether the respondent has any relationship with a bank (checking account, outstanding loan, payment processing, etc.) *at time of survey.*

Racial Disparities in Application Behavior: Impact of Racial Bias

▶ Standard errors clustered by county

	Apply for PPP		Lender type conditional on applying			
			Bank		Fintech	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	−0.048***	−0.049***	−0.098***	−0.099***	0.077***	0.077***
	(0.012)	(0.012)	(0.017)	(0.017)	(0.017)	(0.017)
Black × Explicit Bias	− 0.010		−0.095**		0.071*	
	(0.030)		(0.039)		(0.040)	
Black × Implicit Bias		0.014		−0.109**		0.099**
		(0.037)		(0.048)		(0.047)
N	12,207	12,207	8,170	8,170	8,170	8,170
R^2	0.34	0.34	0.11	0.11	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.84	0.84	0.14	0.14
State & Ind. FEs	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓

Racial Disparities in Application Behavior: Impact of Racial Bias

▶ Standard errors clustered by county

| | Apply for PPP | | Lender type conditional on applying | | | |
| | | | Bank | | Fintech | |
	(1)	(2)	(3)	(4)	(5)	(6)
Black	−0.048***	−0.049***	−0.098***	−0.099***	0.077***	0.077***
	(0.012)	(0.012)	(0.017)	(0.017)	(0.017)	(0.017)
Black × Explicit Bias	−0.010		− 0.095**		0.071*	
	(0.030)		(0.039)		(0.040)	
Black × Implicit Bias		0.014		−0.109**		0.099**
		(0.037)		(0.048)		(0.047)
N	12,207	12,207	8,170	8,170	8,170	8,170
R^2	0.34	0.34	0.11	0.11	0.09	0.09
Dep. Var. Mean	0.67	0.67	0.84	0.84	0.14	0.14
State & Ind. FEs	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓

Racial Disparities in Application Behavior: Other Factors

- ▶ Sample: firms that did not apply for PPP.
- ▶ Dependent variable: reasons why firm chose not to apply for PPP.

	Unneeded	No Gov.	Eligibility	No Lenders	Confusing	Unaware	Deadline
Black	-0.074^{***}	-0.021^{**}	-0.008	0.019	0.058^{***}	0.047^{***}	0.074^{***}
	(0.014)	(0.009)	(0.023)	(0.015)	(0.019)	(0.015)	(0.014)
Asian	-0.048^{**}	-0.045^{***}	0.040	0.031	0.001	0.081^{***}	0.049^{**}
	(0.022)	(0.010)	(0.037)	(0.026)	(0.030)	(0.026)	(0.025)
Hispanic	-0.061^{***}	-0.014	-0.027	0.002	0.043^{*}	0.067^{***}	0.071^{***}
	(0.018)	(0.012)	(0.030)	(0.020)	(0.025)	(0.020)	(0.020)
Female	-0.014	-0.006	0.016	-0.011	0.008	-0.018^{*}	-0.014
	(0.012)	(0.008)	(0.017)	(0.011)	(0.014)	(0.010)	(0.010)
N	3,923	3,923	3,923	3,923	3,923	3,923	3,923
R^2	0.11	0.04	0.06	0.05	0.03	0.05	0.04
Dep. Var. Mean	0.14	0.06	0.45	0.11	0.20	0.10	0.09
State & Ind. FEs	✓	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓	✓

Racial Disparities in Application Behavior: Other Factors

- ▶ Sample: firms that did not apply for PPP.
- ▶ Dependent variable: reasons why firm chose not to apply for PPP.

	Unneeded	No Gov.	Eligibility	No Lenders	Confusing	Unaware	Deadline
Black	-0.074^{***}	-0.021^{**}	-0.008	0.019	0.058^{***}	0.047^{***}	0.074^{***}
	(0.014)	(0.009)	(0.023)	(0.015)	(0.019)	(0.015)	(0.014)
Asian	-0.048^{**}	-0.045^{***}	0.040	0.031	0.001	0.081^{***}	0.049^{**}
	(0.022)	(0.010)	(0.037)	(0.026)	(0.030)	(0.026)	(0.025)
Hispanic	-0.061^{***}	-0.014	-0.027	0.002	0.043^{*}	0.067^{***}	0.071^{***}
	(0.018)	(0.012)	(0.030)	(0.020)	(0.025)	(0.020)	(0.020)
Female	-0.014	-0.006	0.016	-0.011	0.008	-0.018^{*}	-0.014
	(0.012)	(0.008)	(0.017)	(0.011)	(0.014)	(0.010)	(0.010)
N	3,923	3,923	3,923	3,923	3,923	3,923	3,923
R^2	0.11	0.04	0.06	0.05	0.03	0.05	0.04
Dep. Var. Mean	0.14	0.06	0.45	0.11	0.20	0.10	0.09
State & Ind. FEs	✓	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓	✓

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- ▶ Sample: firms that did not apply for PPP.
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	Unneeded	No Gov.	Eligibility	No Lenders	Confusing	Unaware	Deadline
Black	-0.074^{***}	-0.021^{**}	-0.008	0.019	0.058^{***}	0.047^{***}	0.074^{***}
	(0.014)	(0.009)	(0.023)	(0.015)	(0.019)	(0.015)	(0.014)
Asian	-0.048^{**}	-0.045^{***}	0.040	0.031	0.001	0.081^{***}	0.049^{**}
	(0.022)	(0.010)	(0.037)	(0.026)	(0.030)	(0.026)	(0.025)
Hispanic	-0.061^{***}	-0.014	-0.027	0.002	0.043^{*}	0.067^{***}	0.071^{***}
	(0.018)	(0.012)	(0.030)	(0.020)	(0.025)	(0.020)	(0.020)
Female	-0.014	-0.006	0.016	-0.011	0.008	-0.018^{*}	-0.014
	(0.012)	(0.008)	(0.017)	(0.011)	(0.014)	(0.010)	(0.010)
N	3,923	3,923	3,923	3,923	3,923	3,923	3,923
R^2	0.11	0.04	0.06	0.05	0.03	0.05	0.04
Dep. Var. Mean	0.14	0.06	0.45	0.11	0.20	0.10	0.09
State & Ind. FEs	✓	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓	✓

Agenda

1. Data

2. Replicate the literature's findings in our survey data

3. Racial disparities in application rates and in choice of lender type

4. **Racial disparities in approval rates at banks and at fintechs**

5. Unpacking approval disparities: mechanisms in addition to racial discrimination?

Racial Disparities in Approval Rates

	All		Bank		Fintech	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.144^{***}	-0.081^{***}	-0.116^{***}	-0.074^{***}	-0.154^{***}	-0.084^{**}
	(0.014)	(0.013)	(0.016)	(0.016)	(0.036)	(0.041)
Asian	0.011	0.017^{*}	0.013	0.020^{*}	0.050	0.053
	(0.009)	(0.009)	(0.010)	(0.012)	(0.047)	(0.050)
Hispanic	-0.041^{***}	-0.028^{**}	-0.033^{**}	-0.021	-0.067	-0.053
	(0.012)	(0.012)	(0.014)	(0.015)	(0.048)	(0.051)
Female	-0.008	0.013^{**}	-0.014^{**}	0.004	0.030	0.037
	(0.006)	(0.006)	(0.007)	(0.007)	(0.027)	(0.028)
N	8,125	8,125	6,840	6,840	1,150	1,150
R^2	0.04	0.15	0.02	0.11	0.02	0.12
Dep. Var. Mean	0.93	0.93	0.92	0.92	0.70	0.70
State & Ind. FEs		✓		✓		✓
Firm & ZIP chars.		✓		✓		✓

Racial Disparities in Approval Rates

	All		**Bank**		**Fintech**	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.144^{***}	-0.081^{***}	-0.116^{***}	-0.074^{***}	-0.154^{***}	-0.084^{**}
	(0.014)	(0.013)	(0.016)	(0.016)	(0.036)	(0.041)
Asian	0.011	0.017^{*}	0.013	0.020^{*}	0.050	0.053
	(0.009)	(0.009)	(0.010)	(0.012)	(0.047)	(0.050)
Hispanic	-0.041^{***}	-0.028^{**}	-0.033^{**}	-0.021	-0.067	-0.053
	(0.012)	(0.012)	(0.014)	(0.015)	(0.048)	(0.051)
Female	-0.008	0.013^{**}	-0.014^{**}	0.004	0.030	0.037
	(0.006)	(0.006)	(0.007)	(0.007)	(0.027)	(0.028)
N	8,125	8,125	6,840	6,840	1,150	1,150
R^2	0.04	0.15	0.02	0.11	0.02	0.12
Dep. Var. Mean	0.93	0.93	0.92	0.92	0.70	0.70
State & Ind. FEs		✓		✓		✓
Firm & ZIP chars.		✓		✓		✓

Racial Disparities in Approval Rates: Impact of Racial Bias

▶ Standard errors clustered by county.

	All		Bank		Fintech	
	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.080^{***}	-0.080^{***}	-0.074^{***}	-0.075^{***}	-0.081^{**}	-0.084^{**}
	(0.013)	(0.013)	(0.015)	(0.015)	(0.040)	(0.039)
Black × Explicit Bias	-0.045		-0.076^{*}		0.096	
	(0.037)		(0.039)		(0.098)	
Black × Implicit Bias		-0.055		-0.092^{**}		0.075
		(0.041)		(0.041)		(0.127)
N	8,108	8,108	6,824	6,824	1,150	1,150
R^2	0.16	0.16	0.11	0.11	0.12	0.12
Dep. Var. Mean	0.93	0.93	0.92	0.92	0.70	0.70
State & Ind. FEs		✓		✓		✓
Firm & ZIP chars.		✓		✓		✓

Why are Bank and Fintech Approval Disparities Similar?

- Automation at fintechs, even if only partial, should reduce scope for racially discriminatory approval decisions.

- No credit risk $\implies$ must be something about the application process ...

Agenda

1. Data

2. Replicate the literature's findings in our survey data

3. Racial disparities in application rates and in choice of lender type

4. Racial disparities in approval rates at banks and at fintechs

5. **Unpacking approval disparities: mechanisms other than discrimination?**

What other Factors may Contribute to Approval Disparities?

1. Are Black-owned firms more likely to turn down approved PPP Funds? Unlikely:
   - Black-owned firms not applying for PPP are substantially less likely to cite lack of demand as a reason for this decision.

What other Factors may Contribute to Approval Disparities?

1. Are Black-owned firms more likely to turn down approved PPP Funds? Unlikely:
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2. Are Black-owned firms less likely than observably similar white-owned firms to be eligible for PPP? Not enough to explain such large disparities:
   - ▶ Disqualifying factors under original PPP rule relate to bankruptcy, federal loan default/delinquency, and criminal history. Disparities in the likelihood of these factors cannot jointly account for a meaningful fraction of disparities.

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3. Are Black-owned firms more likely to face "administrative burden," such as providing all required documentation and determining eligible loan amount?
   - ▶ Consistent with anecdotal evidence (press reports, interviews, congressional testimony, and rise of community initiatives).
   - ▶ Evidence from sample of non-applicants: Black-owned firms more likely to cite confusion, lack of awareness, and missing PPP deadline as reasons for not applying.

Administrative Burden: Required Payroll Documentation

1. **2019 tax returns** For example, sole proprietors and single-member LLC's had to provide 2019 IRS Form 1040, Schedule C (net income/loss from business).

2. **Payroll processor reports** from a recognized vendor (e.g., Intuit, ADP, Gusto) OR
   All four quarters of BOTH **2019 IRS Form 941 (quarterly tax return)** AND **2019 state unemployment tax returns**.

3. **Proof of employer contributions to any benefits programs** e.g., monthly invoices from benefit administrators for each program.

4. **Payroll statement from the period covering February 15, 2020** OR
   2020 Q1 IRS Form 941 to prove that the business was in operation and had paid employees.

5. **Additional documents required by some lenders** e.g., completed loan amount worksheets, profit-or-loss statements or balance sheets, 2019 W-2 and W-3 forms (wage and salary compensation) for all paid employees.

Administrative Burden: Discrepancies between PPP Amount Requested vs. Received

- ▶ Motivation:
  - ▶ Loan amount calculations are formulaic – based entirely on business type, size of payroll, and net profits.
  - ▶ Vast majority of businesses choose to request their maximum eligible amount.

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  - ▶ Vast majority of businesses choose to request their maximum eligible amount.
- ▶ Receiving less than one requests is due to either **over-requesting** or **under-substantiating**, both of which indicate difficulty navigating the application process.
  - ▶ Over-requesting: including components not considered payroll expenses under PPP rule (e.g., payments to contract workers).
  - ▶ Under-substantiating: missing documentation that is required to support components of request (e.g., evidence of contributions to benefits programs).

Administrative Burden: Discrepancies between PPP Amount Requested vs. Received

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- ▶ Receiving less than one requests is due to either **over-requesting** or **under-substantiating**, both of which indicate difficulty navigating the application process.
  - ▶ Over-requesting: including components not considered payroll expenses under PPP rule (e.g., payments to contract workers).
  - ▶ Under-substantiating: missing documentation that is required to support components of request (e.g., evidence of contributions to benefits programs).
- ▶ If administrative burden contributes to approval disparities, we should therefore find that Black-owned PPP recipients are less likely to receive their full requests.

Administrative Burden: Discrepancies between PPP Amount Requested vs. Received

- In samples of bank and fintech PPP borrowers, estimate

$$Received\ Full\ Request_i = \alpha + \beta Black_i + \gamma' X_i + \varepsilon_i$$

	Bank			Fintech		
	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.203^{***}	-0.203^{***}	-0.203^{***}	-0.253^{***}	-0.264^{***}	-0.256^{***}
	(0.025)	(0.023)	(0.023)	(0.055)	(0.055)	(0.055)
Black $\times$ Explicit Bias		0.010			0.037	
		(0.071)			(0.137)	
Black $\times$ Implicit Bias			-0.000			0.016
			(0.083)			(0.187)
N	6,311	6,295	6,295	797	797	797
R^2	0.09	0.09	0.09	0.16	0.16	0.16
Dep. Var. Mean	0.79	0.79	0.79	0.62	0.62	0.62
State & Ind. FEs	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓

Administrative Burden: Discrepancies between PPP Amount Requested vs. Received

▶ In samples of bank and fintech PPP borrowers, estimate

$$\text{Received Full Request}_i = \alpha + \beta \text{Black}_i + \gamma' X_i + \varepsilon_i$$

	Bank			Fintech		
	(1)	(2)	(3)	(4)	(5)	(6)
Black	-0.203^{***}	-0.203^{***}	-0.203^{***}	-0.253^{***}	-0.264^{***}	-0.256^{***}
	(0.025)	(0.023)	(0.023)	(0.055)	(0.055)	(0.055)
Black × Explicit Bias		0.010			0.037	
		(0.071)			(0.137)	
Black × Implicit Bias			-0.000			0.016
			(0.083)			(0.187)
N	6,311	6,295	6,295	797	797	797
R^2	0.09	0.09	0.09	0.16	0.16	0.16
Dep. Var. Mean	0.79	0.79	0.79	0.62	0.62	0.62
State & Ind. FEs	✓	✓	✓	✓	✓	✓
Firm & ZIP chars.	✓	✓	✓	✓	✓	✓

Concluding Thoughts

▶ Application and approval outcomes both help to explain PPP take-up disparities between observably similar white- and Black-owned firms.

Concluding Thoughts

- ▶ Application and approval outcomes both help to explain PPP take-up disparities between observably similar white- and Black-owned firms.
- ▶ The fact that fintechs are not able to reduce PPP approval disparities indicates the importance of barriers other than racial discrimination at the approval stage, such as administrative burden.
  - ▶ Need to better understand whether automated lending processes, which fintechs tend to rely on, may actually exacerbate the disparate impact of such barriers by reducing the scope for customized technical support.

Concluding Thoughts

- Application and approval outcomes both help to explain PPP take-up disparities between observably similar white- and Black-owned firms.
- The fact that fintechs are not able to reduce PPP approval disparities indicates the importance of barriers other than racial discrimination at the approval stage, such as administrative burden.
  - Need to better understand whether automated lending processes, which fintechs tend to rely on, may actually exacerbate the disparate impact of such barriers by reducing the scope for customized technical support.
- To the extent that fintechs improve PPP access for Black-owned firms, they do so by eliciting new applications. **How might fintechs attract these applications?** Some possibilities:
  - Process: Automation reduces the administrative burden of *submitting* an application.
  - Awareness: Fintechs are more proactive in their marketing efforts, particularly in under-served communities.
  - Trust: Fintechs are able to distance themselves from historical legacies of discrimination in financial services.

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