IMMIGRANT SETTLEMENT AND EMPLOYMENT SUBURBANIZATION: IS THERE A SPATIAL MISMATCH
美国移民居所与就业郊区化的空间不匹配

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Introduction

- Two trends in American Urban Areas: Immigration and Employment Decentralization;
- Immigrant settlement on inter- and intra-metropolitan levels: “Immigrant Suburban Nation” (Hardwick 2008);
- Employment Decentralization keeps its momentum (Holzer and Stoll 2007);
- It is unclear (1) what is the magnitude of spatial disparity between evolving immigrant residential pattern and evolving employment distribution within metropolitan areas and the change of spatial accessibility over time and (2) the direction of movement .

Spatial Mismatch Debate

- Spatial Mismatch Hypothesis (Kain 1968);
- Past studies on the role of space and other spatially constructed barriers (mismatches) on minorities' employment outcomes usually conducted for selected case study metros and for a given point in time (Ihlanfeldt and Sjoquist 1998 for review)
- Exceptions: Martin (2001, 2004) on the persistence of spatial mismatch between blacks and jobs for past decades;
- Recently, research on immigrants' spatial accessibility to jobs in selected cities: Parks (2004), Wang (2006), Liu (2009).

This Study

- Through the construct of Spatial Mismatch Index to capture the net effect of the relative shift of immigrants and jobs within metropolitan areas between 1980 and 2000, and decompose its change to population shift and employment shift;

- Evaluate the causes of intra-metropolitan spatial reorganization by assessing the effect of various factors on county-level change of immigrants and jobs.

Data and Sample

- Top 100 MSAs with largest immigrant population (2003 OMB definition of Metropolitan Statistical Area);
- Unit of Analysis: County;
- U.S. Census County and City Databook 1980, 1990, 2000;
- In order to calculate Spatial Mismatch Index, single-county MSAs and MSAs that one county dominate were eliminated from the sample, resulting in 60 MSAs, or 450 counties.

Employment Suburbanization

Table. Ring Counties' Share of MSA Employment, 1980-2000

	Share (Percent)			Change (Percentage Point)		
	1980	1990	2000	1980-1990	1990-2000	Total
St. Louis, MO-IL	63.9	78.3	82.2	14.5	3.9	18.3
Denver-Aurora, CO	45.9	56.7	63.1	10.8	6.4	17.1
Detroit-Warren-Livonia, MI	44.1	53.8	59.9	9.8	6.0	15.8
Baltimore-Towson, MD	55.8	63.8	70.8	7.9	7.1	15.0
Milwaukee-Waukesha-West Allis, WI	25.2	30.8	37.9	5.6	7.2	12.7
New Orleans-Metairie-Kenner, LA	45.0	51.7	57.6	6.7	5.8	12.5
Atlanta-Sandy Springs-Marietta, GA	54.8	63.2	67.2	8.4	4.0	12.4
Washington-Arlington-Alexandria, DC-VA-MD-WV	70.5	77.5	81.8	7.0	4.2	11.3
Portland-Vancouver-Beaverton, OR-WA	44.3	50.4	55.4	6.1	5.0	11.1
Cincinnati-Middletown, OH-KY-IN	35.0	38.5	45.8	3.5	7.4	10.8
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Wichita, KS	16.0	14.8	15.6	-1.3	0.8	-0.5
Buffalo-Niagara Falls, NY	16.7	15.8	14.7	-0.9	-1.2	-2.0
Greensboro-High Point, NC	27.8	25.5	24.4	-2.4	-1.1	-3.4
Tampa-St. Petersburg-Clearwater, FL	52.6	51.0	49.1	-1.6	-1.9	-3.5
Durham, NC	41.7	37.9	37.4	-3.8	-0.5	-4.3
Allentown-Bethlehem-Easton, PA-NJ	51.0	48.6	46.4	-2.3	-2.2	-4.5
Raleigh-Cary, NC	17.5	13.0	12.7	-4.5	-0.3	-4.8
Richmond, VA	68.5	63.3	62.8	-5.1	-0.5	-5.7
Virginia Beach-Norfolk-Newport News, VA-NC	83.0	78.4	75.4	-4.6	-3.0	-7.6
Charlotte-Gastonia-Concord, NC-SC	42.8	37.7	34.5	-5.1	-3.2	-8.2
Average	44.7	46.8	48.6	2.1	1.8	3.9

Immigrant Suburbanization

Table. Ring Counties' Share of MSA Foreign-born Population, 1980-2000

	Share (Percent)			Change (Percentage Point)		
	1980	1990	2000	1980-1990	1990-2000	Total
Atlanta-Sandy Springs-Marietta, GA	55.3	66.8	75.7	11.5	8.8	20.4
Cincinnati-Middletown, OH-KY-IN	29.2	30.2	44.4	1.0	14.2	15.2
New Orleans-Metairie-Kenner, LA	53.0	60.7	67.9	7.7	7.2	14.9
Baltimore-Towson, MD	66.8	73.2	79.7	6.5	6.5	13.0
Portland-Vancouver-Beaverton, OR-WA	47.8	53.2	59.7	5.4	6.5	11.9
Miami-Fort Lauderdale-Miami Beach, FL	22.9	25.8	34.6	2.9	8.8	11.7
Detroit-Warren-Livonia, MI	47.8	56.5	59.1	8.7	2.6	11.3
Greensboro-High Point, NC	17.0	15.9	26.6	-1.1	10.7	9.6
Chicago-Naperville-Joliet, IL-IN-WI	19.9	21.5	27.3	1.6	5.8	7.4
Sarasota-Bradenton-Venice, FL	35.0	40.6	42.2	5.6	1.6	7.3
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Albany-Schenectady-Troy, NY	57.4	54.0	51.5	-3.4	-2.4	-5.8
Allentown-Bethlehem-Easton, PA-NJ	56.8	52.3	49.8	-4.6	-2.4	-7.0
Richmond, VA	62.6	59.2	54.8	-3.5	-4.3	-7.8
Durham, NC	47.6	46.7	38.9	-0.9	-7.8	-8.7
Omaha-Council Bluffs, NE-IA	30.8	29.2	21.2	-1.5	-8.0	-9.5
Pittsburgh, PA	33.6	27.9	23.1	-5.7	-4.8	-10.5
Providence-New Bedford-Fall River, RI-MA	58.2	52.5	46.9	-5.7	-5.6	-11.3
Virginia Beach-Norfolk-Newport News, VA-NC	71.4	58.8	59.8	-12.6	1.1	-11.6
Tampa-St. Petersburg-Clearwater, FL	66.0	56.6	50.8	-9.4	-5.8	-15.2
Port St. Lucie-Fort Pierce, FL	52.6	41.9	33.8	-10.7	-8.1	-18.8
Average	48.1	47.4	49.8	-0.7	2.4	1.8

Native-born Suburbanization

Table. Ring Counties' Share of MSA Native-born Population, 1980-2000

	Share (Percent)			Change (Percentage Point)		
	1980	1990	2000	1980-1990	1990-2000	Total
Dallas-Fort Worth-Arlington, TX	48.9	54.9	59.9	6.0	5.0	11.0
Nashville-Davidson-Murfreesboro, TN	47.8	51.6	57.7	3.8	6.0	9.8
Denver-Aurora, CO	66.7	72.4	76.2	5.7	3.8	9.5
Atlanta-Sandy Springs-Marietta, GA	68.2	74.5	77.4	6.3	2.8	9.2
Austin-Round Rock, TX	28.5	32.7	37.1	4.2	4.4	8.6
Miami-Fort Lauderdale-Miami Beach, FL	57.6	63.1	66.0	5.5	2.9	8.4
Jacksonville, FL	22.7	27.4	31.0	4.7	3.6	8.3
Portland-Vancouver-Beaverton, OR-WA	58.6	62.2	66.5	3.6	4.3	7.9
Cincinnati-Middletown, OH-KY-IN	50.6	53.5	58.3	2.9	4.8	7.7
Indianapolis, IN	36.9	38.6	44.2	1.7	5.6	7.3
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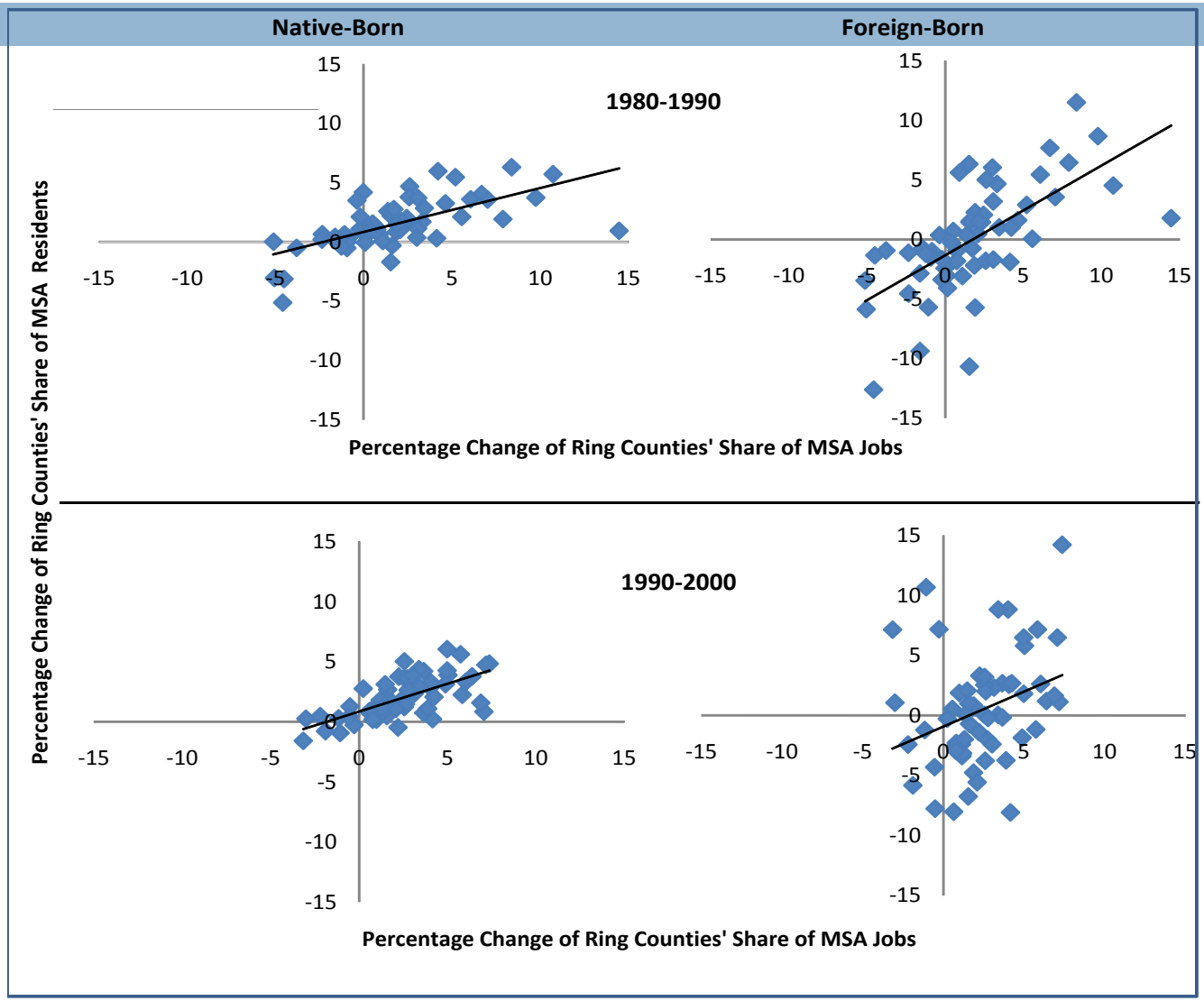
Grand Rapids-Wyoming, MI	23.4	22.9	23.4	-0.5	0.6	0.0
New York-Northern New Jersey-Long Island, NY-NJ-PA	92.1	91.8	92.0	-0.3	0.2	-0.1
San Francisco-Oakland-Fremont, CA	82.8	83.1	82.6	0.3	-0.5	-0.2
Wichita, KS	21.7	21.4	21.5	-0.4	0.2	-0.2
Tampa-St. Petersburg-Clearwater, FL	59.5	59.9	59.1	0.4	-0.8	-0.3
Greensboro-High Point, NC	35.8	36.0	35.1	0.2	-0.9	-0.7
Port St. Lucie-Fort Pierce, FL	41.8	40.1	40.3	-1.7	0.2	-1.5
Raleigh-Cary, NC	25.4	22.3	22.0	-3.1	-0.3	-3.4
Charlotte-Gastonia-Concord, NC-SC	46.4	43.4	41.8	-3.0	-1.6	-4.6
Virginia Beach-Norfolk-Newport News, VA-NC	78.5	73.4	73.6	-5.1	0.3	-4.9
Average	54.4	55.5	57.0	1.2	1.4	2.6

Job Suburbanization versus Population Suburbanization



Spatial Mismatch Index

- Dissimilarity Index (Massey and Denton 1988);
- Spatial Dissimilarity Index (SMI)

$$SMI = \frac{1}{2}\sum_i \left| \frac{E_i}{E} - \frac{P_i}{P} \right|$$

where i = (1,… n) and refers to each county (or other geographic sub-units) in the metropolitan area, In this analysis, Ei and Pi are the employment and population in a given county respectively. E and P are the employment and population for the metro as a whole.

SMI Between Immigrants and Jobs

Table. Spatial Mismatch Index between Immigrants and Jobs, 1980-2000

	SMI			1980-2000 Change		
	1980	1990	2000	Total	Due to Job Shift	Due to Resident Shift
Milwaukee-Waukesha-West Allis, WI	4.4	9.9	16.0	11.6	12.7	-1.2
Pittsburgh, PA	4.7	9.1	14.1	9.5	2.5	7.0
Port St. Lucie-Fort Pierce, FL	7.5	4.7	16.9	9.4	2.6	6.8
Tulsa, OK	3.1	7.3	11.0	7.9	3.0	4.9
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	9.4	14.6	16.4	7.0	13.3	-6.3
Memphis, TN-MS-AR	2.4	6.5	8.1	5.6	4.4	1.2
Indianapolis, IN	3.2	5.3	8.7	5.5	1.2	4.4
Sacramento-Arden-Arcade-Roseville, CA	4.8	5.4	10.1	5.3	5.7	-0.4
Richmond, VA	14.1	16.3	19.2	5.1	-3.3	8.4
Atlanta-Sandy Springs-Marietta, GA	24.7	28.3	29.7	5.0	-7.5	12.5
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...						
Albany-Schenectady-Troy, NY	10.8	9.1	6.7	-4.1	4.2	-8.3
Riverside-San Bernardino-Ontario, CA	5.6	3.1	0.1	-5.5	-4.5	-1.0
Greensboro-High Point, NC	10.8	9.6	5.3	-5.5	-3.4	-2.0
St. Louis, MO-IL5	17.2	8.5	11.2	-6.1	-8.2	2.1
Oklahoma City, OK	11.6	7.3	5.4	-6.1	-4.5	-1.6
Charlotte-Gastonia-Concord, NC-SC	21.7	22.5	14.0	-7.7	-8.2	0.5
Raleigh-Cary, NC	10.5	7.3	0.9	-9.5	-4.8	-4.7
Durham, NC	15.2	15.5	5.6	-9.7	0.9	-10.6
Tampa-St. Petersburg-Clearwater, FL	13.4	5.6	3.5	-9.9	4.3	-14.2
San Francisco-Oakland-Fremont, CA	41.0	36.2	30.1	-10.9	0.0	-10.9
Average	16.8	17.1	15.8	-1.0	3.1	-4.2

SMI Between Native-born and Jobs

Table. Spatial Mismatch Index between Native-born Residents and Jobs, 1980-2000

	SMI			1980-2000 Change		
	1980	1990	2000	Total	Due to Job Shift	Due to Resident Shift
St. Louis, MO-IL	8.1	15.9	17.7	9.7	9.8	-0.1
Port St. Lucie-Fort Pierce, FL	3.3	6.6	10.5	7.2	5.7	1.5
Allentown-Bethlehem-Easton, PA-NJ	6.2	9.2	11.9	5.7	4.5	1.1
Detroit-Warren-Livonia, MI	5.5	7.5	11.0	5.5	8.6	-3.1
Austin-Round Rock, TX	10.4	14.6	15.6	5.2	-3.4	8.6
Durham, NC	6.1	9.4	11.2	5.1	4.3	0.8
Seattle-Tacoma-Bellevue, WA	10.1	12.4	14.9	4.8	0.0	4.9
Dallas-Fort Worth-Arlington, TX	10.4	12.5	15.0	4.6	-5.9	10.6
Orlando-Kissimee, FL	11.2	15.1	15.7	4.5	-0.8	5.3
Tampa-St. Petersburg-Clearwater, FL	6.9	8.9	10.6	3.8	3.5	0.2
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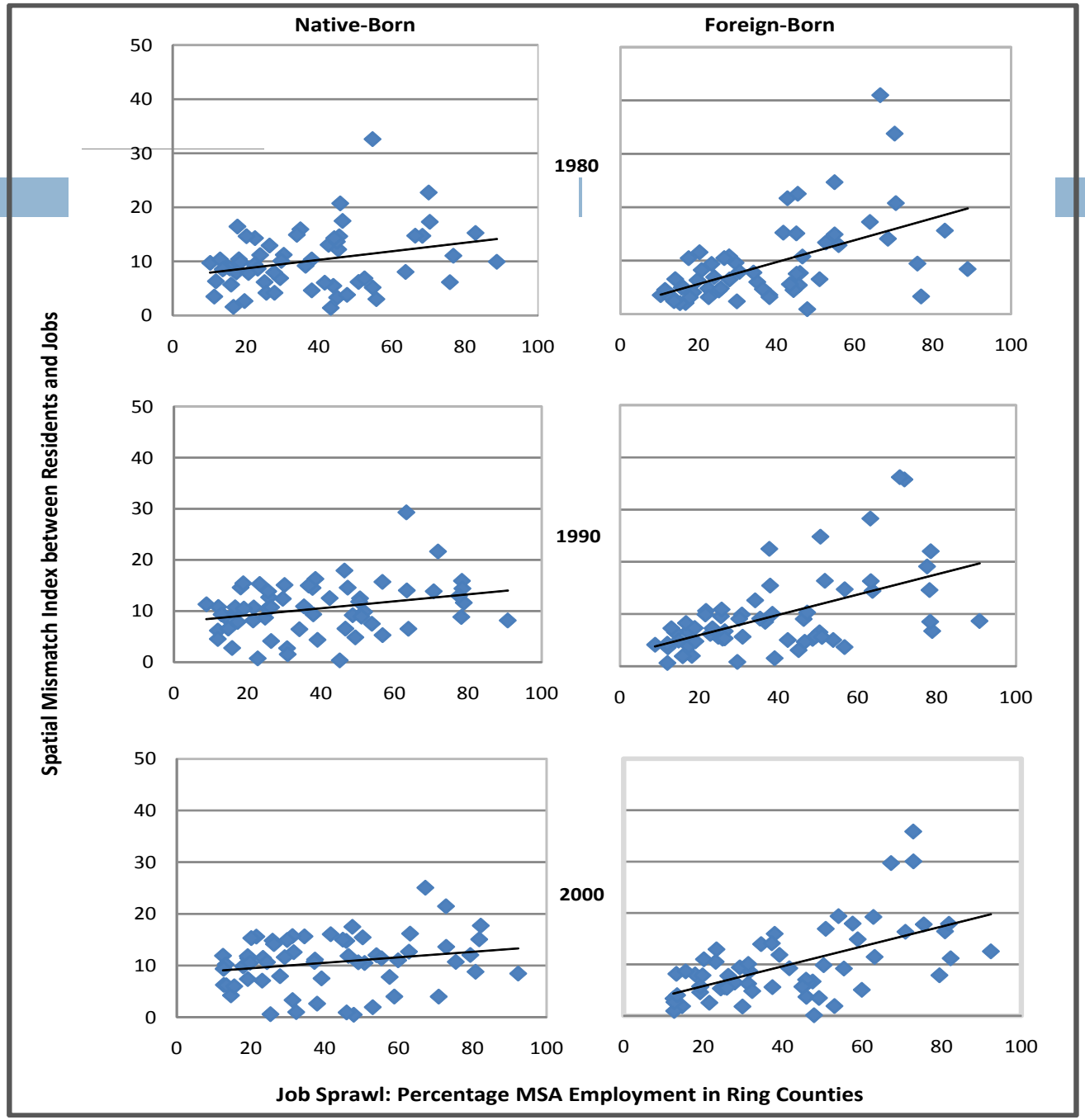
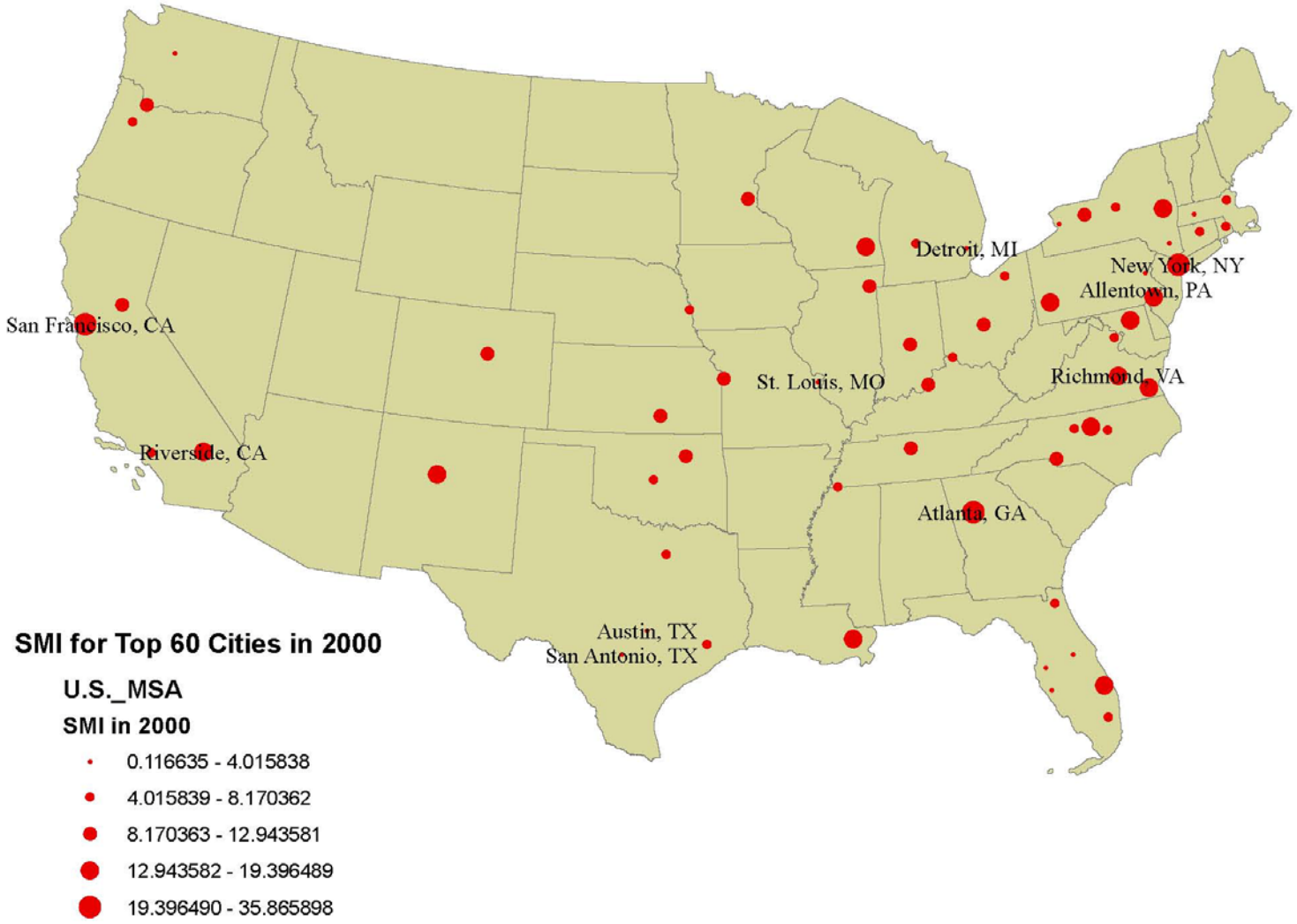
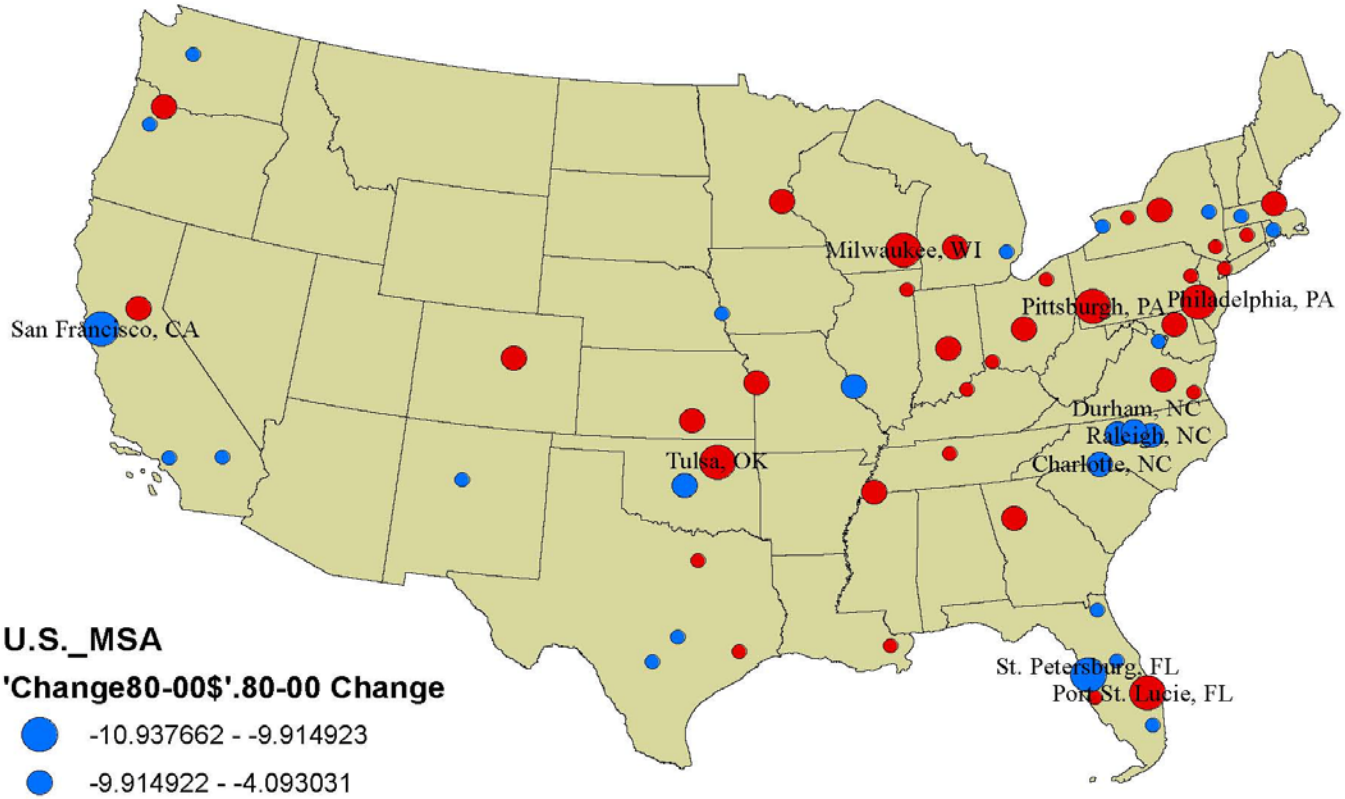
Los Angeles-Long Beach-Santa Ana, CA	2.7	0.7	0.6	-2.1	-1.2	-0.9
Washington-Arlington-Alexandria, DC-VA-MD-WV	17.3	13.0	15.1	-2.2	-6.5	4.2
Portland-Vancouver-Beaverton, OR-WA	14.3	11.8	11.4	-2.9	-7.4	4.5
Springfield, MA	4.2	1.5	1.0	-3.2	-4.3	1.1
Milwaukee, WI	6.2	2.7	2.6	-3.5	-1.7	-1.8
Sarasota-Bradenton-Venice, FL	4.6	4.4	0.9	-3.7	-2.8	-1.0
Denver-Aurora, CO	20.7	15.7	16.2	-4.6	-11.8	7.2
Virginia Beach-Norfolk-Newport News, VA-NC	15.3	14.4	10.7	-4.6	-11.0	6.4
New Orleans-Metairie-Kenner, LA	13.7	9.8	7.8	-5.9	-13.1	7.2
Atlanta-Sandy Springs-Marietta, GA	32.6	29.3	25.1	-7.6	-16.4	8.8
Average	11.1	11.0	11.4	0.3	-2.0	2.2


Native-Born
Foreign-Born
1980
1990
2000
Spatial Mismatch Index between Residents and Jobs
Job Sprawl: Percentage MSA Employment in Ring Counties
0
10
20
30
40
50
0
20
40
60
80
100

SMI for MSAs Across the U.S. in 2000



Change in Spatial Mismatch Index from 1980 to 2000



U.S._MSA

'Change80-00$'.80-00 Change

- -10.937662 - -9.914923
- -9.914922 - -4.093031
- -4.093030 - -0.004700

U.S._MSA

'Change80-00$'.80-00 Change

- 0.156315 - 2.842500
- 2.842501 - 5.647862
- 5.647863 - 11.565207

Regression Analysis (lagged models)

- $IMMSHARE_{1980\text{-}1990} = f\ (IMMSHARE_{1980}, EMPSHARE_{1980}, X_{1980})$ (1)
- $IMMSHARE_{1990\text{-}2000} = f\ (IMMSHARE_{1990}, EMPSHARE_{1990}, X_{1990})$ (2)
- $EMPSHARE_{1980\text{-}1990} = f\ (EMPSHARE_{1980}, IMMSHARE_{1980}, X_{1980})$ (3)
- $EMPSHARE_{1990\text{-}2000} = f\ (EMPSHARE_{1990}, IMMSHARE_{1990}, X_{1990})$ (4)

Variables List:

- Immigrant Share
- Employment Share
- Manufacturing Share
- Wholesale Share
- Services Share
- Construction Share
- Retail Share
- Native-born Share

Center

College

Tax

Expenditure

Unemployment Rate

Poverty Rate

Median Housing Value

Crime Rate

Regression Results of County Population Shift

Regression Results of County Employment Shift

Conclusion

- Immigrants are more spatially mismatched than native-borns in the context of employment decentralization. While jobs are moving towards where native-borns concentrate but away from immigrants, immigrants tend to follow jobs and their residential mobility were able to totally offset the otherwise enlarging spatial disparity.
- Immigrants' spatial accessibility to jobs are worse in cities experiencing greater employment decentralization, and this correlation is much stronger than that for native-borns.
- Between 1980 and 2000, immigrants are attracted to parts of the MSA that have high share of sales jobs, have above MSA average college graduates and lower than average crime rates. Immigrants are diverging from their existing residential concentration, though central county still remains a prominent destination.
- Businesses are attracted to highly-populated areas, especially those native-borns tend to reside, and with relatively high presence of college graduates and low unemployment rate. Employment growth is happening outside existing employment centers, and outside central counties.