



## Race, wages, and assimilation among Cuban immigrants

MADÉLINE ZAVODNY

*Federal Reserve Bank of Atlanta*

**Abstract.** This study uses data from the 1980 and 1990 Census and the 1994–2000 Current Population Survey to examine the determinants of earnings among male Cuban immigrants in the U.S. by race. Nonwhite Cuban immigrants earn about 15 percent less than whites, on average. Much of the racial wage gap is due to differences in educational attainment, age at migration, and years in the U.S., but the gap remains at almost 4 percent after controlling for such factors. Nonwhite Cuban immigrants also have lower returns to education than whites. A comparison to white, non-Hispanic U.S. natives indicates that nonwhite Cubans not only earn less initially than white Cubans on arrival in the U.S., but also do not significantly close the racial earnings gap over time.

**Keywords:** Cuba, immigrants, race

### Introduction

Cubans are generally regarded as among the more ‘successful’ immigrant groups, with higher average earnings and faster wage growth rates than other groups of Hispanic immigrants (Borjas 1982; Portes & Grosfoguel 1994). However, racial differences in earnings among Cuban immigrants suggest a more complicated story. Average incomes among black Cuban immigrants were almost 40 percent less than among their white counterparts in 1990 (Garcia 1996). This study explores the extent of and reasons for differences in wage levels and growth rates between white and nonwhite Cubans.

Cuba is unique among immigrant-sending countries for several reasons. First, Cuba’s population is racially mixed, although estimates are sensitive to how blacks and mixed-race individuals are classified. As of 1995, the racial distribution of the Cuban population was estimated as 11 percent black, 51 percent mixed race, and 37 percent white (Central Intelligence Agency 2000). One of the stated goals of the 1959 revolution was to create a racially blind society. The Castro government promoted opportunities for blacks in employment and education, abolished all institutional forms of racial discrimination, and condemned all individual forms of racism (Pedraza-Bailey 1985).

There are several reasons why race might affect wages and wage growth among immigrants. Characteristics that affect earnings could differ systematically across racial groups. For example, nonwhites might have more limited

educational opportunities in their home country or in the U.S. Employer discrimination against racial minorities also may play a role, with firms possibly offering lower wages to nonwhites than to comparable whites. The theory of segmented assimilation predicts that immigrants' path of adaptation to their new country depends on factors such as race (Portes & Rumbaut 1996). Given the substantial racial differences in labor market outcomes between whites and blacks in the U.S. (e.g., Waters & Eschbach 1995), segmented assimilation theory predicts that black immigrants are less successful in the U.S. labor market than are white immigrants from the same country, all else equal. Earnings growth over time in the U.S., or assimilation (the process of immigrants' wages catching up to the earnings of natives as immigrants acquire experience in the U.S. labor market) may therefore depend in part on race.

Although there is a large literature on wages and assimilation among immigrants, relatively few studies have examined racial differences in immigrants' earnings. Nonblack immigrants earn about 22 percent more than black immigrants, about two-thirds of which is due to differences in characteristics, based on 1980 Census data (Daneshvary & Schwer 1994). Data from the 1980 Census also suggest that black immigrants experience smaller relative earnings gains over time in the U.S. than white immigrants (Butcher 1994). However, the results cannot be used to directly compare assimilation between black and white immigrants because each group is compared to natives of the same respective race. Data from the 1970 Census also indicate that black and Hispanic immigrants have smaller earnings gains over time than do non-black, non-Hispanic immigrants (Stewart & Hyclak 1984). Although these studies suggest racial differences in assimilation, their findings are limited by the use of cross-sectional data; assimilation rates estimated from cross-sectional data may reflect differences in earnings ability across cohorts instead of the effect of duration of U.S. residence on earnings. Other studies have focused on other aspects of relative earnings among black immigrants (e.g., Model 1991; Dodoo 1997).

This study uses repeated cross-sectional data to examine differences in earnings levels and earnings growth between white and nonwhite Cuban immigrants. Data from the 1980 and 1990 Census and the 1994–2000 Current Population Survey indicate that nonwhite Cuban immigrants earn less than white Cuban immigrants and have lower returns to educational attainment. Nonwhite Cuban immigrants appear to experience rates of earnings growth over time in the U.S. similar to those of whites, but because their initial earnings are lower, average earnings among nonwhites do not catch up to those of white immigrants over time.

These findings make several contributions to the literature. Studies on non-white immigrants have focused on blacks from the Caribbean, but not from Cuba (e.g., Model 1991; Kalmijn 1996). Few studies have focused on white-nonwhite immigrant differences in earnings determinants or earnings growth, and none have used repeated cross-sectional data to examine assimilation. In addition, studies that examine racial differences in labor market outcomes include immigrants from multiple countries; the racial differences in earnings and assimilation they find could merely reflect differences in source country characteristics since the racial composition of most countries is quite homogeneous. Focusing on a racially diverse country eliminates this problem. Although results for Cuban immigrants may not be generalizable to all immigrants, this study adds to the literature an examination of racial differences in average earnings, in wage determinants, and in earnings assimilation.

### **Brief history of Cuban migration**

The history of Cuban immigration to the U.S. after the 1959 revolution reveals sizable differences across cohorts in occupational backgrounds and in racial makeup. Although the size of Cuban immigrant flows is dwarfed by those from Mexico, over 750,000 Cubans – about 12 percent of the country's population (have migrated to the U.S. during the last four decades (Pedraza 2000; U.S. Immigration and Naturalization Service 2000).

The first wave of post-revolution immigrants is characterized as being Cuba's elite, composed mainly of supporters of Batista and the upper and upper-middle classes who were adversely affected by the nationalization of American industries in 1960. After the failed Bay of Pigs invasion in April 1961, the exodus increased dramatically until the Cuban missile crisis led to the suspension of flights from Havana to Miami in October 1962 (Aguirre 1976; Fagen et al. 1968). Migrants during 1961–1962 were primarily from the middle class (Fagen et al. 1968). Over 90 percent of those who left shortly after the revolution were white (Pedraza 1996).

Another major exodus occurred when flights resumed in December 1965 until April 1973. Most of the new adult male immigrants were semi- or unskilled blue-collar workers or in clerical and sales occupations because Cuba barred the exit of professionals and technical and skilled workers during this period (Aguirre 1976; Portes et al. 1977). About 14 to 19 percent of Cuban immigrants during this period were nonwhite (Pedraza 1996; Portes & Bach 1985).

The next major wave of Cuban immigrants (1973–75) consisted largely of refugees who had lived temporarily in Spain after leaving Cuba. A high proportion of this wave of immigrants – which was relatively small – had

worked in the service sector in Cuba. About 95 percent of these refugees who arrived were white (Portes et al. 1977; Bach et al. 1981/1982). The flow of Cuban immigrants then essentially halted until 1980 (Nackerud et al. 1999).

The Mariel exodus began in April 1980. Estimates of the fraction of *Marielitos* who were nonwhite range from 20 to 50 percent, whereas the vast majority of Cuban émigrés during the 1960s and 1970s were white (Bach et al. 1981/1982; Pedraza 1996; Skop 2001). The racial makeup of early waves of immigrants did not reflect the racial distribution in Cuba both because the earliest waves were made up of elites, who were almost exclusively white, and because U.S. policy after 1965 gave priority to close relatives of Cubans already present in the U.S., excluding most nonwhites (Aguirre 1976). The relatively unrestricted nature of the Mariel boatlift opened the door to the U.S. for nonwhite Cubans without relatives in the U.S. The vast majority of *Marielitos* were blue-collar workers (Bach 1980; Bach et al. 1981/1982).

These differences across cohorts in occupational structure suggest that both earnings levels and growth rates may differ across groups of Cuban immigrants arriving in different periods. The methodology used here therefore controls for the time period when Cuban immigrants arrived in the U.S., as described below.

## Data

The study uses data from the 1980 and 1990 Census 5 percent Public Use Microdata Samples and the 1994–2000 March Current Population Survey (CPS) to examine wages and assimilation among Cuban immigrants. The surveys ask about labor force outcomes during the previous calendar year. The surveys also ask about demographic factors, including place of birth and, for those not born in the U.S., the year they came to the U.S. Year of arrival in the U.S. is reported in intervals. Five cohorts of immigrants are examined here: 1960–64, 1965–69, 1970–74, 1975–79 and 1980–81.

The data used in this study include all Cuban-born men aged 25–64 who arrived in 1960 or later and reported working during the calendar year prior to the survey, had positive earnings, hours and weeks worked that year, and did not live in group quarters. The analysis does not examine women in order to avoid issues about selection in labor force participation. Some of the analysis compares these male Cuban immigrants to native-born white, non-Hispanic men; a random sample of 5 percent of these natives was drawn from each survey. This analysis focuses on real hourly earnings, constructed as annual earnings divided by weekly hours times average hours worked per week, corrected for inflation using the personal consumption expenditures deflator.

Table 1. Descriptive statistics for Cuban immigrants, by race

	Whites	Nonwhites
Log hourly earnings	2.48 (0.67)	2.33 (0.64)
Age	44.2 (11.2)	42.5 (11.4)
Less than high school graduate (%)	34.0	46.7
High school graduate (%)	20.3	21.0
Attended some college (%)	23.4	18.8
College graduate (%)	22.3	13.5
1960-64 arrival (%)	38.0	24.6
1965-69 arrival (%)	29.0	30.7
1970-74 arrival (%)	17.6	21.1
1975-79 arrival (%)	3.8	6.1
1980-81 arrival (%)	11.6	17.5
Years since migration	18.3 (7.1)	16.1 (6.7)
Age at migration	25.9 (13.2)	26.4 (13.5)
Sample size	12,648	2,261

*Note.* Standard deviations are in parentheses.

*Source.* Author's calculations from 1980 and 1990 Census and 1994–2000 March Current Population Survey.

In the data used here, about 15 percent of Cuban immigrants are nonwhite. Of these, 13 percent reported their race as black, and 87 percent reported their race as 'other'. The other race category is believed to correspond to mixed-race individuals (Mulatos) (Denton & Massey 1989; Pedraza 1996). A small number of individuals who reported their race as Asian are not included in the analysis. As suggested by the above summary of Cuban immigration, the racial distribution of Cuban immigrants varies considerably across cohorts. In the Census and CPS data, about 10 percent of Cubans who arrived during the period 1960–64 are nonwhite, compared with over 20 percent of those who arrived during 1980–81. The descriptive statistics in Table 1 indicate that a larger proportion (almost 18 percent) of nonwhite Cuban immigrants arrived during 1980–81 than among white Cubans (about 12 percent).

Table 1 suggests several differences between white and nonwhite Cuban immigrants in addition to the period they arrived in the U.S. Average hourly earnings among white Cubans are about 15 percent higher than among nonwhites. White Cubans tend to be older and to have more education than

nonwhite Cubans. Average years since migration is higher among white Cuban immigrants than among nonwhites, and average age at migration slightly lower. All of these demographic differences are likely to contribute to the racial earnings differential, so the empirical analysis below controls for these factors.

### Methodology

This analysis focuses on racial differences in earnings levels and earnings growth among Cuban immigrants. Whereas estimating the determinants of earnings levels is fairly straightforward, there are several ways to measure earnings growth or assimilation. In cross-sectional data, assimilation can be measured by comparing wages across cohorts and determining whether wages are higher among cohorts that arrived in the U.S. earlier than among more recent arrivals. However, as emphasized by Borjas (1985), cross-sectional data do not allow for determining whether unobservable differences in earnings ability across cohorts underlie observed differences in wages; earlier cohorts of immigrants could have unobserved characteristics that lead to higher average wages than more recent cohorts do, but cross-sectional data cannot distinguish between cohort effects and years-since-migration effects. In repeated cross-sectional data, the same cohort is observed with different durations of residence in the U.S., allowing for estimation of the relationship between wages and years since migration, controlling for cohort effects. This study therefore uses repeated cross-sectional data to form synthetic cohorts.

The major concern about forming synthetic cohorts in this manner is selective return migration. Selective emigration will bias estimated assimilation rates upwards if individuals with lower earnings ability are more likely to return migrate (Hu 1999; Lubotsky 2000). Such selection in return migration is not of great concern here given that few Cuban immigrants have left the U.S. because Castro has remained in power.

The basic regression model estimated here is

$$\ln w_i = \beta X_i + \delta A_i + \gamma D_i + \eta M_i + \phi C_i + \tau T_i + \epsilon_i, \quad (1)$$

where  $w_i$  is the real hourly earnings of individual  $i$ ,  $X_i$  is a vector of individual characteristics that affect wages,  $A_i$  is individual  $i$ 's age at the time of the survey,  $D_i$  is the approximate number of years individual  $i$  has lived in the U.S.,  $M_i$  is age at migration,  $C_i$  is a set of cohort dummy variables indicating the time period when an individual moved to the U.S., and  $T_i$  is a set of dummy variables that control for the year of the survey (the 1994–2000 surveys are treated as separate years). This analysis follows Borjas (1995) in

including age, years since migration, and age at migration in the regression model as third-order polynomials. Assimilation is typically measured by the variables measuring years since migration, with earnings expected to increase with duration of residence in the U.S. As described further below, the model is estimated using a sample that consists only of immigrants and using a sample that includes both immigrants and natives.

Several issues arise when estimating the basic regression model. Although using repeated cross-sections allows for identification of more variables than in a single cross-section, all of the various effects described above cannot be distinguished in a sample that consists only of immigrants because some variables are linear combinations of each other. The variables measuring survey year, year of arrival (cohort), and years since migration are perfectly collinear, as are the variables measuring age, age at migration, and years since migration. The basic regression model estimated here among immigrants includes only the cohort and survey year variables and excludes the years since migration and age at migration variables, or

$$\ln w_i = \beta X_i + \delta A_i + \phi C_i + \tau T_i + \epsilon_i, \quad (2)$$

is estimated using only data on immigrants. As discussed below, the results are robust to including years since migration ( $D_i$ ) or age at migration ( $M_i$ ) instead of the survey year variables ( $T_i$ ), with which they are collinear.

Including both immigrants and natives in the sample can solve some of these collinearity problems. The cohort, age at migration, and years since migration variables are all equal to zero for natives. Under the assumption that the survey year has the same effect on the wages of immigrants and natives, the coefficients on the cohort and years since migration variables can be identified for immigrants when survey year is also included in the model. In other words, Equation (1) can be estimated by pooling immigrants and natives; the immigrants identify the coefficients  $\gamma$  and  $\phi$  while natives identify the coefficients  $\iota$ . An alternate specification that assumes that the coefficients of the age variables are the same for immigrants and natives allows for the age at migration variables to be identified for the sample of immigrants; the results are robust to making this assumption, as discussed further below.

Another consideration when estimating the model is which variables to include in the vector measuring characteristics that affect individuals' earnings ability,  $X_i$ . The regressions here include dummy variables for three of four education groups (high school diploma, some college, and college graduates, with less than high school graduates as the omitted group). Other variables that may affect earnings, such as marital status, English-speaking ability, occupation, and industry, are not included here because of concerns that they might be endogenous with respect to earnings (e.g., Cornwell & Rupert 1997;

Chiswick & Miller 1995; Murphy & Topel 1987; McLaughlin & Bills 2001). The robustness of the results to controlling for state of residence is discussed below.

Racial differences in earnings levels and earnings growth among Cuban immigrants are first measured by estimating Equation (2) using only data on immigrants. A dummy variable indicating whether an individual is nonwhite is included in these regressions to measure the average difference in earnings between whites and nonwhites, controlling for other factors. Equation (2) is then estimated separately for white and nonwhite Cuban immigrants in order to examine differences in the coefficients, and Oaxaca decompositions are performed in order to determine the relative contributions of differences in average characteristics and differences in returns to characteristics to the average racial earnings difference (Oaxaca 1973). White, non-Hispanic natives are then included in the sample in order to examine earnings growth among white and nonwhite Cuban immigrants relative to U.S. natives by estimating a variant of Equation (1).

## Results

Nonwhite Cuban immigrants earn about 4 percent less than white Cuban immigrants, controlling for other factors. Column 1 in Table 2 shows the determinants of hourly wages among white and nonwhite Cubans. The estimated racial wage gap is about 4 percent when controlling for cohort and survey year. The coefficient on the nonwhite variable declines slightly in magnitude to about 3.5 percent when controls for age at migration or years since migration are included in the regression instead of the survey year variables but remains statistically significant (not shown).

The other results show the usual patterns. Earnings increase with age and are strongly related to educational attainment. The coefficients of the cohort variables suggest that immigrant earnings increase with time in the U.S. If years since migration is included (not shown), it also shows that earnings appear to increase with years in the U.S. In other results, immigrants' earnings appear to decline with age at arrival in the U.S. (not shown).

The results shown here do not control for state of residence because locational choice may be endogenous with respect to wages. Nonwhite Cuban immigrants tend to be more geographically dispersed than white Cuban immigrants. Among immigrants who arrived during the Mariel boatlift, for example, almost 82 percent of whites live in Florida, compared with less than 39 percent of nonwhites (Skop 2001). In results not shown here, controlling for state of residence increases the magnitude of the nonwhite coefficient by about 3.5 percentage points (in absolute value), suggesting that nonwhites

Table 2. Determinants of log hourly earnings among Cuban immigrants

	Pooled	Whites	Nonwhites
Nonwhite	-0.039** (0.014)	-	-
Age	0.148** (0.024)	0.160** (0.027)	0.103 (0.061)
Age <sup>2</sup> ( $\times 10^{-2}$ )	-0.291** (0.057)	-0.314** (0.062)	-0.212 (0.143)
Age <sup>3</sup> ( $\times 10^{-4}$ )	0.181** (0.043)	0.195** (0.047)	0.144 (0.108)
Less than high school graduate	-0.520** (0.015)	-0.527** (0.016)	-0.450** (0.041)
High school graduate	-0.447** (0.016)	-0.463** (0.017)	-0.335** (0.044)
Attended some college	-0.292** (0.015)	-0.304** (0.016)	-0.197** (0.045)
1960–64 arrival	0.436** (0.018)	0.433** (0.020)	0.451** (0.044)
1965–69 arrival	0.302** (0.018)	0.298** (0.020)	0.329** (0.042)
1970–74 arrival	0.264** (0.019)	0.263** (0.021)	0.276** (0.044)
1975–79 arrival	0.070* (0.028)	0.072** (0.032)	0.079 (0.061)
Adjusted R <sup>2</sup>	0.184	0.187	0.136

*Note.* Standard errors are in parentheses. Regressions also include a constant and survey year controls. College graduates and 1980–81 arrivals are the omitted groups. The sample size is 14,909 observations (12,648 whites and 2,261 nonwhites).

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

tend to live in states with higher average wages than whites. The estimates of the racial earnings gap among Cuban immigrants presented here are therefore more conservative than estimates that control for state of residence. The pattern of the other coefficients is unchanged when state controls are included.

One potential concern about the results is that the dependent variable is wage and salary income, which does not include self-employment income. Almost 5 percent of Cuban immigrants report self-employment income, and self-employment is more common among white Cubans than among non-

whites (5 percent and 3 percent, respectively). Including self-employment income slightly increases the magnitude of the estimated nonwhite coefficient and does not affect the pattern of the other results.

### **Results by race**

The above results indicate that nonwhite Cuban immigrants earn less on average than white Cuban immigrants but do not suggest whether the two racial groups experience different rates of earnings growth or indicate the source of the observed wage gap. The other two columns in Table 2 therefore present regression results for the data stratified by race.

There are racial differences in the return to education. The earnings difference between college graduates and high school dropouts is about 8 percentage points smaller for nonwhites than for whites. One potential explanation for this difference is that white Cuban immigrants who completed college may be more likely to have done so in the U.S., as suggested by their lower average age at arrival, than nonwhite Cuban immigrants; returns to schooling in the U.S. are generally believed to be higher than returns to foreign schooling. The earnings difference between high school graduates and dropouts, in contrast, is larger for nonwhites than for whites. Controlling for age at arrival does not change the pattern of the education coefficients, nor does restricting the sample to only immigrants who arrived after age 18 or age 25 and are likely to have acquired all of their schooling in Cuba (not shown). The results also suggest that nonwhites may experience slightly slower wage growth as they age than do whites (although the differences are not statistically significant at conventional levels).

The results do not indicate that nonwhite Cuban immigrants experience a different rate of wage growth over time in the U.S. than white Cuban immigrants. There are no significant differences between whites and nonwhites in the coefficients of the cohort variables. Specifications that control for years since migration variables also do not show differences between whites and nonwhites (not shown).

Oaxaca decompositions offer a means of further examining racial differences in returns to characteristics as well as differences between whites and nonwhites in average characteristics. The method decomposes the average difference in earnings between whites and nonwhites into components due to differences in average characteristics and differences in returns to those characteristics, or

$$\bar{w}_{white} - \bar{w}_{nonwhite} = \hat{\beta}_{white}(\bar{X}_{white} - \bar{X}_{nonwhite}) + \bar{X}_{nonwhite}(\hat{\beta}_{white} - \hat{\beta}_{nonwhite}), \quad (3)$$

where  $w$  denotes log real hourly earnings,  $X$  denotes characteristics, and  $\beta$  denotes estimated coefficients for those characteristics. The first portion on the right-hand side is usually called the ‘explained’ portion of the wage gap because it is due to differences in observable characteristics, and the second portion the ‘unexplained’ portion because it is due to differences in returns. The results in columns 2–3 of Table 2 are used to calculate the Oaxaca decomposition, and standard errors are calculated using the method outlined in Oaxaca and Ransom (1998).

The decomposition suggests that nonwhite Cuban immigrants earn less than their white counterparts because of differences in characteristics, particularly education. As Table 3 reports, lower average educational attainment among nonwhites accounts for almost 6 percentage points of the total 14.6 percent difference in average earnings. Differences in the distribution across arrival cohorts also contribute to the earnings gap; about 4 percentage points of the earnings gap is due to the more recent arrival times among nonwhites. Nonwhites’ higher average age at migration contributes about 1 percentage point to the racial wage gap (not shown).

Differences in returns play a smaller role in the earnings gap, accounting for less than 4 percentage points of the wage gap. As Table 3 indicates, the differences in the coefficients for the education variables act to reduce the earnings gap. Differences in the coefficients for the cohort variables do not significantly contribute to the overall difference. In results not shown here, differences in returns to age at migration and years since migration also do not significantly affect the earnings gap.

Although these results indicate a substantial difference in average hourly earnings, they provide little evidence of significant differences between white and nonwhite Cuban immigrants in earnings assimilation. However, it is difficult to distinguish between cohort, aging, and years since migration effects when estimating assimilation rates using only data on immigrants, as discussed above. The next section therefore compares the wages of Cuban immigrants to white, non-Hispanic natives.

### **Assimilation relative to natives**

Comparing Cubans to natives generally does not indicate racial differences in relative earnings growth, although nonwhite Cubans earn less than white Cubans initially after arriving in the U.S. and their earnings do not catch up

*Table 3.* Decomposition of racial differences in log hourly earning among Cuban immigrants

Total difference	0.146** (0.015)
Difference predicted on basis of characteristics	0.106** (0.003)
Education variables	0.056** (0.002)
Cohort variables	0.042** (0.002)
Difference predicted on basis of coefficients	0.039** (0.014)
Education variables	-0.083** (0.032)
Cohort variables	-0.017 (0.034)

*Note.* Shown are Oaxaca decompositions (and standard errors) of the difference in earnings between white and nonwhite Cuban immigrants based on the results in columns 2–3 of Table 2. The sub-components of the means and coefficients results do not add up to the totals because other variables are also included in the regressions.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

over time. Table 4 shows the estimated determinants of earnings among white and nonwhite Cuban immigrants relative to white, non-Hispanic natives. The three columns are from a single regression, with the column for natives showing the main effects of the included variables and the columns for white and nonwhite Cubans displaying the effects of those variables interacted with indicator variables for white and nonwhite Cubans, respectively.

The results indicate several differences in the returns to education between immigrants and natives. White Cubans who graduated from high school or attended some college earn relatively less in comparison with high school dropouts than is the case for white natives, but the college premium is similar for white Cubans and white natives. Nonwhite Cubans who finished college earn a smaller premium, in contrast, relative to high school dropouts than do their white native-born counterparts.

Table 4. Determinants of log hourly earnings among Cuban immigrants relative to natives

	Natives	Whites	Nonwhites
Age	0.099** (0.007)	0.063* (0.027)	-0.003 (0.061)
Age <sup>2</sup> ( $\times 10^{-2}$ )	-0.128** (0.016)	-0.190** (0.063)	0.009 (0.014)
Age <sup>3</sup> ( $\times 10^{-4}$ )	0.041** (0.012)	0.157** (0.048)	0.094 (0.011)
White Cuban immigrant	-	-0.993* (0.389)	-
Nonwhite Cuban immigrant	-	-	-0.010 (0.848)
Less than high school graduate	-0.541** (0.004)	0.014 (0.016)	0.102* (0.041)
High school graduate	-0.359** (0.004)	-0.104** (0.017)	0.034 (0.044)
Attended some college	-0.259** (0.004)	-0.044** (0.016)	0.073 (0.045)
1960-64 arrival	-	0.159** (0.024)	0.127* (0.054)
1965-69 arrival	-	0.095** (0.022)	0.094* (0.047)
1970-74 arrival	-	0.136** (0.021)	0.125** (0.044)
1975-79 arrival	-	0.031 (0.033)	-0.001 (0.067)
Years since migration	-	0.026* (0.011)	0.017 (0.030)
Years since migration <sup>2</sup> ( $\times 10^{-2}$ )	-	-0.056 (0.061)	-0.022 (0.191)
Years since migration <sup>3</sup> ( $\times 10^{-4}$ )	-	0.084 (0.104)	0.081 (0.373)
Adjusted R <sup>2</sup>	0.151		
Sample size	202,650		

Note. Standard errors are in parentheses. The results are from one regression. The columns for whites and nonwhites show interactions of the indicated variables with a dummy variable for white and nonwhite Cuban immigrants, respectively. The regression also includes a constant and survey year dummy variables.

\*p < 0.05; \*\*p < 0.01.

Most of the cohort coefficients indicate that earlier cohorts have higher average wages than 1980–81 arrivals, and the estimated coefficients tend to be slightly larger for whites than for nonwhites. The results also indicate a significant return to years in the U.S. among whites but not among nonwhites. If age at migration variables are included in the regression, the estimated coefficients are not significantly different for whites and nonwhites (not shown).

Because it is difficult to interpret all of the coefficients reported in Table 4, Figures 1 and 2 use the estimated coefficients to trace out the predicted wage path of white and nonwhite Cubans relative to white, non-Hispanic natives. The figures predict the wage of a Cuban immigrant arriving in the U.S. at age 20 relative to the wage of his native-born counterpart of the same age through age 65. The regression results are evaluated at the sample means for the education and survey year variables. Because most of the cohort effects are statistically significant, separate wage paths are shown for each of the five cohorts; although the relative growth rates are the same across cohorts within each race, each cohort has a different initial relative wage (a different intercept).

Initial average wages among nonwhite Cubans are lower relative to natives than are those of white Cubans. As the figures indicate, the initial wage gap is at least 30 percent among nonwhites – and over 40 percent for the 1975–79 and 1980–81 cohorts – versus 20 to 35 percent among whites. Relative earnings increase over time in the U.S. for both races, with the average earnings of pre-1975 immigrants eventually reaching and then surpassing those of natives. For white Cubans who arrived during 1960–64, the crossover point occurs around 20 years in the U.S., compared with almost 30 years for their nonwhite counterparts. Comparing the slopes across the two figures, relative wage growth is the same or slightly faster among nonwhite immigrants in comparison with white immigrants, but because nonwhites start at a larger earnings disadvantage it takes more years for their earnings to overtake natives' wages.

The figures indicate that the earnings of more recent cohorts of Cuban immigrants may never exceed those of natives, on average, because their initial earnings are so low. The model predicts that earlier cohorts of immigrants, in contrast, earned about 10 percent more than natives after living in the U.S. for 45 years. This difference accords with other findings that the 'quality' of immigrant cohorts may have declined over time in the U.S. (e.g., Borjas 1995).

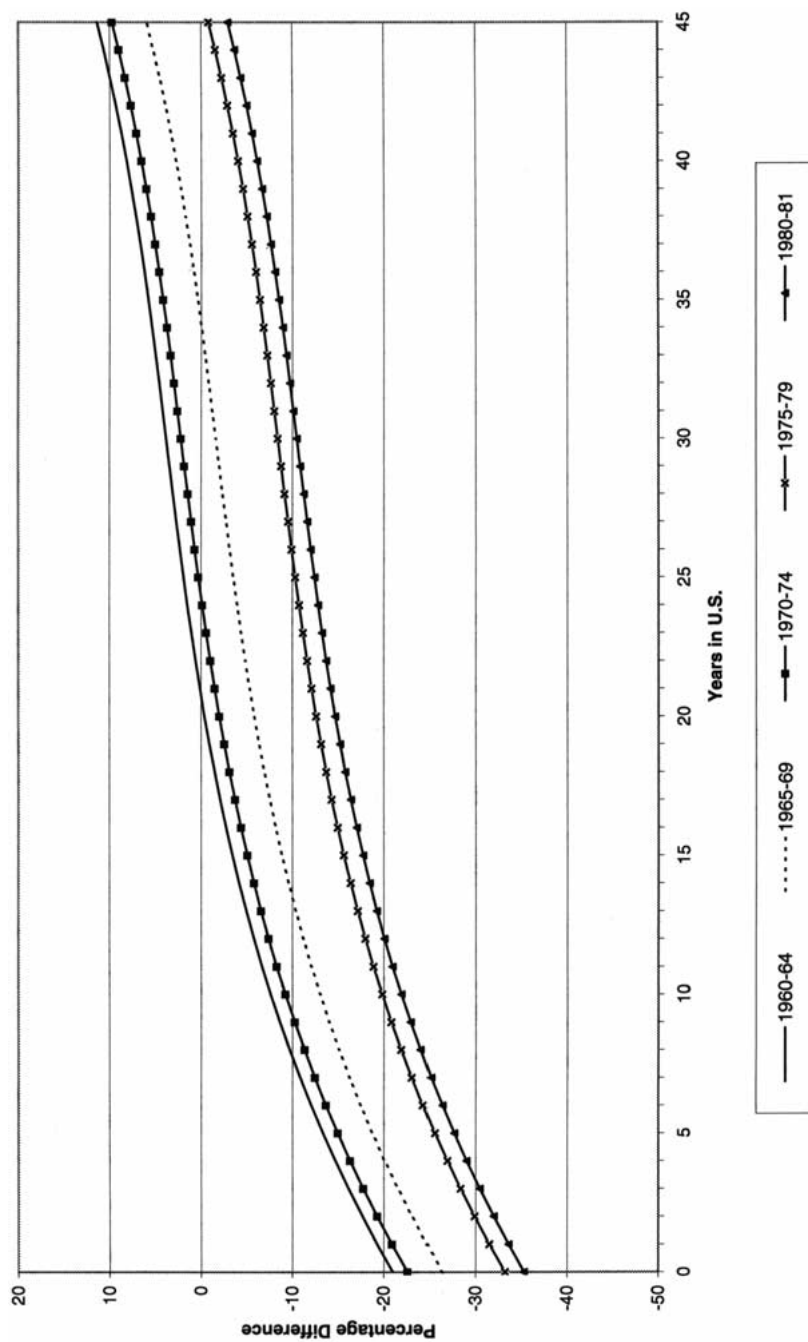


Figure 1. Predicted relative wage path of white Cuban immigrants over time in the U.S.

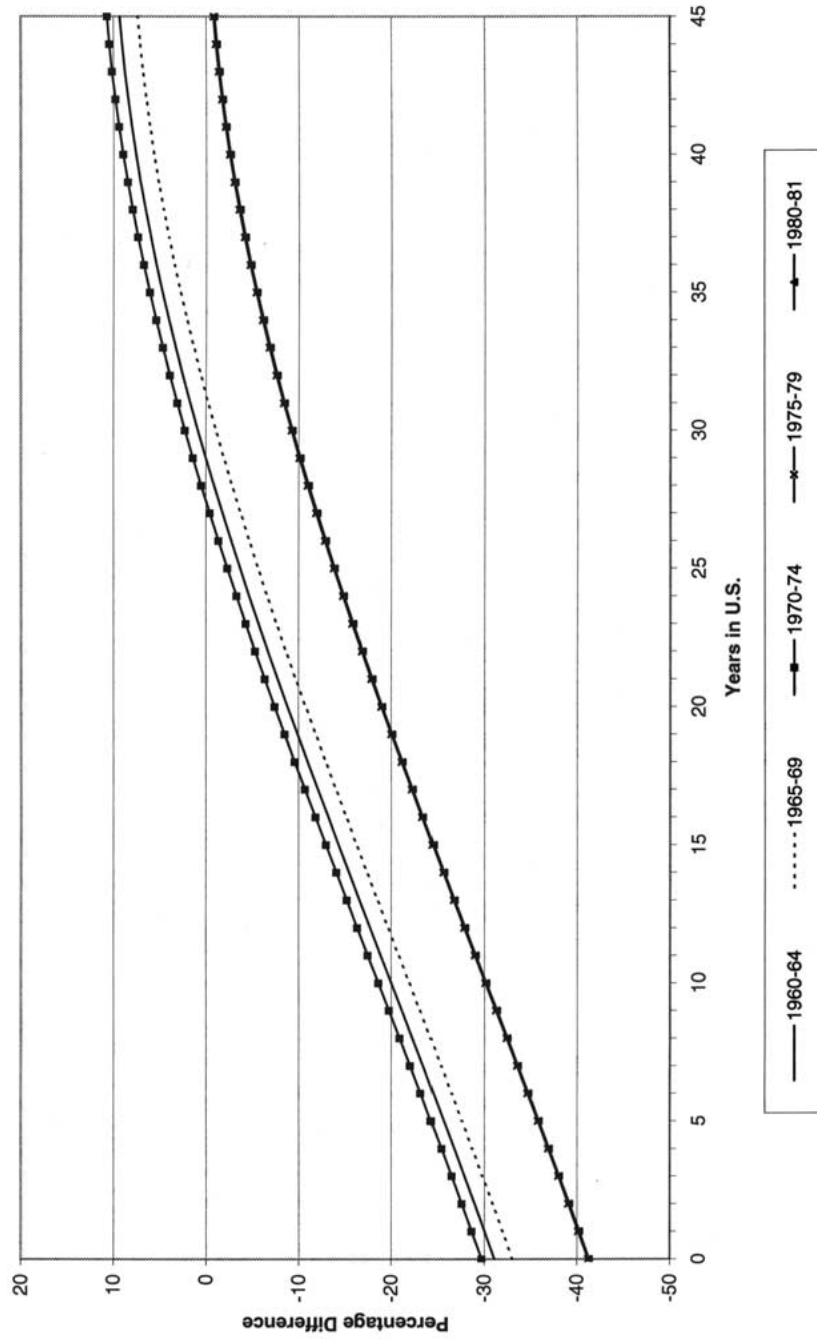


Figure 2. Predicted relative wage path of nonwhite Cuban immigrants over time in the U.S.

## Conclusion

Nonwhite Cuban male immigrants earn about 15 percent less than their white counterparts, and differences in educational attainment, duration of residence in the U.S., and age at migration account for over two-thirds of this racial wage gap. However, the racial earnings differential remains significant at about 4 percent after controlling for such factors. Wage growth rates are similar for nonwhite and white Cubans, so average earnings of nonwhite immigrants do not catch up with those of white immigrants over time in the U.S.

These findings are generally consistent with the theory of segmented assimilation, or that immigrants' path of adaptation to the U.S. depends on race, ethnicity, and other such factors. However, it is not clear the extent to which the existence of racial earnings differentials among Cuban immigrants is due to discrimination in Cuba, in the U.S., or both. This analysis cannot identify the source of the racial difference in average earnings and earnings determinants beyond controlling for observable characteristics such as education. Microdata from Cuba that would allow for an examination of racial earnings differentials in that country are not publicly available. Collecting retrospective data from immigrants on their earnings in their source country as well as in the U.S., together with race and other characteristics, would allow for a fuller examination of this issue.

A key issue when examining assimilation differences across racial groups is what assimilation means. This analysis measures assimilation relative to white, non-Hispanic U.S. natives. Assimilation could also be viewed as whether immigrants' earnings catch up to those of similar natives, which could involve comparing black Cubans to black natives and white Cubans to white natives or both groups to natives with Cuban ancestry. Comparing immigrants to white, non-Hispanic natives is the standard means of evaluating assimilation because it measures how immigrants fare relative to the majority of natives, but using other comparison groups might yield different results.

A final point to note is that the results here, which indicate a statistically significant yet small racial wage gap among Cuban immigrants, may not be generalizable to all immigrants. Political refugees, such as the Cuban immigrants, may have greater incentives to adapt to the U.S. labor market than other immigrants because their likelihood of return migration is relatively low (Chiswick 1978; Borjas 1982). Cuban immigrants were allowed to bring few possessions when they left and forfeited all of their savings in Cuba. This may have wiped out any racial differences in capital among immigrants, except for human capital. However, the earliest waves of immigrants – the elites – may have had savings in the U.S. because of business ties to Miami (Portes & Step-

ick 1993). In addition, Cuban immigrants are coming from an officially race blind society under Castro, which may minimize any pre-arrival differences.

## References

- Aguirre, B.E. (1976), Differential migration of Cuban social races, *Latin American Research Review* 11: 103–124.
- Bach, R.L. (1980), The new Cuban immigrants: Their background and prospects, *Monthly Labor Review* 103: 39–46.
- Bach, R.L., Bach, J.B. & Triplett, T. (1981/1982), The flotilla 'entrants': Latest and most controversial, *Cuban Studies* 11/12: 29–48.
- Borjas, G.J. (1982), The earnings of male Hispanic immigrants in the United States, *Industrial and Labor Relations Review* 35: 343–353.
- Borjas, G.J. (1985), Assimilation, changes in cohort quality and the earnings of immigrants, *Journal of Labor Economics* 3: 463–489.
- Borjas, G.J. (1995), Assimilation and changes in cohort quality revisited: What happened to immigrant earnings in the 1980s?, *Journal of Labor Economics* 13: 201–245.
- Butcher, K.F. (1994), Black immigrants in the United States: A comparison with native blacks and other immigrants, *Industrial and Labor Relations Review* 47: 265–284.
- Central Intelligence Agency. (2000), *World factbook*. Washington, D.C.: Central Intelligence Agency.
- Chiswick, B.R. (1978), A longitudinal analysis of the occupational mobility of immigrants, pp. 897–921 in B.D. Dennis (ed.), *Proceedings of the 30th Annual Winter Meeting, Industrial Relations Research Association*. Madison, WI: I.R.R.A.
- Chiswick, B.R. & Miller, P.W. (1995), The endogeneity between language and earnings: International analyses, *Journal of Labor Economics* 13: 246–288.
- Cornwell, C. & Rupert, P. (1997), Unobservable individual effects, marriage and the earnings of young men, *Economic Inquiry* 35: 285–294.
- Daneshvary, N. & Schwer, R.K. (1994), Black immigrants in the U.S. labor market: an earnings analysis, *Review of Black Political Economy* 22: 77–98.
- Denton, N.A. & Massey, D.S. (1989), Racial identity among Caribbean Hispanics: The effect of double minority status on residential segregation, *American Sociological Review* 54: 790–808.
- Doodoo, F.N. (1997), Assimilation differences among Africans in America, *Social Forces* 76: 527–546.
- Fagen, R.R., Brody, R.A. & O'Leary, T.J. (1968), *Cubans in exile*. Stanford: Stanford University Press.
- Garcia, M.C. (1996), *Havana USA: Cuban exiles and Cuban Americans in south Florida, 1959-1994*. Berkeley: University of California Press.
- Hu, W. (1999), Assimilation and the earnings of immigrants: new evidence from longitudinal data, Mimeo, University of California, Los Angeles.
- Kalmijn, M. (1996), The socioeconomic assimilation of Caribbean American blacks, *Social Forces* 74: 911–930.
- Lubotsky, D. (2000), Chutes or ladders? A longitudinal analysis of immigrant earnings, Mimeo, Princeton University.
- McLaughlin, K.J. & Bills, M. (2001), Interindustry mobility and the cyclical upgrading of labor, *Journal of Labor Economics* 19: 94–135.

- Model, S. (1991), Caribbean immigrants: a black success story?, *International Migration Review* 25: 248–276.
- Murphy, K.J. & Topel, R.H. (1987), Unemployment, risk and earnings: Testing for equalizing wage differences in the labor market, pp. 103–139 in K. Lang & J.S. Leonard (eds.), *Unemployment and the structure of labor markets*. Oxford: Basil Blackwell.
- Nackerud, L., Springer, A., Larrison, C. & Issac, A. (1999), The end of the Cuban contradictions in U.S. refugee policy, *International Migration Review* 33: 176–192.
- Oaxaca, R.L. (1973), Male-female wage differentials in urban labor markets, *International Economic Review* 9: 693–709.
- Oaxaca, R.L. & Ransom, M.R. (1998), Calculation of approximate variances for wage decomposition differentials, *Journal of Economic and Social Measurement* 24: 55–61.
- Pedraza-Bailey, S. (1985), Cuba's exiles: Portrait of a refugee migration, *International Migration Review* 19: 4–34.
- Pedraza, S. (1996), Cuba's refugees: manifold migrations, pp. 250–279 in S. Pedraza & R. Rumbaut (eds.), *Origins and destinies: immigration, race, and ethnicity in America*. Belmont, CA: Wadsworth Publishing.
- Pedraza, S. (2000), Beyond black and white, *Social Science History* 24: 697–726.
- Portes, A. & Bach, R.L. (1985), *Latin journey: Cuban and Mexican immigrants in the United States*. Berkeley, CA: University of California Press.
- Portes, A. & Grosfoguel, R. (1994), Caribbean diasporas: Migration and ethnic communities, *Annals of the American Academy of Political and Social Science* 533(May): 48–69.
- Portes, A. & Rumbaut, R.G. (1996), *Immigrant America: A portrait*. Berkeley, CA: University of California Press.
- Portes, A. & Stepick, A. (1993), *City on the edge: The transformation of Miami*. Berkeley, CA: University of California Press.
- Portes, A., Clark, J.M. & Bach, R.L. (1977), The new wave: A statistical profile of recent Cuban exiles to the US, *Cuban Studies* 7: 1–32.
- Skop, E.H. (2001), Race and place in the adaptation of Mariel exiles, *International Migration Review* 35: 449–471.
- Stewart, J.B. & Hyclak, T. (1984), An analysis of the earnings profiles of immigrants, *Review of Economics and Statistics* 66: 292–296.
- U.S. Immigration and Naturalization Service. (2000), *Statistical yearbook of the Immigration and Naturalization Service, 1998*. Washington, D.C.: U.S. Government Printing Office.
- Waters, M. & Eschbach, K. (1995), Immigration and ethnic and racial inequality in the United States, *Annual Review of Sociology* 21: 419–446.

*Address for correspondence:* Research Department, Federal Reserve Bank of Atlanta, 1000 Peachtree St., Atlanta, GA 30309, (404) 498-8977, mzavodny@yahoo.com

