

NBER WORKING PAPER SERIES

DO IMMIGRANT INFLOWS LEAD TO NATIVE OUTFLOWS?

David Card  
John E. DiNardo

Working Paper 7578  
<http://www.nber.org/papers/w7578>

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
March 2000

Prepared for the January 2000 meetings of the American Economics Association. We are grateful to Ethan Lewis for research assistance and to the Center for Labor Economics at UC Berkeley for research support. The views expressed herein are those of the authors and are not necessarily those of the National Bureau of Economic Research.

© 2000 by David Card and John E. DiNardo. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Do Immigrant Inflows Lead to Native Outflows?

David Card and John E. DiNardo

NBER Working Paper No. 7578

March 2000

JEL No. J61

**ABSTRACT**

We use 1980 and 1990 Census data for 119 larger Metropolitan Statistical Areas to examine the effect of skill-group specific immigrant inflows on the location decisions of natives in the same skill group, and on the overall distribution of human capital. To control for unobserved skill-group specific demand factors, our models include lagged mobility flows of natives over the 1970-80 period. We also estimate instrumental variables models that use the fraction of Mexican immigrants in 1970 to predict skill-group specific relative immigrant inflows over the 1980s. Despite wide variation across cities in the size and relative skill composition of immigrant population changes we find no evidence of selective out-migration by natives. We conclude that immigrant inflows exert a direct effect on the relative skill composition of cities: cities that have received relatively unskilled immigrant flows have experienced proportional rises in the size of their unskilled populations.

David Card  
Department of Economics  
UC Berkeley  
Berkeley, CA 94720-39880  
and NBER  
card@econ.berkeley.edu

John E. DiNardo  
Department of Economics  
UC Irvine  
Irvine, CA 92697-5100  
and NBER  
jdinardo@uci.edu

## Do Immigrant Inflows Lead to Native Outflows?

The rise in immigration that followed the lifting of national origin quotas in 1965 has led to significant changes in the size and composition of the United States population. Despite the presumption that increases in immigration will *necessarily* harm the labor market opportunities of natives, most studies over the past decade have found only very modest effects. The usual approach in this literature, the so-called *area-analysis* method, is to correlate wage levels in different metropolitan areas (or changes in these wage levels) with the fraction of immigrants in the metropolitan area.<sup>1</sup> Point estimates from these studies suggest that a 10 percent increase in the fraction of immigrants lowers native wages by no more than 1 percent. These findings are also consistent with the *natural experiment* provided by Miami's experience following the 1980 Mariel Boatlift. Despite a rapid increase in low-skilled workers, there was no discernable effect on the wages of less skilled natives (Card, 1990).

Recent work by Borjas, Freeman, and Katz (1996,1997) (henceforth BFK), however, has been critical of these analyses. They argue that a core assumption of these studies -- that immigration leads to an increase in the supply of labor in local labor market **B** is violated. Specifically, they argue that selective out-migration by *natives* has effectively *undone* recent immigrant inflows. They note that if the arrival of one immigrant (of a given skill type) to a local labor market leads one native (of the same skill type) to leave the local market, standard economic reasoning suggest that immigrant inflows will have no detectable impact on *local* wage differentials **B** natives have effectively *arbitraged* them

---

<sup>1</sup>Two recent surveys are Borjas (1994) and Friedberg and Hunt (1995).

away (although immigration might still have important *economy-wide* impacts).

Evidence of native-born mobility responses to immigrant inflows, however, is mixed. Frey (1995,1996) reports a strong correlation between immigrant inflows and native outflows, and argues that this behavior is leading to a demographic balkanization of U.S. cities. Wright, Ellis, and Reibel (1997) re-examine Frey's specifications and conclude that native outflows from large metropolitan areas are *unrelated* to immigrant inflows. Likewise, Butcher and Card (1991) find no evidence that native population flows are related to immigration inflows. Filer (1992) and BFK (1997), however, find evidence consistent with a skating rink model of native location decisions -- each new immigrant knocks a native off the ice.

In this paper, we analyze the extent to which immigrant inflows over the 1980s have changed the distribution of skills across cities. Specifically, we focus on the causal relationship between immigrant inflows and native-born location decisions that is at the heart of both the skating rink and demographic balkanization hypotheses. Our analysis exploits several key aspects of recent immigrant inflows. First, there is considerable diversity in the skill levels of new immigrants (Butcher and DiNardo, 1998), with Mexican immigrants in particular being very likely to work in low-skilled occupations. Second, there is also much variation across cities in immigrant inflow rates. As a consequence of these facts, there are remarkable differences across cities in the relative inflows rate of less-skilled immigrant labor. By correlating the relative population movements of native workers in different skill groups with these relative inflow rates, we are able to estimate the net impact of immigration inflows on the relative skill distributions of different cities. To address the concern the unskilled immigrants may be drawn to cities that are experiencing rising relative demand for unskilled labor, we exploit a third important aspect

of US immigration: the tendency of newly arriving immigrants to settle in places where previous immigrants from the same country already live. Specifically, we use the fraction of Mexican immigrants in a city in 1970 as an instrument for the relative inflow rate of low-skilled immigration to the city over the 1980-90 period, while controlling for historical differences in native mobility patterns. Use of this supply side instrument gives no indication that unobserved skill-group specific demand shocks can explain the relative flows of native workers in response to immigrant inflows.

### I. Data Issues

Our analysis is based on microdata from the 1970, 1980, and 1990 Decennial Censuses. Use of these data immediately raises two important conceptual issues: (1) the definition of skill groups; and (2) the definition of local labor markets. The definition of skill groups is potentially important to our analysis since we wish to compare the relative migration responses of natives who are in most direct competition with newly-arriving immigrants, and ultimately evaluate the effect of immigration on the distribution of human capital. One natural way is to use information on occupation.<sup>2</sup> Specifically, we first construct three equally sized occupational groups for each Census year, based on average weekly

---

<sup>2</sup>The literature has adopted several different skill classification systems: by demographic characteristics such as gender, age, and education; by location in the wage distribution; and others. Each of the alternatives can be easily criticized. For example, if foreign education is less valuable in the U.S. labor market, then immigrants with a specific level of education may compete most directly with natives in a lower education category. Moreover, the process of assimilation implies that immigrants with given characteristics compete at a lower rung of the job market when they first enter the country, and then gradually move up the ladder as they accumulate language skills and country-specific human capital. Finally, distinctions between some demographic groups (for example, between men and women with the same level of education) may artificially limit the degree of competition we measure between immigrants and natives. As a practical matter, our experience suggests that different methods of defining skill groups lead to very similar results.

wages in each occupation. Next, for each year and for each of four gender/nativity groups, we fit multinomial logit models for the probability of working in the three occupation groups. These models include flexible functions of the usual human capital variables: education, race, labor market experience, and (for the immigrant groups) country of origin and year of arrival in the US. The models also include detailed geographic controls that control for any distortions in the occupation distribution caused by immigration or other factors. We use these models to assign to all adults (workers and nonworkers) a set of probabilities for working in each of the three occupations in a nationally representative labor market. These probabilities are then used to compute estimates of the relative population of natives and immigrants in each of the three skill groups in each city. (For example, the number of immigrants in the lowest skill group in a city is weighted count of immigrants in the city, using as a weight the probability of working in the lowest occupation group.)

Appendix Table 1 provides a brief overview of the gender and nativity characteristics of our three skill groups in each Census year. As one would expect, women are over-represented in the lowest skill group. In 1970, the occupational distribution of immigrant men is very similar to that of native men, consistent with the relatively similar wage levels of immigrant and native men at that time (Butcher and DiNardo, 1998). By 1990, however, immigrant men are substantially over-represented in the lowest skill group, reflecting the declining education levels and changing country of origin of post-1965 immigrants. Of particular interest are Mexican immigrants, who by 1990 represent about one-quarter of all immigrants. As shown in the bottom row of Appendix Table 1, both Mexican men and women are highly concentrated in the lowest skill group.

The definitions of the local labor markets used in our analysis are similarly important. Previous work has used both state-level data (e.g., BFK (1997)) or Metropolitan Statistical Area (MSA) level data. As we document below, one limitation of a state-level approach is that there are important differences in native and immigrant population flows even within the same state. The smallest geographic that can be easily made consistent across Censuses is the MSA. As a practical matter, we therefore limit our attention to 119 larger MSAs that had relatively stable geographic boundaries between 1970 and 1990. These cities range in size (in terms of population aged 16-68) from 150,000 to 5.8 million in 1970, and from 128,000 to 5.9 million in 1990.<sup>3</sup>

A brief overview of the remarkable inter-city differences in population growth rates and changes in the skill distribution over the period from 1980 to 1990 is provided by Table 1. Panel A decomposes the adult population growth rate for selected MSAs in our sample into components attributable to natives and immigrants. Panel B does the same for the *relative* growth rate of the lowest skill group (i.e. the growth rate of the population of the lowest skill group minus the growth rate for the total population). There is much heterogeneity in population growth across cities (even in the same state), and in the relative contributions of immigrants and natives to total population growth and the growth of the low-skilled population. In California, for example, Los Angeles, San Diego, and San Jose all experienced large increases in the size of their (disproportionately low-skilled) immigrant populations. San Diego had a rapidly rising native population, San Jose's native population was roughly constant,

---

<sup>3</sup>However, even at the level of the MSA, changing geographic definitions do not make a simple match across the 1970, 1980, and 1990 Censuses straightforward for all MSAs. In cases where there have been significant changes in the composition of MSAs we have used the county group codes to make them as comparable as possible. See Jaeger, Loeb, Turner, and Bound (1999).

and Los Angeles saw the size of its native-born population fall 6 percent. In Florida, Miami and Tampa both experienced similar increases in total population, although the increase was virtually all immigrants in Miami and mainly natives in Tampa. Interestingly, this difference was associated with a sharp increase in the relative size of the low-skilled population in Miami, but a more stable relative skill distribution in Tampa.<sup>4</sup> Finally, New York, Chicago, and Philadelphia all had relatively small changes in their immigrant populations, but experienced sizeable declines in their native-born populations.

## II. Empirical Framework

Our analysis proceeds by observing that both the area analyses and the general equilibrium approach of BFK (1997) begin with the presumption that the extent to which immigrant population inflows affect the relative wage and employment outcomes of the native-born depends on the extent to which inflows change the proportion of the population in different skill groups (DiNardo (1997)). For instance, in a model in which each city produces a nationally-traded output using a production function that depends on a CES-aggregate of different labor types, wages will be related to local skill group shares by an equation of the form:

$$\log w_{jc} = \frac{1}{\sigma + \varepsilon} \log (P_j/P_c) + u_j + u_c + e_{jc}$$

where  $w_{jc}$  denotes the wage of skill group  $j$  in city  $c$ ,  $P_j$  is the population of skill group  $j$  in city  $c$  and  $P_c$

---

<sup>4</sup>The fact that total population growth in Miami was similar to that in Tampa (and other Florida cities) has been used by some analysts (e.g., Borjas, 1994) to argue that the 1980 Mariel Boatlift had no net effect on Miami's population. As shown in Table 1, however, this misses the fact that the relative size of the unskilled population increased very rapidly in Miami relative to Tampa or most other cities.



is the total population of the city,  $\sigma$  is the elasticity of substitution across skill groups,  $\varepsilon$  is the elasticity of labor supply (assumed to be common across skill groups),  $u_j$  represents a fixed effect for skill group  $j$ ,  $u_c$  is a city effect reflecting permanent differences in productivity across cities, and  $e_{jc}$  is an error component reflecting city-specific relative demand shocks and other factors.<sup>5</sup> If immigrant inflows are proportional to the existing distribution of skills (or if native outflows completely offset immigrant inflows), then a rise in the immigrant population will have no effect on the structure of wages. If immigrant inflows lead to a rise in the relative share of a particular skill group, however, then the relative wage of that group would be expected to fall.

Assuming that the wage structure in different cities depends on the relative skill distribution (and not on the total size of a city's population), we direct our attention to the effect of immigration inflows on the relative fraction of workers in the three skill groups described above. The use of skill *shares* has the appealing feature that the empirical results are not likely to be too sensitive to the definition of the appropriate labor market. For instance, aggregating two identical regions leaves the predictions for *relative* wages unchanged. Moreover, changes in the boundaries of an MSA (such as occurred in many cities over the 1970-90 period) would not necessarily distort relative skill shares, although they would lead to spurious changes in overall population.

For our empirical analysis it is useful to decompose *changes* in  $\log(P_j/P_c)$  into a component determined by immigrant population changes, and a component determined by native population

---

<sup>5</sup>We are assuming that each worker in each skill group supplies a fixed number of units of labor, if he or she decides to work, and that the fraction who work is a constant elasticity function of the wage, with elasticity  $\varepsilon$ . See Card (2000) for details.

changes. The total population of a city and the population in each skill group can be written as the sum of the populations of immigrants,  $M$  and natives,  $N$  (i.e.  $P_c = M_c + N_c$ ). Using this fact, the change in the log of the fraction of the population in skill group  $j$  in city  $c$  is approximately

$$(1) \quad \Delta \log (P_{jc}/P_c) = (\Delta M_{jc}/P_{jc} - \Delta M_c/P_c) + (\Delta N_{jc}/P_{jc} - \Delta N_c/P_c).$$

The first term in (1) is relative growth rate of the population of skill group  $j$  attributable to immigrants  $\mathbf{B}$  which we call the  $\mathbf{A}$ relative growth rate of immigrants in skill group  $j$  -- while the second term is the corresponding contribution of natives  $\mathbf{B}$  which we call the  $\mathbf{A}$ relative growth rate of natives in skill group  $j$ . With this decomposition in hand, we next posit a simple behavioral equation summarizing the reaction of natives to changes in the relative supply of immigrants in their own skill group:

$$(2) \quad (\Delta N_{jc}/P_{jc} - \Delta N_c/P_c) = a + b (\Delta M_{jc}/P_{jc} - \Delta M_c/P_c) + v_{jc}$$

where  $v_{jc}$  is a skill group and city-specific error term. This equation implies that the overall change in the log population share of a specific skill group is related to the relative immigrant inflow rate for that skill group by:

$$\Delta \log (P_{jc}/P_c) = a + (1+b) (\Delta M_{jc}/P_{jc} - \Delta M_c/P_c) + v_{jc}.$$

If native-born location decisions fully offset immigrant inflows the coefficient  $b$  is equal to  $-1$ , and we have the  $\mathbf{A}$ skating rink model: local skill shares are unaffected by immigrant inflows. Moreover, a value of  $b$  close to  $-1$  suggests a  $\mathbf{A}$ demographic balkanization: inflows of low-skilled immigrants will cause low-skilled natives to move out, causing cities that experience such inflows to become increasingly high-immigrant. At the opposite extreme, a value of  $b=0$  implies that the mobility decisions of natives in a particular skill group are not *differentially* affected by immigrant inflows in the same skill group.  $\mathbf{A}$

value of  $b=0$  does not imply that native location decisions are insensitive to immigrant inflows  $\mathbf{B}$  only that the population changes of natives in different skill groups are not affected by the relative inflow rate of immigrants in the same skill group.

We use data on population changes from 1980 to 1990 for 119 large MSAs to derive two estimates of the coefficient  $b$  in equation (2). In view of the strong focus of the recent literature on low-skilled migrants, we first use data for our lowest skill group (providing us with one observation per city).

In a second set of specifications, we pool data for all three skill groups and include unrestricted city fixed effects. These effects capture any unobserved city-level factors (such as local demand shocks) that might be correlated with immigrant inflows and native migration flows.

As a first specification test, we augment the simple model of equation (2) with a set of plausibly exogenous covariates to allow for the possibility (raised by BFK, 1997) that a simple first-differenced specification may not adequately capture the dynamics of population change. (Note that our use of *relative* growth rates may partially obviate this concern.) Specifically, we include the relative growth of the native population over the period 1970-1980 (i.e., the lagged dependent variable) and the fraction of immigrants in the relevant skill group in 1980. We also include measures of city population growth over the periods 1970-1980 and 1980-1990 in the models for the lowest skill group that exclude city fixed effects.

Columns (1)-(2) and (5)-(6) of Table 2 display the results of estimating equation (2) by weighted ordinary least squares (OLS). The estimates show no evidence that native outmigration rises in response to immigrant inflows. In our basic specification in the first row of column (1), the point

estimate of  $b$  for the lowest skill group is 0.12 with a standard error of 0.07. This suggests, if anything, that a relative inflow of unskilled immigrants leads to a (slight) *increase* in the relative growth of the unskilled native population. Column (5) displays results from a similar model fit to data for all 3 skill groups and including city fixed effects. The point estimate for  $b$  is very similar. The addition of controls for pre-existing trends in relative population growth and for the fraction of immigrants in the city in 1980 in columns (2) and (6) yields estimates of  $b$  that are somewhat more imprecise but generally similar to the results from the simpler specifications in columns (1) and (5).

Some additional insight into the OLS results is provided by Figure 1, which presents a simple bivariate plot of the relative growth of the low skilled population against the relative growth of the low skilled immigrant population. For reference, the figure also includes the 45 degree line (corresponding to  $b=0$  in our regression specifications) and a horizontal line at 0 ( $b=1$ , the skating rink model). Given the large immigrant inflows to many California cities, it is interesting to note that the individual MSAs of the state are scattered fairly evenly around the 45 degree line. Fresno, Los Angeles and Riverside are all above the 45 degree line, reflecting the fact that the relative size of the unskilled native population actually grew slightly over the 1980-90 period, despite relative inflows of unskilled immigrants. On the other hand, Anaheim, San Diego and Oakland are all slightly below the 45 degree line, reflecting small declines in the relative size of the unskilled native population. Also interesting is the fact that no city experienced a large relative outflow of low-skilled immigrants over the 1980-90 period.

A possible objection to inferences based on the scatter in Figure 1 (or the OLS estimates in Table 2) is that immigrant and native population growth patterns may be driven by city-and skill-group-

specific relative demand shocks that attract natives and immigrants in the same skill group to certain cities. In the presence of such shocks, OLS estimates of  $b$  will tend to be upward biased. Suppose, however, that some part of immigrant inflows are determined by supply-side considerations **B** specifically, the tendency of recent immigrants to locate in cities with a large number of previous migrants from their country (Bartel, 1989). In that case, we can use the existing stock of immigrants from a specific country as an instrumental variable for changes in the immigrant skill share. One effect of the changes in immigration laws that occurred in the 1960s was a rapid increase in the number of immigrants from Mexico. The existence of enclave effects suggests that the fraction of Mexican immigrants in a city in 1970 (largely before the big supply shock) can serve as a potential instrumental variable for later immigrant inflows, and particularly for the relative inflow of the lowest skill group. In Figure 2, we present a simple plot of the relative growth rate of low skill immigrants over the 1980-90 period against the percent of Mexican immigrants in each city in 1970. As predicted by the enclave hypothesis, there is a strong positive association between the two.

Columns (3)-(4) and (7)-(8) of Table 2 present instrumental variables (IV) estimation results for equation (2) using the fraction of Mexican immigrants in the appropriate skill group in the city in 1970 as an instrumental variable for the relative growth of the immigrant population in the skill group. Perhaps surprisingly, in every case the IV point estimate of the coefficient  $b$  is larger (i.e., more positive) than the corresponding OLS estimate. One possible explanation for this pattern is that the OLS estimates are downward biased by measurement errors in the immigrant inflow rates. This is quite plausible, given slippage in our definition of skill groups, and possible errors arising from changes in the geographic

boundaries of cities. As with the OLS models, the addition of controls for previous native population flows and the fraction of immigrants in 1980 has little effect on the IV estimates of  $b$ .

A growing literature has stressed the potential problems with IV methods when the instrumental variable is only weakly related to the endogenous variable (see e.g. Bound, Jaeger, and Baker, 1995). To address this concern, the last row of Table 2 reports the t-statistics associated with the coefficient on our instrumental variable (the fraction of Mexican immigrants in the city in 1970) in the first-stage equation. Confirming the impression from Figure 2, the coefficient on the instrumental variable is highly significant, with t-ratios ranging from 4.77 to 13.51. Thus, weak instruments are not a particular concern.

### III. Caveats and Conclusions

Using data from the 1970, 1980, and 1990 Censuses, we investigated the extent to which skill group specific changes in the immigrant population across various MSAs has led to a flight of similarly skilled native-born individuals from these MSAs. Contrary to the demographic balkanization hypothesis, our point estimates suggest that, if anything, increases in immigrant population in specific skill groups lead to small *increases* in the population of native-born individuals of the same skill group. This pattern also suggests that systematic out-migration by the native born is unlikely to provide an explanation of the small measured effects of immigration on the labor market outcomes of the native born found in most area analyses. Indeed, we find that immigration has had quite significant impacts on the skill distribution of various MSAs. Based on this evidence we conclude that the local labor

market impacts of unskilled immigration are mitigated by other avenues of adjustment, such as endogenous shifts in industry structure, rather than by rapid adjustments in the native population.

References

- Bartel, Anne P.**, "Where Do the New Immigrants Live?," *Journal of Labor Economics*, October 1989, 74(4), 371-391.
- Borjas, George**, "The Economics of Immigration," *Journal of Economic Literature*, 1994, 32(4), 1667-1717.
- \_\_\_\_\_, **Richard Freeman, and Lawrence Katz**, "Searching for the Effect of Immigration on the Labor Market," *American Economic Review, Papers and Proceedings*, 1996, 86(2), 246-251.
- \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, "How Much Do Immigration and Trade Affect Labor Market Outcomes?," *Brookings Papers on Economic Activity*, 1, 1997, 1-67.
- Bound, John, David A. Jaeger, and Regina M. Baker**, "Problems with Instrumental Variables Estimation When the Correlation between the Instruments and the Endogenous Explanatory Variable Is Weak," *Journal of the American Statistical Association*, June 1995, 90(430), 443-50.
- Butcher, Kristin F. and David Card**, "Immigration and Wages: Evidence from the 1980's," *American Economic Review*, May 1991, 81 (2), 292--296.
- \_\_\_\_\_, **and John DiNardo**, "The Immigrant and Native-born Wage Distributions: Evidence from United States Censuses," NBER Working Paper 6630, National Bureau of Economic Research, July 1998.
- Card, David**, "The Impact of the Mariel Boatlift on the Miami Labor Market," *Industrial and Labor Relations Review*, January 1990, 43(2), 245--257.
- Card, David**, "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration," *Journal of Labor Economics*, forthcoming 2000.



**DiNardo, John,** AHow Much Do Immigration and Trade Affect Labor Market Outcomes? Comments  
,@*Brookings Papers on Economic Activity*, 1, 1997, 68-76.

**Filer, Randall K.,** AThe Impact of Immigrant Arrivals on Migratory Patterns of Native Workers,@in  
George Borjas and Richard B. Freeman, eds., *Immigration and the Work Force*, Chicago: University  
of Chicago Press, 1992.

**Friedberg, Rachel H. and Jennifer Hunt,** AThe Impact of Immigrants on Host Country Wages,  
Employment, and Growth,@*Journal of Economic Perspectives*, 1995, 9, 23-44.

**Frey, William H.,** AImmigration and Internal Migration >Flight=: A California Case Study,@*Population  
and Environment*, 1995, 16 (4), 353--375.

\_\_\_\_\_,@Immigration, Domestic Migration, and Demographic Balkanization in America: New Evidence  
for the 1990s,@*Population and Development Review*, December 1996, 22 (4), 741--763.

**Jaeger, David A., Susanna Loeb, Sarah E. Turner, and John Bound,** A Coding Geographic  
Areas Across Census Years: Creating Consistent Definitions of Metropolitan Areas,@National Bureau  
of Economic Research, Working Paper, Number 6772, January 1999.

**Wright, R., M. Ellis, and M. Reibel,** AThe linkage between immigration and internal migration in  
large metropolitan areas in the United States,@*Economic Geography*, 1997, 73 (2), 234--253.

Appendix Table: Distributions of Workers into Occupational Groups in 1970, 1980 and 1990

	Occupational Distribution					
	Percent Distribution:			Excess Relative to Native Men:		
	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
<u>1970</u>						
Native Men	22.9	30.9	46.2	--	--	--
Native Women	47.4	37.8	14.7	24.5	6.9	-31.5
Immigrant Men	24.4	31.8	43.7	1.5	0.9	-2.5
Immigrant Women	52.2	35.7	12.1	29.3	4.8	-34.1
<u>1980</u>						
Native Men	17.1	36.2	46.7	--	--	--
Native Women	46.7	34.4	18.9	29.6	-1.8	-27.8
Immigrant Men	24.0	37.6	38.4	6.9	1.4	-8.3
Immigrant Women	50.8	34.1	15.2	33.7	-2.1	-31.5
<u>1990</u>						
Native Men	22.0	37.3	40.7	--	--	--
Native Women	44.3	29.2	26.6	22.3	-8.1	-14.1
Immigrant Men	32.7	36.7	30.5	10.7	-0.6	-10.2
Immigrant Women	52.2	26.3	21.5	30.2	-11.0	-19.2
Mexican Immigrants:						
Men	45.6	43.1	11.3	23.6	5.8	-29.4
Women	67.7	24.3	8.0	45.7	-13.0	-32.7

Notes: The occupational groups include one-third of all wage and salary workers ages 16-68 in each year. Occupations are grouped based on average weekly wages. The excess distributions in columns 4-6 show the difference in the percent of the specific nativity-gender group in the occupation, relative to native men.

Table 1: Components of Population Growth and Relative Population Growth for Selected Cities, 1980-1990

	Total	Immigrants	Natives
<b>A. Total Population Growth 1980-90</b>			
<i>Ten Largest Cities</i>			
Los Angeles CA	14.8	20.7	-5.9
New York NY	-16.4	1.6	-18.0
Chicago IL	-14.0	0.9	-14.9
Philadelphia PA	-15.6	-0.3	-15.4
Washington DC	16.8	8.3	8.5
Detroit MI	-25.0	-1.9	-23.1
Houston TX	11.9	8.1	3.8
Boston MA	12.3	4.3	8.0
Anaheim CA	28.2	21.4	6.8
Dallas TX	-5.0	4.8	-9.8
<i>Selected Other Cities</i>			
Miami FL	25.8	26.7	-1.0
Tampa FL	28.2	4.0	24.2
San Diego CA	26.5	11.8	14.7
San Jose CA	17.9	16.8	1.1
Atlanta GA	21.0	3.6	17.4
Pittsburgh PA	-13.7	-0.8	-12.9
<b>B. Relative Growth of Lowest Skill Group</b>			
<i>Ten Largest Cities</i>			
Los Angeles CA	15.8	13.5	2.3
New York NY	4.3	2.9	1.4
Chicago IL	0.3	1.6	-1.3
Philadelphia PA	-1.9	0.0	-1.9
Washington DC	1.7	3.9	-2.2
Detroit MI	0.1	-0.1	0.2
Houston TX	11.9	5.8	6.1
Boston MA	-6.0	1.4	-7.4
Anaheim CA	12.9	14.8	-1.8
Dallas TX	4.2	3.3	0.9
<i>Selected Other Cities</i>			
Miami FL	15.5	11.7	3.8
Tampa FL	1.9	1.5	0.4
San Diego CA	6.0	7.4	-1.5
San Jose CA	9.9	8.2	1.7
Atlanta GA	-0.6	1.1	-1.7
Pittsburgh PA	-2.2	-0.2	-2.0

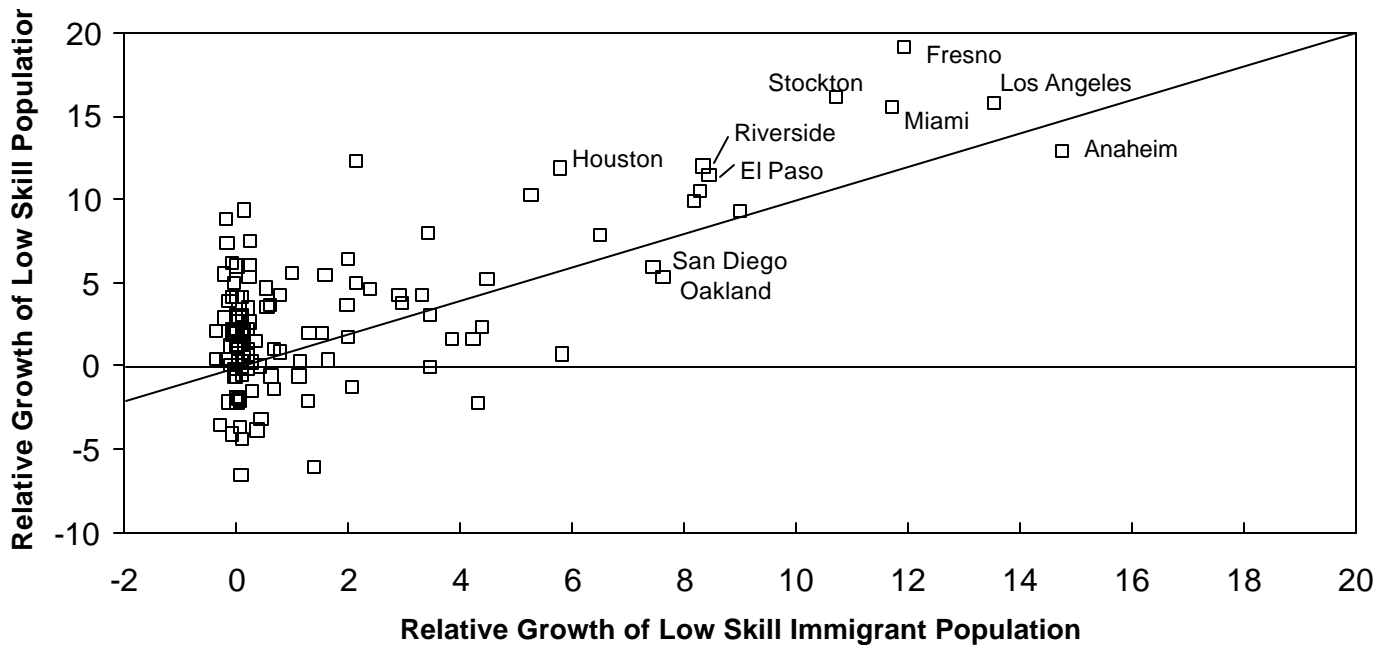
Note: Based on tabulations of 1980 and 1990 Public Use Census files. See text.

Table 2: Estimated Models for the Relative Growth Rate of the Native Population in Specific Skill Groups, 1980-1990

	<u>Lowest Skill Group Only</u>				<u>Pooled Models (3 Groups)</u>			
	<u>OLS</u>		<u>IV</u>		<u>OLS</u>		<u>IV</u>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Relative Growth of Immigrant Population in Same Skill Group	0.12 (0.07)	0.24 (0.13)	0.41 (0.16)	0.61 (0.34)	0.15 (0.06)	0.11 (0.08)	0.28 (0.09)	0.24 (0.22)
2. Relative Growth of Native Population 1970-1980	--	-0.24 (0.10)	-0.34 (0.12)	-0.32 (0.12)	--	-0.17 (0.05)	-0.17 (0.05)	-0.17 (0.05)
3. City Population Growth, 1980-1990	--	-0.02 (0.02)	-0.03 (0.02)	-0.04 (0.03)	--	--	--	--
4. City Population Growth, 1970-1980	--	-0.02 (0.02)	-0.03 (0.02)	-0.04 (0.03)	--	--	--	--
5. Fraction of Immigrants in Skill Group in 1980	--	0.00 (0.04)	--	-0.10 (0.10)	--	0.24 (0.15)	--	0.08 (0.28)
6. City and Skill Group Fixed Effects	No	No	No	No	Yes	Yes	Yes	Yes
7. R-squared	0.03	0.10	0.09	0.09	0.81	0.82	0.81	0.81
8. T-ratio of instrument in first stage	--	--	6.95	4.77	--	--	13.51	6.74

Notes: Standard errors in parentheses. Models in columns 1-4 fit to observations for 119 metropolitan statistical areas (MSAs): dependent variable in these models is the relative growth in the native population in skill group 1 between 1980 and 1990. Models in columns 5-8 are fit to pooled data for three skill groups in 119 MSAs: dependent variable in these models is the skill-group specific relative growth in the native population. In the IV models, the relative growth of the immigrant population in the same skill group is treated as endogenous. For models in columns 3-4 instrument is the fraction of Mexican immigrants in the city in 1970. For models in columns 7-8, instrument is the skill-group specific fraction of Mexican immigrants in 1970.

Figure 1: Relative Growth of Low Skill Population, Total versus Immigrants



**Figure 2: Mexican Immigrant Density and Growth in Low Skill Immigrants**

