
Immigration, Race, and Labor Market Structures in American Metropolitan Areas

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Abstract: In understanding the linkage between the spatial concentration of immigrant populations and local labor markets, this study pay particular attention to the relationships between the size and compositions of immigrants in urban areas and three types of local employment conditions: employment distributions across all local industrial sectors; overall employment rate; and local unemployment rate. Using a sample of the 312 PMSAs/MSAs, the volume of local immigrants reveals significant associations with employment patterns of some local industries (construction, wholesale services, education, and professional). First, this research finds that employment in the industrial sectors of agriculture, transportation, manufacturing, and wholesale services rises to the extent that proportion of recent

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immigrants increases. Second, the volume of immigrant population shows a negative association with the overall employment rate. Third, this study also indicates that local unemployment rates rise to the degree that immigrant population relative to local natives grows. As a whole, however, this study suggests that the size and compositions of local minority populations will have little to do with local employment conditions.

I. Introduction

Peter Blau (1977, 1994) has introduced heterogeneity and inequality as the two basic forms of differentiation in social structure. For the most part, heterogeneity, understood as the distribution or composition of population among groups, tends to exert a direct influence on inequality that pertains to the status distribution among people. In fact, urban labor market research has revealed the overarching impacts of immigrant and racial minority compositions related to a variety of topics, such as a widening inequality in economic status between white workers and minority workers, including immigrant workers (Bean, Leach, and Lowell 2004; Krivo, Peterson, Rizzo, and Reynolds 1998; Raijman and Tienda 1999), and growing disparities in occupational positions among different racial groups (Beggs, Villemez, and Arnold 1997; Blalock 1967; Burr, Galle, and Fossett 1991; Snipp and Hirschman 2005). In the same context, the size and compositions of immigrants or racial minority populations have been identified as the key sources of immigrants' or the natives' opportunities and constraints in employment and earnings (Bean and Stevens 2003; Hamermesh and Bean 1998; Huffman and Cohen 2004; McCall 2001; Spalter-Roth and Lowenthal 2005), their own groups' opportunities and constraints within an ethnic niche/enclave economy (Logan, Alba, and Zhang 2002; Wilson 2003; Zhou 1992),

and the outmigration of local native-born workers (Card 2001; Kritz and Gurak 2001; Wright, Ellis, and Reibel 1997).

However, the topic of whether the size and compositions of immigrants and racial minority populations in metropolitan areas have any substantial relationships with specific employment conditions in urban areas—specific employment distributions across local industrial sectors—has been relatively unexplored in past studies of local labor markets. Likewise, little is known about the associations between urban population groups by immigrant status or racial status and overall urban employment and unemployment rates. To fill this theoretical and empirical gap, this study attempts to address the point that local employment conditions, expressed as the distributions of specific industrial employment in metropolitan areas, have something to do with the size and composition of local immigrants among urban residents. To date, the volume of immigrants in the total US population has risen from 6.2 percent in 1980 to 11.1 percent in 2000, and most immigrants have settled in metropolitan areas (Alba et al. 1999; Bean, Lee, Batalova, and Leach 2005; Frey 2003, 2006; Singer 2004). In the same way, Latino population also has grown to constitute 12.5 percent of the total US population in 2000 from 6.4 percent in 1980, along with Asian population surging from 1.4 percent in 1980 to 3.9 percent of the total US population in 2000 (Goldin 2000; Saenz 2005; Xie and Goyette 2005).

With a relentlessly growing influx of immigrants from Asia and Central or South America, immigrants and racial minority populations—in particular, Latinos and Asians—continue to spread out from their traditional metropolitan areas to new metropolitan areas (Frey 2003, 2006; Logan, Alba, and Zhang 2002; Suro and Singer 2002). Recent population dynamics among immigrants and racial minorities in metropolitan areas made us possible to infer that the structure of local labor markets in urban America will have a tendency to adjust to growing immigrants and Latinos

and Asians. This inference is based on the pattern that these minority residents not only become emerging entities of local labor force, but also they emerge as rising consuming populations of local goods or services. As local employment patterns and unemployment rate vary with the size and compositions of local immigrants and racial minority populations, such issue is as much important as the topics of economic and occupational inequalities between local minority workers and white workers.

II. Immigration, Race, and Urban Labor Markets

There have been two competing arguments about the relationship between local racial minority populations and urban labor markets. In one sense, local racial minority populations, particularly of African Americans, often are confronted with the difficulty in searching for local jobs. As a consequence, they tend to experience underemployment in urban areas where the majority (i.e., local whites) take them, as a group, as an economic threat (Cohen and Fossett 1995; Liberson 1980; McCreary, England, and Farkas 1989). Other studies also show that local racial minority populations experience employment hardships in intrametropolitan area where spatial mismatch between their greater residential concentrations in central cities and relatively better employment prospect in the suburbs takes effect (Lichter 1988; Martin 2001; Stoll, Holzer, and Ihlanfeldt 2000). What follows is a rise in the local unemployment rate because its growth is substantially driven by the spatial concentration of racial minority populations in specific urban areas (Massey and Denton 1993; O'Regan and Quigley 1998). Despite no direct research on the volume of local immigrants and their impacts on local employment conditions, much of Borjas' and his associates' works on immigration and labor markets envision that the oversupply of existing and new labor forces in some less-skilled sectors of employment within

local labor markets will worsen general conditions of local employment regardless of whether either natives or immigrant workers will be far more disadvantaged than their counterparts in an attempt to pursue local employment opportunities (Borjas 1990, 1999, 2003; Borjas, Freeman, and Katz 1996).

By contrast, persuasive to a great extent is a view that more entry of racial minority populations (particularly immigrants) into an urban place is beneficial to the local labor markets generally because some low-status/low wage employment sectors unattractive to existing native workers are filled up by such new local populations on behalf of some of native workers pursuing more desirable jobs with upward occupational mobility (Liebersohn 1980; Waldinger 1996). Some empirical studies also reveal that a rise in immigrants, largely Latino immigrants, generally leads to overall local employment growth or sometimes results in an employment growth effect in certain local industries, such as the sectors of agriculture, retail and personal services, construction, transportation, and manufacturing (Card 1990; Enchautegui 1997; Jasso and Rosenzweig 1990; James, Romine, and Zwangzig 1998; Wright and Ellis 2000). The native whites' employment in local managerial and professional sectors known for white-collar jobs will also rise up with local immigrant growth because such sectors of occupations — e.g., managers, clerical workers, lawyers, accountants, insurers, bankers, physicians, and so on — require American licenses and English proficiency at the minimum (Meisenheimer II 1992; Mueller 1993; Wilson 2003). Likewise, employment patterns in local industries are inseparable from the size and compositions of local immigrants who often facilitate the creation of local jobs commensurate with their own racial/ethnic tastes and preferences (Aldrich et al. 1985; Light and Rosenstein 1995; Linton 2002). The relatively growing proportion of self-employment in metropolitan areas is closely associated with the increasing size and compositions of those populations (Fairlie

2004; Light and Sanchez 1987; Oh, 2008).

Aside from a general interest in the local employment conditions by immigration status or racial groups, less interest is shown about whether the different size and compositions of immigrant cohorts are related to the distributions of specific industrial employment or overall employment and unemployment rates in urban areas. More specifically, little is known about the relationships between recent and earlier immigrant populations in urban areas and local employment conditions. Not surprisingly, recent immigrants often are portrayed as a less-educated and low-skilled labor force group. They are also at a disadvantage due to relatively greater deficiencies of job information, fewer job networks, and low level of English proficiency. As a result, relative to earlier immigrants, they are likely to experience more barriers to access to local employment (Jasso and Rosenzweig 1990; Lofstrom and Bean 2002; Toussaint-Comeau 2006). Even recent Asian immigrants having more human capital tend to experience employment mismatch between their high educational attainments and less availability of local jobs comparable to their educational attainment (Madamba and De Jong 1997).

Unlike a plausible allusion from Borjas' works that the overpopulation of short-stayed and less-skilled immigrants and their prevailing competitions with the native work force generally makes local labor market slide into recession, his past research suggests a contrasting perspective. An adverse impact of recent immigrants on employment opportunities of less-skilled natives, just like a slight impact of overall immigrants on native employment opportunities, is to a great extent offset by the effect of their nationwide economic benefit by magnifying American economic scale and also creating additional jobs by means of more demands for goods and services produced by native workers and firms (Borjas 1990, 1999). Moreover, the relatively higher labor force participation rate of immigrant groups within or outside main-

stream labor market may resonate with rising local employment growth (Carter and Sutch 1999; Waters and Eschbach 1995). In other words, the growing agglomeration of local immigrants without regard to the quality of human capital and duration of residence in the US might have the substantial impacts on the local employment growth, as often revealed in the trend of local employment growth after the rising arrivals of domestic migrants (Greenwood and McDowell 1986; Negrey and Zickel 1994 Sweezy and Owens 1974).

III. Research Questions

As stressed above, the main goal of this study is to explore the associations between the size and compositions of urban immigrant/racial minority populations and local employment conditions, including employment distributions across all industrial categories, overall local employment rate, and local unemployment rate. For this purpose, this study poses three questions about specific local industrial employment under the spatial concentration of immigrants and racial minority populations in urban areas: What specific sectors in local industries experience an employment growth or decline in response to the size and compositions of urban immigrant and racial minority populations?; in what direction does the relative proportion of recent immigrants among total local immigrants exert an influence on the employment distribution of individual local industrial sectors?; and based upon a certain number of immigrants in urban areas, how and to what extent does the size and composition of local minorities (Blacks, Latinos, and Asians) and native majorities (here, non-Hispanic whites) affect local employment patterns across all industrial sectors?

In this study, all of the employment distributions in local industries are identified by the analysis of 13 industrial categories

in the NAICS (North American Industry Classification System). Next, this study further raises questions as to whether and in what direction the size and compositions of urban immigrant and racial minority populations are correlated with overall local employment and unemployment rates. Furthermore, the question of whether the relative proportion of recent immigrants has any substantial implication for overall local employment and unemployment rates also is tested in this study.

IV. Data and Methods

The unit of analysis in this study is based upon the 312 Primary Metropolitan Statistical Areas /Metropolitan Statistical Areas (PMSAs/MSAs) where population in each metropolitan area is greater than 100,000 as of 2000 (Office of Management and Budget 1999). The main condition of a Metropolitan Statistics Area (MSA) requires a city with a 50,000 population or more, or an urbanized area with a total population of at least 100,000. In addition to the sources of data from the on-line site sponsored by the Lewis Mumford Center for Comparative Urban and Regional Research, the University at Albany, SUNY and the 2006 State and Metropolitan Area Data Book, data for most detailed demographic and economic characteristics of the population in 2000 are obtained from on-line State of the Cities Data System (SOCDS) sponsored by the U.S. Department of Housing and Urban Development's Office of Policy Development that has compiled census data for a total of 331 metropolitan areas from 1970 to 2000.

As the key dependent variables, at first, this study employs a series of measures about industrial employment compositions to identify specific local economic conditions in the midst of urban concentration of immigrant and racial minority populations. As follows, patterns of local industrial employment are measured by

percentage of workers in each industry by NAICS, which is mainly classified as 13 industrial sectors: (1) agriculture, forestry, fishing, hunting, and mining (Agriculture); (2) arts, entertainment, recreation, accommodation, and food services (Entertainment); (3) construction; (4) transportation, warehousing, and utilities (Transportation); (5) manufacturing; (6) retail services; (7) wholesale services; (8) finance, insurance, real estate, rental, and leasing services (FIRE); (9) education; (10) information; (11) professional, scientific, management, administrative, and waste management services (Professional); (12) other services -e.g., repair and maintenance, personal and laundry, or private household services; and (13) public administration. Another two key dependent variables in this study are urban employment and unemployment rates at the metropolitan level. Urban employment rate is measured by the percentage of labor force participation among working-age population (16 years of age and over), while urban unemployment rate is measured as the percentage of those who were not at work but were looking for work at that time.

In this study, immigration and race at the metropolitan level are dealt with as the two key determinants of three types of local employment conditions. More specifically, three specific immigration variables used in this study are measured by percentages of total immigrants (foreign-born population), recent immigrants arrived in America in the past 5 years, and earlier immigrants arrived before 1995, respectively. In fact, there is no convincing evidence that a distinction between recent and earlier immigrant cohorts depends upon a dichotomy of duration of stay in a host society (5 years before and after). Nevertheless, this study regards before- and after-5 years of stay in America as the cut-off period because of our research interest as to whether urban labor markets are affected by the size and composition of recent local immigrants. As another key independent variable, race is measured by four racial groups, all of which represent a percentage of each

racial population in metropolitan areas: Non-Hispanic Whites, Blacks, Latinos, and Asians.

In addition, two human capital measures, treated as the control variables in this study, are the percentage of high school graduates or less and college graduates or more. Faced with a difficulty to include a measure reflecting a gendered difference at labor market participation rate, this study employs, as an alternative, a variable of males per 100 females as of 2003. Natural log of total population is also used as a control variable in this study. U.S region, coded as 1 = South and West and otherwise, 0 = Northeast and Midwest, is used as the last control variable because annexation has been far more rapid and easier in metropolitan areas located in the South and West regions than those in the Northeast and Midwest (Abbott 1987; Stahura and Marshall 1982; Abrahamson and Hardt 1990).

V. Results

Table 1 presents descriptive statistics (mean, standard deviation, and range) on three types of local employment conditions and the independent variables for a sample of 312 metropolitan areas in the 2000 census.

In this study, the distributions of local industrial employment are understood as a way to embody local employment conditions. In fact, information on the 13 industrial sectors by NAICS reveals that the top five industries of local employment in urban areas are in education (21.1 percent), manufacturing (14.2 percent), retail services (12.2 percent), Entertainment (8 percent), and Professional (7.9 percent). As another set of key dependent variables, overall local employment in metropolitan areas (percent metropolitan total employment) averages nearly 50 percent, while the average of total local unemployment (percent metropolitan unemployment) approaches 6 percent. In three measures of

Table 1. Descriptive Statistics for Variables Used in the Analysis in 2000 (N=312 MAs)

Variable	Mean	Standard Deviation	Range min	Range Max
Dependent Variables:				
Workers by NAICS industry;				
Percent agricultural workers ^a	1.8	2.4	0.1	22.3
Percent entertainment workers ^b	8.0	2.7	4.8	29.7
Percent construction workers	6.8	1.4	4.3	14.6
Percent transportation workers ^c	4.8	1.7	2.2	14.5
Percent manufacturing workers	14.2	7.0	1.9	47.8
Percent retail service workers	12.2	1.8	2.5	18.0
Percent wholesale service workers	4.8	1.7	2.2	14.5
Percent FIRE workers ^d	6.3	2.5	2.7	23.0
Percent education workers	21.1	4.2	11.9	40.9
Percent information workers	2.6	1.0	0.8	6.7
Percent professional workers ^e	7.9	2.6	3.5	18.3
Percent other services' workers	4.8	0.6	3.2	6.8
Percent public administration workers	5.0	2.9	1.4	22.2
Percent metropolitan total employment	50.3	4.8	35.7	73.4
Percent metropolitan unemployment	5.8	1.8	2.6	13.1
Immigration:				
Percent total immigrants	7.7	7.5	0.9	50.9
Percent recent immigrants	3.3	3.0	0.2	18.5
Percent earlier immigrants	4.4	4.7	0.5	32.5
Race:				
Percent whites	74.1	16.8	4.9	97.9
Percent blacks	11.3	10.7	0.2	51.1
Percent latinos	10.2	14.5	0.5	94.3
Percent asians	3.0	4.9	0.4	69.2
Control Variables:				
Percent high school graduates or less	48.0	8.6	22.0	70.1
Percent college graduates or more	23.7	7.4	11.1	52.4
Males per 100 females	96.7	4.1	88.3	128.6
Total population (ln)	13.5	0.8	12.4	16.1
Region (south and west = 1)	0.5	0.5	0.0	1.0

Note: ^aagriculture, forestry, fishing, hunting, and mining (Agriculture); ^barts, entertainment, recreation, accommodation, and food services (Entertainment); ^ctransportation, warehousing, and utilities (Transportation); ^dfinance, insurance, real estate, rental, and leasing services (FIRE); and ^eprofessional, scientific, management, administrative, and waste management services (Professional).

immigration, 7.7 percent of urban residents in 2000 is composed of immigrants — also called foreign-born population, in which 3.3 percent of them arrived between 1995 and 2000 (recent immigrants) and the remaining 4.4 percent of them came to America before 1995 (earlier immigrants). Of all residents in metropolitan areas, non-Hispanic Whites constitute almost 74 percent of total urban residents, followed by Blacks (11.3 percent), Latinos (10.2 percent), and Asians (3 percent) as of 2000. Besides, a large percent (48) of urban residents, who completed schooling, show high school educations or less.

Table 2 presents the regressions of employment distributions across all 13 industrial sectors on three measures of immigration and four predictors of racial populations in metropolitan areas.

Table 2. Regressions for Employment Distributions by 13 NAICS Industries on Selected Immigration and Racial Variables, 2000

Variable	Agriculture		Entertainment		Construction		Transportation		Manufacturing	
	b	b	b	b	b	b	b	b	b	b
<i>Immigration:</i>										
Percent total immigrants	.043 (.030)	-----	.026 (.037)	-----	-.038* (.018)	-----	.009 (.023)	-----	.051 (.082)	-----
Percent recent immigrants	-----	.254* (.120)	-----	-.012 (.148)	-----	.115 (.070)	-----	.319*** (.091)	-----	1.103*** (.319)
Percent earlier immigrants	-----	-.085 (.077)	-----	.049 (.095)	-----	-.131** (.045)	-----	-.180** (.058)	-----	-.589** (.204)
<i>Race:</i>										
Percent whites	-.036 (.066)	-.042 (.066)	-.146 (.081)	-.145 (.082)	.077* (.039)	.073 (.039)	-.139** (.051)	-.146** (.050)	.249 (.179)	.222 (.176)
Percent blacks	-.061 (.066)	-.067 (.065)	-.170* (.080)	-.169* (.081)	.071 (.038)	.066 (.038)	-.133** (.051)	-.143** (.050)	.219 (.177)	.185 (.174)
Percent latinos	-.013 (.068)	-.016 (.068)	-.157 (.083)	-.157 (.083)	.092* (.040)	.090* (.039)	-.125* (.052)	-.130* (.051)	.108 (.182)	.092 (.179)
Percent asians	-.054 (.072)	-.053 (.071)	-.128 (.088)	-.128 (.088)	.036 (.042)	.037 (.042)	-.128* (.055)	-.126* (.054)	.119 (.193)	.125 (.189)
<i>Control Variables:</i>										
Percent high school graduates or less	.034 (.033)	.023 (.033)	-.067 (.041)	-.065 (.041)	-.034 (.019)	-.041 (.020)	.028 (.025)	.013 (.025)	.267** (.083)	.217* (.089)
Percent college graduates or more	-.042 (.039)	-.069 (.042)	-.071 (.048)	-.066 (.052)	-.011 (.023)	-.031 (.025)	-.025 (.030)	-.065* (.030)	-.046 (.106)	-.183 (.112)
Males per 100 females	.104** (.034)	.084* (.036)	-.016 (.042)	-.012 (.044)	-.012 (.020)	-.027 (.021)	-.065* (.026)	-.095*** (.027)	.124 (.092)	.024 (.095)
Total population (ln)	-.000** (.000)	-.000** (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	-.000 (.000)	.000* (.000)	.000* (.000)	.000 (.000)	.000 (.000)

<i>Region</i> (south and west = 1)	.537 (.300)	.493 (.300)	.795* (.368)	.803* (.370)	1.393*** (.176)	1.361*** (.175)	-.261 (.231)	-.326 (.227)	-4.453*** (.807)	-4.676*** (.795)
<i>Constant</i>	-5.536 (7.967)	-2.051 (8.167)	28.620** (9.769)	27.993** (10.067)	1.838 (4.663)	4.372 (4.765)	23.739 (6.137)	28.875 (6.196)	-29.991 (21.434)	-12.577 (21.668)
<i>R</i> ²	.245	.254	.074	.074	.256	.268	.135	.170	.331	.357
(continued)	<i>Retail Services</i>		<i>Wholesale Services</i>		<i>FIRE</i>		<i>Education</i>		<i>Information</i>	
Variable	b	b	b	b	b	b	b	b	b	b
<i>Immigration:</i>										
Percent total immigrants	-.005 (.023)	-----	.039** (.014)	-----	.006 (.032)	-----	-.147** (.054)	-----	.007 (.010)	
Percent recent immigrants	-----	-.118 (.092)	-----	1.98*** (.054)	-----	.085 (.127)	-----	-.341 (.213)	-----	-.021 (.040)
Percent earlier immigrants	-----	.063 (.059)	-----	-.058 (.034)	-----	-.042 (.081)	-----	-.030 (.136)	-----	.024 (.026)
<i>Race:</i>										
Percent whites	-.011 (.051)	-.009 (.051)	.018 (.030)	.014 (.030)	.079 (.070)	.077 (.070)	-.097 (.117)	-.092 (.117)	.014 (.022)	.015 (.022)
Percent blacks	-.052 (.050)	-.048 (.050)	.010 (.030)	.005 (.029)	.092 (.069)	.089 (.069)	-.105 (.116)	-.099 (.116)	.008 (.022)	.009 (.022)
Percent latinos	-.024 (.052)	-.022 (.052)	.019 (.031)	.017 (.030)	.081 (.071)	.080 (.072)	-.009 (.120)	-.006 (.120)	.014 (.022)	.015 (.023)
Percent asians	-.043 (.055)	-.044 (.054)	.008 (.032)	.009 (.032)	.098 (.076)	.099 (.076)	-.074 (.126)	-.075 (.126)	.023 (.024)	.023 (.024)
<i>Control Variables:</i>										
Percent high school graduates or less	-.012 (.025)	-.007 (.026)	.010 (.015)	.002 (.015)	-.023 (.035)	-.027 (.035)	.133* (.058)	.142* (.059)	.004 (.011)	.005 (.011)
Percent college graduates or more	-.055 (.030)	-.041 (.032)	-.022 (.018)	-.042 (.019)	.093* (.042)	.082 (.045)	.338*** (.070)	.363*** (.075)	.073*** (.013)	.076*** (.014)
Males per 100 females	-.075** (.026)	-.064* (.027)	-.050*** (.015)	-.065*** (.016)	-.084* (.036)	-.092* (.038)	-.190** (.061)	-.171** (.064)	-.015 (.011)	-.012 (.012)
Total population (ln)	-.000 (.000)	-.000 (.000)	.000 (.000)	.000 (.000)	.000** (.000)	.000** (.000)	-.001*** (.000)	-.001*** (.000)	.000*** (.000)	.000*** (.000)
<i>Region</i> (south and west = 1)	.574* (.229)	.597** (.229)	.071 (.135)	.037 (.134)	-.234 (.316)	-.251 (.318)	-.853 (.530)	-.812 (.532)	.041 (.100)	.047 (.100)
<i>Constant</i>	22.911*** (6.071)	21.051*** (6.241)	6.321 (3.588)	8.955* (3.640)	5.130 (8.407)	6.438 (8.659)	35.969* (14.070)	32.766* (14.480)	.454 (2.644)	-.008 (2.723)
<i>R</i> ²	.152	.156	.171	.196	.210	.211	.224	.226	.487	.488
(continued)	<i>professional</i>		<i>Other services</i>		<i>Public Administration</i>					
Variable	b	b	b	b	b	b	b	b	b	b
<i>Immigration:</i>										
Percent total immigrants	.084*** (.021)	-----			-.008 (.007)	-----	-.062 (.038)	-----		
Percent recent immigrants	-----		-.003 (.085)			-.072** (.027)			-.528*** (.148)	
Percent earlier immigrants	-----		.137* (.054)			.031 (.017)	-----		.221* (.095)	
<i>Race:</i>										
Percent whites	.075 (.047)		.077 (.047)		-.001 (.015)	-.001 (.015)	-.075 (.083)		-.063 (.082)	
Percent blacks	.057 (.047)		.059 (.046)		-.008 (.015)	-.006 (.015)	-.011 (.082)		.004 (.081)	

Percent latinos	.064 (.048)	.065 (.048)	.004 (.015)	.005 (.015)	-.026 (.084)	-.019 (.083)
Percent asians	.055 (.050)	.054 (.050)	-.011 (.016)	-.012 (.016)	-.009 (.089)	-.012 (.088)
<i>Control Variables:</i>						
Percent high school graduates or less	-.054* (.023)	-.050* (.024)	-.008 (.007)	-.004 (.008)	-.070 (.041)	-.048 (.041)
Percent college graduates or more	.135*** (.028)	.146*** (.030)	-.022* (.009)	-.013 (.009)	.018 (.049)	.079 (.052)
Males per 100 females	-.054* (.024)	-.046 (.025)	-.056*** (.008)	-.050*** (.008)	-.006 (.043)	.038 (.044)
Total population (ln)	.001*** (.000)	.001*** (.000)	.000* (.000)	.000* (.000)	-.000 (.000)	-.000 (.000)
Region (south and west = 1)	.871*** (.211)	.890*** (.212)	.482*** (.068)	.495*** (.067)	.666 (.374)	.765* (.369)
Constant	3.941 (5.608)	2.501 (5.769)	10.961*** (1.797)	9.902*** (1.834)	14.753 (9.923)	7.044 (10.048)
R ²	.646	.647	.333	.347	.144	.174

Note: Numbers in parentheses are standard errors; N = 312 metropolitan areas.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed t-tests)

In the analysis of each local industrial employment, two models are reported; one including the proportion of total immigrants only and the other including disparate proportions of recent and earlier immigrants among total urban residents. First, two models of Agriculture show that the percentage of recent immigrants among total local residents is a significant predictor of the employment distribution in local agricultural industries. Thus, a 1 percent rise in recent immigrants is associated with a .25 percent growth in local agricultural employment. Neither of four racial measures has any significant association with local agricultural employment. In the second industrial sector, none of all immigration and three racial measures — except for percent blacks - has to do with local Entertainment employment. In the local construction industry, two significant coefficients for percent total immigrants and earlier immigrants indicate that the relative proportion of local construction employment is negatively related to the size of these two immigrant populations. Especially, a 1 percent increase in earlier immigrants in urban areas is correlated with .13 percent drop in local construction employment.

A significant coefficient for local Latino population reveals a positive relationship between their proportion in urban areas and local construction employment. Metropolitan areas in Sun-belt regions (South and West) tend to experience an employment expansion in construction industry. In the second model of local Transportation employment, two immigration predictors are significant, but their correlations with local Transportation employment run counter. A rise in recent immigrants in urban areas has to do with an employment growth in local Transportation employment, whereas its employment falls with an increase in earlier immigrants. Interestingly, both models of local Transportation employment show the significant coefficients for all four racial populations. A proportional growth of each racial population in urban areas has to do with a drop in the relative employment distribution in the local Transportation industry.

Similar to the second regression model of local Transportation employment, the significant coefficient of recent immigrants for local manufacturing employment is contrary to that of earlier immigrants in its direction. A 1 percent increase in recent immigrants is associated with a 1.1 percent growth of local manufacturing employment, while its employment declines with a growth of earlier immigrants. Also, there is no relationship between race-specific population and local manufacturing employment in urban areas. Of all control variables, both coefficients of region are substantially significant in local manufacturing employment. For instance, metropolitan areas in South or West region shows an average of 4-5 percent less in manufacturing employment, relative to those urban areas located in Northeast and Midwest regions. In both regression models of local retail service employment, no coefficients of immigration and racial measures are significant. The same results are seen in the regression models of local FIRE and information employment. In two models of local wholesale service employment, two coefficients of immigrant

measures are significant. A 1 percent increase in recent immigrant populations in urban areas associate with almost 2 percents growth in local wholesale employment. In addition, the percentage of total immigrants in urban areas has a substantial positive effect on local wholesale employment, while the size of total immigrant population in urban areas is related negatively to local educational employment.

In the regression models of the three remaining employment distributions—Professional, other services, and public administration, some immigration predictors have significant relationships with them. Local Professional employment is related positively to the proportion of total immigrants in urban areas. Especially, local Professional employment associates positively with the size of earlier immigrant population in urban areas. The same outcome is shown in the second model of local public administrative employment. But, the relative volume of earlier immigrants tends to have a negative impact on local employment in both sectors of other services and public administration. In general, racial measures are insignificant in employment patterns of these three industrial sectors.

Along with the relationships between immigration/racial measures and specific employment patterns in local industries, this study further analyzes the association between urban population groups by immigration status or racial status and the other two types of urban employment conditions, that is, overall urban employment and unemployment rates. These regression results are displayed in Table 3.

At first, the coefficients for two immigration predictors reveal conflicting outcomes in the two regression models of overall urban employment. The percentage of total immigrants in urban areas tends to be correlated negatively with overall urban employment rate, in which a 1 percent increase in total local immigrants reduces urban employment by almost a .2 percent. After declassifying

Table 3. Regressions for Both Metropolitan Total Employment and Unemployment Rates

Variable	<i>Professional</i>		<i>Other Services</i>	
	b	b	b	b
<i>Immigration:</i>				
Percent total immigrants	-.161*** (.049)	-----	.044* (.018)	-----
Percent recent immigrants	-----	.337 (.191)	-----	.051 (.072)
Percent earlier immigrants	-----	-.464*** (.122)	-----	.040 (.046)
<i>Race:</i>				
Percent whites	.052 (.106)	.040 (.105)	-.102* (.040)	-.102* (.040)
Percent blacks	.078 (.105)	.062 (.104)	-.074 (.039)	-.074 (.039)
Percent latinos	.012 (.109)	.005 (.107)	-.054 (.041)	-.054 (.041)
Percent asians	.130 (.115)	.133 (.114)	-.087* (.043)	-.087* (.043)
<i>Control Variables:</i>				
Percent high school graduates or less	-.103 (.053)	-.127* (.053)	.025 (.020)	.024 (.020)
Percent college graduates or more	.226*** (.063)	.161* (.067)	-.065** (.024)	-.066** (.025)
Males per 100 females	.178*** (.055)	.130* (.057)	-.047* (.021)	-.047* (.022)
Total population (ln)	.000 (.000)	-.000 (.000)	-.000* (.000)	-.000* (.000)
<i>Region</i> (south and west = 1)	-2.414*** (.481)	-2.520*** (.477)	.307 (.180)	.305 (.181)
<i>Constant</i>	30.189* (12.769)	38.432** (13.002)	19.413*** (4.773)	19.526*** (4.920)
R ²	.495	.507	.489	.489

Note: Numbers in parentheses are standard errors; N = 312 metropolitan areas.

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed t-tests)

total urban immigrants into recent and earlier immigrant cohorts, the effect of the recent immigrant cohort has nothing to do with urban employment rate. However, the earlier immigrant cohort in

urban areas has a substantially significant association with the urban employment rate, in which a 1 percent increase in the earlier immigrant cohort has been associated with an approximately .5 percent drop in the overall employment rate at the metropolitan level. In both models, none of the four racial variables affects overall employment rate in urban areas. As expected, both models of urban employment rate demonstrate that overall employment rate in urban areas increases with greater proportion of local population having college education or more, along with a relative growth of local male population.

Overall employment rate is substantially different among metropolitan areas in Sunbelt (South and West) and Frostbelt (Midwest and Northeast) regions. Metropolitan area in Sunbelt regions have an average of almost 2.5 percent less in overall employment rate than those in Frostbelt regions. In the two models of urban unemployment rate, a measure of immigration — percent total immigrants — goes into effect. The percentage of total immigrants in urban areas has a substantial correlation with urban unemployment rate. A 1 percent rise in immigrants among total local residents is related to a .04 percent rise in local unemployment rate. Two other measures of immigration have no direct relationship with local unemployment rate. Unlike two models of overall urban employment, then, the relative size of Whites and Asians in urban areas is associated negatively with urban unemployment rate, respectively. It also is obvious that urban unemployment rate declines with more of urban residents having higher educational attainment.

VI. Discussion

In recent several decades when the dispersions of immigrants and racial minority populations — especially, Latinos — accelerate in urban America, urban labor market research shows much

interest in understanding the linkage between the spatial concentration of immigrant/racial minority populations and local labor markets. In response, this study has attempted to answer the questions as to whether the size and compositions of immigrant and racial minority populations in urban areas are associated with local labor markets. Particular attention has been paid to the relationships between the volume of immigrants in urban areas and three types of local employment conditions: specific employment distributions across all industrial categories overall employment rate; and local unemployment rate.

According to the results in the regression models of employment distributions across all 13 industrial sectors, the size of immigrant groups among all local residents (percent total immigrants) has significant associations with local industrial employment. In general, industrial employment in a local wholesale services and Professional increases with the growth of local immigrant population, which on the contrary has to do with a drop in employment in local construction and education industries. More importantly, the significance of recent immigrants in urban areas is found in the analysis of local industrial employment. Thus, employment in the industrial sectors of Agriculture, Transportation, manufacturing, and wholesale services rises to the extent that proportion of recent immigrants in urban areas increases. It also is known that these industrial sectors are challenged by a substantial shortage of native-born work forces. Declining labor force participation rates among native-born workers in these industries mean that their departure from these four industrial sectors are likely to be affected by relatively low wages, hazardous or risky working conditions, or less job stability there. On the other hand, the vacant jobs in these industries are often filled up by recent immigrant workers. Therefore, the argument that recent immigrants complement native labor force instead of their competitors is much supported in this study (Bean, Lowell, and Taylor 1988; Borjas 1990; Light and

Rosenstein 1995).

Contrarily, the size of earlier immigrants in urban areas is negatively correlated to employment in local Agriculture, Transportation, and manufacturing industries. It seems difficult to explain these opposing employment patterns in urban areas between recent and earlier immigrants. Nevertheless, more duration of stay in the host country can make it possible for immigrants to improve their job qualifications — English proficiency, legalization or naturalization, gains of transferable job credentials, relatively more education achievement among 1.5-generation immigrants, and so on — in assessing more high-tier and prestigious occupations equivalent or similar to those of highly educated native-born Americans in general.

In fact, this account is indirectly supported in ways that a proportional growth of earlier immigrants in urban areas is correlated with the rises in local Professional and public administrative employment. In addition, an increase in the size of recent immigrants in urban areas goes into effect in the employment declines in local other services and public administration. Except for some significant implications in three industrial sectors (Entertainment, construction, and Transportation), on the whole, the size and compositions of racial minority populations have little to do with employment distributions in the remaining 10 industries in urban areas. Still little is known about why there are no significant impacts of racial compositions in urban areas on change in employment patterns in these industries. Thus one plausible inference is that the magnitude and inflow of racial compositions in urban areas as of 2000 is not quite reached enough to shift local employment structures in these 10 industries.

Second, this study also examines the associations between immigrant populations and overall employment and unemployment rates in urban areas. This aim is to observe the impacts of immigrants on their employment opportunities and constraints at

the whole local labor market level. In short, the volume of immigrants in urban areas reveals a negative association to the overall employment rate. The main reason is that a rise in earlier immigrants among all local residents is significantly related to a decline in the overall local employment rate. On the other hand, this study indicates that overall unemployment rate in urban areas rises to the degree that immigrant populations relative to local natives grow.

In both analyses of overall employment conditions in urban areas, the direct effect of immigrant population on local natives' employment opportunities and constraints is still unknown. However, this study suggests that some immigrants might struggle to search for local employment and as a result, they might experience more unemployment or underemployment rates afterward due to local job competitions from the same working-age immigrants. Based on the finding of this research, it is possible to infer a widening disparity in socioeconomic status between local immigrants and natives. Now that both immigrants and natives pursue their employment within a tight local labor market, it is also expected that immigrants' hardships at local labor markets can be not substantially improved or otherwise worsen. Apart from Borjas's account (1990, 1999), a specific impact of recent immigrant population on unemployment rate is unsupported in this study at the level of metropolitan areas. In future studies, therefore, more research needs to be conducted about the associations between the relative size and compositions of immigrants and their employment opportunities in urban areas. Lastly, there is evidence that a relative growth of Whites or Asians in urban areas associates with a drop in local unemployment rate. It is likely that their relatively high human capital (educational attachment) in general lowers their unemployment rates even after controlling for two educational measures (high school graduates or less and college graduates or more). More

specifically, future studies are needed to explain more about why these findings make sense by analyzing these racial population effects on race-specific unemployment rate in urban areas.

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