Who Pays the Penalties? Earnings Effect of Ethnic Labor Market Concentration in Multi-Racial Metropolitan Contexts

ABSTRACT

With the huge influx of immigrants to the United States, it is a well-observed phenomenon that a large number of ethnic minorities concentrate in a particular set of labor market sectors. Although considerable literature suggests that metropolitan contexts have significant effect on the job earnings of different racial and ethnic groups, there is a missing link between the metropolitan context and the earnings effect of ethnic niche employment. Using data from the 2000 Census data, this study deploys a multilevel research approach to compare job earnings of white, black, Hispanic and Asian workers in their respective niche and non-niche sectors, and to examine how the metropolitan urban labor market contexts influence these earnings. The findings show that engaging in ethnic niches is the main source of earning inequalities among different ethnic groups and contextual conditions have great impacts on job earnings between ethnic niches and non-niches, and between different groups.

Key Words: Context, ethnic labor market, concentration, earnings inequality, immigrants

INTRODUCTION

With the huge influx of immigrants to the United States in recent years, we have seen the development of an ethnic/racial stratification of the labor market. A well-observed phenomenon is that a large number of ethnic minorities or immigrants are concentrated in job sectors with low status and low pay. For example, analyses for Los Angeles show that recent-immigrant Latinos make up a vastly disproportionate share in a particular set of low-skill service, operator, laborer, and agricultural brown-collar occupations. In contrast, native-born white Americans tend to be concentrated in capital-intensive and lucrative jobs in white collar and managerial occupations (Catanzarite 2003; Ettlinger and Kwon 1994; Hudson 2003; Logan et al. 1994; Waldigner and Der-Martirosian 2001; Wilson 2003; Wright and Ellis 1997)

A pressing question when discussing the ethnic segmentation of the labor force is this: Does working in an ethnic niche carry an earnings advantage or do ethnic niches provide "last resort" jobs for ethnic minorities who do not have other choices in the open economy? Some researchers argue that engagement in ethnically concentrated job sectors can provide more opportunities for access to the familiar work environment, greater on-the-job training, more access to capital/credit, and information on employment and housing than other jobs (Aldrich et al. 1985; Jibou 1988; Waldinger and Der-Martironsian 2001).

Other studies argue that ethnic employment ethnic niches are associated with low status, low wages, unstable jobs, and deplorable working conditions (Bonacich and Appelbaum 2000; Sander and Nee 1987; Wilson 2003). They suggest that co-ethnic employers are often in a position to exploit new immigrants who may have a limited understanding of their legal rights. These and other studies demonstrate that the concentration of minority workers in certain

occupations depresses earnings of all workers in that occupation (Catanzarite 2003). This observation is typically interpreted as a *pay penalty* of working in an ethnic niche.

Regardless of different perspectives about the advantages/disadvantage of niche employment, previous studies tend to consider the effects of only two sets of factors: individual characteristics and characteristics of the employment sector. A third factor that is curiously missing from consideration is the nature of the metropolitan labor market. There are, however, compelling reasons to hypothesize that the local labor market context has an effect on the earnings in ethnic niches. Studies since the1970s have found that the increase of the relative size of blacks in a local area will increase the earnings gap between whites and blacks (Beggs et al. 1997). White-black wage gaps are also influenced by the macroeconomic restructuring in a local economy (McCall 2001). In recent years the demographic changes caused by immigration also have impacts on earnings differences between whites and blacks, and between natives and immigrants (Lim 2001; Rosenfeld and Tienda 1999). While these studies offer valuable insights on how the ethnic structure of the metropolitan area affects earnings overall, few studies have explored how it affects the earnings in ethnic niche occupations.

This study examines how local labor market characteristics at metropolitan area level, particularly ethnic labor compositions and economic structure, influence the earnings of workers in ethnic niche and non-niche sectors and between different ethnic groups. The following section discusses the literature on the earnings effects of labor market segmentation and concentration, and details how the urban context influences this. I then elaborate on the data and methodology used in this study. After that, this paper discusses the earning difference between niche and non-niche sectors for each group and between different racial/ethnic groups, with the changes of labor market contexts, especially ethnic diversities.

THE EFFECT OF METROPOLITAN CONTEXT ON ETHNIC NICHE EARNINGS

Economic Returns to Ethnic Niche Employment

The question of how ethnic niche earnings are set can be addressed in a number of ways. According to *neoclassical economics*, people choose to work in the sectors providing the highest returns based on certain combinations of skills (Becker 1975). If a particular sector becomes dominated by an ethnic group, this suggests that the ethnic group possesses a comparative advantage in terms of skills or knowledge in satisfying the demands of the jobs in that sector. According to this perspective, although ethnic minority workers may end up concentrating in a low wage sector, job earnings are not directly influenced by race or ethnicity.

Another perspective is built on the notion of *ethnic hegemony* (Jibou 1988). According to this approach, the increase in the relative size of the minority population in a workplace is likely to enhance minority workers' negotiating power, (Aldrich et al. 1985) and thus, ethnic niche workers can attain higher returns on their human capital resources and enjoy better opportunities for promotion and rewards than those available for them in the larger economy (Portes and Bach 1985; Zhou 1992).

Rejecting the lucrative nature of ethnic niches, the *competition hypothesis* argues that in order to get employment opportunities, minority workers willingly supply their labor at a lower cost because their low status does not give them much negotiation power. This, in turn, triggers a competitive process that results in depressed wages and worsened working conditions for all other workers employed in the same employment sector (Hodge and Hodge 1965). Recent studies on the relationship between racial composition of the workplace and earnings have supported the thesis that heavy concentration in particular job sectors suppresses the wages or

earnings in those sectors, and workers in those jobs suffer substantial wage penalties (e.g., Catanzarite 2003).

Regardless of their differences, a common thread in the preceding studies is that the level of ethnic niche job earnings are attributed to either personal socioeconomic characteristics or employment conditions. They tend to neglect the potentially profound impact of the labor market (read metropolitan) context on the earnings effect.

Metropolitan Context Effects on Earnings of Racial/Ethnic Groups

The classic *visibility-discrimination hypothesis* argues that increases in minority groups will heighten the perceived economic and political threat posed to the majority, and provoke discrimination from the majority, leading to a greater earnings gap between them (Beggs et al. 1997; Cohen 1998; Huffman and Cohen 2004). The *white gains* perspective posits that whites directly profit from discrimination against blacks; therefore, the intensity of race-based discrimination will be strongest where black concentration is high (Glenn 1963). Empirical studies have provided evidence that socioeconomic disparities between majority and minority incomes widen as the proportion of minorities in a labor market increases, and that whites usually benefit at the expense of minorities perceived as nonwhite (Tienda and Lii 1987). Collectively, these studies suggest that minority workers will suffer a pay penalty as their numbers grow.

Large scale immigration is changing the racial composition and demographic conditions in metropolitan areas, which is hypothesized as a major source of earnings inequalities between whites and blacks. The widely held assumption is that immigrants tend to accept lower wages, and thus displace native minorities from certain labor market sectors and lower the wages in

those sectors. For example, Borjas (1999) contends that the influx of low-skilled immigrants can have negative effects on native ethnic minorities.

In addition to racial composition and demographic changes caused by immigration, macroeconomic structuring and growth of a new economy in a local metropolitan area also influence job earnings. According to the *restructuring hypothesis*, the emergence of a knowledge-based service economy has polarized the labor market in American cities. At one end is an accelerated demand for jobs requiring high levels of skill and formal education. At the other, there is a need for workers in low-wage industries such as domestic and personal services, retailing, and downgraded manufacturing (Sassen 1988). Ethnic minorities who formerly concentrated in manufacturing industries suffer the most due to lack of job-skills and opportunities in the rising sectors of the new economy. For instance, the exodus of manufacturing plants and union jobs from urban areas resulted in a significant increase in black/white wage differentials during the 1970s and 1980s (McCall 2001).

Whereas the literature provides valuable insights for understanding the earning effects of a metropolitan context, it does not explicitly explain earnings of ethnic niche and non-niche sectors. The unique mechanism through which job niches form and persist suggests that the impacts of labor market context can be very different between niche and non-niche workers, different racial/ethnic groups, and natives and immigrants.

Linking the Earnings of Niche Employment to the Metropolitan Context

In contrast to the perspective that an increase of immigrants in a local labor market will compete with native minorities and lower wages, some studies argue that the domestic labor market is sufficiently segmented so that native workers are insulated from the direct employment effects of the immigrants; further, immigrants, by taking the low-skilled jobs formerly held by

natives, may actually push native-born workers upward in the occupational stratification system (Rosenfeld and Tienda 1999; Tienda and Lii 1987). It is a common practice in ethnic niche sectors that employers recruit new workers through the networks of current employees, or that job seekers enter ethnic niches through job referrals by the coethnic population (Park 2004; Waldinger and Der-Martirosian 2001; Mouw 2003). Both situations could lead to different concentration patterns of immigrant minorities from native minorities. This suggests that although immigration is changing the racial composition of a local labor market, the impacts of local contexts can be different for niche and non-niche workers, and for immigrants and natives.

Closely related to the restructuring hypothesis is the argument that there is an automatic process of "ethnic succession" in the job market as white workers move out of certain employment sectors. Waldinger's (1996) analysis of the New York labor market found that the exit of native whites from the work force created a sequence of job vacancies that growing populations of native non-whites and immigrants could fill. Wright and Ellis (1996) similarly concluded that the exit of whites from certain sectors of New York's labor force in the 1970s gave immigrants entry into the city's labor market. Since the niche formation is intertwined in the process of macroeconomic restructuring, decentralization, and globalization, it is necessary to link the earning effects of labor market concentration with macroeconomic structures in the metropolitan areas.

The final consideration is the racial and ethnic diversity of a current metropolitan context. Since most immigrants today are racial minorities, continuing immigration is transforming the United States from a largely biracial society consisting of a sizable white majority and a small black minority (together with a very small Native American Indian minority of less than 1 percent) into a multiracial, multi-ethnic society (Bean and Stevens 2003). It is becoming

increasingly important to address issues of socioeconomic inequalities with consideration of different racial and ethnic groups. The *visibility-discrimination hypothesis*, *white gains* perspectives, and *restructuring impacts* mainly investigate the earnings difference between whites and blacks. Recent studies have also looked at the competition between natives and immigrants focusing particularly on Hispanic workers (especially Mexicans) and native-born blacks (Borja 1999; Hamermesh and Bean 1998). However, we still know very little about whether the depression earnings effect of black workers still happens in multi-racial/ethnic contexts and whether similar effects are experienced by immigrant minorities.

Given this, the present study compares job earnings of white, black, Hispanic and Asian workers in their respective niche and non-niche sectors and examines how the metropolitan labor market context, net of other factors, influences these earnings. Specifically, I address the following two sets of questions:

- How do workers in ethnic niches fare with regards to earnings when compared to those in non-niche sectors? How does this influence the earning inequalities among racial/ethnic groups?
- How does the urban labor market context, especially racial composition and economic structure, influence the earnings differences of ethnic niche and non-niche workers, and between different racial/ethnic groups? In particular, how is each ethnic group helped or hurt by the increasing presence of other minority groups?

DATA AND METHODOLOGY

This study is based on a multilevel research approach using data at the individual and metropolitan area levels. Data for individual workers come from the 2000 Integrated 5% PUMS (Ruggles et al. 2004). I compare earnings for four main racial/ethnic groups: native-born non-

Hispanic whites, native-born non-Hispanic blacks, foreign-born Hispanics, and foreign-born Asians. Due to the consideration that job earnings are likely to be influenced by retirement, military, school-related, and part-time status, I restrict the sample to those of age 25-54, not in school, and employed in civilian occupational sectors who typically worked 35 hours or more per week in 1999 with positive job earnings. Data for the metropolitan areas, that is, Consolidated Metropolitan Statistics Area (CMSA) or Metropolitan Statistical Areas (MSA), come from Census 2000 Summary File 3 (Census Bureau 2000).

Multilevel Linear Regression Modeling

In conventional studies labor market variables are merged with individual-level variables to assess the effect of local conditions on individual outcomes (e.g., Tienda and Lii 1987). This is not appropriate for the measurement of labor market effects, the significance of which is overestimated due to correlation error within labor markets (for discussion in detail, see Raudenbush and Bryk 2002). To correct these and other problems, this study uses a hierarchical linear model with data on both individuals and labor markets at the metropolitan area level. This two-level approach includes random errors that control for correlation error among individuals in the same labor market; therefore, it allows for simultaneous estimation of a full metropolitan-area-level model with controlled personal-level variables to predict personal job earnings.

Level 1 Model: Effects of individual characteristics

At level 1, job earnings for each racial/ethnic and gender group are estimated using individual-level data for each labor market. The full multilevel model for analyzing job earnings (i.e., the no-intercept model) is:

$$Yij = \beta 1j(\text{White Niche})ij + \beta 2j(\text{White NonNiche})ij + \beta 3j(\text{Black Niche})ij + \beta 4j(\text{Black NonNiche})ij + \beta 5j(\text{Hispanic Niche})ij + \beta 6j(\text{Hispanic NonNiche})ij + \beta 7j(\text{Asian Niche})ij + \beta 8j(\text{Asian NonNiche})ij + C\ ijr + eij \quad (1)$$

where Yij, the dependent variable, is the natural log form of total personal earned income for person i at metropolitan area j. (White Niche)ij, (White NonNiche)ij, (Black Niche)ij, (Black NonNiche)ij, (Hispanic Niche)ij, (Hispanic NonNiche)ij, (Asian Niche)ij, and (Asian NonNiche)ij represent the binary variable for individual i in labor market j in accordance whether they work in an ethnic niche. The coefficients, β1j, β2j, β3j, β4j, β5j, β6j, β7j, and β8j represent adjusted average job earnings for each racial/ethnic and niche/non-niche group, calculated as a natural log form.

Employment ethnic niches are identified as following: First, I use a 14-category breakdown of industrial sectors and a 23-category breakdown of occupations producing a total of 322 crossed-classified sectors (see Appendix 4.1 for the list of sectors). Most previous studies categorize employment sector by industry or occupation alone (Ellis and Wright 1999; Logan et al., 1994; Wright and Ellis, 2000), but labor market specialization can vary both by occupation within industries and by industry within occupations. To capture both features in industrial sectors and occupations, a cross-combination of industry and occupation is employed in very recent studies (e.g. Hudson 2003; Huffman and Cohen 2004; Wilson 2003). Then, each respondent in each metropolitan area is constructed into an industry-occupation-metropolitan area cell. Since both the number and distribution of employment/workers are different among racial/ethnic groups across metropolitan areas, this industry-occupation-metropolitan area design allows the examination of (i) variations in jobs and earnings among different ethnic groups within a single metropolitan area, and (ii) variations in jobs and earnings in a single ethnic group

across metropolitan areas. Finally, the employment sectors that are dominated by a particular ethnic group, i.e., ethnic niches, are identified by odds ratio[1]. Consistent with previous studies, an ethnic niche is defined as one in which the odds ratio is 1.5 or greater. Additionally, in order to prevent a bias resulting from very small numbers, I stipulate that an ethnic niche has to be at least 50% of the average size of ethnic group members across all employment sectors. For example, if there are 322,000 foreign-born Asian workers in metropolitan area A, the average size of each employment sector for foreign-born Asian workers will be 1000 (=322,000 workers/322 sectors). An Asian niche must then have at least 500 (50% of 1000) Asian workers and an odds ratio equal to or greater than 1.5[2]. Since the number of workers for each group is different across metropolitan areas, the minimum restriction for each group is also different across metropolitan areas. Accordingly, all the workers are recoded into a "niche" or a "non-niche" worker. Therefore, all respondents in four racial/ethnic groups are divided into eight groups: white niche and non-niche workers, black niche and non-niche workers, Hispanic niche and non-niche workers, and Asian niche and non-niche workers.

I also include a standard vector of C ij individual level variables with their associated coefficients r, such as age, marital status, level of education, and entrepreneurship, which are found to be responsible for job earning effects in most previous studies (e.g., Cohen 1998; Shumway and Cooke 1998; Tienda and Lii 1987. See table 1 for the description and coding strategy of variables).

Level 2 Model: Effects of the Metropolitan context

At level 2, variation in job earnings across labor market is modeled as a function of local labor market conditions, such as the racial composition and macroeconomic structure.

To control personal differences in their socioeconomic characteristics, the individual level control variables (Cij) are assumed to be fixed across the labor market and are centered around their grand means.

Variation in job earnings for each ethnic group between niche and non-niche across the labor market is estimated at labor-market level by equations 2 through 9:

$$\beta\ 1j = \gamma 10 + Wj\ \gamma 1 + \mu 1j \qquad (2)$$

$$\beta\ 2j = \gamma 20 + Wj\ \gamma 2 + \mu 2j \qquad (3)$$

$$\beta\ 3j = \gamma 30 + Wj\ \gamma 3 + \mu 3j \qquad (4)$$

$$\beta\ 4j = \gamma 40 + Wj\ \gamma 4 + \mu 4j \qquad (5)$$

$$\beta\ 5j = \gamma 50 + Wj\ \gamma 5 + \mu 5j \qquad (6)$$

$$\beta\ 6j = \gamma 60 + Wj\ \gamma 6 + \mu 6j \qquad (7)$$

$$\beta\ 7j = \gamma 70 + Wj\ \gamma 7 + \mu 7j \qquad (8)$$

$$\beta\ 8j = \gamma 80 + Wj\ \gamma 8 + \mu 8j \qquad (9)$$

The adjusted average job earnings for each group are once again represented by β1j through β8j in equations 2 through 9. The level-2 error terms (μ1j through μ6j) indicate that a separate variance component is estimated for each group's earnings. This random spatial variation in earnings is partially explained by vector Wj variables describing the demographic and economic conditions of each labor market j. To examine how the earning differences between niche workers and non-niche workers, ethnic groups, and natives and immigrants are influenced by local racial composition, I mainly look at the effects of black, foreign-born Hispanic, and foreign-born Asian proportions of the population at the metropolitan labor market level. At the same time, I control the effects of economic structure, measured by the percentages of the labor force in manufacturing industries, service, and "high-status" industries (which refers

to information, finance, insurance, real estate, professional, and scientific), the region where the metropolitan area belongs (Northeast, South, Midwest, and West), the size of the civilian labor force (in natural log form), and unemployment rate at metropolitan area level.

FINDINGS AND DISCUSSION

As shown in Table 2, native whites are more likely concentrate in sectors with relatively higher status such as management occupations and sales in FIRE industries. Native born blacks are more concentrated in healthcare support, production, and office and administrative support occupations. Immigrants have very heavy concentration in production jobs. Hispanic immigrants concentrate in the low level of the labor market hierarchy, such as building and grounds cleaning and maintenance. In contrast, Asian immigrants have a high concentration in sectors such as healthcare practitioners, technicians, and computer and mathematical specialists, which generally require a high technology and education level. However even they exhibit high concentrations in low-skilled and labor intensive jobs such as food preparation and serving. Consistent with previous studies elsewhere (Hudson 2003; Wang 2004; Waldigner 2001; Wilson 2003), the overall pattern indicates a similarity of ethnic niches across different metropolitan areas, such as Los Angles, New York, and Chicago.

Job Earnings of Ethnic Niche and Non-Niche Workers

Native blacks and immigrant Hispanics have lower average job earnings than native whites and immigrant Asians. Consistent with labor market concentration patterns, while white niche workers enjoy much higher earnings advantages, both Hispanic and black workers fare worse when working in their ethnic niches. Asian immigrant workers see slightly higher job earnings when working in Asian niches (Figure 1).

Figure 2 shows the earning difference between niche and non-niche sectors. The average refers to the difference of average job earnings between niche and non-niche sectors for each group across all metropolitan without controlling any variables. The controlled difference refers to the difference after controlling personal socioeconomic characteristics described in Table 1 (individual-level). The job earnings are significantly different between niche and non-niche workers and between each ethnic group. Although the niche and non-niche difference becomes smaller after controlling personal characteristics, the basic patterns among groups do not change.

The earning disadvantages of native blacks and immigrant Hispanics are more pronounced when we look at Figure 3. Among white niche workers, 15 percent earn below the first national earnings quartile and 36 percent fall into the fourth quartile. By contrast, 68 percent of foreign-born Hispanic workers earn below the first quartile and only 3 percent fall into the fourth quartile. For native black niche workers, 39 percent earn below the first quartile level and 8 percent earn below the fourth quartile level. Asian niche workers are more equally distributed among all quartiles, with obviously higher earnings than Hispanics and blacks.

How does labor market concentration influence the earning difference between racial/ethnic groups? Figure 4 shows that, although the percentage of workers in ethnic niches for each group is not dominantly large[3], the earning differences among ethnic niche workers are highly correlated with the earning differences among ethnic groups across all metropolitan areas. This indicates that labor market concentration is the main source of earning inequalities among racial/ethnic groups.

Earning Effects of Metropolitan Labor Market Conditions

Table 3 gives the coefficients of metropolitan-area-level characteristics on job earnings for each ethnic group, and between niche and non-niches sectors (the results of individual level

variables are not shown here but available from the author by request). Model 1 is the result without controlling any individual or MA level variables. Model 2 is the coefficients for metropolitan-area-level without controlling personal characteristics; Model 3 is the coefficients for metropolitan-area-variables after controlling personal characteristics. Variance components are listed at the bottom of Table 3, which suggest that substantial variation in job earnings exists across labor markets. The variance statistics also indicate a greater degree of spatial variation for niche workers than for non-niche workers (except foreign-born Hispanics), and greater for white and Asian niche workers than for Hispanic and black niche workers.

Effects of the increasing presence of black population

According to Model 3 (Table 3), controlling for personal characteristics, region, economic structure, unemployment rate, and size of labor force, native blacks, whether in ethnic niches or not, do not fare worse when their coethnic populations increase in a metropolitan area. Also, the percentage of blacks has no significant effects on Asian workers' annual earnings, but has strong positive earning effects on whites and Hispanics. These results are illustrated in Figure 5.

Interestingly, Hispanic niche workers benefit significantly from the increasing presence of black population. For example, net of individual and metropolitan area controls, Hispanic niche workers are predicted to earn 81 percent of Hispanic non-niche workers' earnings and 74 percent of Asian niche workers' earnings at the level of no blacks in a local labor market. When the black proportion increases to 60 percent of the total population, Hispanic niche worker's earnings are predicted to almost equal job earnings for Hispanic non-niche workers and Asian niche workers (effects of black population are negative for Asian workers although the effects are not statistically significant). However, obviously, native white workers, especially white

niche workers, gain the most from the presence of black workers in metropolitan areas. When other conditions are controlled, with the increase of the black population the annual earning difference between native white niche workers and all other groups grows quickly.

Earning effects of the increasing presence of foreign-born Hispanics

Net of individual and metropolitan area controls, native whites and blacks, especially the native workers, are predicted to earn more when the proportion of Hispanics increases in the metropolitan labor market. As shown in Figure 6, native white niche workers benefit greatly from the increase of Hispanic immigrants in a metropolitan area, which is very similar to the effects provided by the increase of blacks.

Since Hispanic workers are more concentrated in the semi- or unskilled and labor-intensive job sectors, that competition hypothesis suggests that an influx of immigrants may hurt native minority workers who have similar labor market concentration patterns (Borjas 1999; Hamermesh and Bean 1998). In opposition to the competition perspective, results from this study show that native black niche workers greatly benefit from the increase of the foreign-born Hispanic population in the local labor market. For example, native black niche workers are predicted to earn 89 percent of native white non-niche workers' earnings when a metropolitan area has no foreign-born Hispanics. When the proportion of the Hispanic population increases to 60 percent, black niche workers are predicted to earn 106 percent of white non-niche workers' earnings.

The Hispanic proportion has no significant earning effects on foreign-born Asian workers when other conditions are controlled. However, Hispanic niche workers are vulnerable from the increase of their coethnic population than non-niche workers. As Figure 6 shows, the predicted earnings for Hispanic niche workers decreases 15 percent when the Hispanic proportion

increases from 0 to 60 percent in a local labor market. Data from this study does not allow examining the mechanism of earning devaluation, but the result is consistent with previous studies on pay penalties – which could come from discrimination due to ethnic/racial visibility or labor market competition among coethnic labor force (Catanzarite 2003).

Effects of the Increasing Presence of foreign-born Asians

With other variables controlled, predicted earnings for both native whites and blacks increase dramatically with the increasing proportion of Asians in the local population (Figure 7, left). In particular, native black niche workers benefit more than coethnic non-niche workers from the increase of the Asian population. For example, the earning difference between black niche workers and non-niche workers changes from negative $1,342 at no Asian population to positive $10,684 when the Asian population shares 60 percent of the total. The gain effects for native blacks from Asian immigrants are larger than that from Hispanics.

By contrast, although native white workers still profit greatly from the increase of Asian immigrants, native white niche workers gain less than their coethnic non-niche workers. For example, the predicted annual earning advantage of white niche workers to non-niche workers changes from $3,311 to negative $31,756 when the Asian proportion increases from 0 to 60 percent of total population after controlling other personal and metropolitan-area-level characteristics. The earning advantages of white niche workers to black niche workers, therefore, are predicted to decline quickly when Asians share more in the local labor market.

Hispanic workers, both in niches and non-niches, benefit from the increase of the Asian population in a metropolitan area, which decreases the earnings difference of Hispanic-white niche workers and Hispanic-Asian niche workers (Figure 7, right). Compared with Hispanic niche workers, the earnings advantages of Asian niche workers disappear because of the negative

earning effects associated with the increase of Asian population in a metropolitan area. For example, foreign-born Asian niche workers earn 1.14 times that of non-niche workers' earnings when there are no Asian immigrants in a metropolitan area. Net of control of other variables, when Asian immigrants share 60 percent of the total population, Asian niche workers are predicted to earn only 18 percent of non-niche workers' earnings. Like Hispanic immigrant niche workers, Asian immigrant niche workers suffer more from the increase of their coethnics.

Effects of the Metropolitan economic structure

The percentage of manufacturing industries has no significant earning effects on white niche workers and all foreign-born Hispanic workers. However, native black niche workers benefit greatly from a high proportion of manufacturing industry in a local labor market. This is consistent with previous studies which suggest that economic inequalities between whites and blacks widened during the economic restructuring from a manufacturing to a service economy (McCall 2001).

Asian immigrants, whether niche or non-niche workers, also benefit from the high proportion of manufacturing industries. Labor market concentration patterns show that the Asian population has very high concentration in manufacturing industries, even in the areas with a significant proportion of "new economy" such as the San Francisco Bay Area. Besides production and a certain number of services, Asian workers are highly concentrated in high-tech or professional occupations in manufacturing industries. Consistent with this, significant technological development and the "new economy" greatly increase the job earnings for Asian and white niche workers.

In contrast, Hispanic immigrant niche workers profit dramatically when the proportion of service industries increases in a local economy at metropolitan area level. As shown in Figure 8,

Hispanic niche workers are predicted to earn 69 percent of non-niche workers at the metropolitan areas with no service industries, but they earn 1.2 times of non-niche workers' earnings when service industries share 30 percent of the total local economy. In contrast, native blacks, especially non-niche workers, suffer considerably from the increase of service industries. Therefore, the Hispanic immigrant niche workers are surely better off from the transformation of a local economy from manufacturing to services, when other conditions are controlled.

In sum, local labor market conditions have different earning effects on ethnic niche and non-niche workers. In contrast to the competition hypothesis, the increase of immigrant minorities does not show detrimental effects on earnings of native workers. Both the native majority and minority, especially those who are working in their coethnic concentrated labor market sectors, benefit greatly from the increase of immigrants. Previous studies have suggested that an influx of immigrants might help native ethnic minorities to move upward in the urban labor market (Lim 2001; Rosenfeld and Tienda 1999; Tienda and Lii 1987). This study does not provide evidence on such phenomenon; however, it shows that both native blacks and immigrant Hispanics benefit from each other's increase of share in a local area. Both minority groups also benefit from the increase of the Asian population. This suggests that an increase in racial and ethnic diversity seems having positive effects on job earnings for ethnic minorities. It is possible that an increase in overall ethnic diversity may mitigate prejudice or discrimination against a single ethnic group, which could promote economic advantages for ethnic minorities. Clearly, more research is needed in this area.

Competition effects do happen to individual ethnic groups. Both Asian and Hispanic workers suffer from the increase of their coethnic population. I interpret this as competition effects. Different from native niche workers, immigrant ethnic niche workers are the members

most likely to be exposed to the competition from coethnics and suffer more than non-niche workers. Although Asian workers have high concentration in knowledge-intensive and high-tech sectors, they still cannot avoid such negative influences from the coethnic population. We cannot know whether this happens because of depressed wages in immigrant niche sectors; at least the results suggest that the mechanisms for the formation of ethnic niches and the mechanism for job earnings can be different for natives and immigrants, regardless of human capital and personal characteristics.

CONCLUSIONS

Ethnic concentration in certain job sectors has become a common component in the urban labor markets in an era of growing immigration. This study finds that, while enjoying the earning advantages of ethnic niches, most minority workers, especially native blacks and Hispanic immigrants, concentrate at the lowest level of the labor market hierarchy. For niche workers concentrating at this level, the attraction of ethnic niches is more likely the availability of the jobs themselves, not necessarily the earning advantages of those jobs when compared with non-niche sectors. Engaging in ethnic niches is the main source of earning inequalities between disadvantaged minorities and whites.

Far beyond the conditions at the individual and job-site level, the earning effects of concentration are significantly influenced by the multi-racial urban contexts. The highly privileged native white niche-workers profit greatly from the increase of ethnic minorities and immigrants in the local economy, which increases the earning inequality between native whites and all other racial/ethnic groups. Due to possible competition from Asian immigrants who have similar concentration patterns, native white niche workers benefit less than non-niche workers;

however, native white concentrated sectors still gain from the increase of Asian immigrants when other conditions are controlled.

Contrary to the expectation from the visibility discrimination thesis, native black workers do not fare worse with a rise in their coethnic population share at the metropolitan level. This result is also different from the competition perspective that maintains that Hispanic immigrants will compete with native blacks and depress their job earnings. Instead, native black niche workers benefit greatly from the increase of immigrant ethnic minorities. This study does not investigate the mechanism through which blacks benefit from the increase of immigrants. I postulate that the increase of immigrants may help them to move upward in the urban labor market; at the same time, a high degree of racial/ethnic diversity may mitigate discrimination or prejudice against blacks that tends to increase more economic opportunities and job earnings.

Similar to the pay degradation phenomenon observed at the occupational or job-site level, this study shows that the increase of coethnic population in a metropolitan area can decrease the pay for immigrant Hispanics and Asians. Although these two immigrant groups have distinct concentration patterns, in both the niche workers suffer more from the increase of their coethnic population than their non-niche workers. Thus, the devaluation effects of contexts are more about the contrast between niche and non-niche workers, and between natives and immigrants, than racial/ethnic divisions. This could be because there is a different mechanism in the labor market concentration process between natives and immigrants. Why do immigrant niche workers, whether Hispanics or Asians, experience earnings devaluation when their coethnics increase in a local area? Because this study does not explain this pay depression, the question of whether the increase of the relative size of immigrants will incur discrimination from native

workers, or simply come from labor market competition from coethnics, still needs further research.

Location and context matter in racial/ethnic experiences in the labor market concentration process (Hanson and Pratt 1988; McCall 2001; Shumway and Cooke 1998). Through a multilevel linear modeling design, this study extends the traditional studies whose emphasis has been on the human capital and individual-level determinants of wage inequality, to include macroeconomic structural effects and local context effects. I also extend the current research in this area from the single focus between whites and blacks or between natives and immigrants to a multiracial urban labor market context, which is increasingly necessary with growing racial and ethnic diversity and widespread economic changes. In particular, linking labor market conditions to ethnic labor market concentration in this study can greatly improve our understanding of socioeconomic consequences of labor market segmentation.

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[1] The odds ratio is given by the formula: Odds Ratio = (Ei / Et-i) / (Oi / Ot-i). The numerator represents the odds of a worker belonging to ethnic group E being engaged in sector i, and the denominator represents the odds of a person from any other ethnic group (O) working in the same sector i. The measurement of odds ratio was used in previous studies (Logan et al. 1994, 2003; Wilson 2003), but a representation index or location quotient has also been used (Ellis and Wright 1999; Hudson, 2003; Rosenfeld and Tienda 1999). Compared to the representation index and location quotient, the odds ratio is more sensitive to the change of employment distribution, although the implication of the odds ratio is similar. Please refer to Rosenfeld and Tienda (1999, appendix) for more discussion.

[2] Both the threshold value of 1.5 and the minimum restriction (50% of the average size) are arbitrary. In previous studies the threshold for defining an ethnic niche was between 1.2 and 2.0 (e.g., Ettlinger and Kwon 1994; Hudson 2003; Wright and Ellis 2000), but they are all arbitrary in nature. We should be aware that choosing a threshold level a priori is risky because the range of values depends on the number of sectors, groups, and the size of the sample. For the restriction on minimum number of workers, some studies use absolute number: for example, at least 300 or 500 workers in niche sector (Wilson 2003). However, I believe that a percentage measure is more preferable than an absolute value to reflect the nature of ethnic labor markets, since the size of the labor force and their share of each sector vary greatly across ethnic groups and across metropolitan areas. We have more detailed discussion elsewhere on different usages of employment sector, threshold of odds ratio, and the minimum worker restriction. Interested readers can contact the author for more detail.

[3] Of all workers across all metropolitan areas percentage defined by this study for native whites, native blacks, Foreign-born Hispanics, and Foreign-born Asian respectively are 29.6, 41.9, 65.7, and 51.1.

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Table 1. Coding Strategy of Variables in MLM Models

Variable	Coding Strategy
Individual-level Variables	
Age	Continuous; in natural log form
Female	Binary; Being female=1
Married	Binary; being married = 1
Family	Continuous; family size in natural log form
Degree	Binary; having college degree =1
Hour	Continuous; hours worked per week in natural log form
Self-employed	Binary; being self-employed = 1
Travel Time	Continuous; travel time from home to work measured in 30 minutes
White Niche	Binary; native whites in white employment niches
White NonNiche	Binary; native whites in white employment non-niches
Black Niche	Binary; native blacks in black employment niches
Black NonNiche	Binary; native blacks in black employment non-niches
Hispan Niche	Binary; foreign-born Hispanics in Hispanic employment niches
Hispan NonNiche	Binary; foreign-born Hispanics in Hispanic employment non-niches
Asian Niche	Binary; foreign-born Asian in Asian employment niches
Asian NonNiche	Binary; foreign-born Asian in Asian employment non-niches
MA-Level Variables	
Northeast	Dummy; region of Northeast =1 (reference category)
South	Dummy; region of South =1
West	Dummy; region of West =1
Midwest	Dummy; region of Midwest =1
Size	Continuous; size of labor force at MA-level in natural log form
Unemployment	Continuous; unemployment rate at MA-level
Manufacturing	Continuous; percentage of labor force in manufacturing industries
High Status	Continuous; percentage of labor force in information, FIRE, professional and scientific industries
Service	Continuous; percentage of labor force in services industries
Black	Continuous; percentage of blacks in total population
Hispanic	Continuous; percentage of foreign-born Hispanics in total population
Asian	Continuous; percentage of foreign-born Asians in total population

Table 2. National Top Five Ethnic Niches by Group

Group	Industrial Sector	Occupation	% [1]
White	Education, Health & Social Service	Education, Training, & Library	6.23
	Manufacturing	Management	5.90
	FIRE	Sale Occupation	5.63
	Wholesale Trade	Sale Occupation	4.71
	Construction	Construction trade	4.15
Black	Education, Health & Social Service	Healthcare support	7.69
	Manufacturing	Production	7.42
	Transportation & Warehousing	Transportation & material moving	6.33
	Public Administration	Office & Administrative support	5.37
	Transportation & Warehousing	Office & Administrative support	5.15
Hispanic	Manufacturing	Production	20.88
	Wholesale Trade	Sale occupation	17.32
	Arts, Recreation, Accommodation & Food	Food Preparation and Serving	11.68
	Professional, Scientific, Management	Building & Grounds Cleaning, maintenance	7.57
	Agriculture, Forestry, Fishing & Hunt	Building & Grounds Cleaning, maintenance	4.29
Asian	Education, Health & Social Service	Healthcare practitioners & Technical	13.68
	Manufacturing	Production	13.19
	Professional, Scientific, Management	Computer and Mathematical	8.34
	Arts, Recreation Accommodation & Food	Food Preparation and Serving	6.18
	Retail Trade	Sales Occupation	3.70

[1]It is the percentage of total ethnic group members in the sample.

Table 3. Multilevel Linear Regression for Annual Job Earnings (*ln*) on Metropolitan Area Characteristics

	Niche			NonNiche		
	Model 1	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
White						
Intercept	10.458***	10.454***	10.404***	10.251***	10.289***	10.313***
South		-0.014	-0.038*		-0.083***	-0.071***
West		0.031	0.008		-0.036*	-0.016
Midwest		0.015	0.013		0.017	0.016
Size		0.082***	0.052***		0.028***	0.026***
Unemployment		-0.006	-0.003		-0.010**	-0.008**
Manufacture		-0.003*	-0.001		0.001	0.002**
High status		0.009**	0.008***		0.007**	0.006**
Service		-0.006	-0.005		-0.006	-0.005
Black		0.005***	0.004***		0.003***	0.002***
Asian		0.007	0.008**		0.026***	0.018***
Hispanic		0.009***	0.005***		0.004**	0.003**
Black						
Intercept	9.940***	10.008***	10.202***	10.064***	10.099***	10.246***
South		-0.112***	-0.105***		-0.075**	-0.074***
West		0.020	-0.029		0.045	0.004
Midwest		-0.031	-0.019		0.014	0.009
Size		0.004	0.013		0.029**	0.023**
Unemployment		-0.020**	-0.014**		-0.011	-0.007
Manufacture		0.005**	0.005**		0.000	0.002
High status		0.009**	0.007**		0.002	0.004
Service		0.001	-0.002		-0.017**	-0.010**
Black		0.000	0.001		0.000	0.000
Asian		0.018***	0.017***		0.017***	0.013***
Hispanic		0.009***	0.006***		0.001	0.001
Hispanic						
Intercept	9.690***	9.854***	9.972***	9.998***	10.104***	10.142***
South		-0.213***	-0.141***		-0.178**	-0.109**
West		-0.232***	-0.125***		-0.187**	-0.067
Midwest		-0.076	-0.039		0.049	0.055
Size		0.007	0.000		0.048**	0.030**
Unemployment		0.000	-0.020**		0.003	-0.008
Manufacture		-0.001	0.003		-0.008*	-0.003
High status		0.001	0.004		0.004	0.006
Service		0.017*	0.016**		-0.001	-0.001
Black		0.003	0.004**		-0.001	0.000
Asian		0.012	0.011**		0.011*	0.010**

Hispanic		-0.008**	-0.004*		-0.008**	-0.002
Asian						
Intercept	10.268***	10.365***	10.224***	10.196***	10.227***	10.146***
South		-0.144**	-0.056		-0.055	-0.002
West		-0.190**	-0.055		-0.031	0.013
Midwest		-0.002	0.003		0.007	0.037
Size		0.051**	0.035**		0.019	0.003
Unemployment		0.008	0.003		-0.034**	-0.029**
Manufacture		0.001	0.005*		0.006	0.007*
High status		0.010	0.011**		0.004	0.005
Service		-0.003	0.002		-0.005	-0.004
Black		0.002	-0.001		0.001	-0.002
Asian		-0.021**	-0.013**		0.017***	0.018***
Hispanic		0.008	0.006		-0.001	-0.003
Variance of Components of Coefficients						
Intercept						
White	0.03728	0.01275	0.00560	0.01626	0.00521	0.00296
Black	0.01939	0.00826	0.00499	0.01511	0.00619	0.00360
Hispanic	0.03079	0.01928	0.00634	0.03618	0.02215	0.00855
Asian	0.05241	0.04189	0.01750	0.01594	0.00487	0.00432

Note: Significance Levels: * P < 0 .1, ** P < 0.05, *** P < 0.001

Figure 1. Average Earnings Gap between Niche workers and Non-Niche workers

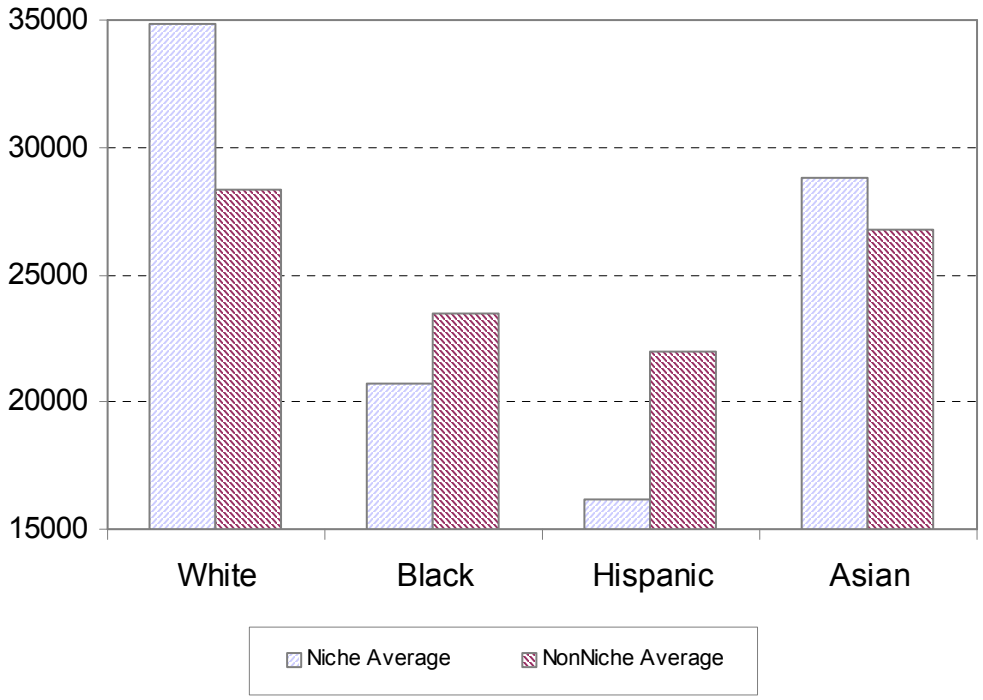


Figure 2. Earning Difference between Niche and Non-Niche Workers before and after controlling Personal Characteristics

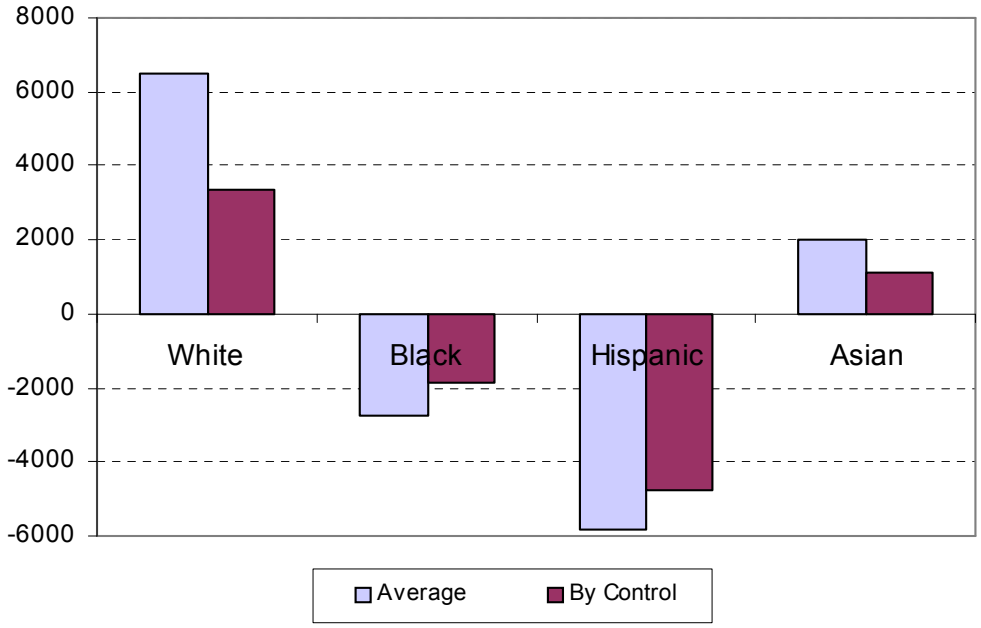


Figure 3. Distribution of Niche Workers by Earning Quartile

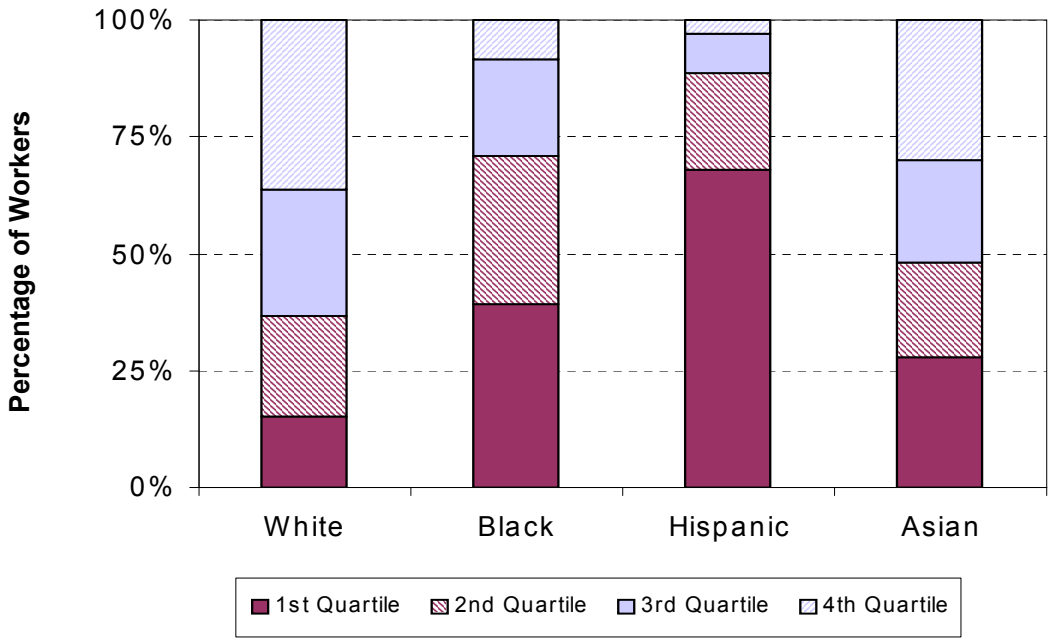


Figure 4. Regression of Weighted-Mean Group Earnings Differences on Weighted-Mean Niche Workers' Earnings Differences across All Metropolitan Areas (in $1,000)

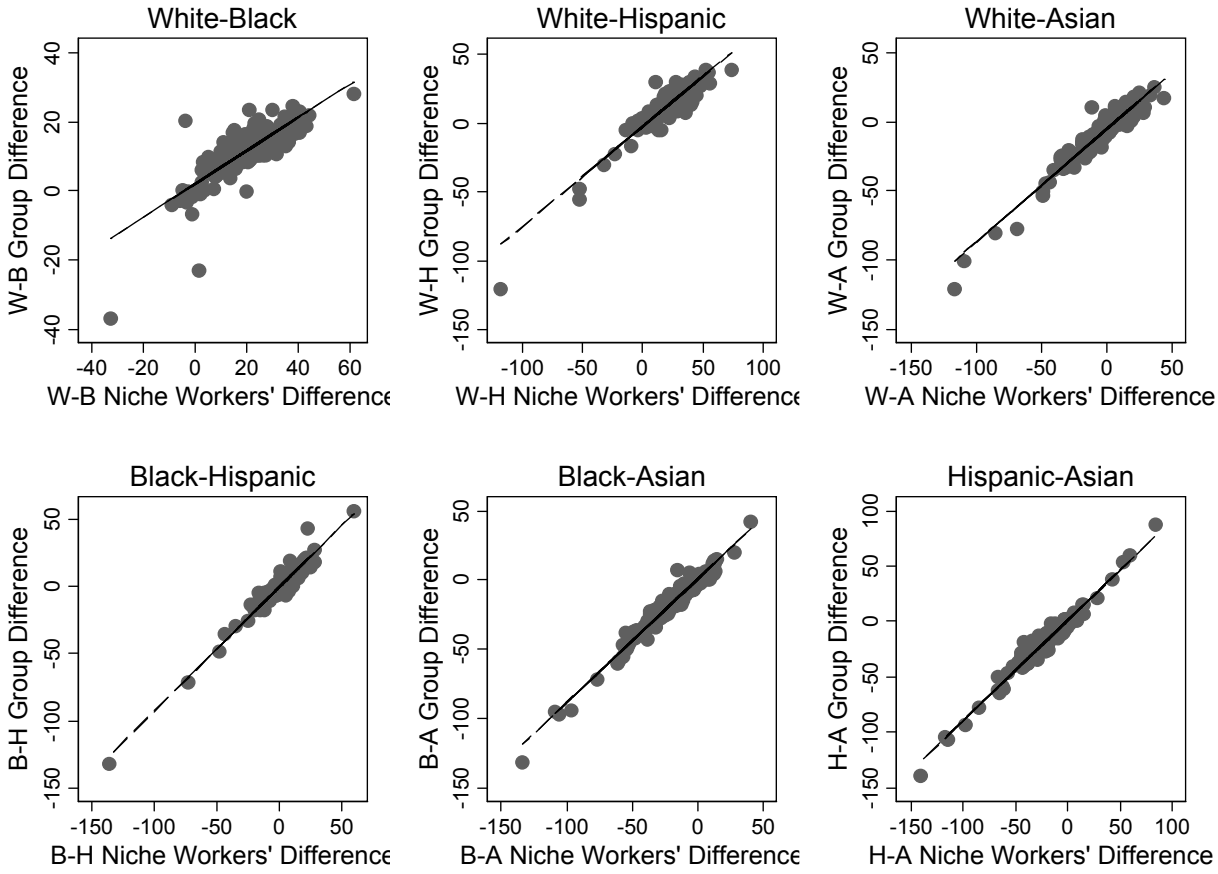


Figure 5. Predicted Annual Earnings for niche and non-niche Workers with Change in Black Percentage at MA-level, by Race/Ethnicity

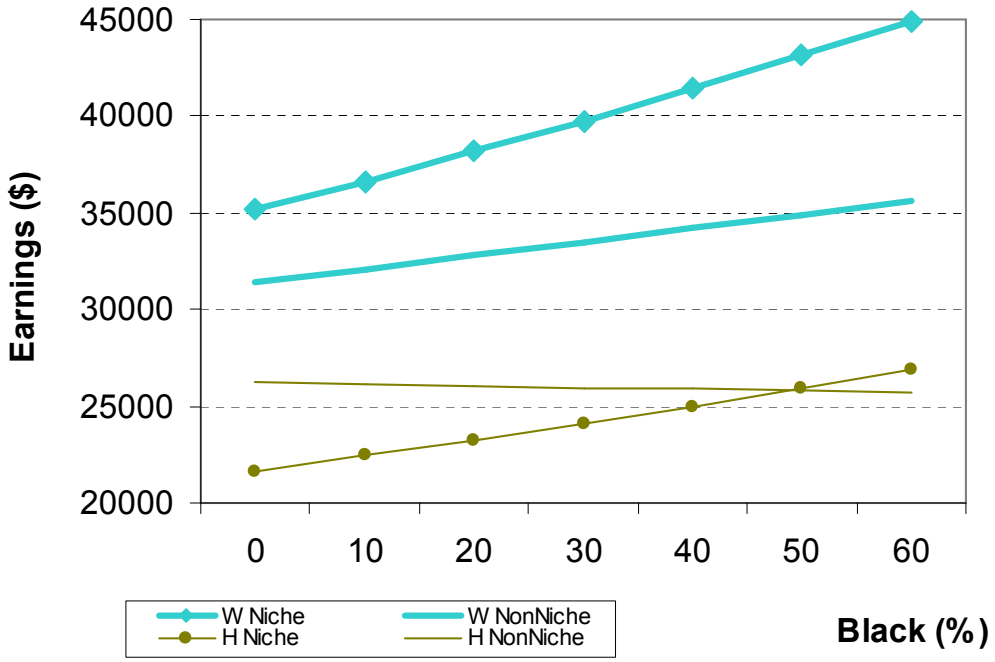


Figure 6. Predicted Annual Earnings of Niche and Non-Niche Workers with Change in Proportion of Foreign-Born Hispanics at MA level

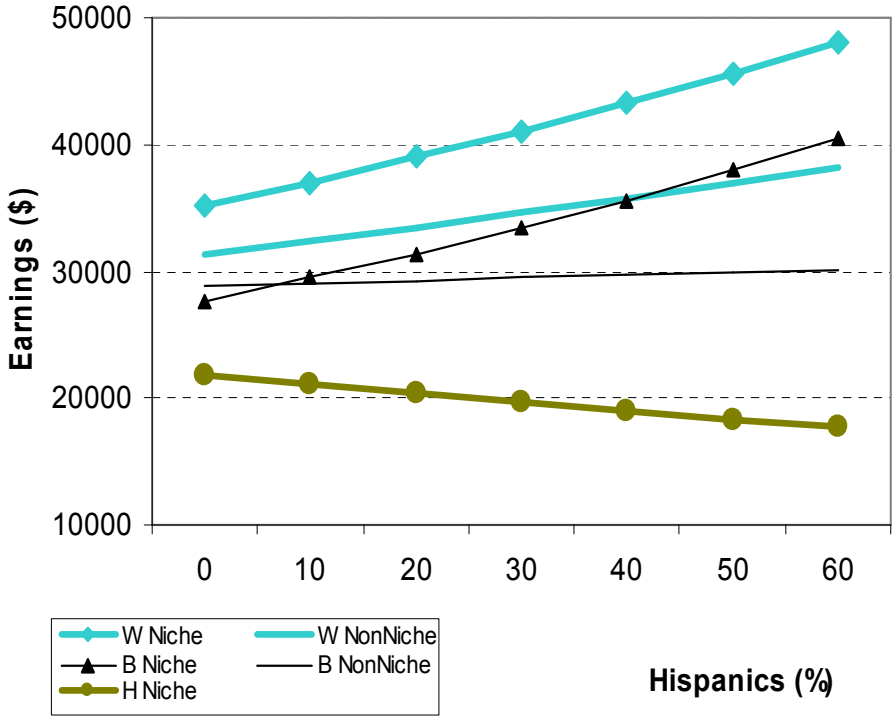


Figure 7. Predicted Annual Earnings of Asians and Hispanics for niche and no-niche workers with Change in Proportion of Asians and Hispanics at MA level

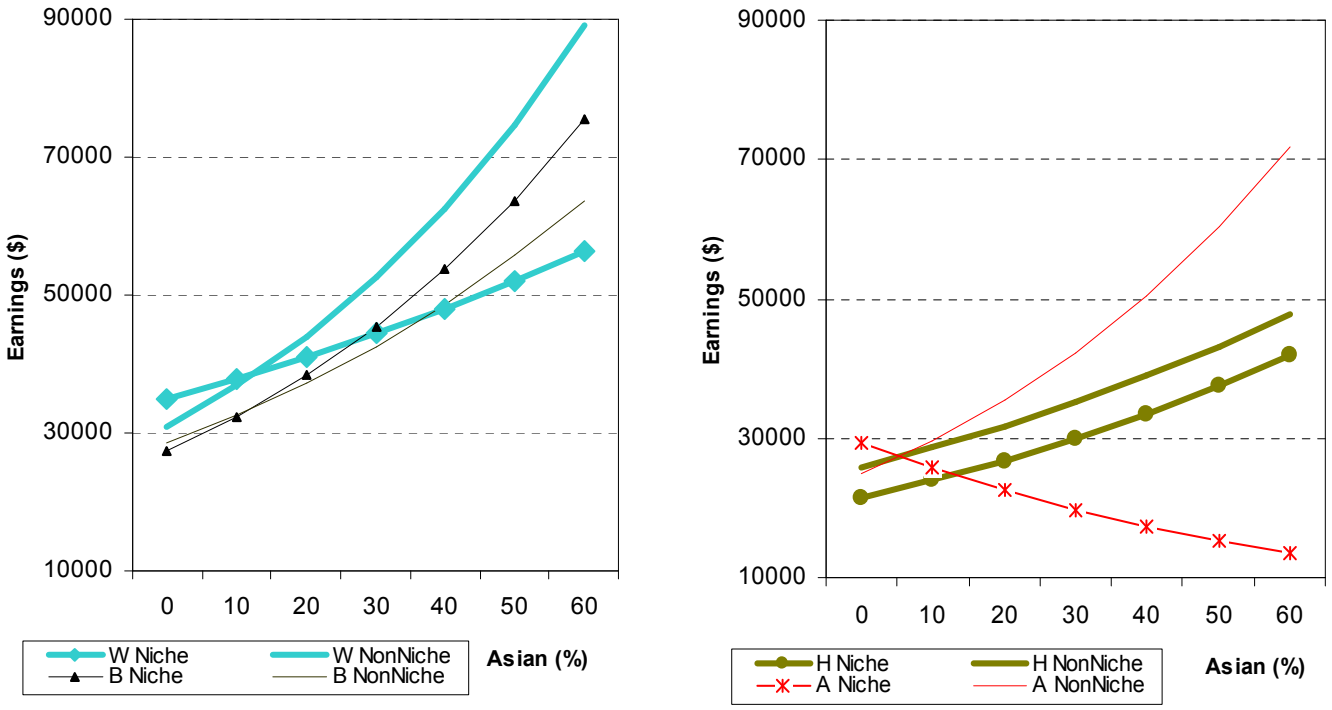
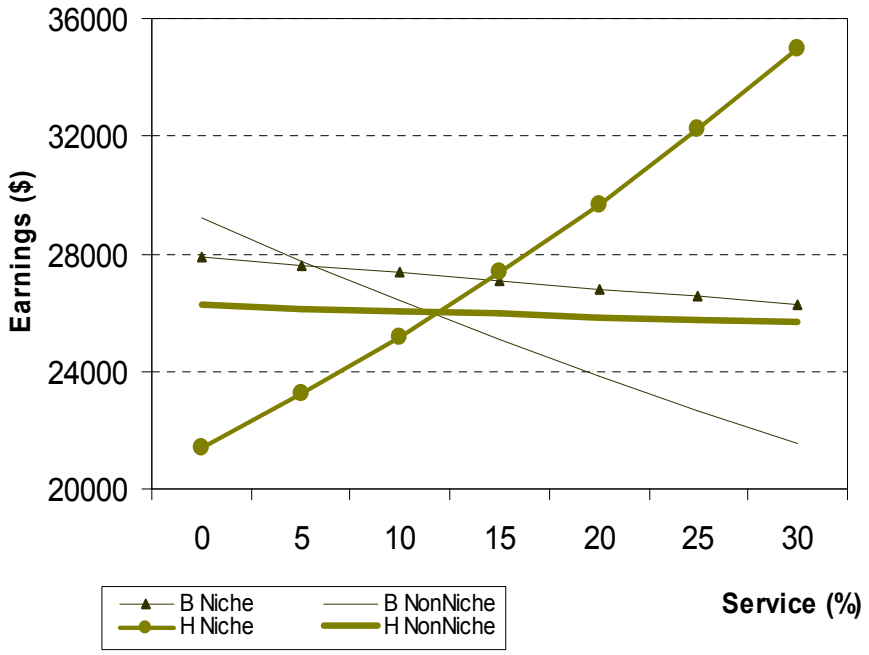


Figure 8. Predicted Annual Earnings for Black and Hispanic niche and no-niche workers with Change in Proportion of Service Industries at MA level



APPENDICES

Appendix 1. Classification of Employment Sectors: 14 Industrial Sectors and 23 Occupations

Industrial Sector	Occupation
Agriculture, Forestry, Fishing, Hunting, & Mining	Management Occupations
Utilities	Business Operations Specialists
Construction	Financial Specialists
Manufacturing	Computer & Mathematical Occupations
Wholesale Trade	Architecture & Engineering Occupations
Retail Trade	Life, Physical, & Social Science Occupations
Transportation and Warehousing	Community & Social Services Occupations
Information and Communications	Legal Occupations
Finance, Insurance, Real Estate, and Rental & Leasing (FIRE)	Education, Training, & Library Occupations
Professional, Scientific, Management, Administrative, & Waste Management Services	Arts, Design, Entertainment, Sports, & Media
Educational, Health & Social Services	Healthcare Practitioners & Technical Occupations
Arts, Entertainment, Recreation, Accommodations, & Food Services	Healthcare Support Occupations
Other Services (Except Public Administration)	Protective Service Occupations
Public Administration	Food Preparation & Serving Occupations
	Building & Grounds Cleaning & Maintenance
	Personal Care and Service Occupations
	Sales Occupations
	Office and Administrative Support Occupations
	Farming, Fishing, & Forestry, Extraction Workers
	Construction Trades
	Installation, Maintenance, & Repair Workers
	Production Occupations Transportation & Material Moving