

5-16-2022

The Racial and Spatial Impacts of the Paycheck Protection Program

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Citation

Lester, T. William and Matthew D. Wilson. 2022. "The Racial and Spatial Impacts of the Paycheck Protection Program." Presented at the virtual National Economic Conference on Inclusive Economic Development and Recovery held on May 6, 2022.
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The Racial and Spatial Impacts of the Paycheck Protection Program

Presented at: National Economic Conference on Inclusive Economic Development and Recovery
May 6th, 2022

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Outline

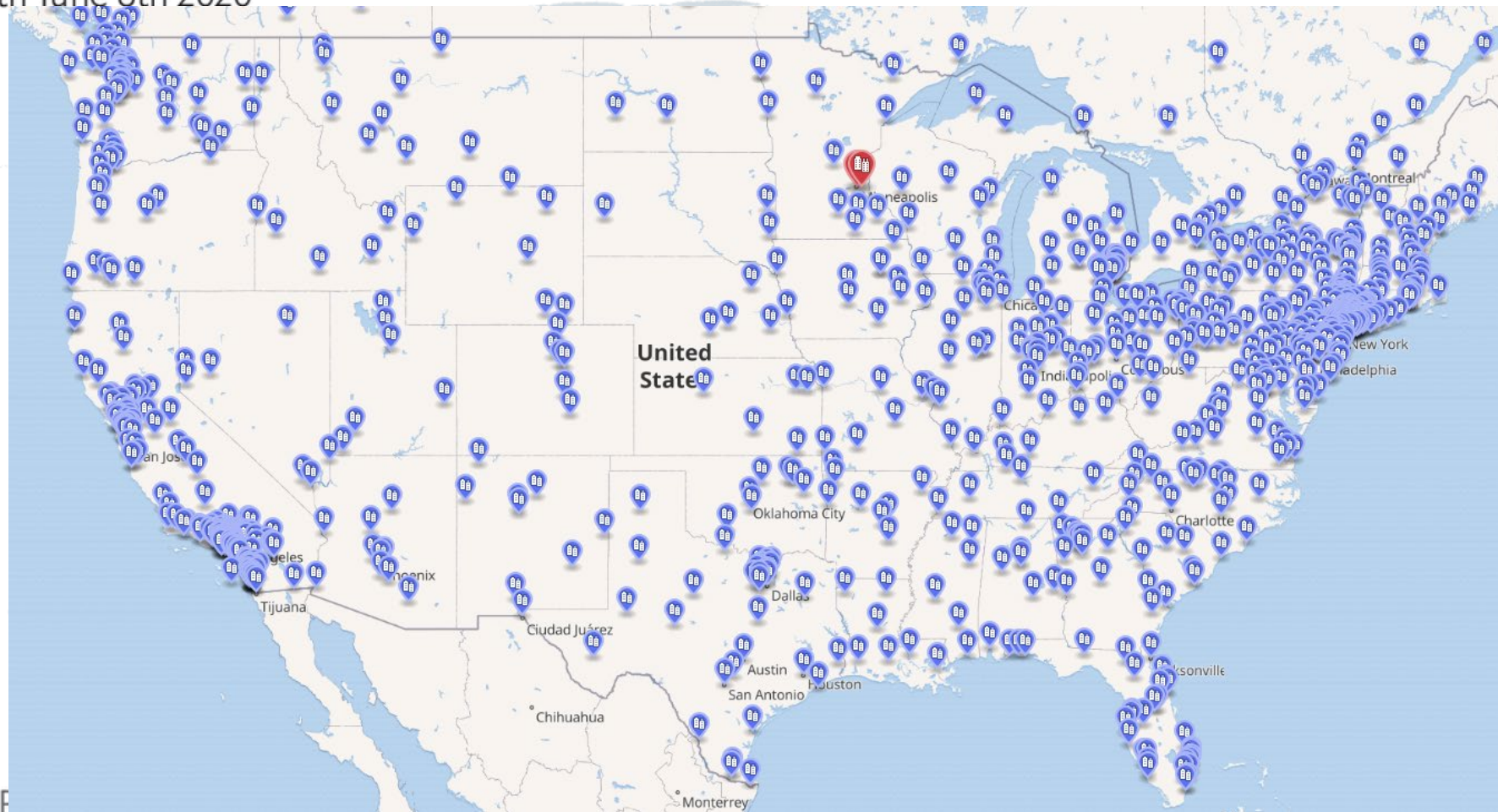
- 1) Motivation
- 2) Review of the Paycheck Protection Program
- 3) Brief Literature Review
- 4) Data analysis steps
- 5) Descriptive findings
- 6) Modeling the role of neighborhood racial/ethnic composition in PPP lending patterns by phase.
- 7) Discussion



A person who mattered

Twitter and Instagram posts tagged #georgefloyd

May 29th-June 8th 2020



Source: Facebook, Twitter and Instagram



Policy Overview: Paycheck Protection Program (PPP)

Part of the \$2.2 trillion CARES, passed in March 2020.

Gave partially forgivable loans to small businesses (<500 emp) impacted by the COVID-19 shutdowns in order to keep workers on the payroll. Payroll and rent expenditures forgivable.

Emphasis placed on the speed of assistance

SBA relied on commercial banks with existing relationships to make the loans.

Policy Evolution

Phase 1 and 2 (\$669 billion) led by larger banks.

Phase 3: In December 2020 Congress authorized an additional \$284 billion but modified rules to better target aid to minority borrowers, smaller businesses, and rural areas.

- First week reserved for small lenders and CDFIs
- Set aside funds for very small businesses (10 or fewer emp.)
- Targeted smaller loans in low-moderate income areas.

Relevant Literature

Uneven Access to Credit in the US by Race and Space

- Historical redlining has long-term impacts on neighborhoods (Aaronson, et. al. 2021)
- Residential lending patterns show ongoing discrimination by race/neighborhood.
 - Higher denial rates (Lester, forthcoming)
 - Higher interest rates charged (Bartlett, et. al. 2022)
 - More sub-prime lending in lower-income neighborhoods (Wyly et al. 2006).
- Structural barriers to business lending (Immergluck, 2002; Bates and Robb, 2016)

Discrimination in the PPP program

- Existing banking relationships favored larger businesses in majority white neighborhoods (Fairlie and Fossen, 2021)
- Disparities smaller in areas with more banks (Atkins, Cook, and Seamans,2021)
- Information frictions (Humphries, Neilson, and Ulysea,2020) disproportionately impact MBEs

Data and Analysis Steps

Unit of Analysis: Census Tract level

Detailed Address-level (lat,lon) PPP data from the Small Business Administration (8.9 million records)

Measuring Existing Banking Relationships/Capital flows

- Residential mortgage flow: HMDA Loan Level data (2019)
- Small business lending: CRA data at the tract level (2019)
- Number of bank branches: FDIC

Measuring Neighborhood Characteristics

- 5 year ACS 2015-2019 data to measure neighborhood racial/ethnicity and income characteristics
- Employment: LODES total job counts at census tract level

Normalizing PPP Loan Data

Local land uses vary significantly across census tracts

Need an estimate of the number of eligible establishments by tract.

- HUD/US Postal Service listing of non-vacant business addresses
- Count of self-employed workers at the tract level from the 2015-2019 ACS.
- Available at: <http://purl.stanford.edu/cn690cd8420>.

Following the methods developed by researchers and reporters at Reveal and the Center for Investigative Reporting (Oh et. al, 2021; Morel, Al Elew, and Harris, 2021)

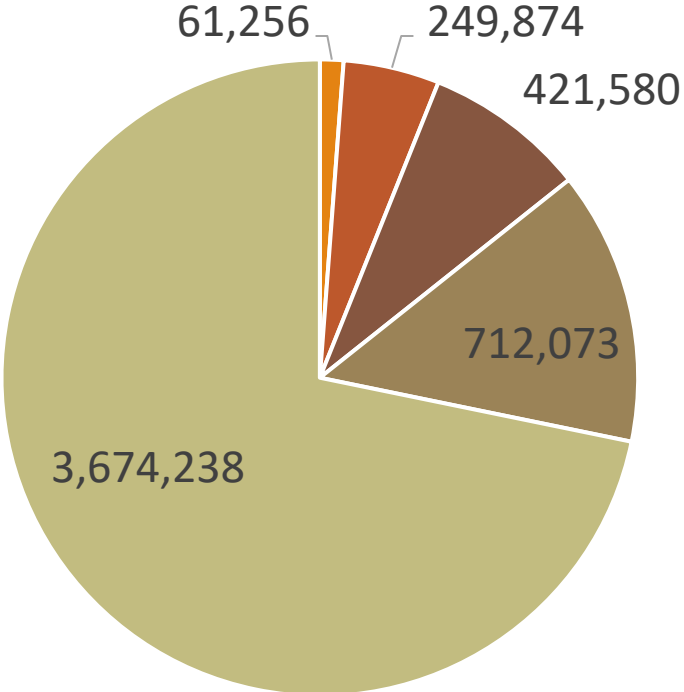
Normalized Variables:

PPP Loan Count/Estimated Business Count

PPP Loan Amt./Estimated Business Count

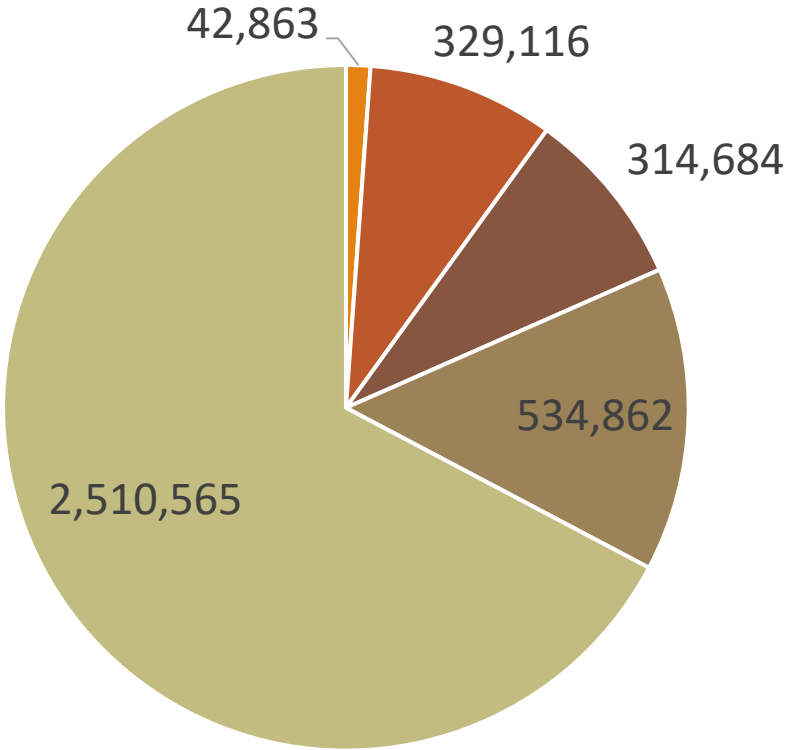
Aggregate PPP Lending by Neighborhood Type

Phase 1 and 2



(N= 5,119,021)

Phase 3



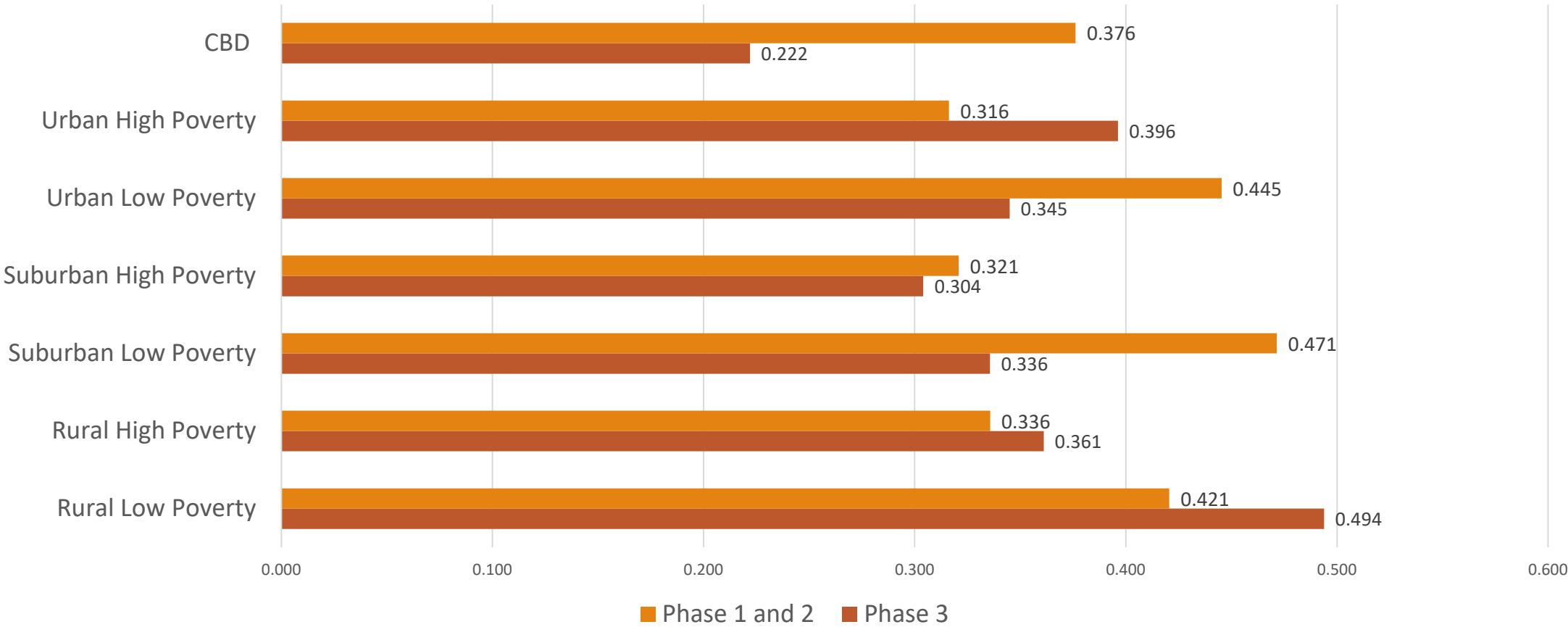
(N=3,732,090)

Majority Asian Majority Black Majority Latinx Mixed Majority White Majority Asian Majority Black Majority Latinx Mixed Majority White

Normalized Lending Patterns by Neighborhood Type and PPP Phase

Normalized Means		Loans Per Eligible Business		Mean Loan Amount per Eligible Business (\$)		Mean Jobs Reported per Eligible Business	
Neighborhood Type	Number of Tracts	Phase 1 and 2	Phase 3	Phase 1 and 2	Phase 3	Phase 1 and 2	Phase 3
Majority Asian	724	0.49 (0.02)	0.35 (0.01)	55,018 (9,178)	19,830 (1,187)	7.83 (2.45)	2.60 (0.41)
Majority Black	5,930	0.39 (0.01)	0.68 (0.02)	30,244 (516)	19,879 (351)	3.70 (0.06)	1.90 (0.03)
Majority Latinx	7,677	0.31 (0.01)	0.25 (0.00)	24,530 (364)	11,169 (170)	3.48 (0.06)	1.39 (0.03)
Mixed	9,286	0.39 (0.00)	0.34 (0.00)	34,655 (392)	15,865 (179)	4.25 (0.04)	1.74 (0.02)
Majority White	48,722	0.45 (0.00)	0.34 (0.00)	36,785 (186)	16,045 (94)	4.56 (0.02)	1.87 (0.01)

Normalized PPP Loan Count by Metropolitan Poverty Status



How does residential credit flow compare to the PPP?

Home Mortgage Disclosure Act (HMDA) Data, 2019 by Neighborhood Type

Neighborhood Type	Mean Loan Applications	Mean Originations	Share of Originations	Mean Amount (\$)	Originations per Owner Occupied HH	Mean Loan Amount per Owner Occupied HH
Majority Asian (N=650)	157.2 (7.7)	93.7 (4.4)	0.76%	50,908,048 (2,974,723)	0.122 (0.019)	66,069 (13,990)
Majority Black (N=5,775)	104.0 (1.8)	44.2 (0.8)	3.03%	8,647,587 (206,376)	0.066 (0.001)	13,409 (298)
Majority Latinx (N=6,870)	133.7 (2.0)	62.0 (1.0)	5.69%	15,147,374 (263,435)	0.093 (0.001)	24,615 (359)
Mixed (N=9,193)	215.6 (2.6)	108.7 (1.3)	11.90%	31,445,994 (477,893)	0.118 (0.002)	34,860 (720)
Majority White (N=48,612)	244.5 (1.0)	136.2 (0.6)	78.62%	34,658,896 (200,181)	0.107 (0.000)	27,644 (142)

How Correlated are PPP and HMDA Lending Patterns?

Generated percentile rank of all census tracts within each MSA

Correlation between PPP rank and HMDA rank.

High correlations in older, more segregated metros. Less so in western MSAs.

Core Based Statistical Area Name	HMDA/PPP Tract Rank Correlation P1/2	HMDA/PPP Tract Rank Correlation P3
Milwaukee-Waukesha, WI	0.693	0.404
Indianapolis-Carmel-Anderson, IN	0.655	0.501
Birmingham-Hoover, AL	0.653	0.501
Memphis, TN-MS-AR	0.632	0.367
Baltimore-Columbia-Towson, MD	0.630	0.554
Chicago-Naperville-Elgin, IL-IN-WI	0.624	0.059
Pittsburgh, PA	0.611	0.566
Kansas City, MO-KS	0.589	0.550
St. Louis, MO-IL	0.579	0.386
Cleveland-Elyria, OH	0.576	0.182

Core Based Statistical Area Name	HMDA/PPP Tract Rank Correlation P1/2	HMDA/PPP Tract Rank Correlation P3
Riverside-San Bernardino-Ontario, CA	0.290	0.345
Las Vegas-Henderson-Paradise, NV	0.305	0.260
San Jose-Sunnyvale-Santa Clara, CA	0.251	0.253
Salt Lake City, UT	0.232	0.238
Sacramento-Roseville-Folsom, CA	0.207	0.254
Denver-Aurora-Lakewood, CO	0.176	0.205
San Francisco-Oakland-Berkeley, CA	0.173	0.117
Tucson, AZ	0.106	0.156
Portland-Vancouver-Hillsboro, OR-WA	0.054	0.051
Seattle-Tacoma-Bellevue, WA	0.035	-0.016

Modeling Normalized PPP lending

Question: Does the Racial/Ethnic composition of a neighborhood affect the number of PPP loans a neighborhood received?

$$PPP_{i,m} = \beta_x X_r RACE_{i,m} + \beta_2 POV_{i,m} + \beta_3 HMDARank_{i,m} + \beta_4 CRA Loans_{i,m} + \beta_5 Banks_{i,m} + \beta_6 LenderComp_{i,m} + \beta_7 Emp_{i,m} + \beta_8 TotPop_{i,m} + \gamma_m$$

i indexes census tracts within metro areas (*m*)

Controlling for:

Poverty rate, HMDA percentile rank, # of existing small business loans pre-pandemic, # of bank branches, lender competition, total employment and population.

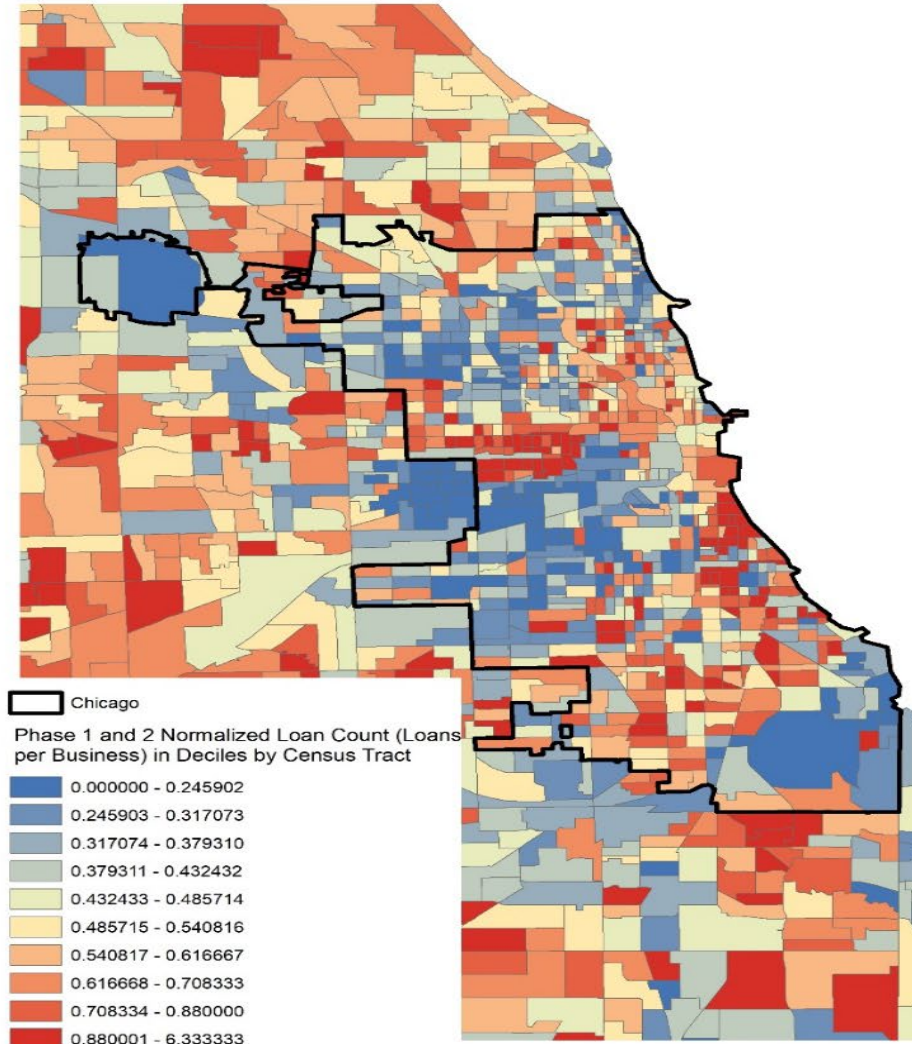
Includes metro fixed effect.

Results

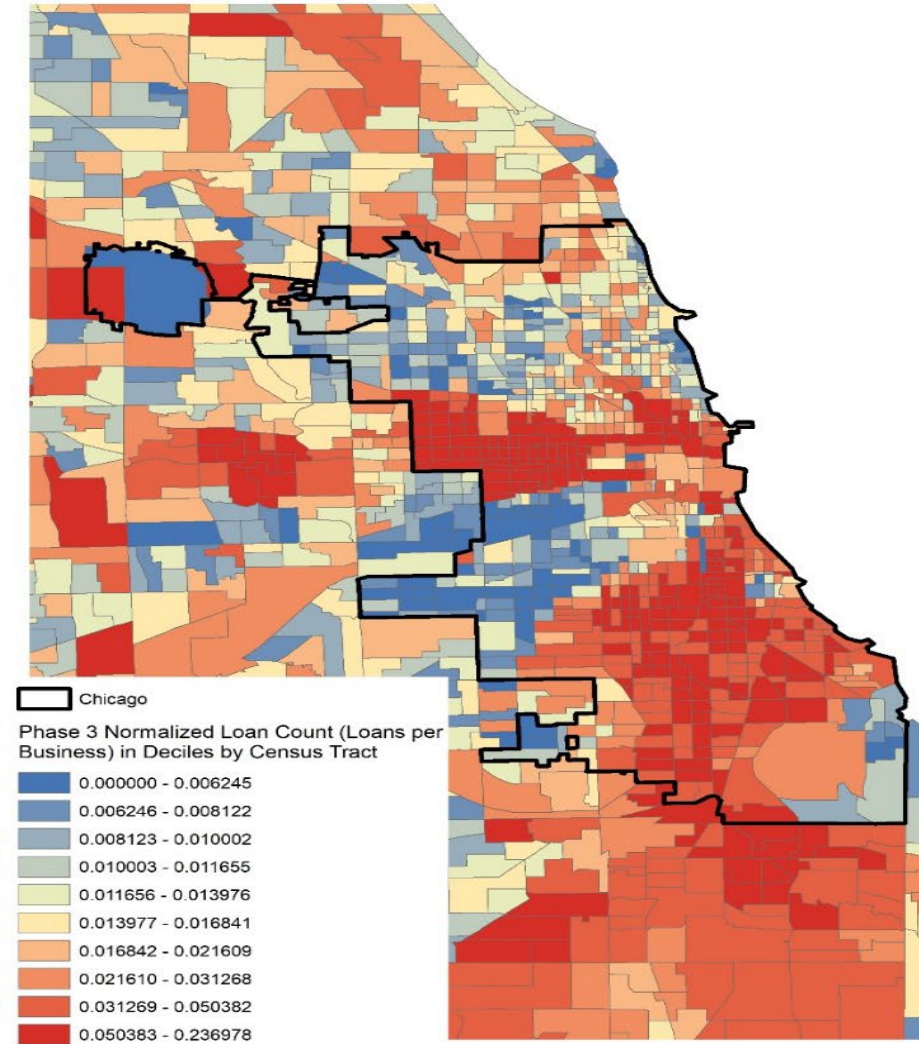
	(1)	(2)	(3)	(4)
	Normalized Loan Count ^{1,3}		Normalized Loan Amount ^{1,3} (\$)	
	Phase 1 and 2	Phase 3	Phase 1 and 2	Phase 3
Percent Black/African-American ²	-0.0532***	0.596***	-6,680***	6,298***
	(0.0111)	(0.0120)	(943.8)	(487.4)
Percent Latinx ²	-0.325***	-0.260***	-11,940***	-10,415***
	(0.0130)	(0.0142)	(1,107)	(571.5)
Percent Asian ²	0.0118	0.0273	3,834*	-206.9
	(0.0231)	(0.0252)	(1,977)	(1,021)
Poverty Rate ²	-0.384***	-0.426***	-14,233***	-8,136***
	(0.0204)	(0.0222)	(1,747)	(902.0)
Total Population ²	-6.92e-06***	3.20e-06***	-1.789***	-0.556***
	(9.02e-07)	(9.83e-07)	(0.0730)	(0.0377)
Total Employment ⁴	-6.83e-06***	-6.85e-06***	1.497***	0.251***
	(5.40e-07)	(5.88e-07)	(0.0567)	(0.0293)
CRA Loan Count ⁵	0.000301***	6.41e-05***		
	(1.69e-05)	(1.84e-05)		
CRA Loan Amount ⁵			1.844***	0.608***
			(0.0373)	(0.0193)
Tract Rank in HMDA Lending ⁶	2.36e-05***	-5.57e-05***	2.418***	-0.300
	(4.77e-06)	(5.20e-06)	(0.407)	(0.210)
Number of Bank Branches ⁷	-0.00943***	-0.0119***	-2,291***	-819.7***
	(0.00110)	(0.00119)	(95.86)	(49.51)
PPP Lenders per Loan Made ¹	-0.00998***	-0.00502***	-1,687***	-773.8***
	(0.000731)	(0.000797)	(63.26)	(32.67)
Constant	0.571***	0.407***	43,157***	20,468***
	(0.00616)	(0.00671)	(530.8)	(274.1)
CBSA Fixed Effect	Y	Y	Y	Y
Observations	65,887	65,887	65,787	65,787
R-squared	0.113	0.161	0.183	0.124

Comparing Phase 1&2 and Phase 3

Phase 1 and 2: Loans per Business



Phase 3: Loans per Business



Key Takeaways

Initial Rounds of PPP program resulted in maintaining structural inequality in access to credit.

- African American, Latinx and high poverty neighborhoods received fewer loans and loan dollars per eligible business.

Tension between emergency aid and solving long term structural inequality

However, policy shifts in Phase 3 that built in an equity focus can work