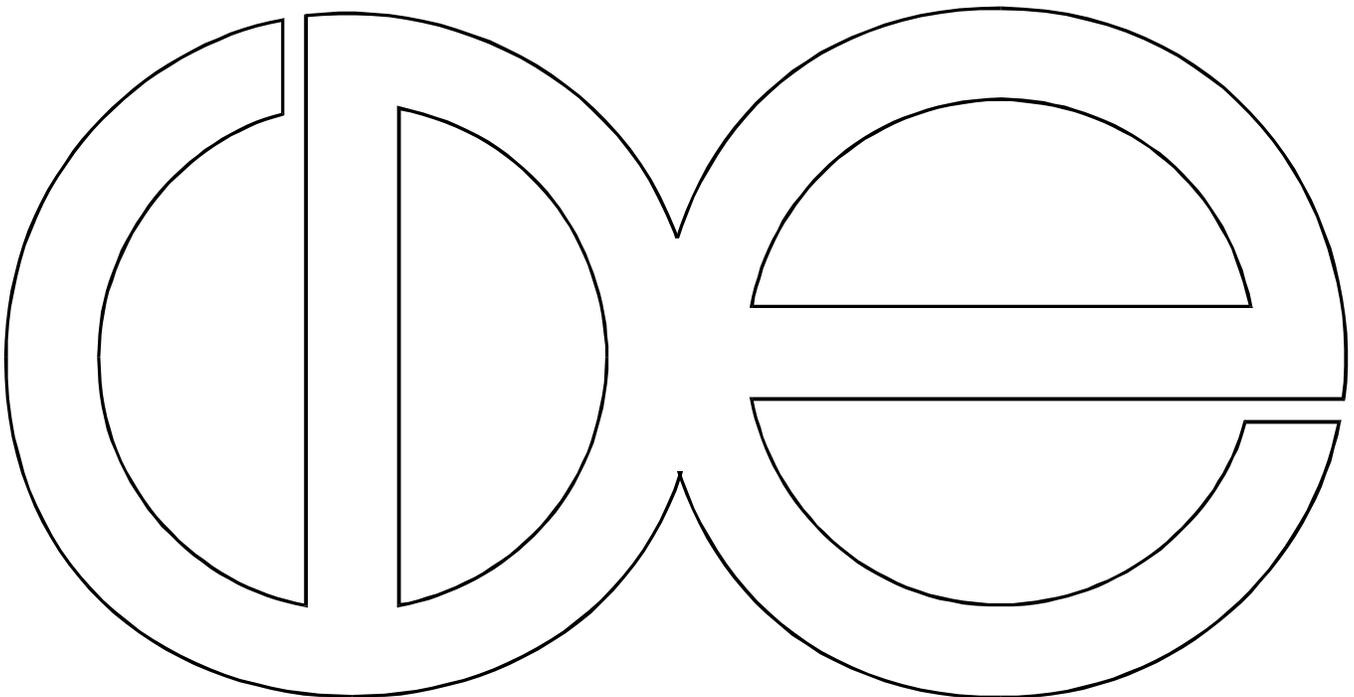# Center for Demography and Ecology

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Immigration and Labor Market Outcomes
for Native Workers

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insightful comments and suggestions made by two anonymous reviewers.

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ABSTRACT

This paper assesses the association of migration (both international and internal) with the employment status and earnings of native whites, blacks, Hispanics and Asians in the United States during the 1980-1990 decade. Results indicate that neither net internal migration nor immigration of minorities to fifty-two of the largest metropolitan areas were related to 1980-90 changes in the probability of joblessness for native and immigrant workers, but were marginally associated with 1979-89 decreases in the hourly wages of some native ethnic/immigrant groups. Results also indicate that the share of an industry sector's workforce that was foreign born and changes in that percentage were associated with increases in the odds of joblessness for some groups, but decreases for others. However, analysis of predicted mean values indicate immigration and the immigrant share of an industry sector's workforce accounts for less than 2 percent of the change that occurred in joblessness and hourly wages during the 1980's.

INTRODUCTION

This paper reports estimates of the association of immigration with the wages and employment of native-born workers in the United States. Massive immigration during the last quarter of a century raises concerns that the newcomers are a substitute labor supply for native workers. Whether or not immigrants adversely affect labor market outcomes of native workers is receiving increased attention from social scientists (see Borjas 1994; Muller 1993; Borjas and Freeman 1992; Bean and Fossett forthcoming; Espenshade forthcoming). Despite repeated surveys indicating that most Americans believe that immigrants take jobs from and lower the wages of natives, most cross-sectional studies of inter-metropolitan variation in employment and earnings of natives indicate little or no adverse effects from immigration (see Borjas 1994). But Jaeger reports (1995) that increases in the immigrant share of the labor force during the 1980s accounted for 6 percent of the increase in the college-high school wage differential; and immigration caused a 3 to 5 percent decrease in the wages of high school dropouts in the aggregate of the 50 largest metropolitan areas. Similarly, Borjas, Freeman, and Katz (1992) employing time series analysis to estimate the macro impact of immigration concluded that immigrants with lower educational attainment were partly responsible for the relative decline in the wages of native workers with similar levels of education; and findings by Borjas (1992) of relative declines in the skill levels of recent immigrants suggest that such effects may become long-term.

Our analysis compares differences in the level of joblessness and earnings, within four major occupational categories, among native blacks, Hispanics, Asians, and non-Hispanic whites; and recent and long-term immigrants living in fifty-two of the largest consolidated metropolitan statistical areas

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(CMSA)/metropolitan statistical areas (MSA) by three major industry sectors. The discussion is organized as follows: first, we briefly review several hypotheses about the association of immigration with the labor market status of native workers; second, we explain why further analysis of this relationship is necessary, and we discuss the particular approach applied in this paper; third, we report small but significant estimates indicating that, generally, 1979-89 decreases in the wages of natives were associated with internal and international migration flows; and that 1980-90 increases in joblessness among native semi-skilled blue-collar workers, but not white-collar or skilled blue collar workers, were associated with the increasing concentration of the foreign-born in major industrial sectors of local labor markets.

BACKGROUND

There appears to be general agreement that the labor market status of white-collar and skilled blue-collar workers has not been adversely affected by the influx of immigrant workers (see Smith and Edmonston, 1997; Borjas 1990, 1994; Muller 1993; Muller and Espenshade 1985). However, a number of arguments have been advanced to explain why immigration's effects on the unskilled may differ from its effects on skilled labor. First, relative to that for unskilled labor, the demand for skilled workers continues to increase, allowing skilled immigrants to be more readily absorbed into labor markets. Second, skilled native workers, fluent in the English language and familiar with prevailing cultural practices, enjoy a decisive advantage over most immigrants in the labor market. In addition, certification or licensing, as well as apprenticeship and examination, are often required to gain entry to skilled occupations and jobs. Even when immigrants have received occupation-specific training

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before arrival, they still may not meet standards acceptable in the United States. Finally, some evidence suggests that because immigrants increase the demand for goods and services, their arrival may result in a disproportionate increase in employment opportunities for skilled native workers (Mueller and Espenshade 1985).

In contrast to conditions for skilled employment, immigrants are more easily substitutable for unskilled workers, since little or no training is required for unskilled jobs. Additionally, given declining employment opportunities for low-skilled blue-collar workers, (see Kasarda, 1995; Levy 1987; Wetzel, 1995) employer preferences for low costs and immigrants' presumed willingness to work for lower pay makes the potential for competition and job displacement much greater in the case of low-skilled native workers (Bailey and Waldinger 1991). Bonacich's (1972, 1976) split labor market model, which was developed to account for the antagonism of white toward black workers in U.S. cities in the 19th and early 20th centuries, can also be applied to the relations between employers, native and immigrant blue collar workers.

If employers are faced with two groups of workers who differ considerably in their potential for labor militancy over wages, benefits, and working conditions but are similar in other productivity characteristics, employers are likely to select workers from the least militant group on the grounds that these workers are less likely to disrupt the production process. Furthermore, immigrants are considered to be in a weaker bargaining position, because they often have fewer alternative means of support, and their expectations about labor remuneration may be lower because their reference is prevailing wage and benefit structures at their country of origin. Moreover, once immigrants establish a presence in an industry/occupation their numbers are likely to increase through referral and networking (see Waldinger, 1994; Bailey and Waldinger, 1991, 1992). In this context immigrants

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may become the preferred workers, particularly in industries with low profit margins and few options for employers to relocate. An alternative interpretation of native-immigrant differences in joblessness among the less skilled is that the latter are willing to take jobs the former will not take, either because of low wages, poor working conditions or access to alternative sources of income (see Welch 1990; Mead 1992). Support for this explanation is partly provided by the high joblessness of native workers in major cities that have experienced substantial declines in blue collar jobs in manufacturing but substantial increases in low wage service jobs taken by immigrants (Bailey and Waldinger 1991).

Internal Migration and Ethnicity

Analyses of immigration's labor market effects have been based on a simple idea. If immigration has negative effects, then, other economic factors constant, employment conditions of native workers should be worse in areas with relatively more immigrant workers. Hence, much research compares the wages (employment status) of native workers in labor markets with few immigrants to those with relatively many immigrants. If other economic factors have been sufficiently controlled, a good estimate of the independent effect of immigration is obtained. But few studies have reported reductions in earnings and/or increased joblessness among native workers, which can be attributed to immigration of more than two percent. (See Borjas, 1994; Friedberg & Hunt, 1995; Smith & Edmonston, 1987).

Some researchers believe that negative effects have not been found because native workers whose wages or employment would have been worsened by immigration leave areas receiving large numbers of immigrants (Frey, 1995). If so, the comparative model underestimates immigration's effect on native workers for two reasons. First, average employment conditions of native workers

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in high immigrant areas rise because those with the worst conditions have left. Second, those leaving high immigrant areas for low immigrant areas increase the labor supply and may worsen employment conditions in their areas of destination. These behaviors may cause employment conditions for natives in both kinds of areas to converge. Thus, even if immigration has substantial effects on native workers nationwide, those effects may not be found by comparing different metropolitan areas, largely because internal migration acts as an equilibrating mechanism.

Several studies report finding a link between outmigration of natives and the destination choices of immigrants (Walker, Ellis, and Barff 1992; Frey 1995; White and Hunter 1993). Frey (1995) reports that black and white less-skilled native workers have high outmigration rates from areas that attract large numbers of immigrants; the natives appear to migrate to places with few immigrants. Both the theoretical critique and the empirical findings on the migration behavior of the native-born imply that estimates of immigration's effects on native workers must explicitly consider domestic migration as well as immigration.

There is also the possibility that migrants are attracted to areas of modest to strong economic growth, making it difficult to distinguish the effects of immigration on the labor market outcomes of native workers from that associated with economic conditions. If migrants respond to favorable employment conditions at destination, then competition with and displacement of native workers may not occur, because of tight labor market conditions. Thus higher joblessness and low wages among native workers may be higher where economic conditions are stagnant and the volume of immigration is low.

In the U.S. labor market, segmented by ethnicity and gender, as well as education, ethnically diverse flows of immigrants should be expected to have differential effects on an ethnically varied

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native working force. But much previous work has also relied on highly aggregate data that conceal structural features of labor markets that influence intergroup competition. For example, immigrant workers seldom self-identify or organize themselves in social networks as "immigrants." Rather, they form social networks within a nationality or ethnic category. These social networks play important roles in determining in what localities and for what jobs their members compete.

Immigrants concentrate in industries containing large numbers of their ethnic/national-origin counterparts. Use of such social networks suggests that many immigrant and native-born groups may be noncompeting groups, while others may be quite competitive. The wages and employment of native-born members of the noncompeting groups may be unaffected or even enhanced by immigration, while the wages and employment of the competing groups may be worsened by immigration. These different effects may produce enough variation that statistical analyses of the effects of a composite category, "immigrants," on a composite category, "native-born", may on average, be null precisely because the average conceals important differences between groups.

For example, Espenshade (forthcoming) found that while "immigrants" have no effect on the wages of blacks in New Jersey, Puerto Ricans do. Comparing the effects of Puerto Rican migrants, a distinctive and self-identified minority group with strong internal social networks, on the wages of native blacks to the effects of immigrants, an amorphous conglomeration of groups with separate social networks, is an ideal test of our critique of the minority competition hypothesis. Moreover, while Puerto Ricans are not immigrants, the characteristics of those migrating from the island to the mainland are very similar to many Hispanic immigrants. Estimates of immigration's effects on native workers must disaggregate data to capture the ethnic group-specific character of these effects.

CURRENT RESEARCH

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The research reported here is designed to consider some of the factors discussed above. By combining several alternative data sets with 1980 and 1990 census data, we compute estimates of immigration's effects on native workers during the 1980s. Our estimation method also assesses the effect of internal migration on the labor market status of native and immigrant workers. Our objective is to estimate the effects of immigration on the labor market position of various demographic groups. We pursue this task by estimating immigration's contribution to inter-industry-metropolitan area variation in 1980-1990 changes joblessness and hourly wage, for different native ethnic/immigrant groups by occupation.

We have attempted to avoid some of the measurement problems which have plagued previous research on this issue.[1] Our analytic model is structured to provide insight into the question of whether the effect of migration on labor market outcomes differs for native African American, Asian, Hispanic and White workers and two categories of immigrant workers distinguished by length of residence in the U. S., who were employed in similar occupations and industry sectors. We

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[1] Previous research has relied heavily on products from the decennial censuses, primarily because of the limited availability of date files with detailed information about local labor market conditions with which to study the effects of immigration. The potential for estimating biased relationships is greater if all relevant variables are obtained from a common data source. In addition, the time periods covered by these data are such that it is impossible to reconstruct a temporal ordering of relevant variables in ways that correspond to cause and effect relations. For example, earnings are reported for the previous year, while information on migration (both internal and international) covers the entire five year period up to the census week. Finally, few efforts have been made to ensure that the individual members of ethnic, gender, and nativity groups who are to be compared are similar with respect to relevant variables such as education, age, disability status, and marital status. If, for example, one wants to compare the wages of unskilled native black or Hispanic men or women with that of foreign-born men or women, but fails to control for attributes that determine wages at the individual level, it would be difficult to attribute a wage difference as being a positive or negative effect of immigration.

hypothesize that within occupations and industry sectors the association of migration with labor market outcomes should be similar for members of these different groups net of the influence group differences in demographic and human capital attributes and of structural factors, operating at the level of local labor markets, which affect labor supply and demand.

The analysis follows a two-stage procedure. First, for 1980 and 1990, we estimate 156 separate equations for joblessness and hourly wages, respectively, for samples of respondents living in 52 of the largest metropolitan areas and who work either in the primary, secondary or tertiary sector of local labor markets. We use these equations to adjust the so called "ethnic" effect for group differences in education, labor market experiences and other demographic characteristics that are reflected in the gross odds of joblessness and mean hourly wages of individual ethnic and immigrant groups. In the second stage, we use the partial slope coefficients for the effect of ethnicity and immigrant status, distinguished by occupation, as dependent variables, in which different measures of migration are the exploratory variables.[2] Here we test whether 1980-1990 changes in the log odds of joblessness and of log hourly wages, within major industrial sectors and metropolitan areas, are associated with migration net of other metropolitan level labor market characteristics also known to affect these outcomes.

Equation (1a) estimates a logistic regression for the log odds of joblessness and equation (1b) estimates an OLS regression model for the log of hourly wages:

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[2] We use major occupation as a stratifying variable because it corresponds closely with the kind of work activity in which individuals are actually involved in the labor market. This provides a means for determining the potential for competition, displacement or substitution between native and immigrant workers.

$$\text{Log } (P/1\text{-}P) = \alpha + \Sigma B_i X + \Sigma \beta_i Z + \Sigma \beta_i W + \Sigma \beta_i ZW \qquad (1a)$$

$$\text{Log(HWAGE)} = \alpha + \Sigma \beta_i X + \Sigma \beta_i Z + \Sigma \beta i W + \Sigma \beta i ZW + e \qquad (1b)$$

Where $\text{Log}(P/1\text{-}P)$ is the log odds of being jobless, that is, unemployed or not in the labor force during the week of the census but worked within the last two years; Log (HWAGE) is the log of hourly wages for workers with wage and salary income in 1979 and 1989 respectively;[3] the $\underline{X}$'s are individual human capital and demographic attributes, such as age, age squared, non-respondent household income, marital status, sex, education, disability, and school attendance; $\underline{Z}$ is a vector of binary variables for ethnic/immigrant group affiliation including native Asians, non-Hispanic blacks, non-Hispanic whites and Hispanics, immigrants who have been in the US for less than eleven years or those who have been in the US for more than ten years; $\underline{W}$ is a vector of binary variables for major occupation of respondent, including skilled white-collar, semi-skilled white-collar, skilled blue, and semi-skilled and unskilled blue collar; and $\underline{ZW}$ is a vector of binary variables for the product of ethnic/immigrant group affiliations and major occupation. The definitions of all variables are reported in Appendix Table A1. Non-respondent household income is only included in the jobless equation, and age squared only appears in the wage equation.

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[3] In estimating equation (1b) for hourly wages, a selection equation approach would have been more appropriate rather than only including respondents with positive earnings. We do not know the extent of the bias in the estimate produced, but it is likely that the differences between whites and the other groups are smaller than they would have been had a selection equation approach been applied.

The sample population for both the 1980 and 1990 censuses (5% samples) included non-agricultural workers who were 19-64 years of age. As previously noted, the above model was separately estimated, for each census year, for 156 samples defined by industry and metropolitan area (three major industry sectors and fifty-two metropolitan areas). We group respondents into three exclusive and exhaustive industry sector categories, including (1) Primary industries--construction and manufacturing; (2) Secondary industries--transportation, utilities, wholesale and retail trade, entertainment and personal services; and (3) tertiary industries-- finance, insurance, real estate, business services, professional services and public administration. This three sector classification is crude, but unfortunately, we could not provide more industry detail without reducing the number of ethnic groups and/or occupational categories employed in the analysis. We use industry as a stratifying variable because previous research indicates substantial variation in the concentration of ethnic populations across industrial sectors, reflecting differences in skills, experiences, self-employment patterns and social network sustained niches (see Altonji and Card 1991; Waldinger 1994; Logan, Alba and McNulty 1994). Native workers' competition with and displacement by immigrant workers is less likely to occur in the absence of both groups working in the same industrial sector (Bailey and Waldinger 1991).

The metropolitan areas included in this analysis were selected based on the presence of at least 1,000 sample respondents on the 1990 PUMS (5% sample) who are either native black, Hispanic or Asian, and in which there are at least 500 foreign born respondents, and for which information is available on other files used in this analysis. For a number of these metropolitan areas, the PUMS files do not provide representative samples of their populations. The under-representation occurs

because identifying the population of an excluded area would have violated confidentiality rules.[4]

Although the coefficients derived from estimating equations (1a) and (1b) might differ from those that could be estimated if the entire metropolitan population was represented, we assume they do not; and, in any event, we do not think this poses a serious problem because the omitted population represents in most instances less than 10 percent of the total population. We include no metropolitan areas located in New England because of the manner in which the county components were allocated on the 1990 PUMS.

In total, we estimated the model for 312 samples defined by census year, industry sector, and metropolitan area. Table 1 reports estimated coefficients for two of these equations. It shows the estimated coefficients for equation (1a) estimated for 1980 and 1990 for construction and manufacturing workers in the Miami metropolitan area.

In the second stage of the estimation, we used the estimated coefficients from equations (1a) and (1b) for the binary variables in $\underline{Z}$, $\underline{W}$, and $\underline{ZW}$ to construct the dependent variables, 1980-1990 changes in the log odds of being jobless, and 1979-1989 changes in log hourly wages for workers of industry sector j, metropolitan area k, ethnic/immigrant group $\underline{Z}$, and occupation group $\underline{W}$. Note that we estimated equations (1a) and (1b) separately on samples that were defined by metropolitan area and industry, but not by ethnic/immigrant identity or occupation. However, we did include

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[4] In 1980, the CMSA(MSA)'s affected by this rule include Albany-Schenectady-Troy, Baton Rouge, Cincinnati, Denver, Detroit, Houston, Memphis, New Orleans, New York, Rochester (NY), San Antonio, Toledo, and Washington, D.C. The affected CMSA(MSA)'S IN 1990 include Memphis, Baton Rouge, New Orleans, Washington, DC., Baltimore, Rochester (NY), Albany-Schenectady-Troy, Charlotte-Gastonia-Rock Hill, Greensboro-Winston-Salem-High Point, Toledo, Dayton-Springfield (OH), San Antonio, Austin, Richmond-Petersburg, New York, Denver, Houston, and Philadelphia. The complete list of fifty-two metropolitan areas and the primary metropolitan areas (PMSA's) associated with the CMSA's is available from the authors upon request.

ethnic/immigrant groups and occupation categories in equations (1a) and (1b) as explanatory variables. The estimated coefficients for the vectors $\underline{Z}$, $\underline{W}$, and $\underline{ZW}$ were used to construct ethnic/immigrant and occupationally specific values for joblessness and hourly wages. The results reported in Table 1 can be used to illustrate how the dependent variables were constructed. The occupation specific coefficients for blacks, Hispanics, and Asians are calculated by collecting terms representing the effect of whites being in a given occupational category, plus an ethnic effect plus the interaction of ethnicity and occupation. The latter term captures ethnic group - white differences in slope coefficients. Thus, the estimated (log) odds of joblessness for black skilled white-collar workers were calculated as follows:

 -.438(skil.white col.) + .784(black)-.551(skil.white-col.black).[5] Values for other occupations and for Hispanics and Asians, and immigrant skilled white-collar workers were derived in a similar manner.[6]

Thus, equation (2) relates 1980-90 changes in the log odds of joblessness and 1979-89 changes in log hourly wages for native and immigrant workers to the flow of internal and international migration to a metropolitan area, as well as the share and change in share of a local industry sector's work force that is foreign born. We hypothesize that neither internal nor international migration will affect the labor market status of white-collar or skilled blue collar native workers, but may reduce the wages and raise joblessness among recent immigrants in these occupations. As noted previously,

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[5] For 1980, the coefficient for Blacks skilled white collar workers would be {-.4463 (skilled white collar)+.0931(black)+13.1155 (skilled white-collar black)}, and the standard error for this coefficient would be $\sqrt{(.0319)^2 +(.0264)^2 +(38.6313)^2}$

[6] In the case of white workers, the coefficients would be: B_0(semi-skilled and unskilled blue collar), the omitted category; B_7 (skilled white collar); B_3 (semi-skilled white collar), and B_4 (skilled blue collar).

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low-skilled native workers are substantially more likely to be adversely affected by the presence of immigrant workers than native workers in other occupations largely because in many industries the amount of training and experience required in the jobs for which they are qualified are often very low and workers need not speak English fluently. Given low wages, no fringes, and poor working conditions, labor turnover rates are likely to be high, and there is also a good chance that the share of immigrants who are undocumented will also be high. In addition, as others have noted, the demand for low skilled workers has been declining because of economic restructuring (see Kasarda 1985; Levy 1987; Harrison and Bluestone 1988), resulting in increased competition, reduced employment opportunities and low wages. With respect to the labor market status of immigrants, if they become the preferred workers for a given occupation within an industrial sector, one would expect their wages to be slightly lower than native workers, but their employment levels to be appreciably higher than native workers. The equations for the second stage estimation procedure are of the following form:

$$
\begin{aligned}
\text{JOBLESS}_{(90\text{-}80)} = {} & \alpha + \tau_1 \text{FOREIGN} + \tau_2 \% \text{FOREIGN} + \tau_3 \text{PMIMMIG} + \tau_4 \text{NETMIG} \\
& + \tau_5 \text{RWPOP} + \tau_6 \text{RINDUST} + \tau_7 \text{LTPOP} + \tau_8 \text{MINPOP} \\
& + \tau_9 \text{SECONDARY} + \tau_{10} \text{PRIMARY} + \tau_{11} \text{WUNEMPY} + \tau_{12} \text{INCOME} \\
& + \tau_{13} \text{AFROHISP} + \tau_{14} \text{AFROAM} + \tau_{15} \text{HISPANA} + \tau_{16} \text{LATINO} \\
& + \tau_{17} \text{BLACK} + \tau_{18} \text{HISPANIC} + \tau_{19} \text{ASIAN} + \tau_{20} \text{IMMIG}{<}11 \\
& + \Sigma \tau_{21} \text{IMMIG}{>}10 + \Sigma \tau_i \text{ETHNIC(X)FOREIGN} + \Sigma \tau_i \text{ETHNIC(X)NETMIG} \\
& + \Sigma \tau_i \text{ETHNIC(X)\%FOREIGN} + \Sigma \tau_i \text{ETHNIC(X)PMIMMIG} \\
& + \Sigma \tau_i \text{ETHNIC(X)RWPOP} + e \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (2)
\end{aligned}
$$

Equation (2) is also estimated for WAGE$_{(8a-7a)}$.   Where JOBLESS$_{(90-80)}$ is 1980-90 changes in the log odds of being jobless, specific to ethnicity, occupation, industrial sector and metropolitan area; WAGE is 1980-90 change in the log of hourly wages also specific to ethnicity, occupation, industry sector and metropolitan area; FOREIGN is share of workers in an industry sector who are foreign-born; %FOREIGN is 1980-90 change in the share of workers, in an industry sector who are foreign-born; PMIMMIG is share of net metropolitan area migrants who are foreign-born blacks, Hispanics, and Asians; NETMIG is net metropolitan migrants; RWPOP is 1980-88 change in the white population of a metropolitan area; RINDUST is 1980-90 change in the share of a metropolitan labor force employment in a given industry sector; LTPOP is 1980 metropolitan population size; MINPOP is 1980 share of metropolitan population minority; SECONDARY is one for workers in the secondary sector; PRIMARY is one for workers in the primary sector; WUNEMPY is 1983-88 change in the unemployment rate for white workers in a metropolitan area; INCOME is 1983-88 change in mean monthly household income in metropolitan area; AFROHISP is one for workers in metropolitan areas with high concentrations of Blacks and Hispanics; AFROAM is one for workers in metropolitan areas with a high concentration of Blacks; HISPANA is one for workers in metropolitan areas with high concentrations of Hispanics and Asians, LATINO is one for workers in metropolitan areas with high concentrations of Hispanic workers; BLACK is one for workers who are black; HISPANIC is one for workers who are Hispanic; ASIAN is one for workers who are Asian; IMMIG<11 is one for immigrants who have resided in the U.S. for less than eleven years; IMMIG>10 is one for immigrants who have resided in the U.S. for more than 10 years; and ETHNIC (X) variables are product terms. Equation (2) is estimated four times: Once for each of four major occupational categories, in which native blacks, Hispanics, Asians and non-Hispanic whites are compared with immigrants. Non-

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Hispanic white semi-skilled and unskilled blue collar workers are represented by the intercept terms from equations (1a) and (1b). (It will be recalled that the intercept includes the status of semi-skilled and unskilled blue collar workers, position on the other omitted categories, and systematic variation across metropolitan areas not captured by measured variables.) Occupationally specific coefficients for non-Hispanic whites and the immigrant subgroups were obtained from the estimation of equations (1a) and (1b) one hundred-fifty-six times each, respectively; coefficients for blacks were obtained from 141 equations; for Hispanics, 96; and for Asians, 54.[7] The product terms involving "ETHNIC (X)" provide tests of whether the association of FOREIGN, %FOREIGN, PMIMMIG, NETMIG and RWPOP with 1980-90 changes in the log odds of joblessness and log hourly wages differ for native African Americans, Hispanics, Asians and two immigrant groups relative to non-Hispanic whites. If migration differentially affects the labor market status of native workers based on group affiliation, this should be reflected in the pattern of variation exhibited by the coefficients for the ETHNIC (X) terms.

In applying equation (2) to 1980-90 difference in the log odds of joblessness and 1979-89 difference in the log of hourly wages, we use the reciprocal of the square root of the sum of the variances as weights.[8] This procedure corrects for heteroscedasticity due to the regression

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[7] Whether occupationally specific terms were included in equation (1a) and (1b) for Blacks, Hispanics and Asians depended on whether there were at least 1,000 workers of each group in a given metropolitan area. Thus there were 47 metropolitan areas on the PUMS with 1,000 or more Blacks, 32 with 1,000 or more Hispanics and 18 with 1,000 or more Asians. In many cases, we excluded metropolitan areas with sufficient samples of whites and blacks, because they had very few immigrants on the PUMS file, and no data on 1980-88 immigration.

[8] The reciprocal of the standard errors of the regression coefficients are computed as follows: $1/\sigma = 1/\sqrt{\sigma_{yxt}^2 + \sigma_{y+xt+1}^2}$ where $\underline{y}$ is jobless on wages, $\underline{x}$ is the independent variable, t is 1980 and t+1 is 1990.

coefficients not having the same variance. All of the metric variables are expressed in log form. Thus, equation (2) attempts to explain industry and metropolitan variations in changes in the log odds of joblessness and changes in log hourly earnings for whites, blacks, Hispanics, Asian natives, and two categories of immigrants who have been in the U.S. less than eleven years versus those who have been in the U.S. eleven or more years.

We include variables in equation (2) to take account of inter-metropolitan variation in the size and composition of the individual minority populations. We classify metropolitan areas based on the presence of 1,000 or more respondents 19 years of age and over for one or more ethnic minority populations. The largest number of metropolitan areas (N=20) are predominately non-Hispanic black and white in ethnic composition (AFROAM); 17 others are multi-ethnic, with all four groups present in significant numbers (the omitted category in equation (2); 10 consist of Hispanics, blacks and whites (AFROHISP); 4 of Hispanic and whites (LATINO) and one of Asian, Hispanics and whites (HISPANA). Since the analytic model used calls for comparisons of the labor market status of immigrant groups with native workers of different ethnic backgrounds, such comparisons are only meaningful for metropolitan areas in which members of these groups are concentrated. The ethnic composition of metropolitan areas differs, however, not only with respect to the share of their populations represented by individual ethnic minority groups, but also with respect to variation in the origin and composition of the immigrant components of their populations. Thus, native workers may encounter immigrants from different origins with different migration histories, and this in turn, provides the context within which they interact in local labor markets.[9]

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[9] An issue which might be of concern is that of whether the ethnic composition of the two immigration categories varies by metropolitan area. The distinction we make between immigrants and native ethnic populations ignores the generational relations existing between these sub-groups,

Model 2 also contains a number of labor demand related variables including 1983-88 changes in the white unemployment rate (WUNEMPLY), mean household income (INCOME), and proportion of the metropolitan labor force employed in the industry sector;[10] metropolitan population size in 1980 (LTPOP); and minority population share of the total metropolitan population in 1980 (MINPOP).[11] We include these variables to control for labor demand conditions in a local labor market. Ethnic minorities may experience rising joblessness and/or declining wages because of changes in labor demand conditions not related to migration.[12]

The explanatory variables whose effects are of particular interest include: NETMIG, estimated net minority migrants to a metropolitan area between 1980 and 1988 who are black, Hispanic, and

a connection which may be more pronounced among members of some groups in some metropolitan areas. We constructed tables (not shown) to evaluate this possibility with the following results. The results show that while the ethnic composition of the nativity groups varies by metropolitan area as expected, there are only five instances in which a specific ethnic group represents more than 50 percent of the population of either of the immigrant categories. Three of these cases involve non-Hispanic white immigrants who have been in the U.S. for more than ten years. In the case of specific metropolitan areas, there are four in the Southwest in which Hispanics constitute the majority of both native and immigrant groups, and six in the East North Central and South Atlantic regions in which whites are the majority of all three groups.

[10] These variables were estimated with data from the Survey of Income and Program Participation (SIPP), 1984 and 1987 panels. Although the estimates are based on averages for the last six months of a calendar year (1983 or 1988), they are probably subject to greater sampling variability because of the size of the SIPP panels. Thirteen CMSA(MSA)'s are not separately identified on the SIPP, including Albuquerque, Baton Rouge, Bakersfield, Baltimore, Brownsville-Harlingen (TX), Charleston (SC), Charlotte Gastonia-Rock Hill (NC-SC), Columbia (SC), El Paso, McAllen-Edinburgh-Mission (TX), Richmond-Petersburg, Waco. For these metropolitan areas, we use state estimates.

[11] LTPOP and MINPOP are based on population estimates derived from *Current Population Reports* (U. S. Bureau of the Census 1989 and 1990).

[12] However, we should emphasize once again that migration flows may be disproportionately directed to labor market areas experiencing modest to strong economic growth, potentially making it difficult to distinguish the effects of migration from that of local economic growth.

Asian, divided by ½ (1980_{pop}+1988_{pop}); PMIMMIG, the percentage of net minority migrants to a metropolitan area who are immigrants; RWPOP, change in white population, 1980-88; FOREIGN, the percentage of the labor force of a major industry sector that is foreign born in 1980; and %FOREIGN, the ratio of the percentage of an industry sector's labor force that is foreign born in 1990 to its 1980 percentage. NETMIG combines an estimate of internal migration derived from income tax records with estimates of the number of persons receiving permanent resident alien status, the number of refugee arrivals, and an estimate of the number of undocumented international migrants entering the country between 1980 and 1985 (see U. S. Bureau of the Census 1989 for a detailed discussion of the methodology). Through linear projection, we extend the estimates to cover the period through 1988.[13,14] Although much of the debate about negative impact links immigration with the labor market status of native workers, we think a case can be made for considering internal migrants as well. First, immigrants do engage in secondary internal moves (see Bean and Tienda 1987). Second, internal migration streams may also contain substantial numbers of illegal immigrants, some of whom are included in surveys and administrative records. Finally, poorly educated and unskilled native workers can also migrate and compete effectively against long-term residents of a local area with similar labor market skills and experiences.

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[13] The national estimate of immigration for 1980-85 by sixteen source countries is distributed to states and counties according to the proportionate distribution of 1975-80 immigrants to states and counties by the sixteen source countries. In other words, it is assumed that immigrants who arrived between 1980 and 1985 distributed themselves in the same manner geographically as those who arrived during 1975-80.

[14] NETMIG, PMIMMIG, AND RWPOP are from *Current Population Reports* (1989, 1990) and FOREIGN and %FOREIGN were constructed from the 1980 and 1990 PUMS files, specific for each of the major industry sectors and metropolitan area.

Our expectations are that high levels of net in-migration, whether internal or international in origin, of blacks, Hispanics and Asians over the 1980-88 period will increase the level of joblessness among native workers and lower their wages. This expectation is based on the assumption that internal migrants and immigrants are willing to work for lower wages, few fringe benefits, and under worse conditions. We include PMIMMIG as a way of separating the effect of immigration from net internal migration, the latter being represented by NETMIG. This has the advantage of enabling us to determine whether high levels of net internal migration of minority populations also adversely affects changes in joblessness and wages between 1980 (1979) and 1990 (1989). However, consistent with previous work, we hypothesize that the positive effects of NETMIG and PMIMMIG on joblessness and their negative effects on wages will be strongest for low skilled blue collar workers and minimal or nonexistent for skilled workers. This is because entry level requirements for low skilled jobs are such that migrants (immigrants) encounter fewer barriers to securing these types of jobs.

NETMIG and PMIMMIG are global flow measures, since they are not specific with respect to the age, labor force status and/or industry of employment for the reference population. Thus, it may be that these measures capture the general effect of migration on the local economy, resulting in a decline in joblessness and an increase in wages, differentially by occupation, because of increased demand for goods and services.

RWPOP may also capture the effect of increased local aggregate demand. But our primary reason for including it is to determine whether changes in the white population differentially affect minority versus majority labor market outcomes. Metropolitan labor markets are not closed systems, and thus residents can respond to changing employment opportunities by moving to other areas

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(Borjas, 1994). Several studies report finding a link between out-migration of natives and the destination choices of immigrants (Walker, Ellis and Barff 1992; Frey 1995; White and Hunter 1993). Frey (1995), for example, reports that immigrants appear to be moving into areas with high outmigration of natives, including black and white low skilled native workers, and natives appear to be moving to places in the Midwest and South regions to which few immigrants move, with the exception of Chicago and some port cities among the Atlantic coast. Immigrants are drawn to many of these places because of the presence of other immigrants who preceded them, and because the economic transformation of these places is creating employment opportunities at the low end of the skill distribution that have traditionally served as points of entry into the U.S. labor market (see Sassen 1991; Walker, Ellis and Barff 1992). We expect an increase in the non-Hispanic white population of metropolitan areas would be indicative of an expanding or booming local economy with expanding job opportunities that tend to be attractive to native workers, resulting in lower joblessness and higher wages. This hypothesis complements that advanced by Frey (1995) and Walker, Ellis and Barff (1992), who suggest that native white and black workers are being pushed out of places with high immigration flows. We expect RWPOP to be beneficial for whites, less so for blacks, Asians and Hispanics, and possibly negative for immigrants.

FOREIGN and %FOREIGN are industry sector specific and thus can be used to assess whether the concentration of immigrants and/or changes therein increase joblessness and/or lower wages for workers in a major industry sector. Although it is generally acknowledged that competition between natives and immigrants and the subsequent displacement of native workers cannot occur unless members of the two groups work in a similar industry sector and occupation, few efforts have been made to assess the effect of immigrant concentrations in this manner (see Altonji and Card 1991;

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Bailey and Waldinger 1991). If immigrants displace native workers because they are in a weaker bargaining position, then we would expect joblessness and wages to be much lower among immigrants than native workers in those industry sectors in which they are highly concentrated and/or in which their percentage of the workforce is increasing.

RESULTS

Table 2 reports the association of selected variables with intermetropolitan variation in 1980-90 changes in the odds of joblessness for four major occupational categories. Of particular interest is whether changes in the white population, net migration and immigration flows, and the changing concentration of foreign workers in an industrial sector are associated with native/foreign workers' differentials in joblessness and hourly wages, and whether such effects vary across occupations as suggested by previous work. Note that the association of these labor market outcome measures with NETMIG, PMIMMIG, FOREIGN, %FOREIGN and RWPOP are reported for each ethnic/immigrant group.

Hispanic, Asian, and immigrant skilled white-collar workers living in metropolitan areas in which the white population increased experienced decreases in their level of joblessness while blacks experienced increased joblessness. The coefficients for blacks and Hispanics are only marginally statistically significant (.05<p>.10). Among Hispanic and Asian skilled blue collar workers statistically significant declines in joblessness were related to increases in the non-Hispanic white population.

The results appear to be inconsistent with previous observations since, among skilled white-collar workers, the declines in joblessness among immigrants appear greater in response to the increased size of the white population in metropolitan areas. Metropolitan areas with growing white populations are also likely to experience economic growth, perhaps sufficient to absorb non-traditional workers who possess the requisite skills in demand. That changes in joblessness among whites appear not to be in response to white population change might be due to whites being at full employment. Only blacks in skilled white-collar positions appear to be slightly disadvantaged by increases in the white population. We can offer no explanation for this outcome, but speculate that the increased joblessness might reflect the limited ability of black workers to transfer their skills and experiences to newly emerging occupations.

Neither net minority migration nor the share of immigrants of net minority migrants were associated with intermetropolitan variation in changes in joblessness. The results apply to practically all ethnic groups within each of the four major occupational categories. There are two notable exceptions, both involving immigrants. The odds of joblessness increased for long-term immigrant skilled white-collar workers in relation to both net internal and international migrations, while the opposite occurred for recent immigrant semi-skilled white-collar workers as a result of immigration. Moreover, the important point to note here is that, consistent with results reported elsewhere, we find no evidence to support the hypothesis that internal or international migrations are associated with the employment outcomes of native workers living in metropolitan areas. In particular, we note that changes in joblessness among native blue collar workers were not higher in those metropolitan areas that have experienced large inflows of migrants (immigrants).

The search for immigration impact has focused primarily on an assessment of the impact of flows to labor market areas, although it is generally acknowledged that the displacement of native by immigrant workers generally occurs within industries. This suggests that immigrant flows only capture a portion of the overall effect of immigration. A second source of such effects could be reflected in the extent of concentration of the foreign born in particular industry sector, where displacement and declining wages are likely to occur (see Bailey and Waldinger 1991). The results reported in Table 4 for the relations of the foreign born share of an industrial sector's workforce and changes therein with 1980-90 changes in joblessness are presented. Skilled white-collar long-term immigrants working in industry sectors with high percentages of the foreign born in their workforces are likely to have experienced significant declines in joblessness over the 80-90 period. Black and Hispanic skilled white-collar workers experienced marginally increased joblessness in relation to the increased concentration of the foreign born in their industrial sector. Among semi-skilled white-collar workers, employment in industry sectors with high concentrations of the foreign born was marginally associated with lower joblessness for all groups except long-term immigrants; and the increased concentrations of the foreign born was associated with substantially lower odds of joblessness among recent immigrants.

Evidence for the association of the concentration of the foreign born with changes in joblessness is much stronger among blue collar workers. For skilled workers, recent immigrants experienced a significant decline in the odds of joblessness if they worked in an industry sector with high foreign concentrations in 1980, and both recent and long-term immigrants experienced declines if they worked in an industry sector that experienced increased concentrations of the foreign born between 1980 and 1990. Among native workers, increases in joblessness among blacks and whites

were not related to the concentration of the foreign born whereas those for Hispanics and Asians were responsive to increases in the concentration of the foreign born in a particular industrial sector. In the case of semi-skilled blue collar workers, high foreign born concentration in 1980 was substantially associated with the odds of joblessness among all groups except blacks, whose level remained essentially unchanged. However, when we consider the impact of increases in the concentration of the foreign born in an industrial sector, whites, blacks, Asians, and long-term immigrants experienced significant increases in joblessness, while Hispanics and recent immigrants experienced significant decreases in joblessness in relation to increases in the share of an industry's workforce that is foreign born.

The findings for blue collar workers point to general increases in joblessness among native workers not in response to immigration flows, but as a result of the rising concentration of the foreign born in an industrial sector. These findings are consistent with the hypothesis that immigrants are a substitute labor supply that can lead to the displacement of native workers once their concentration in an industry is sufficient to change the structures of employment relations in an industry. We should note here that there are several alternative interpretations, which we cannot rule out.

First, we cannot distinguish between replacement of a labor supply due to competition and displacement and that which would occur as a result of voluntary exits from employment in certain industrial sectors in search of other alternatives. Second, the observed associations may be a consequence of the heterogeneous character of the industrial sectors employed in the analysis. A more refined industrial classification would yield different results.

Table 3 reports the association of selected variables with intermetropolitan variation in 1980-90 changes in hourly wages. Very few of the coefficients for internal migration, immigration, the

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concentration of the foreign born and changes therein are statistically significant for white-collar workers and skilled blue collar workers. It is plausible to conclude that these variables did not raise or lower the relative wages of these workers. Thus, consistent with results reported elsewhere, neither internal nor international migration are related to intermetropolitan variation in changes in hourly wages for white-collar and skilled blue collar workers. This is not the case for semi-skilled blue collar workers. However, in contrast to joblessness, intermetropolitan variation in wages is much more responsive to both internal and international migration. Specifically, white semi-skilled blue collar workers who live in metropolitan areas with high net internal migration experienced substantial increases in hourly wages, while Asians experienced significant decreases in hourly wages. Changes in the hourly wages of the other groups were small, though significantly different from non-Hispanic whites. With respect to the association with immigration, wages increased appreciably for whites and Hispanics, and decreased for Asians and immigrants. Changes in the wages of black workers appear not to have been associated with immigration. Hourly wage returns per unit increase in the share of immigrants is three times as large for Asians as for recent immigrants. These results suggest that increased immigration is more likely to have been associated with an increase rather than decrease in the wages of native workers and older immigrants, except native Asians.

Also reported in Table 3 are the effects of the foreign born share of an industry sector's labor force in 1980 and changes in that share between 1980 and 1990. Changes in hourly wages in response to the foreign born share of an industry sector's labor force in 1980 show a significant, but small, increase for whites, Hispanics, Asians, and older immigrants; significant, but small, decrease for recent immigrants and no change for blacks. In the case of whites, Hispanics, Asians, and older immigrants, the greater the concentration of the foreign born in an industry sector in 1980, the

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greater the increase in hourly wages between 1980 and 1990. The reverse is true for recent immigrants. Finally, we can note that changes in the foreign born share of an industrial sector's work force had no effect on changes in wages among semi-skilled blue collar workers for any of the ethnic/immigrant groups.

The results presented in Table 4 summarize the relative association of migration flows and the cumulative concentration of the foreign born in an industry sector on the probability of joblessness and hourly wages of workers living in fifty-two of the largest metropolitan areas. In this table, we report predicted values based on alternate specifications of equation (2). Predicted values for model 1 of Table 4 are based on the complete variable specifications included in equation (2). The predicted values for model 2 were obtained by re-estimating equation (2) for joblessness and hourly wages, where the migration flow and foreign-born stock variables were omitted from the specification if they were statistically significant at P<.05 in the initial estimation (model 1).

The ratio of model 2 to model 1 in Table 4, column 3, assesses the impact of the concentration of the foreign born in an industry sector and changes therein on joblessness. These were the only immigration-related variables that had statistically significant effects at P<.05 on joblessness. As indicated by the ratios, share of an industrial sector's workforce foreign born was associated with no more than a 2 percent increase(decrease) in joblessness during the 1990's. Industrial concentration and change in industrial concentration of the foreign born had no effect on the level of joblessness observed for whites and Asians, a one percent increase for blacks and long-term immigrants, and a two percent decrease for Hispanics and recent immigrants. In the case of hourly wages, we can also observe increases (decreases) of no more than two percent during the 1980's as indicated by the ratios report in column 6 of Table 4. The wages of blacks, on average, decreased 2 percent; recent

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immigrants increased one percent; that of Hispanics and long term immigrants remained unchanged; and Asians increased 2 percent. From these results, we conclude that the impact of immigration on labor market outcomes is very small if not zero.

DISCUSSION

The results reported in the previous section of this paper suggest the following tentative conclusions. First, flow measures, whether of internal migration or immigration, were not associated with 1980-90 changes in levels of joblessness among native blacks, Hispanics or Asians; and only selectively associated with those of recent and long-term immigrant groups. These findings are consistent with results of previous work (see reviews in Borjas 1994; Friedberg and Hunt 1995). However, contrary to previous work, we do find that the wages of semi-skilled blue collar workers were associated with both net minority internal migration and immigration. Net internal minority migration raised the wages of white workers and lowered the wages of Asian workers; and net immigration of minorities raised the wages of whites and Hispanics, and lowered those of immigrants and Asian semi-skilled blue collar workers.

Changes in joblessness were substantially more associated with industrial concentration of the foreign born. Joblessness increased for native semi-skilled blue collar workers, except blacks, if they worked in industries with high concentrations of the foreign born in 1980. If the foreign born component of an industry sector's workforce continued to increase during the 1980 decade, then joblessness among whites, blacks, Asians and long-term immigrant semi-skilled blue collar workers also increased. The latter result also applies to Hispanic and Asian skilled blue collar workers.

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Recent immigrants experienced a substantial decline in joblessness in response to the level of foreign born concentration in 1980 and changes in concentration during the 1980 decade. The association of foreign born concentration in an industrial sector was less pronounced for wages, because only the level of concentration of the foreign born in an industry in 1980 affected wages. The wages of whites, Hispanics, Asians, and older immigrants slightly increased while that of recent immigrants slightly decreased as a result of this variable.

The relation of the concentration of the foreign born in an industry with employment outcome is consistent with the hypothesis that the presence of immigrant workers reduces employment opportunities for native workers. However, the positive effects of immigration and foreign born concentration in an industry on hourly wages of native workers are contrary to what one would expect under a displacement model. It could very well be that such increases are short-term, however. It is also important to note that there are other plausible explanations for these relations. First, we cannot distinguish between a displacement effect due to immigrants and an effect which is the consequence of voluntary withdrawal of native workers in pursuit of more remunerative employment. Second, there is also the possibility that joblessness is pushed to high levels because some jobs in certain industries and certain locations require more experience than new entrants possess (Kasarda 1985). Finally, although the results reported in Table 2 indicate that increased industrial concentration of the foreign born is associated with increased joblessness and those reported in Table 3 indicate in-migration (immigration) flows affect wages of semi-skilled blue collar workers, the results reported in Table 4 clearly suggest that the impact of these effects, overall, on changes in joblessness and wages was very small. These results imply that the high joblessness

observed among native blacks and some Hispanic groups living in major central cities of metropolitan areas probably is not directly related to immigration.

We believe that much could be learned from further exploration of the impact of the cumulative concentration of the foreign born in selected industries, both as owners and as workers. We excluded the self-employed, but it is clear that an assessment of the influence of immigration on labor market outcomes must consider all of the possible ways in which that influence can be transmitted. Immigrants who are successful in establishing a business and are able to employ other immigrants are not likely to generate the same kind of labor market dynamics as those who secure employment in industries in which members of their immigrant (ethnic) group historically have been under-represented.

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Table 1. Logistic Regression of the Probability of Being Jobless: Construction and Manufacturing Workers, Miami CMSA

		1990			

ANALYSIS OF MAXIMUM-LIKELIHOOD ESTIMATES

VARIABLES	Parameter	Estimate	Standard Error	Chi-Square	Prob
INTERCEPT	1	-2.8667	0.0375	5836.67	0.0000
AGE	2	0.00450	0.000547	67.79	0.0000
SEMI-SKILL.WHIT.COL.	3	-0.1706	0.0323	27.96	0.0000
SKILLED BLUE COLLAR	4	-0.1313	0.0307	18.23	0.0000
SEX (FEMALE=1)	5	0.5877	0.0134	1926.93	0.0000
HH INCOME (NONRESPOND.)	6	0.0349	0.00122	822.96	0.0000
SKILLED WHITE COLLAR	7	-0.4382	0.0352	154.77	0.0000
ATTENDING SCHOOL	8	0.3684	0.0146	636.29	0.0000
WORK RELAT. DISABILITY	9	1.7797	0.0212	7034.03	0.0000
MARRIED	10	-0.1965	0.0127	240.54	0.0000
COLLEGE, ONE + YRS.	11	-0.3298	0.0150	486.03	0.0000
BLACK (NON-HISPANIC)	12	0.7835	0.0311	633.23	0.0000
HISPANIC	13	0.5216	0.0333	245.48	0.0000
ASIAN	14	-0.5715	0.1422	16.16	0.0001
SEMI-SKILLED WHIT. COL.					
(X) BLACK	15	-0.6326	0.0554	130.58	0.0000
(X) HISPANIC	16	-0.4857	0.0526	85.16	0.0000
(X) ASIAN	17	0.6529	0.2009	10.56	0.0012
SKILLED WHITE COLLAR					
(X) BLACK	18	-0.5511	0.0979	31.70	0.0000
(X) HISPANIC	19	-0.1867	0.0662	7.95	0.0048
(X) ASIAN	20	1.5323	0.1815	71.29	0.0000
SKILLED BLUE COLLAR					
(X) BLACK	21	-0.2262	0.0454	24.77	0.0000
(X) HISPANIC	22	-0.2568	0.0491	27.30	0.0000
(X) ASIAN	23	0.7827	0.2010	15.17	0.0001
IMMIG<11 YR	24	-0.2870	0.0268	114.27	0.0000
IMMIG>10 YR	25	-0.3599	0.0283	161.21	0.0000
SKILLED WHITE COLLAR					
(X) IMMIG<11 YR	26	0.8035	0.0697	132.89	0.0000
(X) IMMIG>10 YR	27	0.1374	0.0676	4.14	0.0419
SEMI-SKILL.WHITE COL.					
(X) IMMIG<11 YR	28	0.6499	0.0526	152.40	0.0000
(X) IMMIG>10 YR	29	0.5185	0.0501	107.10	0.0000
SKILLED BLUE COLLAR					
(X) IMMIG<11 YR	30	0.2826	0.0450	39.36	0.0000
(X) IMMIG>10 YR	31	0.1952	0.0460	17.99	0.0000

OBSERVATIONS (UNWEIGHTED) = 9,686

Table 1. Continued

	1980				

ANALYSIS OF MAXIMUM-LIKELIHOOD ESTIMATES

VARIABLES	Parameter	Estimate	Standard Error	Chi-Square	Prob
INTERCEPT	1	-2.3030	0.0289	6348.27	0.0000
AGE	2	0.00187	0.000548	11.65	0.0006
SEMI-SKILL.WHIT.COL	3	-0.2651	0.0252	110.33	0.0000
SKILLED BLUE COLLAR	4	-0.5759	0.0271	453.07	0.0000
SEX (FEMALE=1)	5	0.7845	0.0145	2943.42	0.0000
HH INCOME (NONRESPOND.)	6	0.0285	0.00130	483.34	0.0000
SKILLED WHITE COLLAR	7	-0.4463	0.0319	196.15	0.0000
ATTENDING SCHOOL	8	0.4344	0.0182	571.33	0.0000
WORK RELAT. DISABILITY	9	1.3522	0.0214	3987.65	0.0000
MARRIED	10	-0.1177	0.0141	69.19	0.0000
COLLEGE, ONE + YRS.	11	-0.1413	0.0169	70.05	0.0000
BLACK (NON-HISPANIC)	12	0.0931	0.0264	12.41	0.0004
HISPANIC	13	-0.1653	0.0312	28.14	0.0000
ASIAN	14	0.4036	0.1039	15.09	0.0001
SEMI-SKILL.WHIT.COL.					
(X) BLACK	15	-0.1403	0.0570	6.07	0.0138
(X) HISPANIC	16	-0.3518	0.0576	37.35	0.0000
(X) ASIAN	17	-0.7160	0.2089	11.75	0.0006
SKILLED WHITE COLLAR					
(X) BLACK	18	-13.1155	38.6313	0.12	0.7342
(X) HISPANIC	19	-0.0237	0.0810	0.09	0.7702
(X) ASIAN	20	-11.8251 #	.	.	.
SKILLED BLUE COLLAR					
(X) BLACK	21	0.2709	0.0499	29.45	0.0000
(X) HISPANIC	22	0.4232	0.0598	50.05	0.0000
(X) ASIAN	23	-0.3707	0.2622	2.00	0.1575
IMMIG<11 YR	24	0.1314	0.0306	18.43	0.0000
IMMIG>10 YR	25	0.0799	0.0306	6.82	0.0090
SKILLED WHITE COLLAR					
(X) IMMIG<11 YR	26	0.6893	0.0898	58.93	0.0000
(X) IMMIG>10 YR	27	-0.0376	0.0861	0.19	0.6623
SEMI-SKILL.WHITE COL.					
(X) IMMIG<11 YR	28	0.5052	0.0610	68.59	0.0000
(X) IMMIG>10 YR	29	0.1946	0.0583	11.13	0.0008
SKILLED BLUE COLLAR					
(X) IMMIG<11 YR	30	0.0302	0.0633	0.23	0.6331
(X) IMMIG>10 YR	31	-0.1220	0.0623	3.84	0.0502

OBSERVATIONS (UNWEIGHTED) = 8,523

Table 2. Determinants of Intermetropolitan Variation in 1980-90: Changes in the Odds of Joblessness.

| Variables | White Collar | | | | Blue Collar | | | |
| | Skilled | | Semi-Skilled | | Skilled | | Semi-Skilled | |
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Intercept	.997	2.53	-1.283	1.65	.617	2.68	2.318	3.83
Ethnic/Immigrant Group								
Non-Hispanic White	.---		. ---		.---		. ---	
Non-Hispanic Black	-.42	4.05	2.870	2.74	.420	4.24	.164	5.17
Hispanic	6.541#	3.87	.083	2.69	3.675	4.03	-.600	5.13
Asian	1.397	5.91	.967	4.31	.204	4.59	-.436	7.63
Immigrant < 11 yrs	1.371	4.48	1.515	2.87	-3.678	4.19	-3.083	5.12
Immigrant > 10 yrs	-14.194###	4.23	2.686	2.93	-4.365	4.28	.096	5.27
Non-Hispanic White								
Population Change, 1980-88								
Non-Hispanic White	-.285	.25	.224	.17	.230	.41	.077	.41
Non-Hispanic Black	.842#	.49	-.535#	.31	.236	.56	-.012	.58
Hispanic	-1.509#	.88	.286	.53	-2.183##	.81	-1.018	.94
Asian	-2.203###	.92	-.468	.55	-1.901##	.86	-.650	.99
Immigrant < 11 yrs	-2.875###	.86	.104	.48	-.808	.72	.047	.83
Immigrant > 10 yrs	-5.582###	.76	.241	.37	-.204	.60	-.441	.66
Net Minority Migration, 1980-88								
Non-Hispanic White	-.190	.30	.220	.21	-.170	.35	-.467	.47
Non-Hispanic Black	.005	.45	-.322	.31	-.028	.47	.159	.58
Hispanic	-.831#	.44	.013	.30	-.486	.46	.235	.59
Asian	-.246	.68	-.086	.49	-.034	.76	.234	.87
Immigrant < 11 yrs	-.207	.51	-.164	.32	.505	.47	.499	.57
Immigrant > 10 yrs	1.647###	.48	-.339	.33	.528	.48	.099	.59
% Immigrants of Net Minority								
Migrants, 1980-88								
Non-Hispanic White	-.817	.65	.136	.47	-.063	.77	-1.659	1.14
Non-Hispanic Black	.317	1.13	-.269	.77	-.903	1.20	1.146	1.50
Hispanic	1.064	1.29	.292	.87	-.527	1.31	.693	1.64
Asian	1.563	1.89	-.286	1.39	-1.243	2.13	.085	2.43
Immigrant < 11 yrs	.696	1.41	-2.106##	.94	-.446	1.39	.094	1.69
Immigrant > 10 yrs	2.346#	1.13	-.784	.91	.124	1.34	1.189	1.66
Share of Industry's Labor								
Force Foreign Born, 1980								
Non-Hispanic White	-.066	.07	-.084*	.05	.066	.08	.304***	.11
Non-Hispanic Black	.013	.11	-.084#	.05	-.036	.12	.033#	.17
Hispanic	.242	.17	-.084*	.05	.069	.17	.304***	.11
Asian	.412	.32	-.084*	.05	.258	.36	.304***	.11
Immigrant < 11 yrs	-.079	.18	-.084*	.05	-.329##	.17	.304***	.11
Immigrant > 10 yrs	-1.012###	.16	.140#	.10	-.170	.15	.304***	.11

Table 2. Continued

Variables	White Collar				Blue Collar			
	Skilled		Semi-Skilled		Semi-Skilled		Skilled	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Ratio (1990/1980) Share of Industry's Labor Force Foreign Born								
Non-Hispanic White	-.219	.18	-.142	.11	-.270	.21	.651**	.29
Non-Hispanic Black	.597#	.33	.021	.20	.290	.33	.651**	.29
Hispanic	.897#	.52	.083	.32	1.291###	.50	-.560##	.63
Asian	-1.249	.87	-.628	.64	1.636#	.97	.651**	.29
Immigrant < 11 yrs	.102	.51	-.896###	.32	-1.603###	.50	-.943###	.61
Immigrant > 10 yrs	-.333	.48	-.123	.31	-.823#	.46	.651**	.29
Population Size, 1980	.129**	.05	-.018	.04	.047	.06	.068	.07
% Minority Population, 1980	-.062	.06	-.087**	.04	.080	.07	-.038	.08
Ratio (1988/1983) Household Income	.702***	.23	.170	.15	-.423	.28	-.209	.32
Ratio (1988/1983) White Unemployment	-.073	1.59	.875	1.05	2.255	1.92	1.403	2.11
Ratio (1988/1983) % Employed in Industry (j)	.587	.72	.915*	.47	.655	.77	1.001	.93
Industry								
Construct/Manufact.	.104*	.06	.027	.05	.080	.08	-.374***	.09
Tran/Util/Whole/Retail	.071	.06	.038	.04	.001	.07	-.225***	.08
FIRE/Profess/Public	----		----		----		-----	
CMSA (MSA) Sample Type								
Non-Hispanic Black	.089	.11	-.101	.08	-.002	.14	.023	.16
Non-Hispanic Black and Hispanic	.036	.10	-.058	.06	.206*	.11	.226*	.13
Hispanic	-.115	.18	-.149	.13	.373*	.20	.517**	.24
Hispanic and Asian	-1.618**	.49	-.046	.23	-.352	.39	-.439	.46
Multi-Ethnic	----		----		----		----	
R^2 (corrected)	.202		.039		.053		.209	

N = 759

* p <.10; **p <.05; *** p <.01
# p <.10; ## p <.05; ### p <.01 The coefficient for group (I) is significantly different from that of Whites.
[1] Omitted category

Table 3. Determinants of Intermetropolitan Variation in 1980-90 Changes in Hourly Wages.

Variables	White Collar				Blue Collar			
	Skilled		Semi-Skilled		Skilled		Semi-Skilled	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Intercept	.955	.72	.127	.63	.197	1.09	-5.150***	1.39
Ethnic/Immigrant Group								
Non-Hispanic White	----		----		-----		-----	
Non-Hispanic Black	-1.022	.27	.527	1.08	-.733	1.80	5.312###	1.72
Hispanic	-2.173#	1.26	-1.332	1.07	.269	1.72	5.412###	1.67
Asian	-.223	1.85	.265	1.65	1.271	2.68	7.420###	2.30
Immigrant < 11 yrs	-1.897	1.25	-.996	1.10	.246	1.73	4.987###	1.68
Immigrant > 10 yrs	-1.335	1.23	.325	1.06	1.503	1.69	5.609###	1.66
Non-Hispanic White Population Change, 1980-88								
Non-Hispanic White	-.040	.08	-.010	.07	-.099	.017	.099	.15
Non-Hispanic Black	.013	.16	.034	.13	.158	.24	-.144	.20
Hispanic	-.058	.24	-.214	.20	.005	.31	.096	.26
Asian	.091	.23	.062	.19	.277	.32	-.115	.27
Immigrant < 11 yrs	-.220	.18	.092	.16	.315	.25	.250	.22
Immigrant > 10 yrs	.024	.17	.148	.13	.152	.22	.107	.19
Net Minority Migration, 1980-88								
Non-Hispanic White	-.099	.09	.010	.08	-.034	.14	.499***	.17
Non-Hispanic Black	.099	.14	-.058	.12	.085	.20	-.009###	.25
Hispanic	.224	.14	.131	.12	-.023	.19	-.031###	.25
Asian	-.010	.21	-.054	.19	-.728	.30	-.289###	.31
Immigrant < 11 yrs	.187	.14	.116	.12	-.043	.19	.027###	.24
Immigrant > 10 yrs	.151	.13	-.026	.12	-.189	.19	-.052###	.25
% Immigrants of Net Minority Migrants, 1980-88								
Non-Hispanic White	-.114	.20	.048	.18	.027	.31	.956**	.42
Non-Hispanic Black	.150	.37	-.208	.30	-.471	.51	-.006#	.44
Hispanic	.239	.42	.443	.35	-.728	.57	.956**	.42
Asian	-.059	.59	-.369	.53	-1.737##	.88	-.767##	.84
Immigrant < 11 yrs	.240	.41	.261	.36	.449	.58	-.206##	.48
Immigrant > 10 yrs	-.078	.39	.107	.34	-.167	.54	-.092##	.46
Share of Industry's Labor Force Foreign Born, 1980								
Non-Hispanic White	-.005	.02	-.002	.01	-.006	.03	.085**	.04
Non-Hispanic Black	.005	.03	.004	.03	-.013	.05	.006#	.06
Hispanic	-.028	.05	-.042	.04	-.012	.07	.085**	.04
Asian	.104	.21	.057	.08	-.108	.13	.085**	.04
Immigrant < 11 yrs	-.042	.04	-.074##	.04	.031	.06	-.030##	.06
Immigrant > 10 yrs	-.057	.04	-.046	.03	.090#	.05	.085**	.04

Table 3. Continued

Variables	White Collar Skilled B	S.E.	White Collar Semi-Skilled B	S.E.	Blue Collar Skilled B	S.E.	Blue Collar Semi-Skilled B	S.E.
Ratio (1990/1980) Share of Industry's Labor Force Foreign Born								
Non-Hispanic White	.016	.05	-.013	.04	.048	.08	.147	.11
Non-Hispanic Black	.004	.10	-.024	.08	-.022	.014	-.059	.13
Hispanic	-.017	.16	.220#	.13	-.257	.21	.034	.18
Asian	-.060	.59	.040	.23	-.878##	.38	.091	.29
Immigrant < 11 yrs	.150	.13	-.036	.12	.155	.19	.200	.16
Immigrant > 10 yrs	-.079	.12	-.074	.10	-.002	.16	-.123	.15
Population Size, 1980	-.005	.01	-.018	.01	.019	.02	.005	.02
% Minority Population, 1980	.029	.02	.013	.02	-.022	.03	-.026	.03
Ratio (1988/1983) Household Income	.037	.07	.057	.06	.034	.11	.171#	.09
Ratio (1988/1983) White Unemployment	.183	.47	-.019	.40	-.033	.78	-.142	.64
Ratio (1988/1983) % Employed in Industry (j)	-.247	.21	-.065	.18	-.097	.31	.050	.27
Industry								
Construct/Manufact.	.058***	.02	.033**	.02	.038	.03	-.019	.03
Tran/Util/Whole/Retail	.056***	.02	.011	.02	.052*	.03	-.001	.03
FIRE/Profess/Public	-----		-----		-----		-----	
CMSA (MSA) Sample Type								
Non-Hispanic Black	-1.022	1.27	-.040	.03	-.011	.06	.065	.05
Non-Hispanic Black and Hispanic	-.007	.03	-.007	.02	.020	.04	.006	.04
Hispanic	-.009	.07	-.036	.05	.094	.08	-.068	.07
Hispanic and Asian	-.030	.10	-.006	.08	.035	.14	.103	.13
Multi-Ethnic	----		----		-----		-----	
R^2 (corrected)	.070		.042		-.001		.304	

N = 759

* p <.10; **p <.05; *** p <.01
# p <.10; ## p <.05; ### p <.01 The coefficient for group (I) is significantly different from that of Whites.
[1] Omitted category

Table 4. Predicted Probability of Joblessness and Hourly Wages for Semi-Skilled Workers by Ethnicity: 1990

Ethnicity	Probability of Joblessness			Hourly Wages		
	Model 1	Model 2	Ratio	Model 1	Model 2	Ratio
	(1)	(2)	(2)/(1)	(4)	(5)	(5)/(4)
Non-Hispanic White	.069	.069	1.00	2.054	2.023	.99
Non-Hispanic Black	.097	.096	.99	1.944	1.901	.98
Hispanic	.083	.085	1.02	1.954	1.949	1.00
Asian	.080	.080	1.00	2.013	2.056	1.02
Immigrant<11yrs	.084	.086	1.02	1.825	1.803	.99
Immigrant>10yrs	.068	.067	.99	1.965	1.960	1.00

Source: Predicted values for model 1 are based on the specifications for equation (2). Predicted values for model 2 were derived from the re-estimation of equation (2) where migration flows and foreign born stock variables were omitted from the re-estimation if they were statistically significant at P<.05 for model (1).

Appendix Table A1.

Definition of Variables

Equations (1a) and (1b)

Log (HWAGE)	log of hourly wages for 1979(1989).
Log (P/1-P)	**P** is the probability of a respondent being jobless during the week of the Census in 1980(1990), but having worked within the previous two years.
SEX	is one if respondent is female.
LHHPER	the log of household income minus earnings of respondent in 1979(1989).
IMMG<11	is one if respondent is foreign born and has been in the United States for less than eleven years.
IMMG>10	is one if respondent is foreign born and has been in the United States eleven years or more.
BLACK	is one if respondent is an African American
HISPANIC	is one if respondent is of Hispanic origin
ASIAN	is one if respondent is Asian American
ETHNIC(X)	dummy variables for interaction of ethnic group membership and immigration status with specified variables.
SSKBLUE	is one if respondent occupation is private household, fabricator, operatives, and laborers.
ATTEND	is one if respondent is attending school.
DISABLE	is one if respondent has a disability which limits her/his ability to work.
AGE	age in years.
AGE^2	age squared.
SKWHTC	is one if respondent's occupation is managerial/professional.
SSKWHTC	is one if respondent's occupation is administrative, sales or service (except private household).
SKBLUE	is one if respondent's occupation is crafts or precision manufacturing (production).
COLLEGE	is one if respondent has completed one or more years of college.