Landing a Job in Urban Space: The Extent & Effects of Spatial Mismatch

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Research Questions

- Is access to employment opportunities for non-college graduates greater in the suburbs than in the central city?
- Due to the non-uniform geographic pattern of suburban job growth, is there significant variation in access within the suburbs?
- Are individuals expanding their search geographically in response to the decentralization of employment?
- If not, what aspects of the costs/benefits of job search make longer commutes and expanded search patterns an inefficient response to the geographic labor demand shift that has occurred over the past 3 decades?

Necessary/Sufficient Conditions to Generate Spatial Mismatch

1. Residential location decisions must be constrained

2. Firms must face higher costs (set-up/production costs) in areas where residents are constrained

3. Search or commuting costs must be non-trivial

Reasons Why We Expect Race Differences in Labor Market Effects of Spatial Related Factors

- Blacks face more residential location constraints due to discrimination in the suburban housing market and mortgage market.

- Blacks have greater search/commute costs due to lower car ownership rates.

- Blacks have inferior social networks and information to connect them to jobs.

Primary Hypothesis to be Tested

- Job search behavior and job search outcomes of more residentially constrained racial/ethnic groups are more sensitive to local job accessibility

  - How job search behavior and job search outcomes are affected by local job accessibility is dependent on the fluidity of the labor market

Empirical Challenges

- Confronting problem of endogeneity of residential location

- Characterizing the spatial distribution of employment opportunities by creating an access measure

Data: MCSUI – HH & Employer Surveys

- Employer and HH surveys administered ’92- ’94 in Atlanta, Boston, and L.A.

- HH Survey. Sample restricted to individuals who began most recent job search within past year—analysis included both on-the-job search and search while unemployed (Final sample: 1205); contains extensive set of search method variables.

Data contd.

- Employer Survey.
  - 800 Employers surveyed per MSA
  - Info about number of net new hires over past year
  - Info about search/recruitment process and methods used to fill most recent job not requiring a college degree
  - Sampling frame: stratified ex-ante by firm size categories to reproduce distribution of employment across these categories

Estimating Distance Decay Function

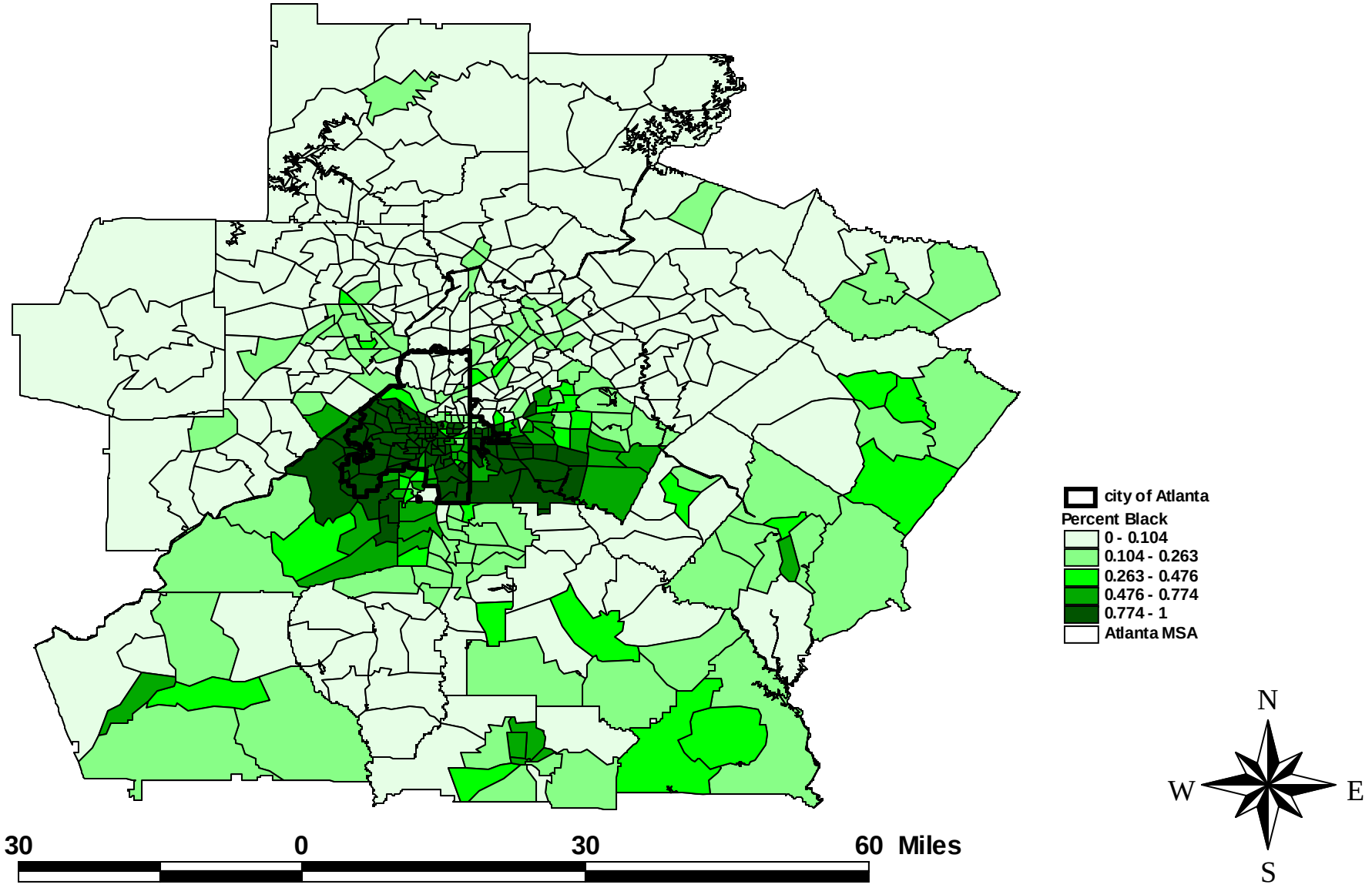
- Use CTPP data on journey-to-work flows between neighborhoods
- Model extent of commuting between every possible neighborhood pair as a function of
    1) # of workers living in neighborhood $i(L_i)_j$
    2) # of jobs located in neighborhood j-jobs(occ_{ij})
    3) Accessibility of job location j to all alternative job locations available (Aj)
    4) Occupational/skill compatibility between workers who live in neighborhood i and neighborhood j-jobs(occ_{ij})
    5) Distance in miles between neighborhoods i and j(dij), and cost of overcoming this distance (captured by the distance decay function, F_{ij}.

Access Measures

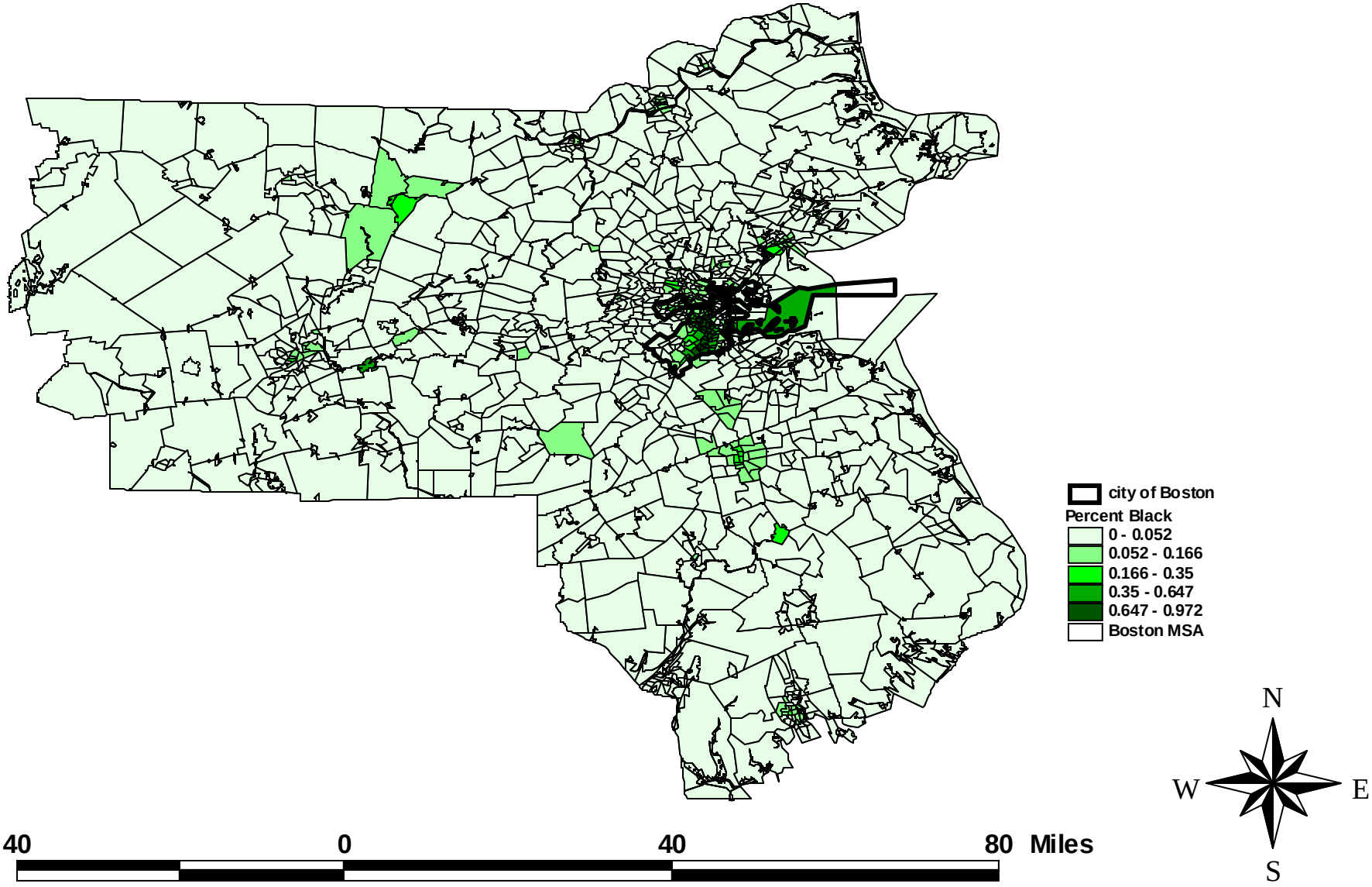
$$\text{Access}_i^{TO} = \left[\frac{\left[\sum_{j=1}^{J} \left(\frac{E_j (e^{\lambda d_{ij}})}{E} \right) \right]}{\left[\sum_{k=1}^{K} \left(\frac{NC_k (e^{\lambda d_{ik}})}{NC} \right) \right]} \right] \quad ; \quad \text{Access}_i^{NH} = \left[\frac{\left[\sum_{j=1}^{J} \left(NETHIRES_j (e^{\lambda d_{ij}}) \right) \right]}{\left[\sum_{k=1}^{K} \left(NC_k (e^{\lambda d_{ik}}) \right) \right]} \right]$$

where i, j, k indexes tracts/neighborhoods;
$\text{Access}_i^{TO} \equiv$ access to turnover-induced job availability for an individual who lives in neighborhood i;
$\text{Access}_i^{NH} \equiv$ access to job opportunities generated by employment growth for an individual who lives in neighborhood i;
$E_j \equiv$ number of recently-filled non-college jobs in neighborhood j; $E \equiv$ total number of recently-filled non-college jobs, $\text{E} = \sum_{j=1}^{J} E_j$;
$\lambda \equiv$ distance decay parameter; $d_{ij} \equiv$ distance in miles between neighborhood i and j;
$NC_k \equiv$ number of non-college educated individuals that live in neighborhood k; $NC \equiv$ total number of non-college educated individuals, $NC = \sum_{k=1}^{K} NC_k$.

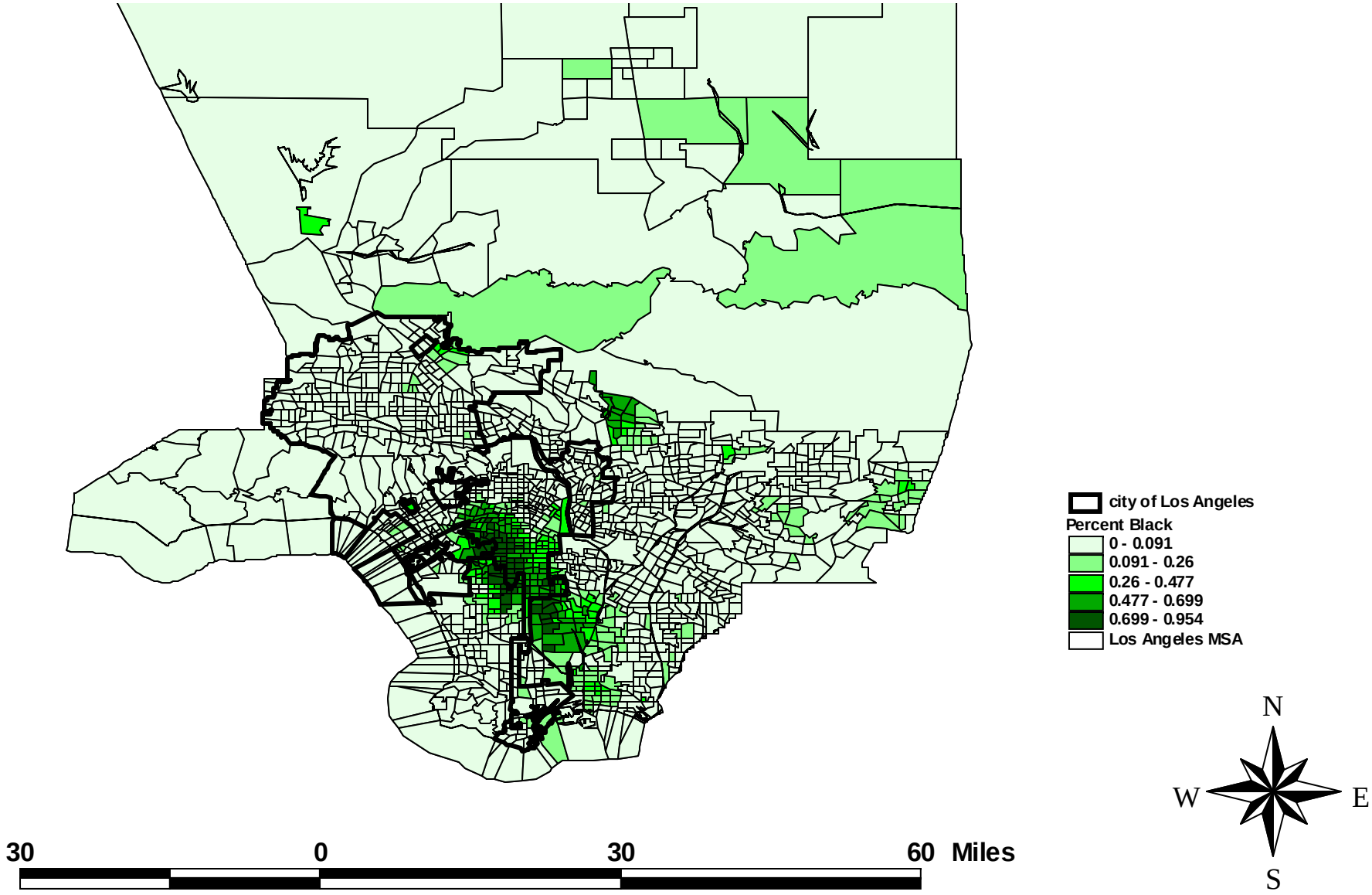
1990 Residential Segregation in Atlanta



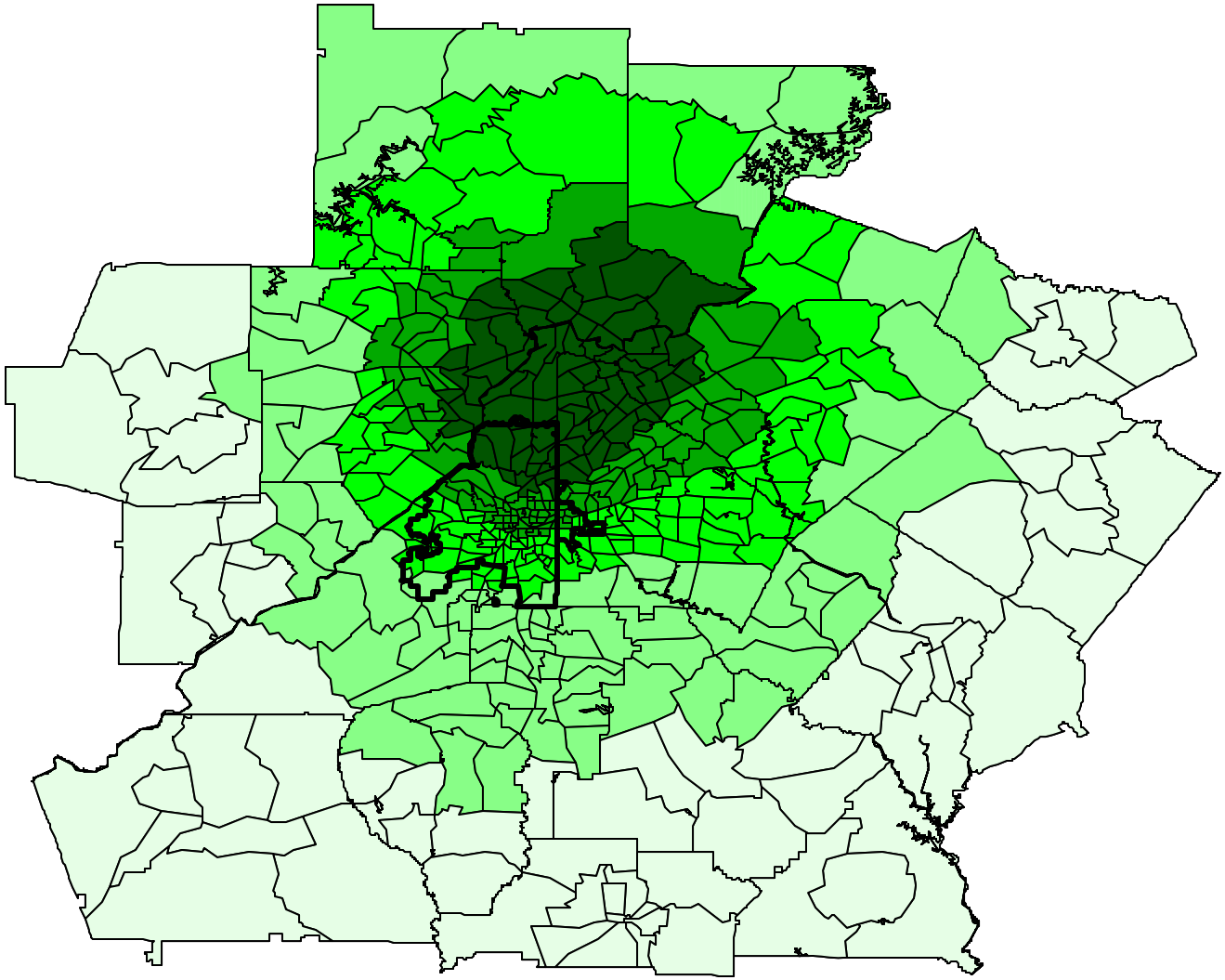
1990 Residential Segregation in Boston



1990 Residential Segregation in Los Angeles



Atlanta MSA
Access to Turnover-Induced Non-college Job Availability

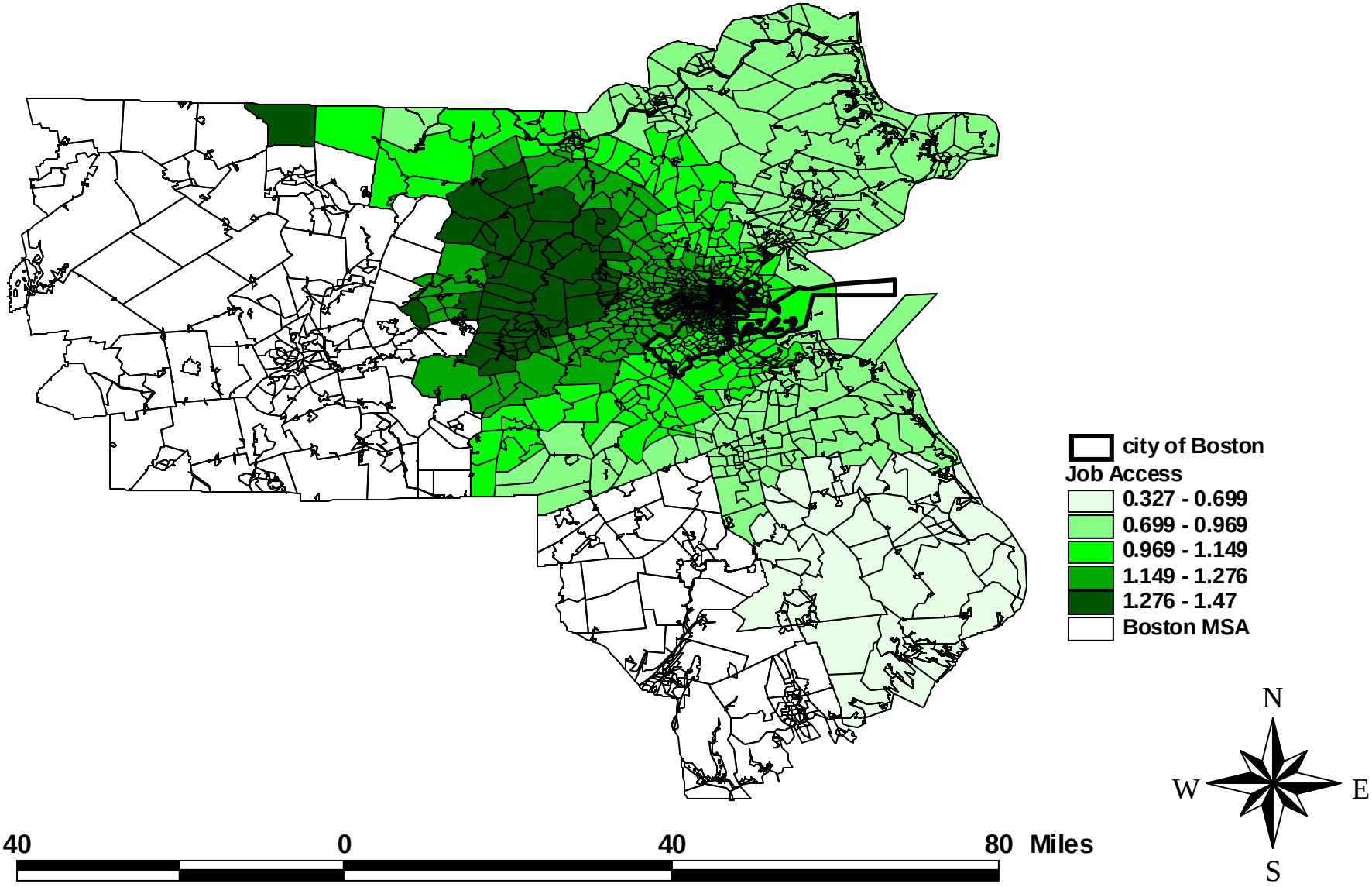


city of Atlanta
Job Access
0.514 - 0.83
0.83 - 1.059
1.059 - 1.257
1.257 - 1.457
1.457 - 1.684
Atlanta MSA

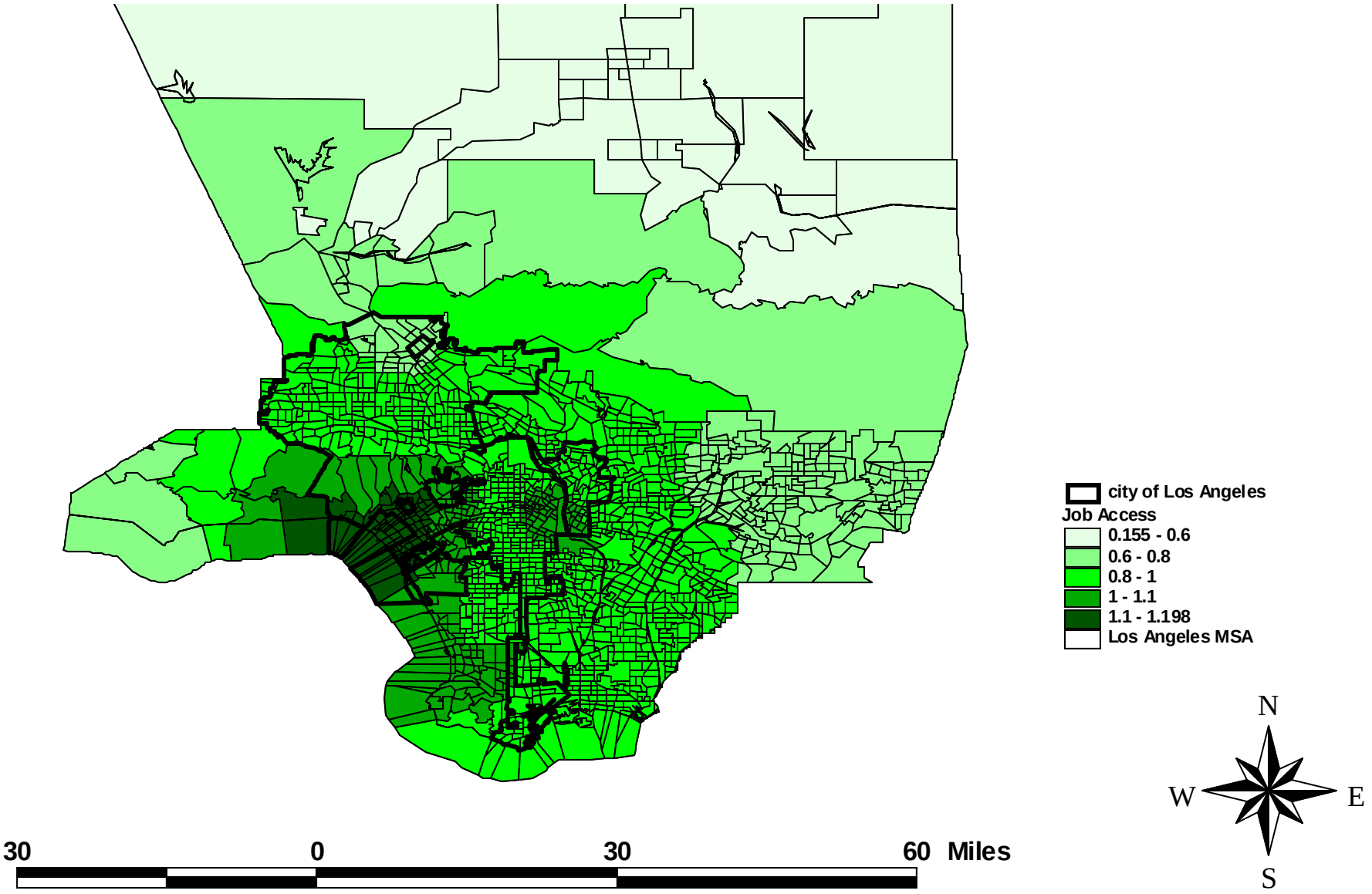
N
W
E
S

30 0 30 60 Miles

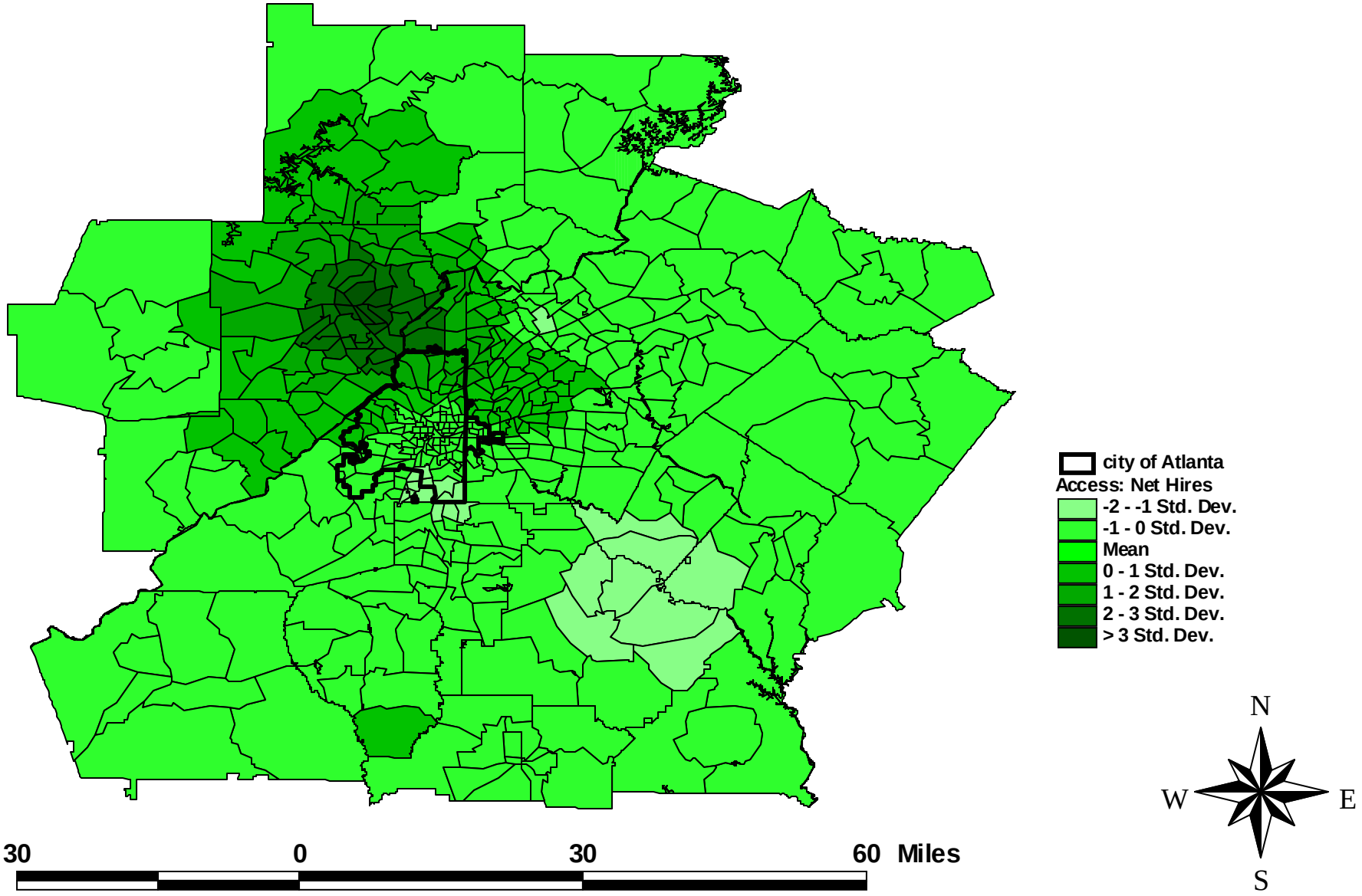
Boston MSA
Access to Turnover-Induced Non-college Job Availability



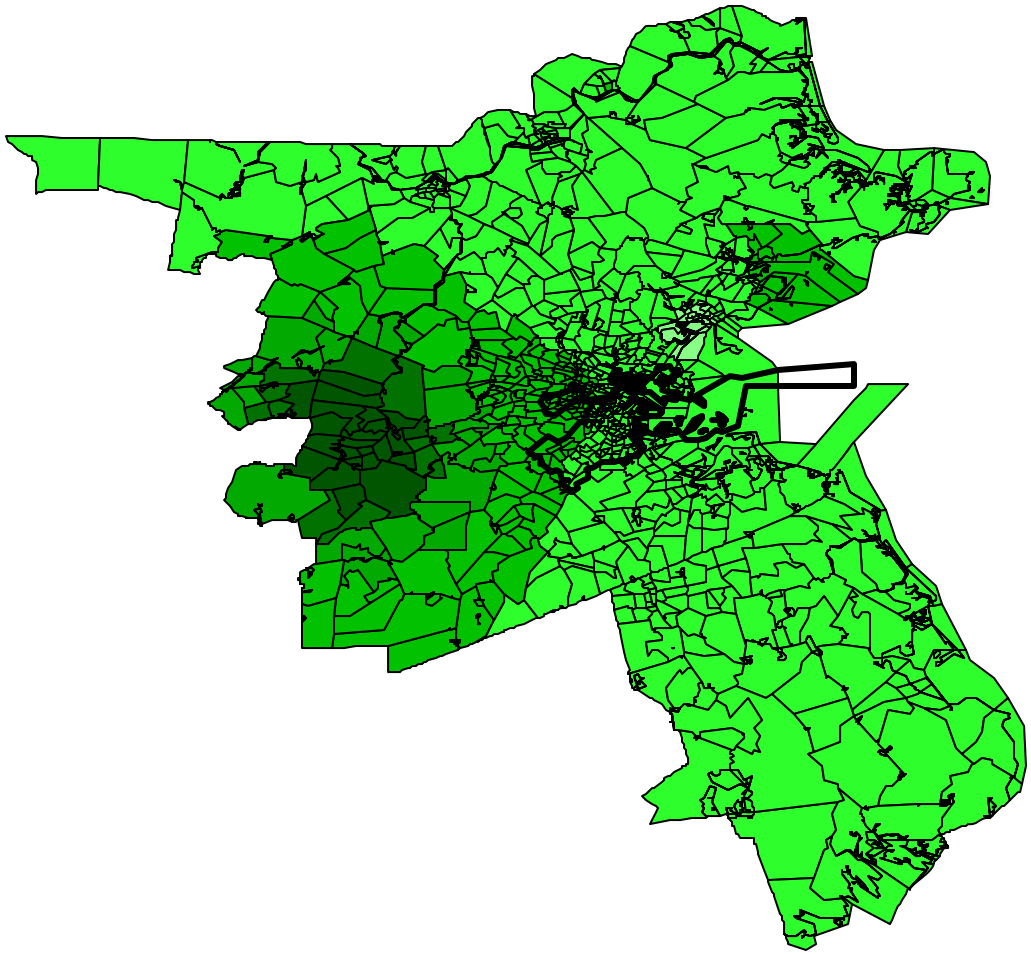
Los Angeles MSA
Access to Turnover-Induced Non-college Job Availability



Atlanta MSA
Accessibility to Net Employment Growth



Boston MSA
Accessibility to Net Employment Growth

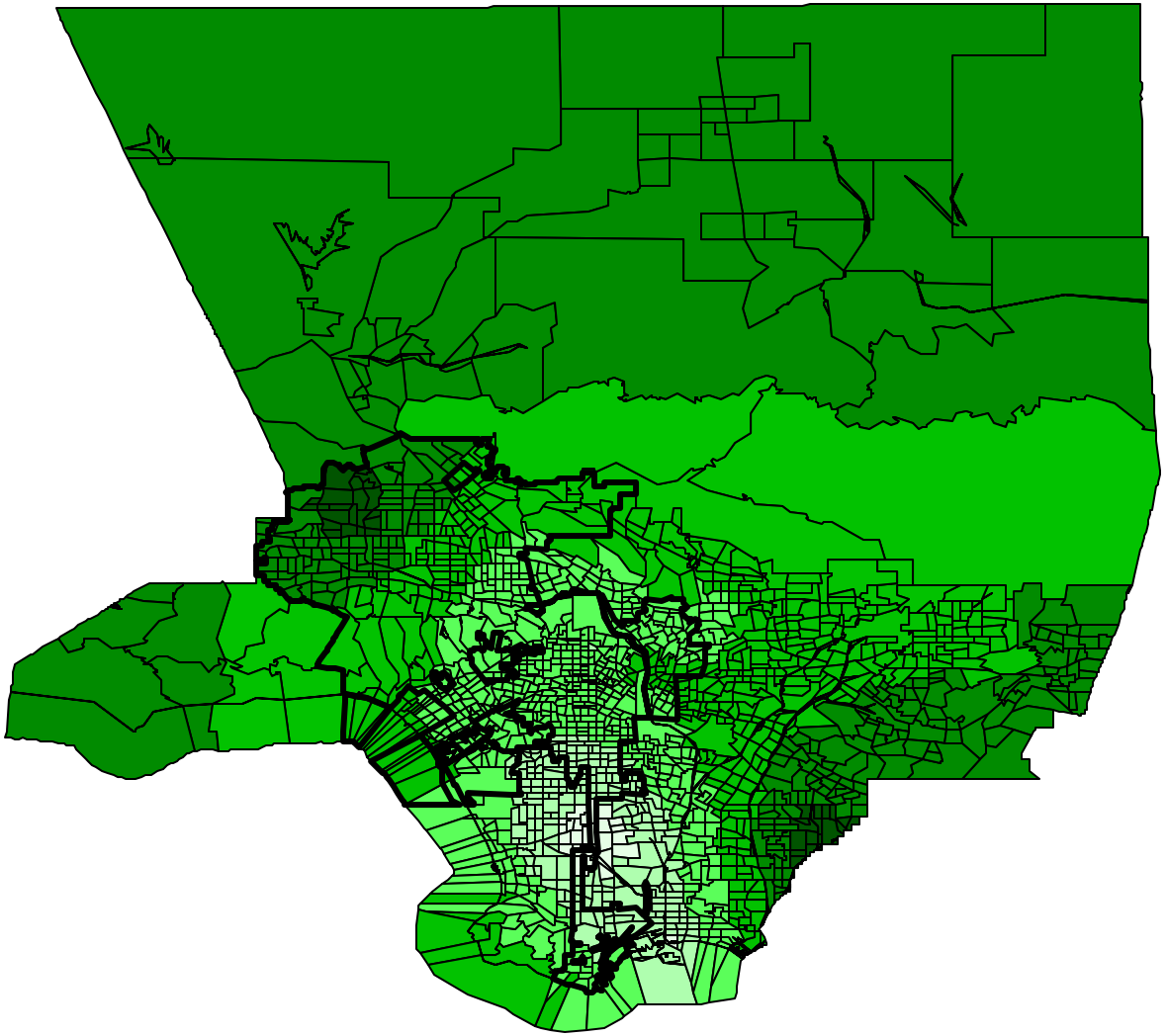


city of Boston
Access: Net Hires
-2 - -1 Std. Dev.
-1 - 0 Std. Dev.
Mean
0 - 1 Std. Dev.
1 - 2 Std. Dev.
2 - 3 Std. Dev.
> 3 Std. Dev.

N
W
E
S

40 0 40 80 Miles

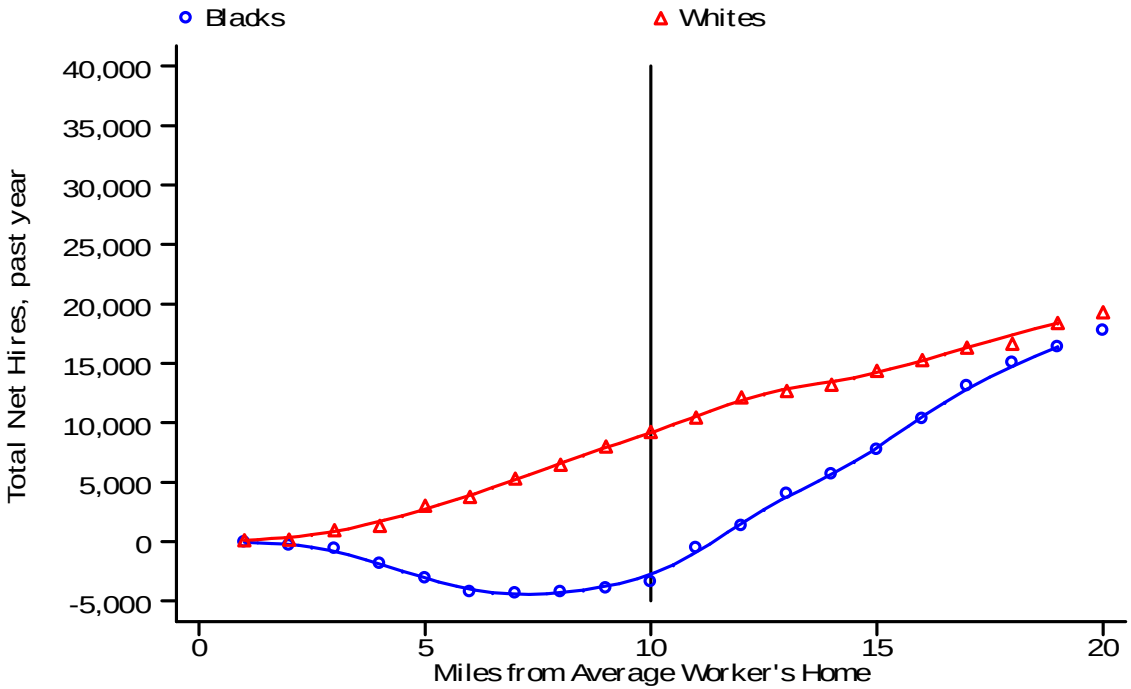
Los Angeles MSA
Accessibilty to Net Employment Growth



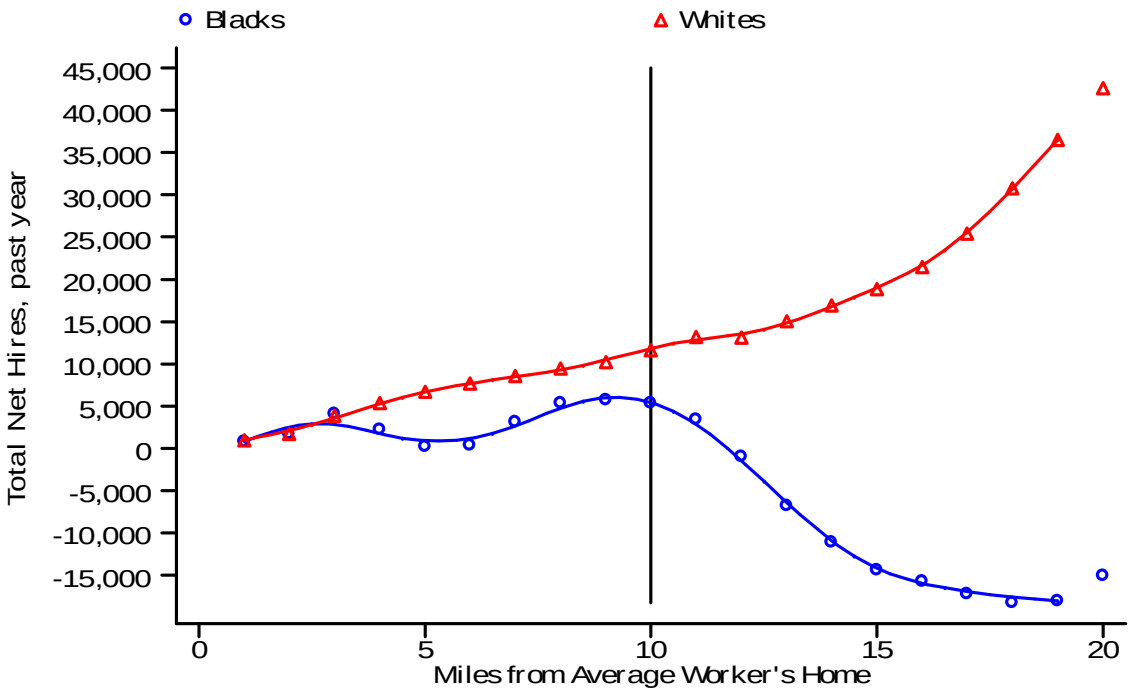
city of Los Angeles
Access: Net Hires
-3 - -2 Std. Dev.
-2 - -1 Std. Dev.
-1 - 0 Std. Dev.
Mean
0 - 1 Std. Dev.
1 - 2 Std. Dev.
2 - 3 Std. Dev.

N
W
E
S

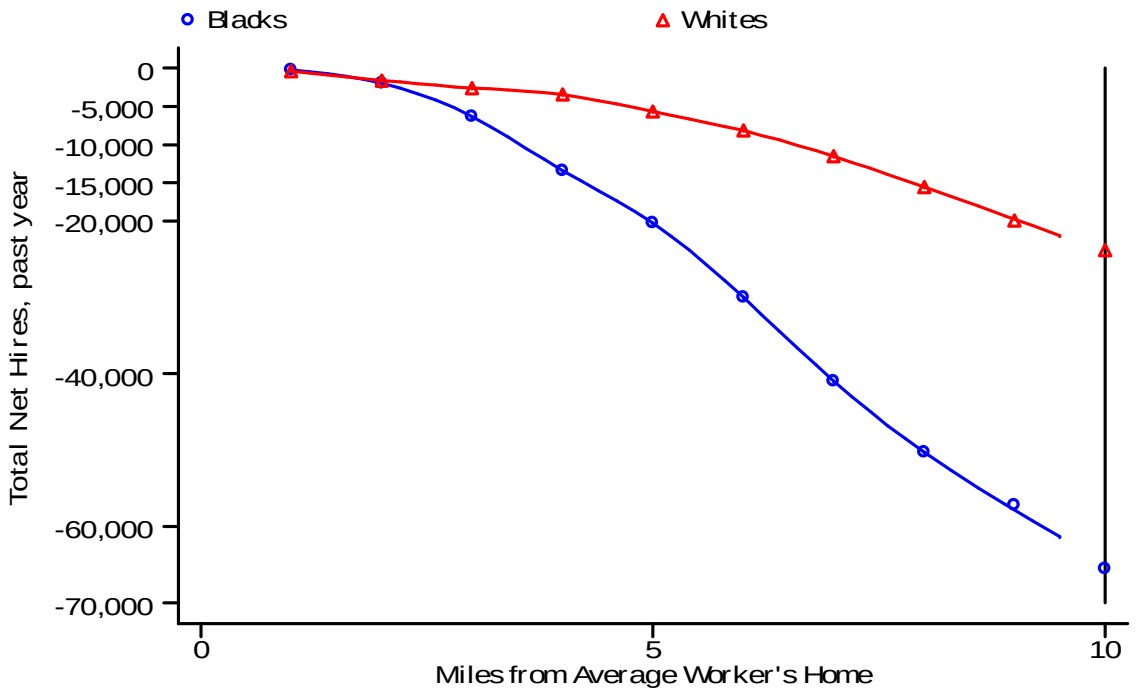
30 0 30 60 Miles



Net Hires by Distance from Worker's Home: Atlanta, 1992-1993



Net Hires by Distance from Worker's Home: Boston, 1992-1993



Net Hires by Distance from Worker's Home: Los Angeles, 1992-1993

Table 4b: Hazard Model Estimates

	Change in Variable	% Change in Hazard
Spatial Search Variables		
Effect of Turnover-induced Job Access for White Non-college Grads	Mean to	5.2%
Effect of Turnover-induced Job Access for Black Non-college Grads	(1 std dev	77.6%
Effect of Turnover-induced Job Access for Hispanic Non-college Grads	above	75.3%
Effect of Turnover-induced Job Access for Asian Non-college Grads	mean)	11.0%
Effect of Employment Growth Access for White Non-college Grads	Mean to	-7.7%
Effect of Employment Growth Access for Black Non-college Grads	(1 std dev	43.6%
Effect of Employment Growth Access for Hispanic Non-college Grads	above	11.5%
Effect of Employment Growth Access for Asian Non-college Grads	mean)	-7.6%
Access to car when searched	0 to 1	48.3%
Rsv commute time (minutes)	20 to 40	-13.5%
Effect of searching in job-rich areas for non-college grads	0 to 1	34.9%
# of steadily employed persons in social network	0 to 3	33.2%
Live in 10-30% poverty tract (ref. cat:<10%)	0 to 1	-8.2%
Live in >30% poverty tract	0 to 1	-10.1%
Search Method Variables		
Credential-based references	0 to 1	23.2%
Network-based references	0 to 1	-23.7%
Search intensity (hours per week)	8 to 9	3.2%
Relative reservation wage	1 to 1.10	-3.3%

Table 5a: Duration of Search Spells of Blacks and Whites Using Hazard Estimates: Evaluated at Different Levels of Job Accessibility

Simulated Values	Proportion of Search Spells Successfully Completed in:				
	<= 1 Month	<= 3 Months	<= 6 Months	<= 9 Months	<= 12 Months
Job Access Measures = Mean - SD:					
Black non-college graduate	.038	.107	.210	.289	.357
White non-college graduate	.253	.519	.728	.819	.871
Job Access Measures = Mean:					
Black non-college graduate	.094	.244	.427	.541	.623
White non-college graduate	.247	.510	.721	.813	.866
Job Access Measures = Mean + SD:					
Black non-college graduate	.216	.476	.694	.791	.846
White non-college graduate	.242	.502	.713	.807	.861

Table 6: Decomposition of Black-White Differences in Hazard of Successfully Completing Job Search

	Black	White
Predicted weekly hazard (gap=.032) (evaluated at beginning of search spell)	0.039	0.070
Contribution to the gap from racial differences in the following variables:		
1. Job Accessibility	23.1%	
2. Car ownership	8.0%	
3. Search in job-rich areas	5.1%	
4. Social network quality	5.6%	
5. Reservation commute time	2.8%	
6. Search intensity	9.5%	
7. Human Capital Variables	10.0%	
8. Demographic Variables	5.1%	
Total explained (All Variables)	69.3%	

Summary of Main Results

- Job access for less-educated workers greatest in predominantly white suburbs, & these "job rich" areas are not served by public transportation.

- Large effects of job access for less-educated blacks and insignificant effects for similarly educated whites (mirror race differences in residential location constraint).

- Blacks' greater sensitivity to local labor market demand conditions contribute significantly to black-white gap in search durations.

- Race differences in distribution of job access account for ¼ of black-white gap; included spatial search-related variables accounts for ½ of overall black-white gap.