The Effects of Recent Immigration and Trade on
Racial/Ethnic Labor Market Differentials

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1. Introduction

As the United States economy becomes increasingly globalized, increasing attention has been paid to the potential distributional consequences of globalization. A particular focus of concern has been the labor market consequences for low-skilled workers who face competitive pressures from the vast supply of low-skilled workers worldwide. We analyze the impact of immigration and international trade on the employment and wages of low-skilled U.S. workers, emphasizing changes by race and ethnicity over the 1990s. This period is one of heightened geographic diffusion of immigrants across the nation and continued growth in international trade. Our timeframe, 1989 to 1999, is dictated by availability of decennial Census data. Fortunately, each of these years is near a business cycle peak and unemployment was low. We limit our analysis to men between the ages of 25 and 62 from the three major racial and ethnic groups: white non-Hispanics, black non-Hispanics, and Latinos (hereafter referred to as race groups).

We first review employment and wage trends by race over the last three decades. We then estimate the impact of immigration on native employment and wages and explore potential effects of international trade by examining the decline in manufacturing. Then, we consider the potential future effects of offshoring on employment and present our conclusions.

2. Trends in Employment and Wages

We review trends in employment and wages using data from the Annual Social and Economic Supplement of the Current Population Survey (March files) for the years since 1975. Employment declined for prime-age men, especially for black and Latino

men relative to white men (Figure 1). In 2005, the annual employment rate of whites was 90 percent, 3 percentage points higher than that of Latinos and 13 points higher than that of blacks. Between 1989 and 1999, employment fell only over one percentage point for whites and by less than one percentage point for blacks and Latinos.

Annual hours of work increased substantially for men who did work (Figure 2). Average annual hours in 2005 were about 2200 for whites, 2070 for Latinos and 2000 for blacks. After remaining fairly stable during the 1980s, during the 1990s hours increased by almost 155 for blacks, by about 85 for Latinos, and by almost 50 hours for whites.

The real median hourly wage fell roughly 20 cents for both whites and Latinos between 1989 and 1999 to $20.25 for whites and $12.95 for Latinos (Figure 3).[1] Black men had both the greatest increase in hours and a $1.30 increase in median wage to $15.55 over the decade. Thus, the relative hourly wage of blacks increased from 70 cents per dollar earned by white men to 77 cents per dollar.

Less than one-third of the black-white wage gap is explained by racial differences in education and age, as the adjusted wage for blacks was only 81 percent of that earned by whites in 1999 (Figure 4). More than half of the improvement in the relative wage of blacks is explained by relative increases in education and age, as the adjusted wage gap increased by only 2 percentage points over the 1990s. Among Latinos, the relative wage held at about 64 percent, but the adjusted wage gap fell from 82 percent to 78 percent. However, among U.S.-born Latinos, the relative wage was much higher at 79 percent in 1999 and their adjusted wage gap was 87 percent.

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[1] Hourly wage is defined as annual earnings divided by the product of annual weeks of work and usual hours per week for all workers with annual hours and annual earnings greater than zero.

Overall, these trends do not suggest major racial differences in labor market forces in the 1990s. The increase in annual hours suggests growth in labor demand and/or supply with somewhat larger growth among blacks and Latinos. Blacks saw growth in their median hourly wage, although most of the growth relative to whites was due to improvements in education and potential experience. The relative wage of Latinos held steady, although their adjusted relative wage declined. Of course, these broad trends may mask substantial differences in the effects of immigration and trade as these effects are expected to be greatest among workers with low education, as we will explore in the next sections.

3. Immigration

The impact of immigration on racial labor market differentials has two components: a composition effect and an effect on the employment and wages of natives. The composition effect is mechanical, simply the change in outcomes due to the inclusion of immigrants in labor market statistics. For example, recent immigrants (arriving in 1990 or later) made up about 19 percent of male Latino workers in 1999. When they are included, the median hourly wage was $13.40; it was $14.10 when they are excluded. For blacks and whites, less than 4 percent of male workers were recent immigrants, too small a significant composition effect.[2]

Immigrants may have a real effect on the employment or wages of natives. Theory predicts that immigration will increase the wages of native workers who are complements to immigrants and decrease the wages of native workers who are substitutes. Because immigrants have disproportionately low education relative to

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[2] These estimates are based on the 2000 Census (PUMS, 5-percent) for non-institutionalized working men ages 25 to 62.

natives (Figure 5), low-education natives generally are more likely to be substitutes and high-education natives, complements.[3] Immigration might have a larger negative impact on labor market outcomes for black and especially Latino natives because greater shares of these groups have low education levels (Figure 5).

We describe the immigration-related labor market supply shift using the ratio of recent immigrants-to-natives. To measure the full supply effect, the ratio includes all workers (male and female) ages 16 and over. Immigrants who arrived before 1990 are included with natives in the denominator. Within education groups, the ratio is highest for workers with less than 9 years of completed schooling, 18 immigrants per 100 natives and 52 immigrant hours of work per 100 native hours of work (Figure 6). In contrast, for workers with a bachelor's degree, there are only 5 recent immigrants per 100 native workers and only 7 hours of immigrant work per 100 hours of native work. [4]

We describe supply shifts by race by weighting the ratios in Figure 6 by the education distribution of each U.S.-born race group. Latino natives have the lowest educational attainment (for example, about 30 percent lack a high school diploma, compared to 25 percent for blacks and 11 percent for whites). As a result, they face the greatest potential competition with recent immigrants with 5.8 recent immigrants per 100 natives, compared to 4.9 for blacks and 4.6 for whites (Table 1).

The labor supply effect can also be described by metropolitan area, occupation, or industry. We calculate the ratio of immigrants-to-natives in each metropolitan area and then weight by the metropolitan distribution of each U.S.-born race group. Because extensive immigration potentially induces migration out of a metropolitan area, we also

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[3] Competition with immigrants could also be high for natives with a graduate degree for whom the ratio is higher than that of natives with college education.
[4] People with a GED cannot be separated from those with a high school diploma in Census data.

weight the 2000 immigrant-to-native ratios by the 1990 metropolitan distributions of

natives. Measuring the labor supply effect by metro areas rather than by education leads

to higher ratios for Latinos (10.5 instead of 5.8) because recent immigrants settle in areas

with larger Latino populations (Table 1). Measuring the effect by occupation is roughly

similar to the education results; measuring by aggregated industry minimizes racial

differences.

These results suggest that labor market competition from recent immigrants is

likely to be greatest for Latinos, then blacks, and less substantial for whites. Borjas

(2003) gauges the impact of immigration on native wages by measuring the impact on

labor supply by education and experience and multiplying by estimates of the elasticity of

wages with respect to supply shocks by education and experience (allowing for

substitution across education and experience groups). Borjas (2006) extends this method

to race differences by weighting the wage effects at each education level by the education

distribution of each native wage group. He concludes that the 1980-2000 influx of

immigrants has a short-run negative impact on native wages of 3.2 percent for white men,

4.1 percent for black men, and 4.6 percent for Latino men. The model assumes that in

the long run, capital adjusts so that the long-run aggregate effect is zero, but for white

men it is positive 0.2 percent whereas for black men it is negative 0.7 percent and for

Latino men it is negative 1.2 percent.[5]

Our contribution is to relax the Borjas assumption that the elasticity of

substitution between natives and immigrants is constant for all race groups. For example,

among low-educated natives, recent immigrants are more likely to be in the same

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[5] Ottaviano and Peri (2006) and Peri (2007) allow for imperfect substitution between recent immigrants and
natives with the same education levels. Their estimates of elasticities of substitution lead to much smaller
(and often positive) estimates of the impact of recent immigration on native wages.

occupations as Latinos, then blacks, and less so for whites. Because blacks and Latinos are more likely than whites to attend low-quality schools and more likely to complete a GED, blacks and Latinos with a high school diploma or GED may be more substitutable than whites with recent immigrants who have not completed high school.

We allow for flexibility by adopting the method developed by Altonji and Card (1991). We use differential levels of immigration by metro area to identify the impact of recent immigration on native employment and wages. This approach has two well-known sources of bias. First, immigrants likely choose their destination and timing based, in part, on strong labor market opportunities in the destination. To address this endogeneity bias, we follow Altonji and Card (1991) and use recent immigration arriving during the 1980s as an instrument for recent immigrants arriving during the 1990s. Because new immigrants tend to choose similar destinations to previous immigrants, this instrument predicts recent immigration well.[6] However, if immigration during the 1980s continued to affect native labor market outcomes in the 1990s, then the IV estimates will be biased. We use a first-differenced model, estimating the *change* in labor market outcomes as a function of recent immigration, to abstract from any time-invariant characteristics of a metro that affect labor market outcomes.

The second methodological concern is that labor or capital may adjust to labor supply shocks in specific metropolitan areas, spreading any negative impact of immigration across the nation. For example, less-skilled natives may migrate out of a metro area when faced with competition from immigrants. The results in Table 1 suggest

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[6] In the model of equation (1), the R-squareds in the first stage are over 0.85; excluding the instrument (recent immigration as of 1990) causes the R-squareds to fall to about 0.06. The F-test statistics for the exclusion restrictions exceed 400. As expected, relative to the OLS results, the IV results find stronger negative effects of immigration, especially for wages and less so for employment.

such movement, as the ratio of immigrants-to-natives is higher for each group when we weight by the metro distribution in 1990 compared to that in 2000. Direct evidence on the migratory response by natives is mixed (Card, 2001; Frey, 2005). As we have no means to account for labor and capital adjustments, this may bias our results toward zero.

To measure the impact of recent immigration on employment and wages for low-education natives, we estimate separate models for those who have not completed a high school diploma and for those who have no more than a high school diploma. For each U.S.-born race-education group, we estimate an employment change equation and a wage rate change equation of the following form:

$$Y_m = a + bR_m + cM_m + dE_m + e_m \qquad (1)$$

We use preliminary regressions to estimate the dependent variables for each race group for each metropolitan area (m) as the metro fixed-effect in models that control for individual education and potential experience.[7] The models are estimated separately for 1989 and for 1999 and the dependent variables in equation (1) are the changes in metro fixed-effects.

Recent immigration (R_m) is measured as the ratio of immigrant workers arriving in 1990 or later to native workers in 2000. To measure the full supply shock, we include all workers ages 16 and over. Within each metro area, the ratio does not vary by race or education. Long-term immigrants are included with natives in the denominator of the ratio for the supply shock but the changes in employment and wages (Y_m) are estimated

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[7] We estimate a linear probability model for the annual employment rate. We use the natural logarithm of wages to model wages. For each of the three race groups, we estimate two models by education group: one for those without a high school diploma (with controls for attainment of less than ninth grade, ninth grade, tenth grade, eleventh grade, and twelfth grade but no diploma) and one for those with a high school diploma or less (adding a sixth education indicator for high school completed). Each of the six models include a quartic in potential adult labor market experience (age minus 18).

for U.S.-born workers only. We instrument for recent immigration using the 1990 Census to calculate the ratio of immigrants arriving in 1980 or later to the native population in 1990.

The model also controls for the share of workers in the metro area who were employed in manufacturing (M_m) and metro growth in total employment (E_m). To address endogeneity concerns, the manufacturing share is measured in 1990 and employment growth is measured between 1980 and 1990.[8] Employment and manufacturing data come from County Business Patterns (1980-2000).[9]

We limit our analysis to areas with at least 30 wage observations. For black men and white men with less than a high school diploma, there are 135 metropolitan areas that meet the following criteria: at least 30 wage earners of each race in both the 1990 and 2000 Censuses, metro area is identifiable in all three Census years (1980, 1990, and 2000), and the relevant information in County Business Patterns is complete.[10] We use these 135 metropolitan areas for the larger education category (blacks and whites with a high school diploma or less). For Latinos, there are only 98 metropolitan areas that meet the three criteria. We weight our estimates by the number of individual observations used to estimate metro employment and wages (Y_m) and report standard errors that are robust to heteroskedasticity.

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[8] Card and Lewis (2006) use the change in employment during the 1980s to instrument for the change in employment during the 1990s. We simply include the change in employment in the 1980s as a reduced-form estimate (lnemp90-lnemp80). Bound and Holzer (2000) develop an alternative instrument based on national growth by industry and the industrial makeup of each metro.

[9] Our main findings are not substantially changed when we use manufacturing share and employment as measured by the Census.

[10] Metropolitan areas within the same consolidated metropolitan area are treated separately (e.g., Oakland and San Francisco). We are grateful to Ethan Lewis for providing programs that map from Census data (1980, 1990, and 2000) by county and PUMA to metropolitan areas using consistent definitions.

For whites with less than a high school diploma, we find robust negative employment effects that suggest that increasing the ratio of immigrants-to-natives by 1 per 100 would reduce employment by 0.25 percentage points (IV estimate, Table 2). For metropolitan white men without a high school diploma, the ratio averages 4.6 per 100 implying that in the absence of recent immigration, employment would be higher by over 1 percentage point (0.25*0.046*100=1.15). This is equivalent to almost one-third of the actual decline in employment for these men over the 1990s.

For black men without a high school diploma, we find that increasing the ratio by 1 per 100 would reduce employment by 0.15 percentage points (IV estimate, Table 2). For these men, the ratio averages 5.9 per 100 implying that in the absence of recent immigration, employment would be higher by almost 1 percentage point (0.15*0.059*100=0.89) or only about one-sixth of the actual decline in their employment over the 1990s.

Expanding the analysis to include men with a high school diploma or less education reduces the magnitude of the immigration coefficients for whites and blacks, but not substantially. The data do not reject the hypothesis that the coefficients are the same for whites and blacks. Interestingly, for Latinos, we find no statistically significant effect of recent immigration on employment (perhaps because for Latinos the effect works through wages and not employment).[11]

To explore the robustness of these findings, we estimate a second IV model with additional controls. Altonji and Card (1991) report that even after controlling for individual human capital in the first stage, metro average human capital characteristics

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[11] Due to sample size by metro area, the metro areas are different for Latinos than for blacks and whites. However, when we estimate the model for whites using the same metros as for Latinos, are main results (IV) are not substantially or significantly altered.

were statistically significant. We add the race-specific changes in the share with less than ninth grade and changes in the share with less than ten years of potential experience. Schoeni (1998) finds that changes in metro cost of living influenced the estimated effects of immigration. We include the change in the fair market rent for a two bedroom apartment. With these additional controls, the estimated negative effect of immigration on employment among native whites remains essentially unchanged. For blacks, the estimated effect is of similar magnitude, but is no longer statistically significant.

We also estimate the model with a control for the change in incarceration rates by states. Raphael and Ronconi (2006) find that inclusion of incarceration rates in a national-level model reduces the estimated impact of immigration on low-skilled workers because incarceration rates and immigration are correlated. We do not take a position on the causal nature of these relationships, but include incarceration as a robustness check. We measure incarceration using the share of men ages 18 to 62 who are institutionalized. Standard errors for this model are adjusted for clustering at the state level. We find that inclusion of incarceration has little impact on the magnitude or significance of our employment estimates.[12]

For all three race groups we find robust negative effects of recent immigration on the wages of workers with less than a high school diploma (Table 3). The estimates suggest that increasing the ratio of immigrants-to-natives by 1 per 100 would reduce wages by about 0.6 percentage points (IV estimate, Table 3). For metropolitan men without a high school diploma, in the absence of recent immigration wage rates would be about 3.5 (0.60*0.059*100) percentage points higher for blacks, almost 3 percentage

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[12] This result is consistent with Raphael and Ronconi (2006) who find little impact of inclusion of incarceration rates in state-level analysis.

points higher for whites, and over 5 percentage points higher for Latinos. For a fulltime worker with an hourly wage of $10, this amounts to annual earnings losses of about $700 for blacks, $525 for whites, and $1025 for Latinos. Differences across race groups result mainly from the higher ratios of immigrants-to-natives faced by Latinos and blacks relative to whites. The estimated wage effects of immigration are not statistically different by race. When we expand to workers with a high school diploma or less, the magnitude of the estimated coefficients fall, but remain statically significant for blacks and whites.

Our estimates of employment and wage effects are larger than existing estimates that use a similar approach to identifying effects from differences in immigration across metropolitan areas. A National Research Council study (1997, p. 221) describes this literature as finding results that "cluster around zero." Much of this research, including Altonji and Card (1991), focused on immigration over the 1970s. Our results may differ because of the greater degree of immigration during the 1990s, the greater diversity of immigrant destinations across metro areas, or better quality of data (e.g., larger samples in the Census and the availability of employment data from County Business Patterns).

We use the same data and time period as Card and Lewis (2006) who find no effect of recent immigration on the wages of low-skilled natives. Their study and most of the recent research examines the effect of immigration-induced changes in the relative supply of workers with less than a high school diploma compared to workers with a high school diploma on the relative wages of these two groups. An advantage of their method is that it implicitly controls for metro area differences that affect both education groups equally. However, our model allows for more flexibility in substitution by race group

within and across education groups. If immigrants who have not completed high school compete for jobs with natives who have completed high school, the relative estimates could be biased toward zero.[13]

Further analysis of these differences in estimation technique is beyond the scope of this paper. However, we are exploring these differences in a paper that focuses on differences by education level rather than race (Reed and Danziger, 2007, forthcoming).

4. International Trade

The impact of international trade on labor market outcomes has generally been assessed in a manner similar to the Borjas model for immigration. Borjas, Freeman, and Katz (1997) calculate the labor supply implicit in net imports and use estimates of the elasticity of wages with respect to labor supply shocks to calculate wage effects. They conclude that immigration has had a much larger impact on the wages of low-skilled workers than has trade with developing countries.

As with immigration, we investigate whether the impact of trade differs by race group within and across educational attainment levels. One approach would use data on imports by industry and industry shares by metropolitan area to measure the implicit labor supply shock by area.[14] This is difficult because industry classifications were changed between 1990 (SIC codes) and 2000 (NAICS codes). Furthermore, this approach incurs the same criticism as other studies of trade's impact on wages, namely that wage effects may result from threat of trade rather than actual trade levels. For example, a U.S. manufacturer may be able to reduce wage costs or change production

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[13] Similar to our analysis, Schoeni (1998) finds negative effects of the share of immigrants in a metro area on native employment and wages using data for the 1970s and 1980s.
[14] Black and Brainerd (1999) develop such a metropolitan level measure using NBER data on trade and productivity.

technologies when faced with the potential of cheap imports, and, if successful, no increase in imports would be recorded.

We measure the impact of trade across race groups by analyzing manufacturing employment. Broadly speaking, imports compete with domestic manufactured goods and thus contribute to reduced manufacturing employment. Other factors, such as technological innovation, also contribute to reduced manufacturing employment. Thus, our measure does not isolate the impact of trade. Rather, we explore whether the decline in manufacturing, which is partly a function of trade, had a differential impact across race and education groups. The decline in manufacturing may be more important for black and Latino workers if they are less mobile than whites when faced with a local downturn in manufacturing employment.

In 1990, race differences in manufacturing employment were minimal. Latino workers (21%) were slightly less likely than black or white workers (23%) to be employed in manufacturing (Table 4). Averaging over the metropolitan areas analyzed above, workers in each group lived in metro areas with 16 to 19 percent of total male employment in manufacturing.

We estimate whether changes in employment and wages during the 1990s were related to the area's share of employment in manufacturing in 1990 (M_m in equation 1). Manufacturing share is measured at the metro level and does not vary by race or education. We find no impact of manufacturing share on the change in employment for any race group (see Appendix tables). The control for employment change (E_c), while potentially important for measuring the impact of immigration, could limit the magnitude of the estimated impact of manufacturing. To estimate the full effect of manufacturing

share, we remove the control for employment change (E_c). The impact of manufacturing

share on employment was not statistically significant in these models. As an alternative,

we use the change in manufacturing share over the 1990s and found no statistically

significant effect on employment change.[15]

We do find some evidence of racial differences in the effect of the decline in

manufacturing on wages (Table 5), but the estimates are imprecise and we cannot reject

the hypothesis that the impact is the same across all three race groups. For white men,

the estimates are small and not generally statistically significant. For black men, the

estimates are more substantial and, for those with a high school diploma or less

education, generally statistically significant.   For Latino men, the estimates are larger

and are generally significant. For black men, the estimate of -0.24 implies that a 1

percentage point increase in the manufacturing share in 1990 was associated with a 0.24

percent wage decline over the 1990s; for Latino men, a 1 point increase in this share was

associated with a 0.32 percent decline.

We also estimate the impact of the change in manufacturing share over the 1990s.

For black men with a high school diploma or less, a 1 percentage point larger decline in

manufacturing was associated with a 0.51 percent decline in wage. For these men, the

average manufacturing share of employment in their metropolitan areas fell from 26.5

percent to 18.7 percent which would lead to a 4 percent fall in wage over the period

((.187-.265)*0.51*100). For Latino men, a 1 point decline in manufacturing was

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[15] Results available on request from the first author. In one case, for the employment change among blacks
with a high school diploma or less, the estimate of the impact of the change in metropolitan manufacturing
share (with E_c excluded from the model) was bordering on significant at the 10 percent level. The
magnitude was about -0.15.

associated with a 0.65 percent decline in wage. Their manufacturing share fell from 23.9 to 15.9, implying a 5 percent fall in wage.

Our results for manufacturing are consistent with those of Bound and Holzer (1993) who find that manufacturing declines during the 1970s and 1980s had a larger negative impact on black workers than on white workers. However, they find an impact on employment and we do not. The difference may be due to the period of study. We measure only the effect of manufacturing change over the 1990s and not the cumulative impact since the 1970s. Taken together, the results of both studies suggest that among low-educated workers, international trade has a greater negative impact on black and Latino workers than on white workers.

5. Offshoring Employment

Offshoring of jobs to foreign workers is another way in which globalization leads to implicit labor supply shocks. Examples of offshoring include telephone operators and bookkeeping clerks. We know of no way to measure the impact of offshoring on labor market outcomes for U.S. natives. However, the Bureau of Labor Statistics (2006) has developed a list of 40 occupations susceptible to significant risk of offshoring in the future. Such work can be digitally transmitted, involves repetitive tasks, has clear requirements with few nuances, and has little face-to-face interaction. The list includes many engineering and computer-related occupations and others that have a relatively high share of workers with a bachelor's degree or higher education (48% for those on the list compared to 28% for other occupations).

Whites are over-represented in the occupations susceptible to offshoring (Table 6). Even within education levels, whites tend to be over-represented. Thus, offshoring

will likely have a larger negative impact on whites for two reasons. First, offshoring will disproportionately affect workers with a bachelor's degree or higher education and such workers are disproportionately white. Second, even among college-educated workers, whites are over-represented in the occupations susceptible to offshoring.

6. Conclusions

Have trade and immigration increased racial differentials in labor market outcomes for men born in the U.S.? Our answer is "yes." We find that recent immigration has contributed to declines in the employment of black and white workers and to lower wages among black, white, and Latino workers, for workers with less than a high school diploma. Although we do not find evidence that these wage effects differ by race among workers with low education, immigration has a larger total effect on Latino and black workers because a greater share of these workers have low education and because, on average, they live in metro areas with higher immigrant shares.

We find that low-educated black and Latino (but not white) workers in metropolitan areas with a large manufacturing share of employment in 1990 experienced greater wage declines. This suggests that trade has had a greater negative impact on the wages of less-educated Latino and black workers than on the wages of their white counterparts. The racial difference is further intensified by the greater share of Latinos and blacks among low-educated workers.

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Figure 1. Employment Trends by Race, 1975-2005
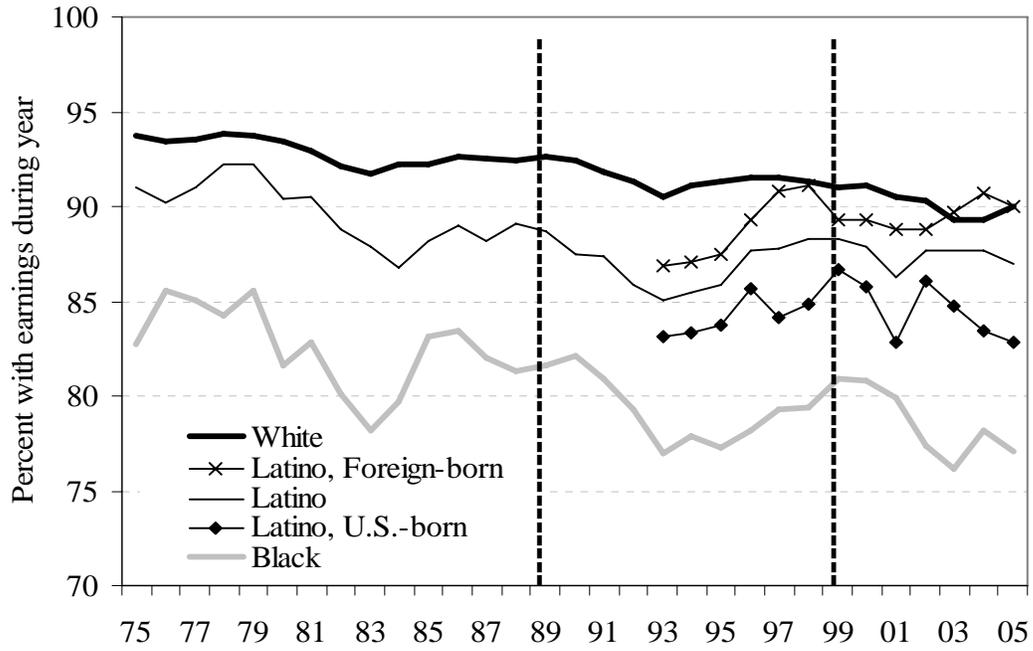
Source: Authors' calculations from the Current Population Survey (March files), 1976-2006.
Notes: Figure includes civilian, non-institutionalized men ages 25 to 62. Within race groups, estimates are age-adjusted to match the U.S. male population in 2006.

Figure 2. Average Annual Hours by Race, 1975-2005
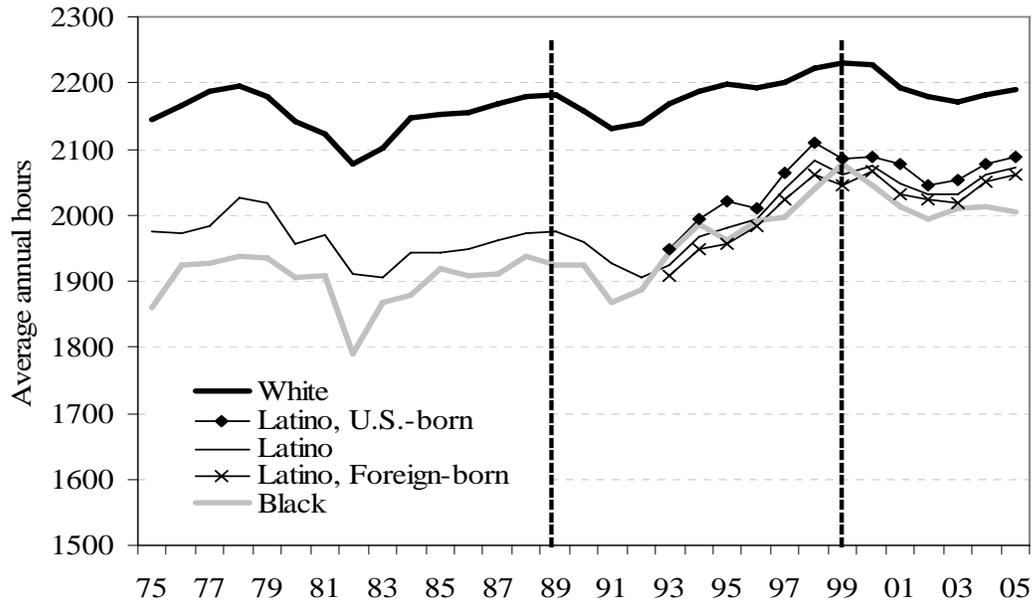
Source and notes: See Figure 1.

Figure 3. Median Hourly Wage by Race, 1975-2005
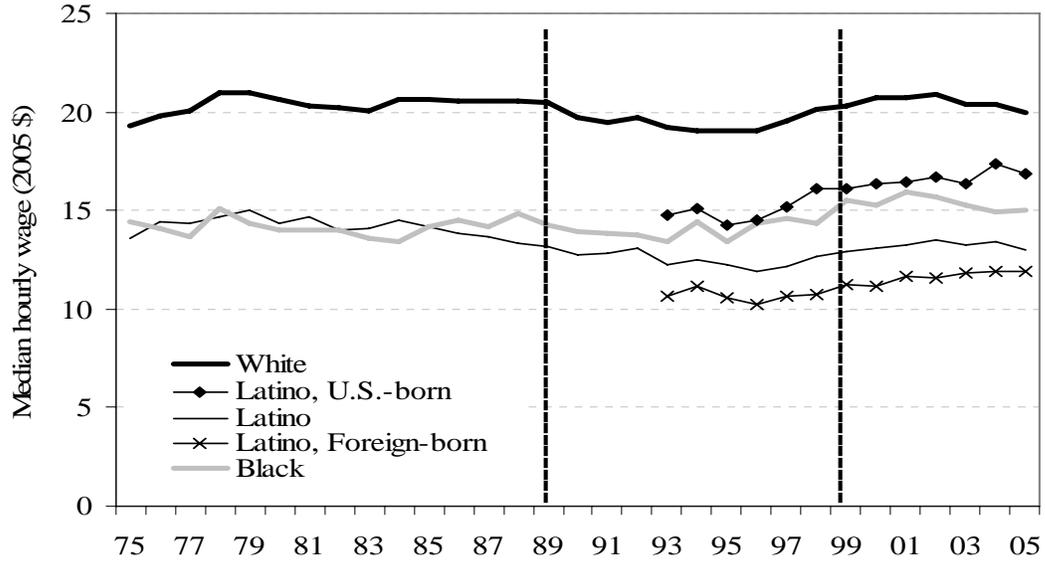
Source and notes: See Figure 1.

Figure 4. Median Hourly Wage Relative to Whites, Adjusted for Education and Age, 1975-2005
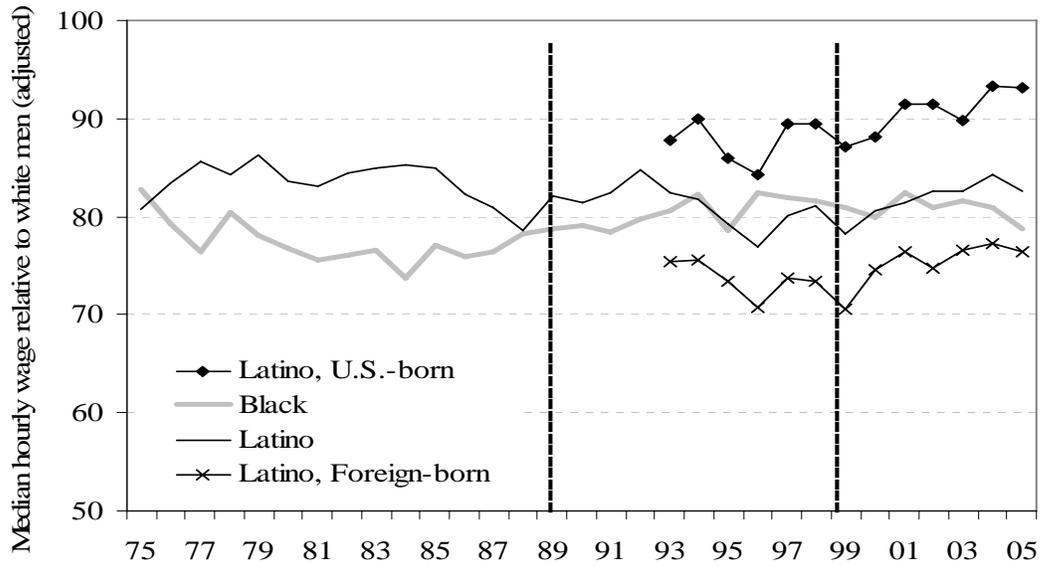
Source: See Figure 1.
Notes: Figure includes civilian, non-institutionalized men ages 25 to 62 who worked during the year. Estimates are based on a linear regression of the natural logarithm of hourly wage on dummies for education (no high school education, some high school education, high school diploma, some college, bachelor's degree, and graduate degree), a quartic in potential experience, and dummies for race.

Figure 5. Education Distribution of Natives and Recent Immigrants, 2000
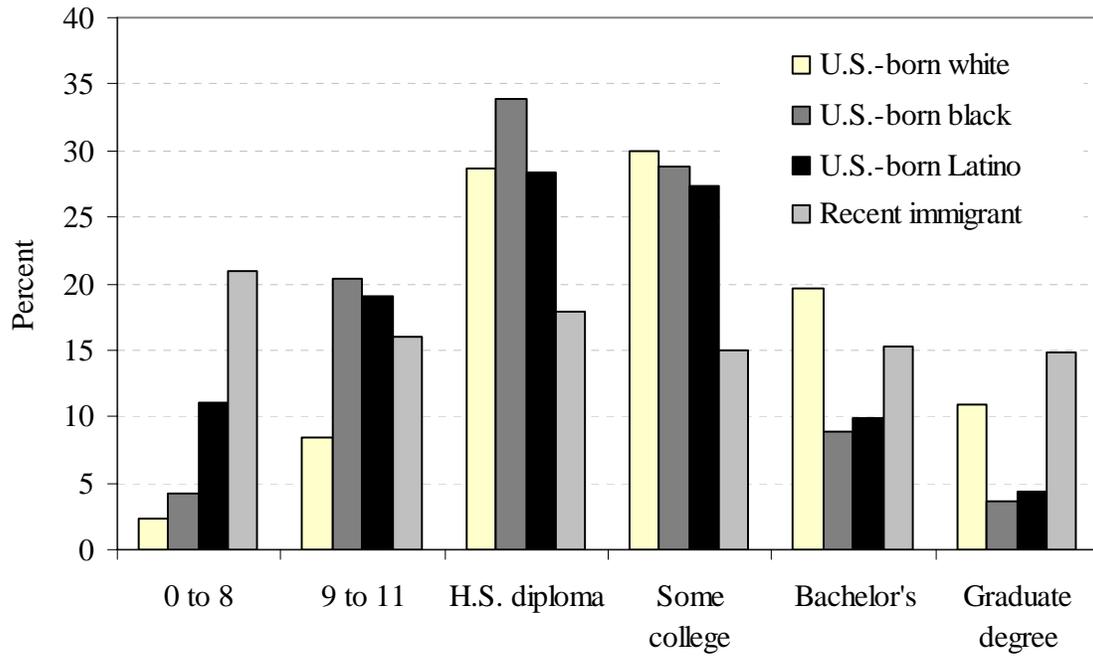
Source: Authors' calculations from the 2000 Census.
Notes: Education shares are based on U.S.-born men, ages 25 to 62.

Figure 6. Ratio of Recent Immigrants-to-Natives, 2000
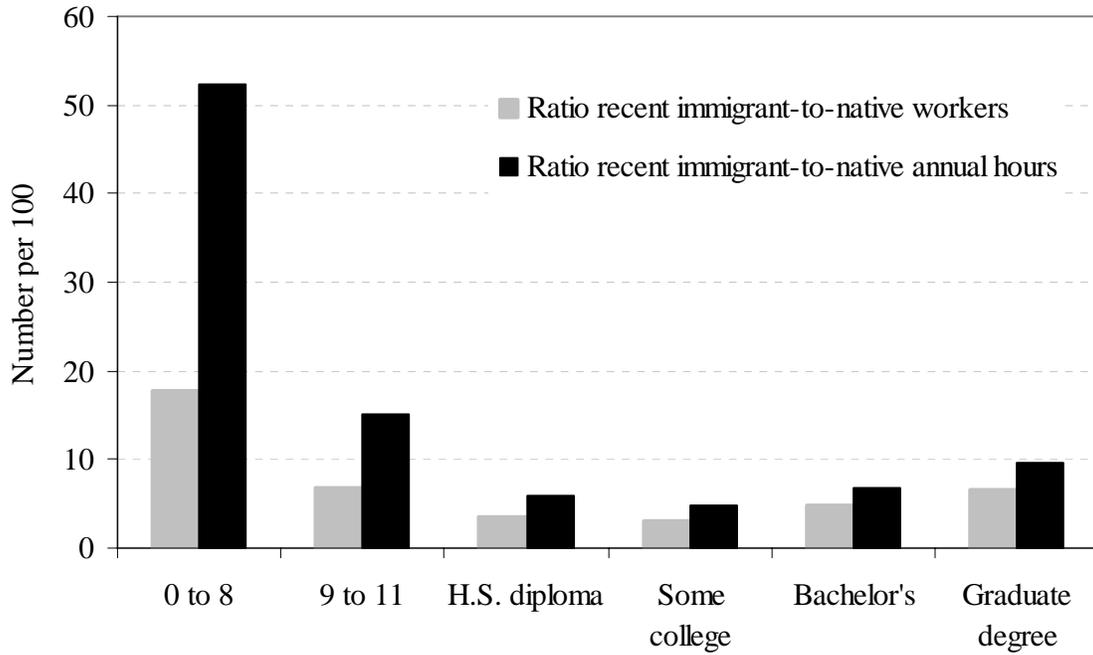
Source: Authors' calculations from the 2000 Census.
Notes: The ratios are calculated based on all workers ages 16 and older. Recent immigrants arrived in 1990 or later. Long-term immigrants are included in the denominator with natives.

Table 1. Ratio of Recent Immigrants-to-100 Natives by Race, 2000

	White	Black	Latino
By education (as in Figure 5)	4.6	4.9	5.8
By metro area	5.3	6.4	10.5
By metro 1990	5.8	7.0	11.0
By occupation	4.9	6.0	6.9
By occupation in 1990	4.9	6.2	7.4
By industry	5.5	5.3	5.8
By industry in 1990	5.4	5.2	5.9

Source: Authors' calculations from the Census (1990, 2000).
Notes: See notes to Figure 6. Ratios are weighted by the distribution of U.S.-born men ages 25 to 62 for each race group. Occupation is measured at the 3-digit level in 337 categories. Industry is aggregated to 12 categories. There are 288 large metropolitan areas. Industry and occupation weighting is for working men only.

Table 2. Effect of Recent Immigration on the Change in Native Employment by Race, 1990-2000

	White	Black	Latino
Education less than high school diploma			
OLS	-0.21***	-0.15*	-0.08
	(0.06)	(0.08)	(0.10)
IV	-0.25***	-0.15**	-0.05
	(0.06)	(0.07)	(0.10)
IV (additional controls)	-0.23**	-0.12	-0.01
	(0.09)	(0.08)	(0.11)
IV (adds incarceration)	-0.24***	-0.15**	-0.02
	(0.06)	(0.07)	(0.12)
Education high school diploma or less			
OLS	-0.18***	-0.11	-0.10
	(0.04)	(0.07)	(0.07)
IV	-0.22***	-0.12*	-0.07
	(0.04)	(0.07)	(0.07)
IV (additional controls)	-0.22***	-0.11	-0.05
	(0.04)	(0.07)	(0.09)
IV (adds incarceration)	-0.22***	-0.10*	-0.06
	(0.04)	(0.06)	(0.09)

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. See text for details.

Table 3. Effect of Recent Immigration on the Change in Native Wage by Race, 1990-2000

	White	Black	Latino
Education less than high school diploma			
OLS	-0.35***	-0.52***	-0.35***
	(0.12)	(0.19)	(0.17)
IV	-0.57***	-0.60***	-0.59***
	(0.13)	(0.20)	(0.19)
IV (additional controls)	-0.36**	-0.49**	-0.60***
	(0.16)	(0.22)	(0.21)
IV (adds incarceration)	-0.52***	-0.49**	-0.50**
	(0.14)	(0.22)	(0.18)
Education high school diploma or less			
OLS	-0.14	-0.34**	-0.13
	(0.09)	(0.14)	(0.16)
IV	-0.31***	-0.49***	-0.38*
	(0.10)	(0.15)	(0.22)
IV (additional controls)	-0.28**	-0.42***	-0.41*
	(0.12)	(0.13)	(0.22)
IV (adds incarceration)	-0.27**	-0.40*	-0.31
	(0.11)	(0.20)	(0.23)

Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. See text for details.

Table 4. Manufacturing Employment by Race, 1990 (percentages)

	White	Black	Latino
Share	23	23	21
Share (educ <= H.S. diploma)	27	27	24
By metro	18	17	16
By metro (educ <= H.S. diploma)	19	18	16

Source: Authors' calculations from Census (1990) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62.

Table 5. Effect of 1990 Manufacturing Share on Change in Native Wage by Race, 1990-2000

	White	Black	Latino
Education less than high school diploma			
IV	-0.11	-0.15	-0.42***
	(0.09)	(0.15)	(0.17)
IV (drop E_c)	-0.11	-0.20	-0.35***
	(0.08)	(0.14)	(0.15)
IV (additional controls)	-0.14	-0.15	-0.44***
	(0.10)	(0.17)	(0.15)
IV (additional controls, drop E_c)	-0.12	-0.21	-0.37***
	(0.09)	(0.15)	(0.14)
IV (change in manufacturing,	0.24	0.72***	0.32
additional controls, drop E_c)	(0.22)	(0.25)	(0.34)
Education high school diploma or less			
IV	-0.10	-0.15	-0.36***
	(0.08)	(0.10)	(0.13)
IV (drop E_c)	-0.10	-0.24**	-0.32***
	(0.07)	(0.10)	(0.12)
IV (additional controls)	-0.15**	-0.21*	-0.40***
	(0.07)	(0.11)	(0.12)
IV (additional controls, drop E_c)	-0.12*	-0.28***	-0.37***
	(0.07)	(0.10)	(0.11)
IV (change in manufacturing,	0.18	0.51**	0.65**
additional controls, drop E_c)	(0.18)	(0.22)	(0.27)

Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. The model uses instrumental variables for recent immigration. See text for details.

Table 6. Native Employment in Offshoring-Susceptible Occupations, 2000 (percentages)

	White	Black	Latino
Share	8	5	5
Share (educ <= H.S. diploma)	3	2	2
Share (educ >= bachelor's)	12	10	11

Source: Authors' calculations from Census (2000).
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62.

Table A1. Variable Means for U.S.-born Men Nationwide, 1989 and 1999

	Whites		Blacks		Latinos	
	1989	1999	1989	1999	1989	1999
Employed (%)	92.9	91.5	81.6	79.5	87.3	82.5
Wage (median)	16.83	17.31	12.48	13.46	13.44	12.82
Manuf. share (%)	22.9	18.7	22.6	16.8	20.8	14.6
Age	40.7	42.6	39.7	41.2	38.5	39.7
Education (%)						
Less than 9 years	4.0	2.2	8.1	4.1	13.9	10.6
Some high school	10.3	8.3	22.7	18.6	21.2	18.1
High school diploma	29.6	28.6	31.6	34.0	28.0	28.4
Some college	28.2	30.1	25.8	29.8	26	28
Bachelors	17.6	19.8	8.1	9.6	7.4	10.3
Graduate degree	10.2	11.1	3.6	4.0	3.5	4.6
For educ. < high school						
Employed (%)	80.9	76.9	68.1	61.3	77.4	67.6
Wage (median)	12.48	12.14	10.14	10.29	10.82	9.62
Manuf. share (%)	27.3	19.0	26.3	15.7	25.2	14.6
Age	44.0	43.7	43.1	43.5	41.3	41.8

Source: Authors' calculations from Census data (1990, 2000).
Notes: Samples includes non-institutionalized U.S.-born men, ages 25 to 62.

Table A2. Variable Means for U.S.-born Men in Large Metropolitan Areas, 1989 and 1999

	Whites		Blacks		Latinos	
	1990	2000	1990	2000	1990	2000
Employed (%)	93.5	92.3	81.2	79.6	86.9	85.8
Wage (median)	18.20	18.99	13.10	13.93	13.73	14.11
Manuf. share (%)	21.8	17.2	20.3	14.7	20.8	14.8
Age	40.5	42.4	39.8	41.1	38.5	39.0
Education (%)						
Less than 9 years	3.0	1.7	7.0	3.5	13.8	8.4
Some high school	9.4	7.3	22.4	18.1	21.6	18.8
High school diploma	26.7	25.2	31.2	33.1	27.6	28.6
Some college	28.9	30	26.7	30.7	26.2	29.8
Bachelors	20.2	22.8	8.7	10.4	7.4	10.0
Graduate degree	11.8	13	3.9	4.3	3.4	4.4
Metro area characteristics:						
Ratio (100*imm/natives)	4.0	5.5	4.8	6.1	8.6	9.1
Manuf. share	1,031	1,013	1,246	1,170	1,326	1,239
Employment (1000s)	18.4	13.8	17.5	13	13.8	12.4
Institutionalized share	1.6	1.9	1.6	2.0	1.6	2.0
For educ. < high school						
Employed (%)	82.0	78.4	66.8	60.5	76.7	72.9
Wage (median)	13.10	12.82	10.82	10.58	11.09	10.58
Manuf. share (%)	26.2	17.9	23.2	13.6	25.2	16.2
Age	43.6	43.3	43.1	43.2	41.3	40.7
Metro area characteristics:						
Ratio (recent imm/natives)	3.2	4.6	4.5	5.9	8.6	9.1
Manuf. share	19.2	14.7	17.7	13.1	13.5	12.4
Employment (1000s)	891	873	1,188	1,149	1,424	1,299
Institutionalized share	1.6	2.0	1.6	2.0	1.6	2.0

Source: Authors' calculations from Census data (1990, 2000).

Notes: Samples include men ages 25 to 62 for in large metropolitan regions (135 regions for whites and blacks and 98 regions for Latinos). Metro area characteristics are calculated for each metropolitan area regardless of race or education level and differ by race and education because the averages are weighted by population size. Institutionalized share is calculated at the state level.

Table A3. Regression Results for the Change in Employment among White Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	-0.13***	-0.12***	-0.11***	-0.13***	-0.07***	-0.07***	-0.10***	-0.08***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.00)	(0.01)	(0.02)	(0.01)
Immigration	-0.21***	-0.25***	-0.23**	-0.24***	-0.18***	-0.22***	-0.22***	-0.22***
	(0.06)	(0.06)	(0.09)	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)
Manuf. share	0.00	-0.01	-0.01	0.01	-0.01	-0.01	-0.01	0.00
	(0.03)	(0.03)	(0.03)	(0.04)	(0.01)	(0.01)	(0.01)	(0.02)
Employment	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.00	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Housing cost			0.02				0.02	
			(0.04)				(0.03)	
Share ed<9 yrs			0.06				-0.02	
			(0.10)				(0.04)	
Share ed<H.S.							-0.04*	
							(0.02)	
Share exp<10			0.25				0.09	
			(0.17)				(0.08)	
Incarceration				1.3				0.75
				(1.3)				(0.75)
R-squared	0.093	0.091	0.114	0.112	0.222	0.211	0.252	0.234

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent

Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.

Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.

Table A4. Regression Results for the Change in Employment among Black Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	-0.30***	-0.30***	-0.29***	-0.30***	-0.30***	-0.29***	-0.43***	-0.30***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.01)	(0.01)	(0.04)	(0.02)
Immigration	-0.15*	-0.15**	-0.12	-0.15**	-0.11	-0.12*	-0.11	-0.10*
	(0.08)	(0.07)	(0.08)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)
Manuf. share	-0.02	-0.02	-0.02	-0.01	0.01	0.01	-0.03	0.03
	(0.09)	(0.09)	(0.10)	(0.11)	(0.06)	(0.06)	(0.05)	(0.08)
Employment	-0.08***	-0.08***	-0.08**	-0.08**	-0.06***	-0.06***	-0.08***	-0.06**
	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
Housing cost			-0.06				0.02	
			(0.08)				(0.05)	
Share ed<9 yrs			-0.01				-0.-3	
			(0.11)				(0.08)	
Share ed<H.S.							-0.25***	
							(0.06)	
Share exp<10			-0.03				-0.08	
			(0.19)				(0.12)	
Incarceration				0.52				1.4
				(2.0)				(1.7)
R-squared	0.061	0.061	0.066	0.075	0.096	0.096	0.199	0.104

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.

Table A5. Regression Results for the Change in Employment among Latino Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	-0.11***	-0.11***	-0.11***	-0.13***	-0.06***	-0.06***	-0.06*	-0.07***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.04)	(0.01)
Immigration	-0.08	-0.05	-0.01	-0.02	-0.10	-0.07	-0.05	-0.06
	(0.10)	(0.10)	(0.11)	(0.12)	(0.07)	(0.07)	(0.09)	(0.09)
Manuf. share	-0.03	-0.03	-0.03	0.00	0.00	0.00	0.00	0.02
	(0.08)	(0.08)	(0.08)	(0.05)	(0.06)	(0.06)	(0.06)	(0.04)
Employment	-0.03	-0.03	0.03	-0.02	-0.02	-0.03	-0.03	-0.02
	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)
Housing cost			0.08				0.05	
			(0.07)				(0.05)	
Share ed<9 yrs			-0.08				-0.02	
			(0.06)				(0.04)	
Share ed<H.S.							0.00	
							(0.05)	
Share exp<10			-0.14				-0.17**	
			(0.13)				(0.08)	
Incarceration				2.1*				1.2*
				(1.1)				(0.6)
R-squared	0.015	0.014	0.046	0.032	0.034	0.033	0.071	0.044

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 98 metro observations.

Table A6. Regression Results for the Change in Wage among White Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	0.24***	0.26***	0.20***	0.22***	0.29***	0.31***	0.50***	0.27***
	(0.03)	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.07)	(0.03)
Immigration	-0.35***	-0.57***	-0.36**	-0.52***	-0.14	-0.31***	-0.28**	-0.27**
	(0.12)	(0.13)	(0.16)	(0.14)	(0.09)	(0.10)	(0.12)	(0.11)
Manuf. share	-0.08	-0.11	-0.14	-0.06	-0.08	-0.10	-0.15**	-0.06
	(0.09)	(0.09)	(0.10)	(0.13)	(0.08)	(0.08)	(0.07)	(0.10)
Employment	0.00	0.00	-0.02	0.02	-0.01	-0.01	-0.04	0.00
	(0.04)	(0.04)	(0.04)	(0.05)	(0.03)	(0.03)	(0.03)	(0.03)
Housing cost			0.11				0.17**	
			(0.11)				(0.07)	
Share ed<9 yrs			-0.60***				-0.14	
			(0.22)				(0.14)	
Share ed<H.S.							0.29***	
							(0.07)	
Share exp<10			-0.26				0.05	
			(0.35)				(0.25)	
Incarceration				5.4**				4.8**
				(2.6)				(2.2)
R-squared	0.042	0.027	0.057	0.090	0.020	0.001	0.144	0.116

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.

Table A7. Regression Results for the Change in Wage among Black Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	0.10**	0.11**	0.12**	0.03	0.02	0.03	-0.03	-0.03
	(0.04)	(0.04)	(0.05)	(0.05)	(0.03)	(0.03)	(0.10)	(0.04)
Immigration	-0.52***	-0.60***	-0.49**	-0.49**	-0.34**	-0.49***	-0.42***	-0.40*
	(0.19)	(0.20)	(0.22)	(0.22)	(0.14)	(0.15)	(0.13)	(0.20)
Manuf. share	-0.14	-0.15	-0.15	-0.03	-0.13	-0.15	-0.21*	-0.07
	(0.16)	(0.15)	(0.17)	(0.16)	(0.10)	(0.10)	(0.11)	(0.13)
Employment	0.05	0.05	0.06	0.10	0.09**	0.08**	0.07	0.12*
	(0.06)	(0.06)	(0.07)	(0.10)	(0.04)	(0.04)	(0.04)	(0.08)
Housing cost			-0.15				0.07**	
			(0.19)				(0.14)	
Share ed<9 yrs			-0.12				-0.32	
			(0.24)				(0.16)	
Share ed<H.S.							-0.06	
							(0.15)	
Share exp<10			0.03				0.21	
			(0.41)				(0.27)	
Incarceration				9.1**				7.2**
				(3.8)				(3.5)
R-squared	0.041	0.040	0.081	0.091	0.072	0.066	0.111	0.140

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.

Table A8 Regression Results for the Change in Wage among Latino Natives

	Education Less than H.S.				Education H.S. or Less			
	OLS	IV(1)	IV(2)	IV(3)	OLS	IV(1)	IV(2)	IV(3)
Intercept	0.66***	0.68***	0.64***	0.61***	0.41***	0.43***	0.44***	0.37***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.07)	(0.03)
Immigration	-0.35**	-0.59***	-0.60***	-0.50**	-0.13	-0.38*	-0.41*	-0.31
	(0.17)	(0.19)	(0.21)	(0.18)	(0.16)	(0.22)	(0.22)	(0.23)
Manuf. share	-0.41**	-0.42**	-0.44***	-0.33**	-0.35***	-0.36***	-0.40***	-0.29***
	(0.16)	(0.17)	(0.15)	(0.17)	(0.12)	(0.13)	(0.12)	(0.08)
Employment	-0.09*	-0.09*	-0.09*	-0.05	-0.05	-0.05	-0.04	-0.02
	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)
Housing cost			0.20*				0.20**	
			(0.11)				(0.10)	
Share ed<9 yrs			-0.14				0.07	
			(0.11)				(0.10)	
Share ed<H.S.							0.08	
							(0.12)	
Share exp<10			-0.30				-0.24	
			(0.23)				(0.19)	
Incarceration				7.2**				6.0**
				(2.9)				(2.8)
R-squared	0.104	0.089	0.144	0.155	0.095	0.068	0.148	0.226

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 98 metro observations.

Table A9. Regression Results for the Change in Wage among White Natives,
Without Control for Employment Change

	Education Less than H.S.			Education H.S. or Less		
	IV(1a)	IV(2a)	IV(4)	IV(1a)	IV(2a)	IV(4)
Intercept	0.26***	0.19***	0.17***	0.30***	0.48***	0.43***
	(0.02)	(0.03)	(0.03)	(0.02)	(0.06)	(0.06)
Immigration	-0.57***	-0.35**	-0.32*	-0.31***	-0.26**	-0.22*
	(0.12)	(0.16)	(0.17)	(0.10)	(0.11)	(0.12)
Manuf. share	-0.11	-0.12		-0.10	-0.12*	
	(0.08)	(0.09)		(0.07)	(0.07)	
Change in manuf.			0.24			0.18
			(0.22)			(0.18)
Housing cost		0.00	0.00		0.00**	0.00**
		0.00	0.00		0.00	0.00
Share ed<9 yrs		-0.59***	-0.58***		-0.13	-0.15
		(0.22)	(0.21)		(0.13)	(0.13)
Share ed<H.S.					0.27***	0.23***
					(0.07)	(0.07)
Share exp<10		-0.21	-0.31		0.14	0.03
		(0.33)	(0.32)		(0.23)	(0.22)
R-squared	0.03	0.14	0.15		0.15	0.15

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.

Table A10. Regression Results for the Change in Wage among Black Natives,
  Without Control for Employment Change

	Education Less than H.S.			Education H.S. or Less		
	IV(1a)	IV(2a)	IV(4)	IV(1a)	IV(2a)	IV(4)
Intercept	0.14***	0.14***	0.11***	0.07***	-0.02	-0.04
	(0.03)	(0.05)	(0.04)	(0.02)	(0.09)	(0.09)
Immigration	-0.63***	-0.54**	-0.50**	-0.53***	-0.46***	-0.40***
	(0.19)	(0.21)	(0.21)	(0.14)	(0.13)	(0.13)
Manuf. share	-0.20	-0.21		-0.24**	-0.28***	
	(0.14)	(0.15)		(0.10)	(0.10)	
Change in manuf.			0.72***			0.51**
			(0.25)			(0.22)
Housing cost		0.00	0.00		0.00	0.00
		0.00	0.00		0.00	0.00
Share ed<9 yrs		-0.13	-0.11		-0.35**	-0.31*
		(0.25)	(0.23)		(0.16)	(0.16)
Share ed<H.S.					-0.10	-0.06
					(0.14)	(0.14)
Share exp<10		0.04	-0.06		0.21	0.11
		(0.41)	(0.39)		(0.27)	(0.26)
R-squared	0.04	0.05	0.08	0.04	0.09	0.10

***Significant at 1 percent   **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro
observations.

Table A11. Regression Results for the Change in Wage among Latino Natives, Without Control for Employment Change

	Education Less than H.S.			Education H.S. or Less		
	IV(1a)	IV(2a)	IV(4)	IV(1a)	IV(2a)	IV(4)
Intercept	0.64***	0.61***	0.54***	0.41***	0.43***	0.35***
	(0.03)	(0.03)	(0.02)	(0.03)	(0.07)	(0.06)
Immigration	-0.59***	-0.59***	-0.52**	-0.38*	-0.41*	-0.34
	(0.20)	(0.22)	(0.24)	(0.22)	(0.23)	(0.24)
Manuf. share	-0.35**	-0.37***		-0.32***	-0.37***	
	(0.15)	(0.14)		(0.12)	(0.11)	
Change in manuf.			0.32			0.65**
			(0.34)			(0.27)
Housing cost		0.00*	0.00**		0.00**	0.00***
		0.00	0.00		0.00	0.00
Share ed<9 yrs		-0.15	-0.18		-0.07	-0.12
		(0.11)	(0.11)		(0.10)	(0.10)
Share ed<H.S.					0.10	0.05
					(0.11)	(0.11)
Share exp<10		-0.28	-0.24		-0.23	-0.18
		(0.23)	(0.23)		(0.19)	(0.19)
R-squared	0.07	0.12	0.08	0.06	0.14	0.10

***Significant at 1 percent **Significant at 5 percent   *Significant at 10 percent
Source: Authors' calculations from Census (1980, 1990, 2000) and County Business Pattern data.
Notes: Sample includes non-institutionalized, U.S.-born men ages 25 to 62. There are 135 metro observations.