'Hate at First Sight': Evidence of Consumer Discrimination Against African-Americans in the US

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Racial Labor Market Outcome gaps

In the US, Blacks are over-exposed to unemployment risk and under-represented in jobs in contact with consumers ('contact-jobs') :

- The (male) unemployment gap has increased over the past 40 years : around 10%-15%
- Black employees are 10 percent less likely to occupy 'contact-jobs' than their white counterparts

Are minorities discriminated against in 'contact-jobs'?

Does discrimination in such jobs reduce the set of employment opportunities?

Racial Labor Market Outcome gaps

Why are these questions important :

- the actual economic situation of blacks in the US is bad
- the residual employment gap has increased over the past decades
- the type of discrimination matters (employer/customer discrimination)
- the share of contact-jobs has been increasing over the past forty years

These gaps are based on the geography of racial discrimination

- Low residential mobility and frictional labor markets
- Local proportion of prejudiced individuals affects blacks' job opportunities

Taste-based models of discrimination

- Literature points to an important role for labor-market discrimination in producing wage residual gaps

  Becker (1957), Johnson & Neal (1998), Charles & Guryan (2008)

- Search models predict racial prejudice generates wage, unemployment duration and unemployment differentials

  Context : costly search, imperfect information or reduced mobility

  Black (1995), Bowlus & Eckstein (2002), Lang et al. (2005) and Rosen (2003)

Consumer discrimination

Previous literature is based on the racial composition of consumers :

- Empirical studies use the racial composition of residents in geographical areas (Holzer & Ihlanfeldt 1998, Giuliano et al. 2010, Kenney & Wissoker 1994)
- Test strategy of customer discrimination provided by Combes et al. (2011)

Outline

- Use search model to test presence of consumer discrimination
- Test evidence of this type of discrimination on US data
- Measure of the local shares of racial prejudice using a social survey
- US individual data (IPUMS) in 2000 in a cross-section of local labor markets
- Instrumentation to control for endogeneity

Model

- Imperfect competition : matching frictions and limited mobility of workers
- 2 types of job-seekers : Blacks (B) and Whites (W)
- With probability p, the job is from Sector 2 and is in contact; with probability $(1-p)$ the job is from Sector 1
- Customer sectorial discrimination and employer multi-sectorial discrimination
- Sector-specific abilities/preferences with different distribution across groups
- α_e : proportion of jobs whose corresponding employer refuses to hire black employees
- α_c : proportion of contact-jobs whose customers refuse to interact with black employees

Outputs

e^i : employment rate among individuals of group-i
q^i : probability of employment in sector 2 for an employee of group-i
ϕ^i_j : proportion of individuals of group i accepting an offer in sector j

Employment rate

$$e^W = (1-p)m\phi_1^W + pm\phi_2^W$$

$$e^B = (1-p)m\phi_1^B(1-\alpha_e) + pm\phi_2^B(1-\alpha_e)(1-\alpha_c)$$

Probability of employment in sector 2

$$q^W = \frac{pm\phi_2^W}{(1-p)m\phi_1^W + pm\phi_2^W}$$

$$q^B = \frac{pm\phi_2^B(1-\alpha_e)(1-\alpha_c)}{(1-p)m\phi_1^B(1-\alpha_e) + pm\phi_2^B(1-\alpha_e)(1-\alpha_c)}$$

Output Gaps

$$\Delta e = m[(1-p)[\phi_1^B(1-\alpha_e) - \phi_1^W] + p[\phi_2^B(1-\alpha_e)(1-\alpha_c) - \phi_2^W]]$$

$$\Delta q = \frac{p(1-\alpha_c)\phi_2^B}{p(1-\alpha_c)\phi_2^B + (1-p)\phi_1^B} - \frac{p\phi_2^W}{(1-p)\phi_1^W + p\phi_2^W}$$

Both equations allow to identify discrimination phenomena and disentangle customer from employer discrimination

Impact of racial prejudice

$$\frac{\partial \Delta e}{\partial \alpha_e} = m[-(1-p)\phi_1^B - p\phi_2^B(1-\alpha_c)]$$

$$\frac{\partial \Delta e}{\partial \alpha_c} = m[-p\phi_2^B(1-\alpha_e)]$$

$$\frac{\partial \Delta q}{\partial \alpha_c} = -\frac{p(1-p)\phi_1^B\phi_2^B}{\left[(1-p)\,\phi_1^B + p\,(1-\alpha_c)\,\phi_2^B\right]^2}$$

- Racial discrimination at entry-job iff $\frac{\partial \Delta e}{\partial \alpha} < 0$
- Consumer discrimination iff $\frac{\partial \Delta e}{\partial \alpha} < 0$ and $\frac{\partial \Delta q}{\partial \alpha_c} < 0$

Public-Use MicroData Sample (IPUMS) - 2000

2 main advantages of this database :

- has large sample sizes (5% of the population)
- allows to construct local labor markets using the definition of *Commuting Zones*

Empirical analysis focuses on low-skilled males of working age (25-64 years old) :

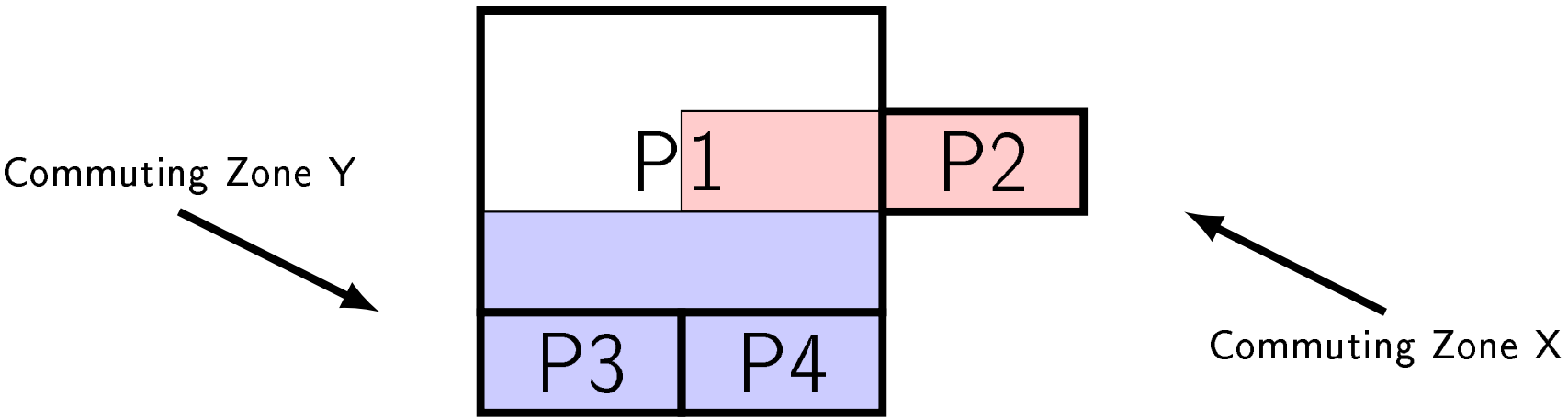
- To avoid a number of questions related to family arrangements, residential choices, and female labor market outcomes
- Absence of differentials among highly skilled male workers

Construction of *Commuting Zones* : US Local labor markets

Definition based on the concept of Commuting Zones (Tolbert and Sizer 1996) : each CZ is a collection of counties with strong commuting links among them.

The most detailed geographic units in IPUMS data are defined to comprise between 100,000 and 200,000 residents each (PUMAs).

To assign individuals to CZs, I split every individual observation into multiple parts whenever an individual's PUMA cannot be uniquely assigned to a CZ. Then, I weight each resident of a specific PUMA by the probability to live in a particular CZ.



Proportion of contact for each occupation : q

- O*NET (US Dept of Labor) is the primary source of occupational information for the US
- It provides standardized descriptors (skills, tasks, requirements,...) for 974 occupations
- Index for the importance of 'working directly with the public' in a given occupation (between 0 and 96)
- I match the contact index of importance to the corresponding Census occupation classification

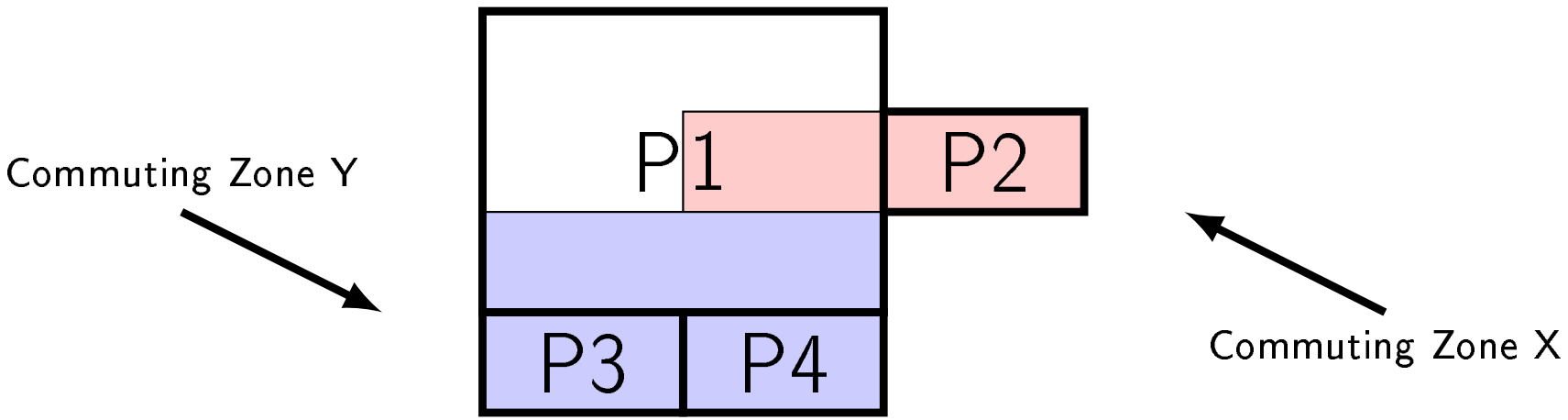
Measure of Racial Prejudice using the General Social Survey (1972-2004)

- This nationally representative dataset elicited responses from survey questions about matters related to racially prejudiced sentiments
- Using the question "Do you think there should be laws against marriages between blacks and whites ?"
- Compute the Share of Racial Prejudice as the percentage of white respondents who answered **Yes**
- Time period 1996-2004 for decennial Census 2000

Measure of Racial Prejudice at the CZ level - Two issues

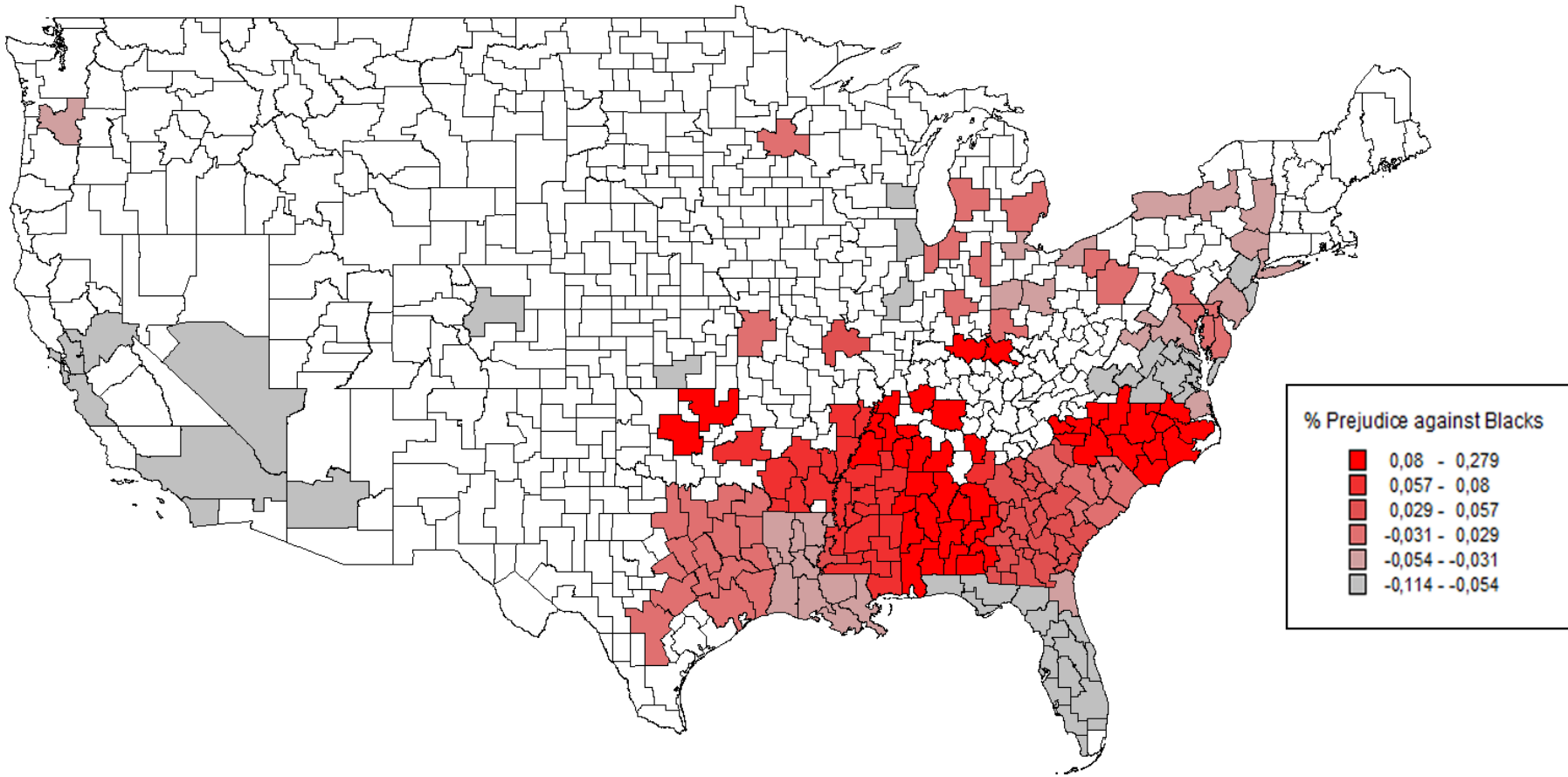
- Not assessing whether racial prejudice comes from employers or from consumers
  $\Rightarrow$ Assume the share of racial prejudice has the same value for both α_e and α_c

- GSS provides information on prejudice at the state level only
  $\Rightarrow$ allocate the share of prejudice at the state level to the PUMA level and I convert this share at PUMA level to CZ level in assigning PUMA to a CZ based on the population weight of the PUMA in the CZ.



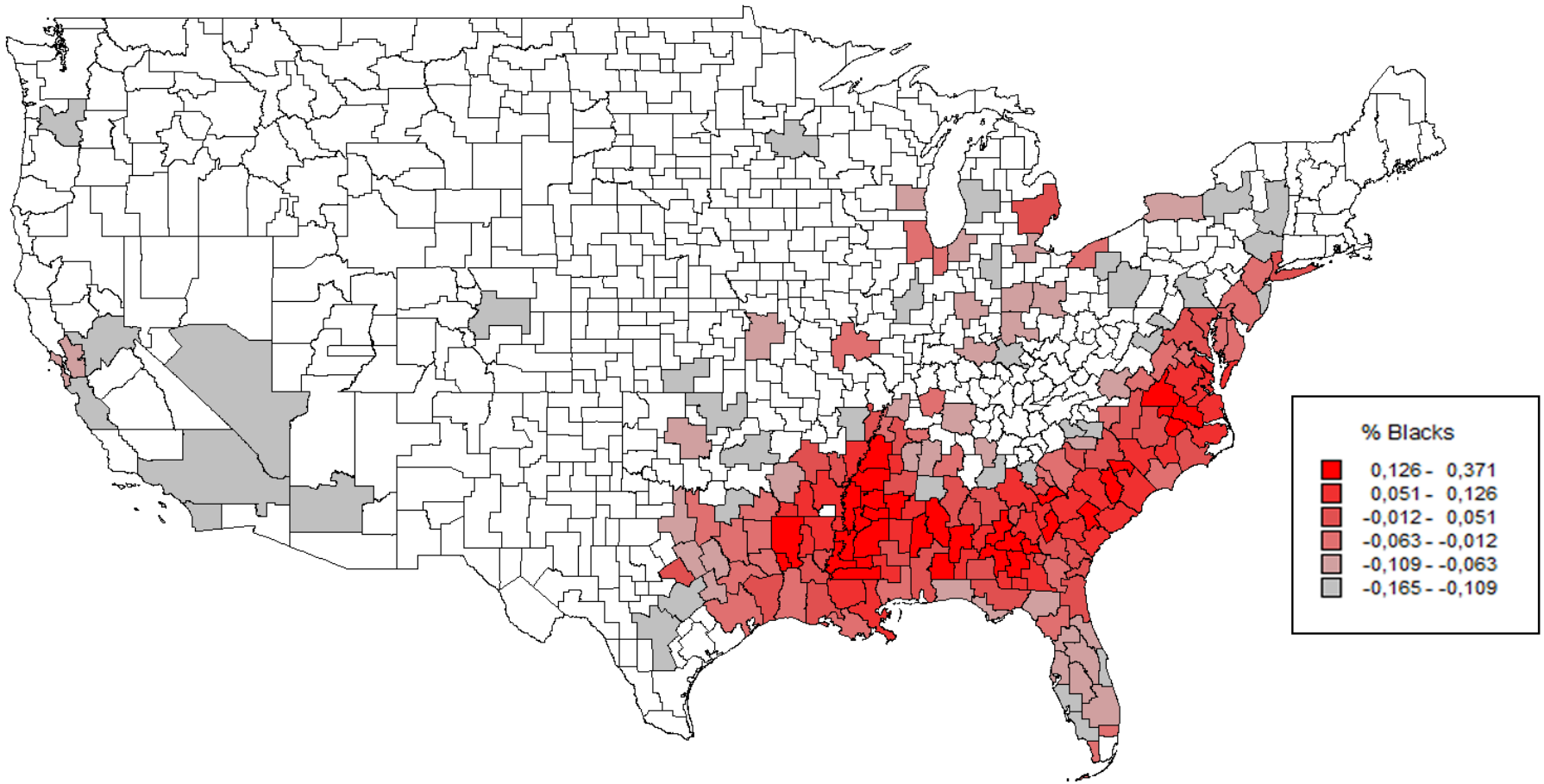
Spatial distribution of racial prejudice - 2000

Figure: Spatial distribution of racial prejudice across Commuting Zones



Spatial distribution of blacks - 2000

Figure: Spatial distribution of blacks across Commuting Zones



Two-Step Econometric Modeling

1. Regress individual outcomes on individual characteristics (X), CZ fixed effects (CZ), and on CZ effects interacted with a Black dummy ($CZ.Black$):

$$e_i = \gamma_0 + \gamma_1 X_i + \gamma_2 Black_i + \sum_{k(i)} \left(\psi^1_{k(i)} CZ_{k(i)} + \varphi^1_{k(i)} CZ_{k(i)}.Black_i \right) + \epsilon_i$$

$$q_i = \beta_0 + \beta_1 X_i + \beta_2 Black_i + \sum_{k(i)} \left(\psi^2_{k(i)} CZ_{k(i)} + \varphi^2_{k(i)} CZ_{k(i)}.Black_i \right) + \rho\sigma\widehat{\lambda}_i + \varepsilon_i$$

Equation corrected for sample selection bias using a Heckman procedure.

The coefficients on the Area-Black interactions φ_k represent estimates of racial gaps in each CZ adjusted for racial differences in individual characteristics.

Two-Step Econometric Modeling

2. Regress the estimated coefficients $\hat{\varphi}_k$ on $\%Prejudice_k$:

$$\hat{\varphi^1}_k = \alpha^1 \%Prejudice_k + \upsilon_k^1$$

$$\hat{\varphi^2}_k = \alpha^2 \%Prejudice_k + \upsilon_k^2$$

If $\alpha^1 < 0$: evidence of discrimination against blacks

If $\alpha^1 < 0$ and $\alpha^2 < 0$: evidence of consumer discrimination against blacks

Probability of Employment: Second-Step Results

	Differential employment gap			
	(1)	(2)	(3)	(4)
%*Prejudice*	-0.083^a	-0.064^b	-0.178^c	-0.212^c
	(0.031)	(0.032)	(0.093)	(0.115)
%African-Americans		-0.044^b		0.048
		(0.022)		(0.061)
Constant	-0.038^a	-0.033^a	0.052^a	0.049^a
	(0.003)	(0.004)	(0.012)	(0.013)
Geographical Level	CZ	CZ	State	State
R^2	0.04	0.06	0.14	0.16
obs.	193	193	32	32

Notes: (i) weighted least-square regressions using as weights the inverse of the estimated variance of the coefficients from the first-step regression; (ii) the share of prejudice is centered with respect to African-Americans' means; (iii) All columns are estimated using a first-step linear probability model ; (iv) in columns (1)-(2), the share of prejudice is computed as the share at the CZ level, while in columns (3)-(4), the share of prejudice is computed at the State level; and (v) standard errors are clustered at the state level in columns (3)-(4); significance levels a, b, c: 1%, 5%, and 10%, respectively.

Probability of Being in Contact: Second-Step Results

	Differential contact gap					
	(1)	(2)	(3)	(4)	(5)	(6)
%*Prejudice*	−0.123[a]	−0.108[a]	−0.071[a]	−0.075[a]	−0.040[a]	−0.045[a]
	(0.023)	(0.024)	(0.019)	(0.020)	(0.015)	(0.016)
%African-Americans		−0.033[b]		0.008		0.011
		(0.016)		(0.014)		(0.011)
Constant	−0.003	−0.001	0.005[a]	0.004[b]	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Geographical Level	CZ	CZ	CZ	CZ	CZ	CZ
R^2	0.13	0.15	0.07	0.07	0.03	0.04
obs.	193	193	193	193	193	193

Notes: (i) weighted least-square regressions using as weights the inverse of the estimated variance of the coefficients from the first-step regression ; (ii) the share of prejudice is centered with respect to African-Americans' means; (iii) columns (1)-(2), columns (3)-(4) and columns (5)-(6) are estimated using first-step regression with no occupations, 5 occupation dummies and 12 occupation dummies, respectively ; (iv) in all columns , the share of prejudice is computed as the share at the CZ level ; and (v) significance levels a, b, c: 1%, 5%, and 10%, respectively.

Endogeneity of Racial Prejudice : IV approach

Racial prejudice can be endogenous :

- reverse causality
- factors can affect both blacks' labor market outcomes and prejudice

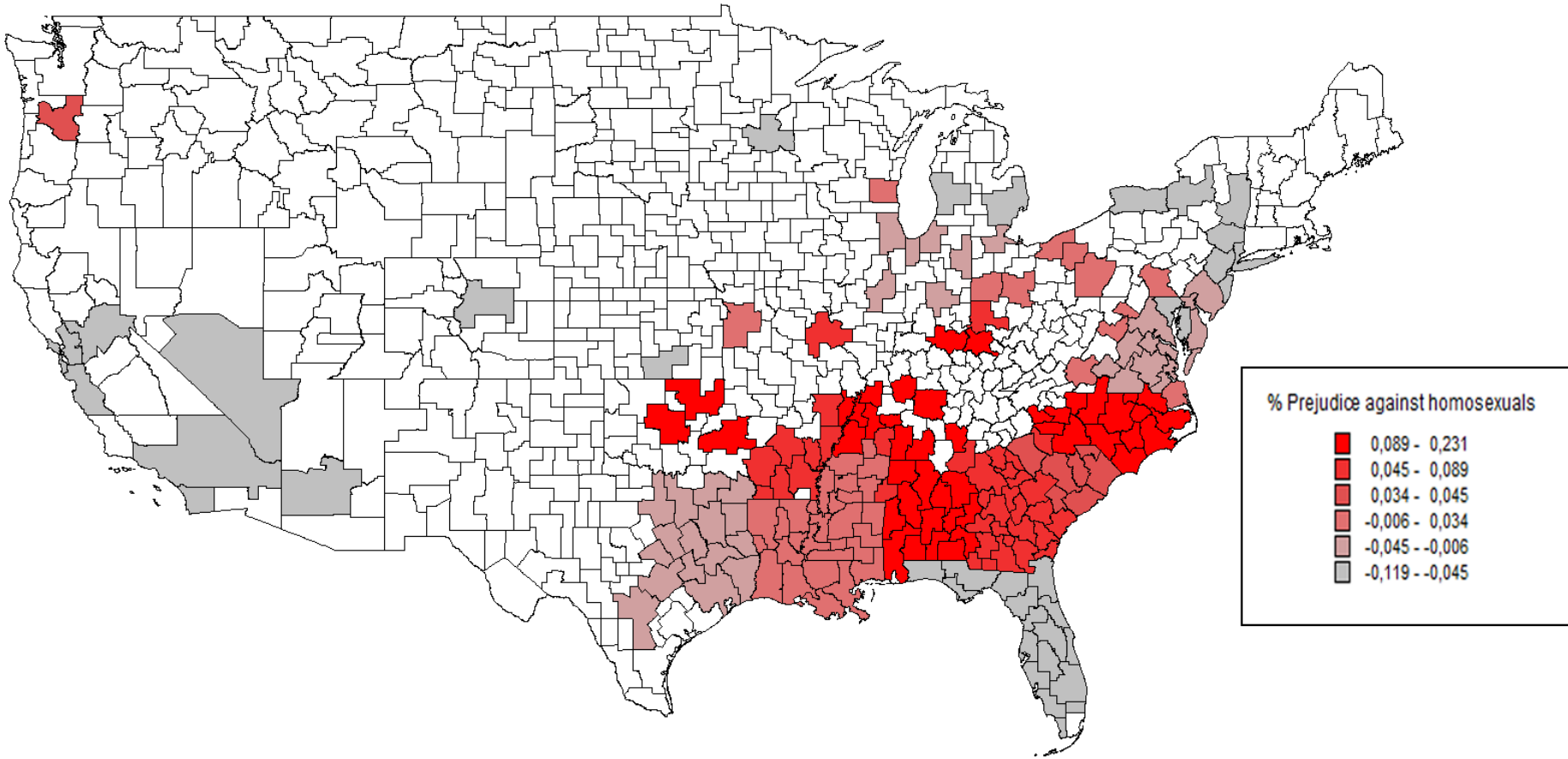
Endogeneity of Racial Prejudice : IV approach

I instrument the share of racial prejudice with the share of prejudice against homosexuals and against communists.

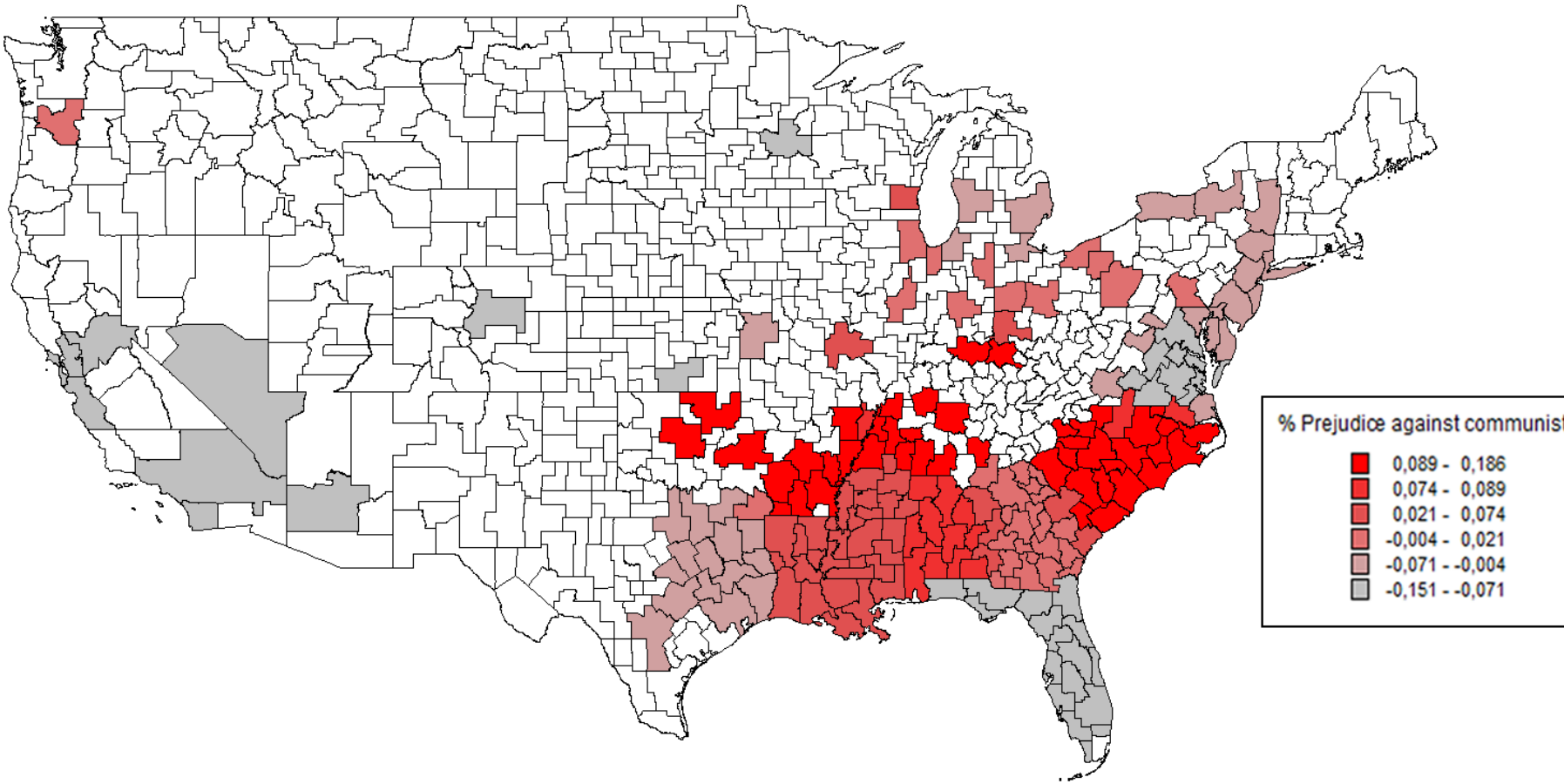
Use GSS to compute this share :

- Suppose a man who admits he is a Communist wanted to make a speech in your community. Should he be allowed to speak, or not? **Not allowed**
- Suppose a man who admits he is a Communist is teaching in a college. Should he be fired, or not? **Yes**
- Suppose a man who admits that he is a homosexual wanted to make a speech in your community. Should he be allowed to speak, or not? **Not allowed**
- Should a man who admits that he is a homosexual be allowed to teach in a college or university, or not? **Not allowed**

Prejudice against homosexuals - 2000



Prejudice against communists - 2000



Probability of Employment: Second-Step Results - IV

	Differential employment gap			
	(1)	(2)	(3)	(4)
%*Prejudice*	-0.112^{a}	-0.092^{b}	-0.183^{c}	-0.224^{b}
	(0.042)	(0.043)	(0.102)	(0.113)
%African-Americans		-0.038^{c}		0.051
		(0.022)		(0.059)
Constant	-0.037^{a}	-0.033^{a}	0.053^{a}	0.050^{a}
	(0.004)	(0.005)	(0.013)	(0.013)
Geographical Level	CZ	CZ	State	State
Shea p. R^2	0.82	0.80	0.80	0.75
J-stat p-value	0.11	0.18	0.48	0.41
Cragg-Donald	426.1	379.9	40.86	30.89
obs.	193	193	32	32

Notes: (i) weighted least-square regressions using as weights the inverse of the estimated variance of the coefficients from the first-step regression ; (ii) the share of prejudice is centered with respect to African-Americans' means; (iii) the share of racial prejudice is instrumented by the shares of prejudice against Communists and against homosexuals; (iv) in columns (1)-(2), the share of prejudice is computed as the share at the CZ level, while in columns (3)-(4), the share of prejudice is computed at the State level; and (v) standard errors are clustered at the state level in columns (3)-(4) and significance levels a, b, c: 1%, 5%, and 10%, respectively.

Probability of Being in Contact: Second-Step Results - IV

	Differential contact gap					
	(1)	(2)	(3)	(4)	(5)	(6)
%Prejudice	-0.104^{a}	-0.083^{a}	-0.052^{b}	-0.053^{b}	-0.027	-0.031^{c}
	(0.027)	(0.029)	(0.023)	(0.024)	(0.017)	(0.018)
%African-Americans		-0.037^{b}		0.001		0.008
		(0.017)		(0.014)		(0.011)
Constant	-0.010^{a}	-0.008^{a}	-0.000	-0.000	0.001	0.000
	(0.002)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)
Geographical Level	CZ	CZ	CZ	CZ	CZ	CZ
Shea p. R^2	0.84	0.82	0.84	0.82	0.83	0.82
J-stat p-value	0.65	0.87	0.80	0.80	0.80	0.75
Cragg-Donald	487.0	437.6	487.0	437.6	477.3	419.5
obs.	193	193	193	193	193	193

Notes: (i) weighted least-square regressions using as weights the inverse of the estimated variance of the coefficients from the first-step regression ; (ii) the share of prejudice is centered with respect to African-Americans' means; (iii) the share of racial prejudice is instrumented by the shares of prejudice against Communists and against homosexuals; (iv) columns (1) to (4), columns (5) to (8) and columns (9) and (10) are estimated using column (2), column (4) and column (6) of the first-step regression ; (v) in all columns, the share of prejudice is computed as the share at the CZ level ; and (vi) significance levels a, b, c: 1%, 5%, and 10%, respectively.

Second-step regression results

The estimated coefficient indicates that a one-standard deviation increase in the proportion of prejudiced individuals widens the adjusted racial employment gap 16%-40% a standard deviation of the dependent variable.

The estimated coefficients indicate that a one-standard deviation increase in the proportion of prejudiced individuals widens the adjusted racial contact gap between 24%-32% a standard deviation of the dependent variable.

Results indicate evidence of customer discrimination against African-Americans in the US labor market

Conclusion

- Evidence of consumer discrimination in the US using a search model
- Importance of the share of prejudice in explaining both residual gaps
- Missing : Theoretical model of consumer discrimination on blacks' wages
- Prejudice Paradox : persistence of employment and wage gaps
- Expansion of jobs in contact in the 70's in large cities puts blacks at a disadvantage