Credit Cards, Race, and Entrepreneurship

Aaron K. Chatterji (Duke)

Robert C. Seamans (NYU)

Research Question:
Does financial deregulation differentially affect black and white entrepreneurs? And if so, why?

To address this question, we focus on credit cards

In doing so, we ...

- Build directly on recent literature on the effect of financial deregulation on entrepreneurship

  (Black &Strahan, 2002; Cetorelli &Strahan, 2006; Kerr &Nanda, 2009)

- Examine the role of credit cards in entrepreneurial finance
    - Describe a mechanism that black entrepreneurs use to overcome barriers to entry.

Are Credit Cards Important for Entrepreneurs?

- Anecdotally, yes
  - Spike Lee (She's Gotta Have It); Brin and Page (Google)
  - Bootstrap financing, working capital
- Limited research
  - Kauffman Firm Survey data (Fairlie & Robb, 2008; Scott, 2010)

Entrepreneurial Finance and Discrimination

- Black entrepreneurs encounter more financial frictions than white entrepreneurs
  - Have trouble accessing external capital markets (Robb, Fairlie & Robinson, 2009)
  - Are more likely to be denied bank credit (Blanchflower, Levine & Zimmerman, 2003)
  - Pay higher interest rates when engaged in "face-to-face" interactions with lenders (Ravina, 2008)
- Can credit cards relieve these frictions?

  "...if financial institutions discriminate against blacks in obtaining small-business loans, we may even expect to see them use credit cards more often than whites, because they have fewer alternatives."
  (Blanchflower et al, 2003: p. 940)

Research Design: Compare Response of Black and White Entrepreneurs to State-Level Policy Shocks

Credit Card Deregulation

- *Marquette* decision: In 1978, the Supreme Court ruled that banks selling a credit card into another state could charge the home state rate, regardless of the interest rate caps in the customer's state of residence
- Following the ruling, a number of states removed limits on credit card interest rates in hope of luring credit card companies into the state

Number of States with No Limit on Credit Card Rates

States which switch to no limit on credit card interest rates
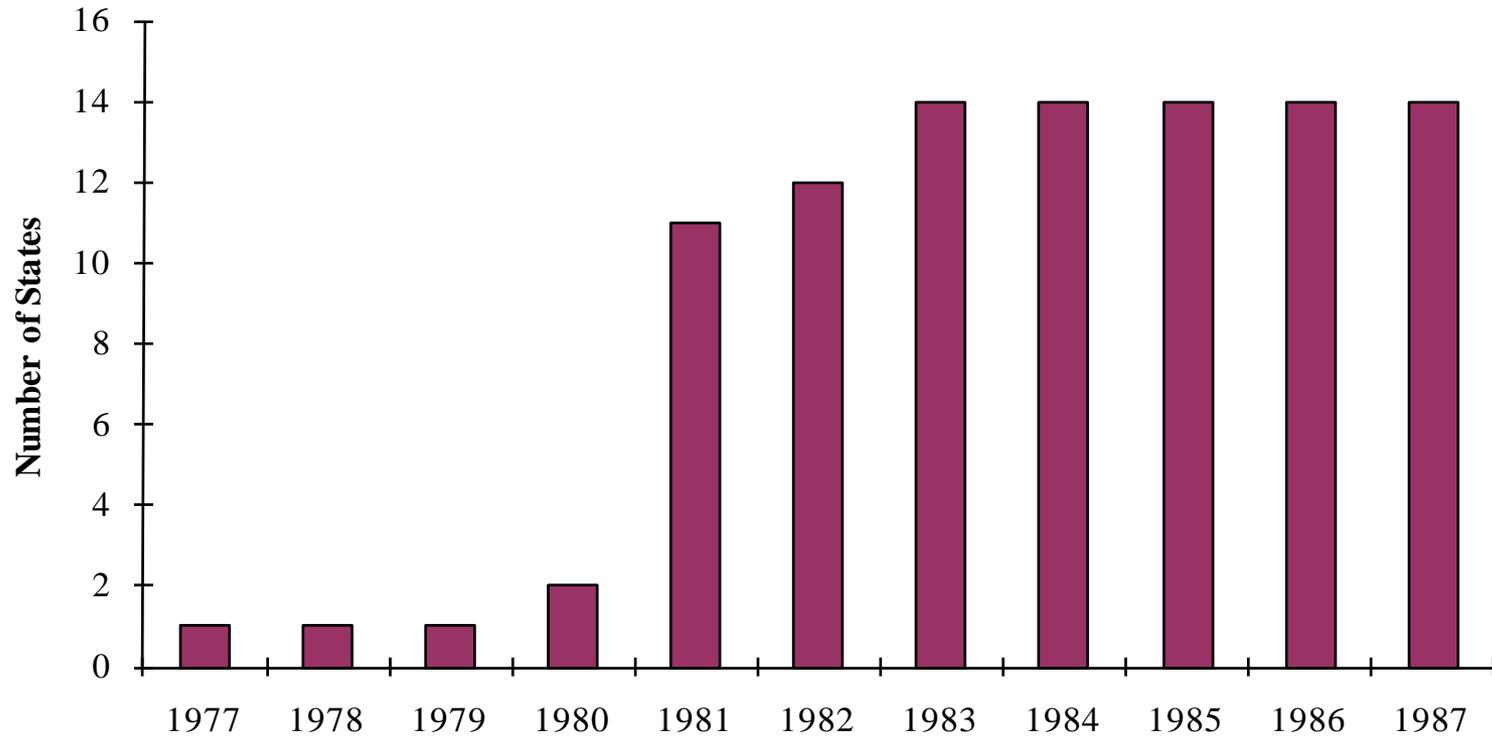
Effect of state's switch to "no limit"

- Individuals living in state were most affected
  - Credit cards not frequently issued across state borders until late 1980s (Knittel & Stango, 2003)
- Increased supply of credit card issuing banks
  - Decrease in HHI of credit card issuing banks (our analysis, using data from Knittel & Stango, 2003)
- Increased number and use of credit cards
  - Increase in probability of owning a credit card (Zinman, 2002)
  - Increase in number of credit cards owned (Zinman, 2002)
- Possible shift in distribution of credit card owners
  - Increase in APR (Zinman, 2002; our analysis)

Credit Characteristics of States and Individuals

	No Limit State?		
	No	Yes	T-test
State Level Credit Characteristics			
State Level HHI Credit Card Issuers (1983)	2259	1878	0.53
State Level HHI Credit Card Issuers (1986)	2698	1712	1.40
Individual Level Credit Characteristics			
Credit Card Debt (1983)	283.58	370.35	-3.13
Last Month's Credit Card Balance (1983)	204.35	275.63	-2.89
APR on Credit Card (1983)	17.72	18.17	-2.09
Number of Bank Issued Credit Cards (1983)	0.72	0.77	-1.32

State level data on HHI of Credit Card Issuers is from Knittel and Stango; available for 33 states in 1983 and 38 states in 1986. Individual level credit data is from the Survey of Consumer Finances (SCF). The number of observations varies from 1900 to 4103, due to missing observations.

Does credit card deregulation increase entrepreneurial entry?

- Policy shocks provide time varying switches to no limit on credit card interest rates.

- Increased access to credit cards provides increased access to finance, lowering a (potential) barrier to entry.

  → *If true, entrepreneurial entry should increase in "no limit" states*

- Does credit card deregulation have a larger effect on black entrepreneurial entry?
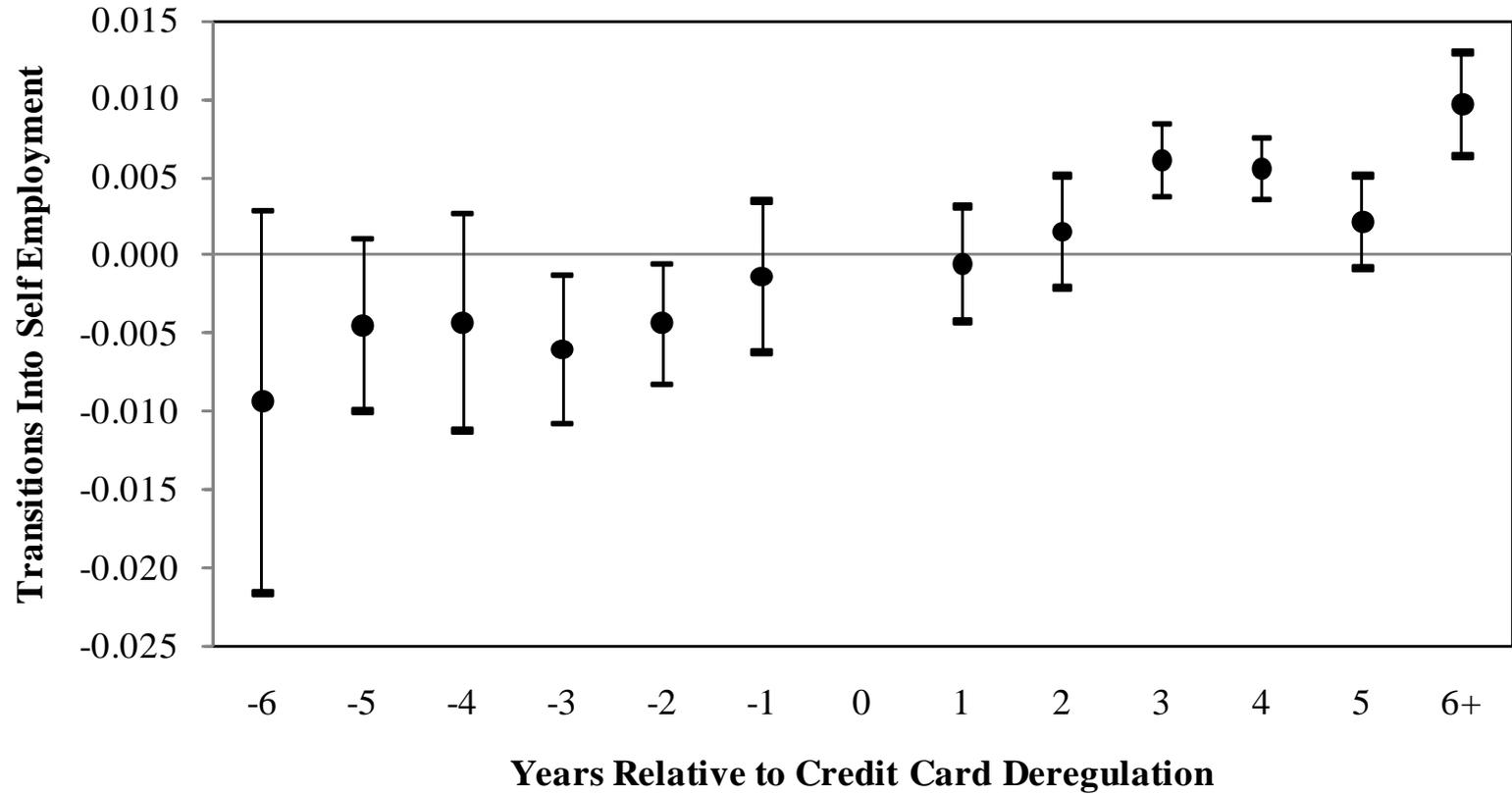
Data Used in Analysis

- *Current Population Survey* (CPS) data from 1977-1987
  - Transition into self employment
  - Rich demographic control variables
  - Identify geographic location at the MSA-State level
- *Credit Card deregulation*
  - Collected from *Cost of Personal Borrowing in the U.S.*
- *Bank deregulation*
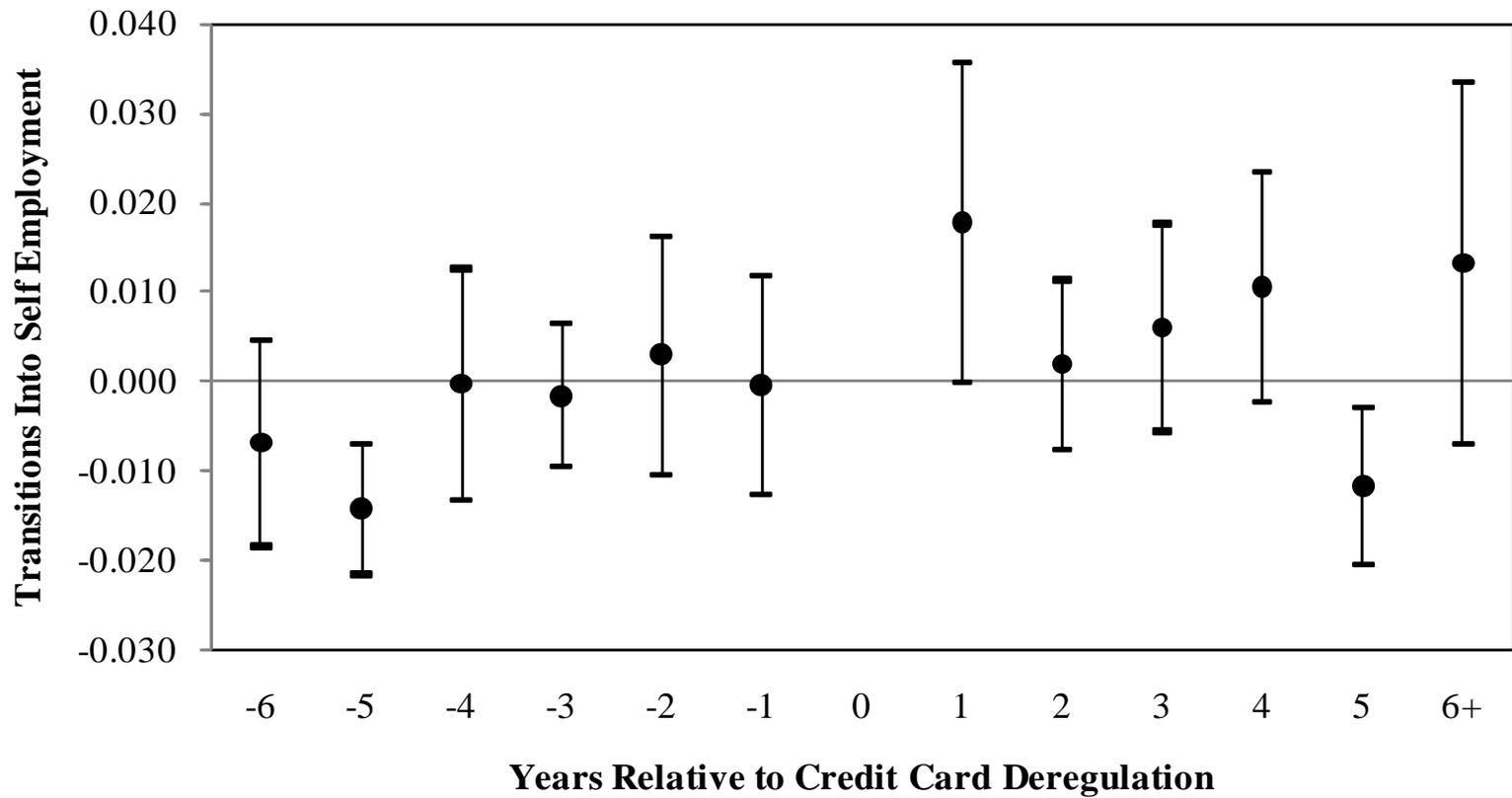 - Available in Kroszner & Strahan (1999)

Summary Statistics

	Full Sample				1977 Split Sample		
	Mean	*Std. Dev.*	*Min*	*Max*	*Limit*	*No Limit*	*T-test*
Trans. Self Employment	0.008	0.089	0.00	1.00	0.008	0.009	-1.10
Black	0.087	0.282	0.00	1.00	0.115	0.043	2.00
Female	0.379	0.485	0.00	1.00	0.352	0.347	0.92
Age	36.66	12.29	18.00	65.00	36.59	35.99	1.80
High School Grad	0.802	0.399	0.00	1.00	0.771	0.786	-1.04
Married	0.639	0.480	0.00	1.00	0.678	0.680	-0.29
Homeowner	0.648	0.478	0.00	1.00	0.680	0.690	-0.51
Household Income	29094	19224	-9299	393379	20745	20672	0.11
Unemployed %	0.055	0.229	0.00	1.00	0.024	0.023	0.51
Rural %	0.012	0.030	0.00	0.23	0.021	0.044	-1.61
No Limit	0.140	0.347	0.00	1.00			
Interstate Banking Deregulation	0.184	0.388	0.00	1.00			

Note: A Limit state is a state that never switches to no limit. A No Limit state is a state that switches to no limit by 1987 (the last year of the dataset). 1977 is the year prior to the Supreme Court's *Marquette* decision, and the first year that the CPS includes information on all 50 states plus DC.

White Transitions into Self Employment

Chatterji and Seamans

Black Transitions into Self Employment

Chart showing "Transitions Into Self Employment" (y-axis, ranging from -0.030 to 0.040) plotted against "Years Relative to Credit Card Deregulation" (x-axis, from -6 to 6+) with point estimates and confidence interval bars.

We estimate the following general regression model to measure transitions into self employment:

$$y^*_{imt} = \alpha + \beta_1 Nolimit_{mt} + \beta_2 Nolimit_{mt}*black_{imt} + \delta_m + T_t + Trend*\delta_m + \mathbf{X_{imt}}\boldsymbol{\beta} + e_{imt}$$

- y^*_{imt} : indicator = 1 if individual *i* in market *m* is self employed at time *t* given not self employed and working full time at time *t-1*.
- δ_m are MSA-State fixed effects; *Trend* counts years since 1977
- T_t are year fixed effects
- $\mathbf{X}_{imt}\boldsymbol{\beta}$: demographic characteristics
- $NoLimit_{mt}$: indicator = 1 if market is in state which switches to no limit on credit card interest rates
- e_{imt} clustered at market level

Effect of No Limit on Credit Card Interest Rates on Transitions into Self Employment (CPS Data, 1977-1987)

Sample Restriction:	(1) All States	(2) All States	(3) No Limit States
No Limit on Credit Card Interest Rates	0.0018*	0.0014	0.0010
	[0.0011]	[0.0012]	[0.0015]
Black*No Limit on Credit Card Deregulation		0.0073***	0.0079***
		[0.0021]	[0.0028]
Black	0.0009	0.0002	-0.0002
	[0.0008]	[0.0007]	[0.0020]
Individual Characteristics	YES	YES	YES
Industry Dummies	YES	YES	YES
Year Fixed Effects (1977-1987)	YES	YES	YES
MSA-State Fixed Effects	YES	YES	YES
Trend*MSA-State Fixed Effects	YES	YES	YES
Observations	271580	271580	67702
R-squared	0.0135	0.0136	0.0147
Number of clusters	308	308	57

Robust standard errors in brackets, clustered at MSA-state level; * significant at 10%; ** significant at 5%; *** significant at 1%.

Does credit card deregulation increase churn?

- Evidence that individuals in states which deregulate credit card interest rates had higher APRs

- Evidence that credit card deregulation increased transitions into self employment

- Were entrepreneurs engaged in riskier enterprises?

    → *If true, entrepreneurs in "no limit" states should be more likely to fail*

- We test this idea using transitions from self employment to unemployment

Effect of No Limit on Credit Card Interest Rates on Transitions out of Self Employment (CPS Data, 1977-1987)

Transition into	(1)	(2)	(3)	(4)
	Unemployment		Wage Paying Job	
No Limit	0.0128***	0.0125***	0.0005	0.0014
	[0.0046]	[0.0046]	[0.0203]	[0.0202]
Black	0.0222***	0.0199***	-0.0506***	-0.0441**
	[0.0070]	[0.0073]	[0.0158]	[0.0179]
Black*No Limit		0.0237		-0.0667*
		[0.0280]		[0.0388]
Individual Characteristics	YES	YES	YES	YES
Industry Dummies	YES	YES	YES	YES
Year Fixed Effects (1977-1987)	YES	YES	YES	YES
MSA-State Fixed Effects	YES	YES	YES	YES
Trend*MSA-State Fixed Effects	YES	YES	YES	YES
Observations	39742	39742	39742	39742
R-squared	0.0383	0.0384	0.1368	0.1368
Number of clusters	301	301	301	301

Robust standard errors in brackets, clustered at MSA-state level; * significant at 10%; ** significant at 5%; *** significant at 1%.

Another Way to Explain Impact on Black Entrepreneurs: Discrimination

- Credit cards might be a way to lower barriers to entry

    "…if financial institutions discriminate against blacks in obtaining small-business loans, we may even expect to see them use credit cards more often than whites, because they have fewer alternatives."
    (Blanchflower et al, 2003: p. 940)

- Credit card deregulation should have a larger effect on black entrepreneurs who encounter more frictions

- Discrimination is the likely source of such frictions, so there should be a larger effect on black entrepreneurs in states with higher levels of discrimination.

    – Discrimination is not easy to measure.

Another Way to Explain Impact on Black Entrepreneurs: Discrimination

- To investigate this idea, we compare the coefficient on *black*nolimit* across split samples.

- Sample split by state type:
  - Slave states immediately prior to Civil War
  - Anti-miscegenation laws not repealed prior to Loving v. Virginia, 1967 (Fryer, 2007)
  - No fair housing laws prior to FHA 1968 (Collins, 2004)
  - Interracial Marriage Bias Index (Levine, Levkov and Rubinstein, 2008: App. 3)

Evidence that black entrepreneurs in states with a history of discrimination are more affected by the policy shock

Split Sample Coefficients on *Black*NoLimit*

	No	Yes
Former Slave State?	0.0047**	0.0144***
	[0.0024]	[0.0043]
Anti-miscegenation Law?	0.0046**	0.0148***
	[0.0023]	[0.0045]
No Fair Housing Law?	0.0034	0.0102***
	[0.0033]	[0.0028]
High Interracial Marriage Bias?	0.0057***	0.0132**
	[0.0022]	[0.0051]

Note: Each cell represents results from a separate regression.

Are State Policy Shocks Exogenous?

- No evidence (statistical or otherwise) that states attempted to deregulate credit cards to aid entrepreneurship
- Bank deregulation appears to have been driven by state level political economy (Kroszner & Strahan, 1999)
  - But no evidence that credit card deregulation was driven by political economy.

Hazard Models Predicting When a State Switches to No Limit

	(1)	(2)	(3)
Self Employed	0.4449	0.3811	0.6765
	[0.3908]	[0.3880]	[0.5977]
Black	0.1759	0.1425	0.3175
	[0.1469]	[0.1574]	[0.2959]
Black*Self Employed		1.1448	0.6046
		[1.1066]	[2.0448]
Small Bank Share of Assets			0.4400
			[0.3313]
Diff. in Small-Large Bank Capital-Asset Ratio			1.1785
			[0.7147]
Share of Small Firms			0.1994
			[0.4501]
Single Party Control of State Gov't			-0.0186
			[0.0211]
Demographic Variables	YES	YES	YES
State & Year Fixed Effects	YES	YES	YES
Observations	561	561	321
R-squared	0.34	0.34	0.44
Number of clusters	51	51	37

Summary of results

- Credit card deregulation increased transitions into self-employment
  - Strong effect on black entrepreneurs
- Credit card deregulation increased probability of transitions out of self-employment into unemployment
  - Black entrepreneurs did not appear to be engaged in ventures that were "riskier" than white ventures
- Larger impact for black individuals in areas with a history of discrimination
  - Suggests that credit cards were a mechanism that black entrepreneurs used to overcome financial barriers to entry

Policy Implications

The analyses provide a nuanced view on the effects of financial deregulation:

- Financial deregulation can have differential effects on entrepreneurs
  - Black and white entrepreneurs (our study)
  - New and established small businesses (Zarutskie, 2006)
  - Single business unit and multi-business unit (Kerr &Nanda, 2009)
- Financial deregulation increases new business churn, but also increases opportunities for minority entrepreneurs.
  - Welfare effects are unclear

Thank You

ronnie@duke.edu
rseamans@stern.nyu.edu

Effect of No Limit on Credit Card Interest Rates on Self Employment Levels, by Credit Card Ownership, using SCF Data

Sample Restriction: Owns Credit Card?	(1) No Restriction	(2) Yes	(3) No
No Limit	-0.0309*	-0.0239	-0.0481
	[0.0182]	[0.0192]	[0.0306]
Black*No Limit	0.0774**	0.1011*	0.0045
	[0.0377]	[0.0520]	[0.0243]
Black	-0.0425***	-0.0441***	-0.0424***
	[0.0083]	[0.0072]	[0.0151]
Individual Characteristics	YES	YES	YES
Year Fixed Effects	YES	YES	YES
State Fixed Effects	YES	YES	YES
Observations	4889	3686	1203
R-Squared	0.0319	0.0367	0.0592
Clusters	36	36	35

SCF excludes DC, HI, ID, KS, MD, MT, ND, NH, NM, NV, RI, VT, WV, WY; SCF includes only 1977, 1983, 1986. Robust standard errors in brackets; clustered at state. * significant at 10%; ** significant at 5%; *** significant at 1%.

Regression Results Using Answers to SCF Survey Questions on Fairness of Lenders and Availability of Loans

When applying for a loan, have you ever been…	(1) *Treated Unfairly?*	(2) *Turned Down or Unable to Obtain?*	(3) *Afraid of being Turned Down?*
Black Respondents	Yes	Yes*	Yes***

* significant at 10%; ** significant at 5%; *** significant at 1%.