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# **RACE, CULTURE, AND SKILL: INTERRACIAL WAGE DIFFERENCES AMONG AFRICAN AMERICANS, LATINOS, AND WHITES**

*Patrick L. Mason*

This article examines the interrelationships among race, culture, skill, and the distribution of wages. I utilize a three-equation system to explore this process: skill is a multidimensional productive attribute measured by years of education and work effort; educational attainment is a function of class background and individual effort; and individual wage rates are a function of skill and class background. By further assuming that effort is differentially distributed across individuals and social groups, I am able to estimate reduced form equations for educational and earnings attainment, where both equations are functions of the class backgrounds and race of individuals.

The collective results of this article challenge the conventional wisdom among economists that African American and Latino job skills are of a lower quality than white job skills. To the extent that effort is an important element of worker skill, our results suggest that neither African American nor Latino labor is of lower quality than white labor. The results regarding differences between African Americans and whites in educational attainment, i.e., African Americans are able to translate a given level of resources into higher levels of educational attainment, reaffirm previous findings in the literature. The results on Latino versus white educational attainment are novel. Additionally, unlike previous research, this article connects racial differences in the skill acquisition process to the economics of discrimination.

## **INTRODUCTION**

The causes of persistent interracial earnings differentials continue to inspire debate among economists. More precisely, there is debate over the nature of the interracial wage differential which remains after ana-

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lysts have accounted for differences in observed productive attributes. The magnitude of the unexplained or residual African American–white earnings differential ( $d$ ) has stagnated or increased from the mid-1970s to the present, after continually decreasing during 1965–1975 (Mason, 1995a; Donohue and Heckman, 1992). Interracial differences in the rate of return to observed attributes represent an “unexplained” wage differential ( $d$ ) since identical services should receive an identical rate of return in competitive markets.<sup>1</sup> If there are no unobserved differences in productive attributes (“skill”) among workers, then  $d$  measures the extent of discrimination. However,  $d > 0$  need not imply discrimination against African Americans or Latinos.<sup>2</sup> Rather,  $d > 0$  may occur if: 1) there are unobserved skill differences between whites and Latinos or African Americans, and if 2) the mean level of these unobserved productive attributes is higher among whites than African Americans or Latinos.

The conventional wisdom among economists (Welch, 1973; Hirsch and Schumacher, 1992; Hirsch and Macpherson, 1994; Juhn, Murphy, and Pierce, 1991) is that given quantities of African American observed attributes represent less skill than similar quantities of white observed attributes. Therefore, intertemporal changes in  $d$  may reflect the importance of changes in the price or relative quantities of skill rather than changes in the extent of discrimination. For example, Ferguson (1995), Maxwell (1995), Neal and Johnson (1996), and O’Neill (1990) all claim to demonstrate that after adjusting for differences in unobserved attributes via differences in Armed Forces Qualification Test (AFQT) scores, interracial differences in wage rates become inconsequential. These standardized test scores, which presumably capture individual-specific differences in productive ability, can be modeled as a function of personal attributes, family and community background, and optimal responses to public policy (Hill and O’Neill 1994). For these authors, pre-labor market discrimination may lower test scores, since skill accumulation does not occur entirely within competitive markets, but for given skill (labor quality) levels labor market discrimination is a minor and declining issue. (See Darity and Mason, 1998, for a critical evaluation of this line of research.)

It is futile to challenge the proposition that wage equations may omit elements of unobserved skill; regardless of the sign of  $d$  it is always possible that a particular empirical model suffers from a missing or inaccurately measured variable (Heckman and MaCurdy, 1993). But, for a given level of education, it is an empirical question as to whether unobserved white productive attributes exceed those of either African Ameri-

cans or Latinos. It is also an empirical question as to whether the AFQT or other standardized test scores accurately capture unobserved ability.

For example, in a recent article which examines the interrelationships among individual wages, human capital, and psychological capital, viz. self-esteem and locus of control (which are usually unobserved variables), Goldsmith, Veum, and Darity (1997) find that African Americans have a higher level of psychological capital. Including self-esteem and locus of control in the wage equation does not eliminate the influence of race on the hourly wage rate; otherwise identical African Americans receive lower pay than white workers.

Furthermore, Rodgers (1994, 1997) shows that the general trend of rising skill prices is only a partial explanation of rising racial inequality among men. Similarly, Mason (1995a) shows that an increase in the extent of discrimination can explain nearly three-fourths of the increase in the male interracial residual earnings differential from 1975 to 1991. Currie and Thomas (1995) find that interracial differences in cognitive achievement vary according to the particular test given and that there are important interracial differences in the predictive power of the covariates of cognitive skill. For example, maternal education has a larger impact on the test scores of African American children than white children. Further, Currie and Thomas find (p. 3) that "the skills that are valued in the labor market are not necessarily the most valuable in terms of child development." Finally, Rodgers and Spriggs (1996) also demonstrate that as measures of unobserved ability, AFQT scores have measurement error that is correlated with race. After correcting for this source of measurement error, they do find that test scores have a positive correlation with the wage rate but the inclusion of error-corrected scores in the wage equation has little impact on the interracial wage differential.

This article also examines the relationship between unobserved labor quality and the unexplained interracial wage differential. Rather than focusing on test scores, however, I restrict my attention to a model where skill is an endogenous outcome. From the educational attainment and wage equations I then make inferences about interracial differences in labor quality and the extent of discrimination in competitive labor markets.

This approach is motivated by a dramatic inconsistency between African American cultural folklore and the received wisdom among economists. African American popular wisdom holds that "in order for an African American to be treated equally (s)he must be better." One interpretation of this maxim is that for a group whose median standard of

living is below the national average, catching up to the national average will require that its individual members put forward supra-normal levels of effort in skill accumulation. To the extent that educational effort is positively correlated with work effort and that work effort is a component of "skill," measured interracial inequality may underestimate the true extent of discrimination. In short, there is no a priori reason to presume that adequately controlling for unobserved productive attributes will lower rather than raise the so-called unexplained interracial wage differential.

There are at least three stylized facts which lend credence to this argument. First, for the entire post-slavery era African American years of schooling has tended to show annual increases relative to white years of schooling (Smith, 1984; Bernstein, 1995), even as the average level of education of both groups has been on an upward trend. Today, white males average less than six months more schooling than African American males. Two, in recent decades, achievement scores of African Americans have increased relative to the achievement scores of whites (Jencks, 1993:177–179; Bernstein, 1995).<sup>3</sup> Jaynes and Williams (1989:351–2) write:

In sum, over the relatively short period from 1970 to 1980, the gap between average academic performance of white and black school children narrowed appreciably. The effects are visible for all levels of ability and for all types of communities. The data suggest that the largest impact was in rural areas. *It is not possible to conclude from the evidence that achievement gains of black students are due simply to school desegregation or to programs initiated in the 1960s that were designed to increase educational opportunities for minority students.* However, the results do present a challenge to commentators who judge that those programs failed. (emphasis added)

In short, although years of schooling and academic achievement (as measured by standardized test scores) among African Americans are lower than among whites, African American growth in educational attainment has outpaced white growth in these areas. And, this relatively faster growth cannot be attributed solely to interracial differences in the benefits of government policy. There is evidence then of a positive race-specific effect on educational attainment associated with being an African American. This is precisely the longitudinal pattern one would

expect if supra-normal effort has become part of a culturally inspired group self-help strategy to move toward the median standard of living (Billingsley, 1992).

Three, on average, whites have fewer institutional, social, and economic hurdles for increasing either years of schooling or academic achievement than either Latinos or African Americans. For many commentators, it is not at all clear that these hurdles are diminishing over time.<sup>4</sup>

Intergroup differences in educational effort—and its subsequent affect on labor market outcomes—has been long accepted as an explanation for the movement of white immigrants into the “middle class.” For example, Taubman (1975:41) strongly argues that an above-average preference for education among Jews is a major determinant of Jewish economic success. Sowell (1975:144–146) also argues:

Among the characteristics associated with success is a future orientation—a belief in a pattern of behavior that sacrifices present comforts and enjoyments while preparing for future success . . . Those groups who [have had] this—the Jews, the Japanese-Americans, and the West Indian Negroes [*sic*—for example, all came from social backgrounds in which this kind of behavior was common before they set foot on American soil.

A high value on “fun,” “excitement,” and emotionalism has characterized the less successful minorities. (emphasis in original)

Given the nearly universally accepted notion that the culture of white immigrants and ethnics has enabled these groups to achieve upward mobility through individual supra-normal “effort,” it is at least a testable hypothesis that there are similar group culture–individual achievement links among racial minorities. There is after all an underutilized body of literature (see Bernstein, 1995; and Haveman and Wolfe, 1994, for references) which suggests that for whites and African Americans of similar class (socioeconomic status) backgrounds, African Americans have higher probabilities of both graduating from high school and going on to postsecondary education and obtain more years of education. Utilizing the Panel Study on Income Dynamics, Haveman and Wolfe (1994: 170–173) report that African Americans (especially women) are more likely to graduate from high school than their white counterparts. Among men, they find no statistically significant difference in the probability of

postsecondary education across racial groups. Among women, African Americans have a substantially greater probability of going on to postsecondary education than white women of the same socioeconomic status. Similarly, utilizing the National Longitudinal Study of Youth, Maxwell (1995) found that African American men were more likely to attend college and achieved more years of schooling than white males of similar background. Additionally, after adjusting for social background, Maxwell found that there are no race-specific statistically significant differences in AFQT scores (which are often used as a measure of educational achievement).

Neither Maxwell nor Haveman and Wolfe includes Latinos in their sample. However, there is no reason to suspect that the interactions among race, class, and individual effort which inform African American–white differences in skill attainment are any less operative for Latino–white differences in skill attainment. Regardless of race, individuals from groups with a below-average standard of living may seek to utilize supra-normal effort as one strategy to move toward the median.

If there is truly a positive or at least non-negative race-specific effect for educational attainment, then why is the race-specific effect in wage equations uniformly negative? I argue that the link between these two outcomes can be found in the interrelationships among race, culture, and skill acquisition. Accordingly, this article has a two-part objective: to determine if effort, an unmeasured cultural attribute, differs across identifiable social groups; and to determine if interracial patterns in differing effort levels are consistent with the claim that unexplained earnings differentials are evidence of discrimination. I will proceed by simultaneously examining the relationship between observed individual attributes and educational and income attainment.

### STATISTICAL MODEL

Consider the following modification of Bowles's (1972) and Grilliches's (1977) recursive model of educational attainment and income.<sup>5</sup>

- (1)  $S = \alpha_1 E + e_w$ ,
- (2)  $E = X\beta + e_E + \varepsilon_1$ , and
- (3)  $W = S\gamma_1 + X\gamma_2 + \varepsilon_2$ ,

where  $S$  = skill,  $e_w$  = work effort,  $e_E$  = education effort,  $E$  = educational attainment,  $W$  = logarithmic wage rate,  $X$  = social class background,

and  $\alpha_1 > 0, \beta > 0, \gamma_1 > 0, \gamma_2 > 0, \text{Cov}(X, e_E) = \text{Cov}(X, e_W) = 0, E(\epsilon_1, \epsilon_2) = 0,$  and  $\epsilon_i \sim N(0, \sigma_i),$  where  $i = 1, 2.$

Skill has both a produced component, education, and a cultural component, “work effort.” For a given level of education effort, individuals from higher social class backgrounds are able to obtain higher levels of education. In turn, Bowles argues that social class origins have both an indirect impact on income (through education) and a direct impact on income; hence, the distribution of income is ultimately determined by the class origins and efforts of individuals.<sup>6</sup>

As a rule we estimate (3') rather than (3), which does not provide a return to skill,  $= \gamma_1 \alpha_1 \neq \gamma_1.$  Additionally, the presence of work effort ( $e_W \gamma_1$ ) in the error term implies ordinary least squares estimation of (3') will suffer from omitted variables bias since work effort is arguably correlated with educational attainment and (I argue below) race.

$$(3') \quad W = E + X\gamma_2 + \omega, \text{ where } \omega = e_W \gamma_1 + \epsilon_2$$

For example, suppose work effort is a positive and monotonic function of education effort. Without loss of generality we may write  $e_W = e_E = e.$  Now consider Graph 1. Let  $e = 0$  represent the normal or average level of effort,  $e_{\max}$  represent the maximum effort possible for an individual, and  $e_{\min}$  represent the minimum feasible level of effort associated with skill attainment. Let  $I_g/I$  ( $g =$  African American, Latino, or white) represent the relative income of a particular racial group. When  $I_g/I < 1$  there is above average cultural pressure to achieve, “to uplift the race” and oneself. As  $I_g/I$  increases beyond 1 there is less group pressure to achieve and thereby one can act more individually.

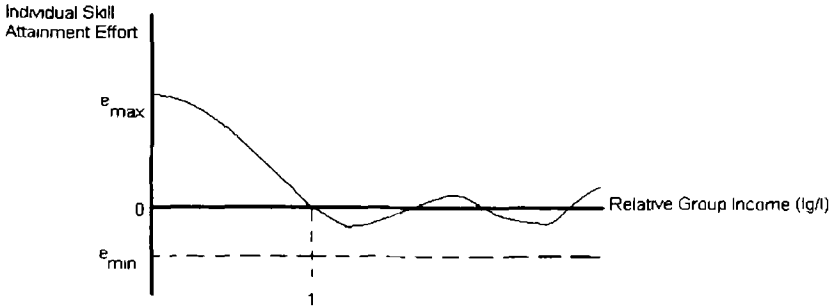
So,  $e = \delta_0 + \delta_1 * f(I_g/I),$  where  $\delta_0$  is the individual component of effort and  $\delta_1 * f(I_g/I)$  is the cultural component of effort. Given the sizable inter-racial differences in standards of living, racial identity is a natural proxy for  $f(I_g/I).$  Hence, the effort function may be written as  $e = \delta_0 + \delta_1 * \text{race} + \epsilon_3,$  where  $\text{race} = 1$  if the individual is Latino or African American and 0 if the individual is white and  $\epsilon_3 \sim N(0, \sigma_3).$  (The observed variables  $[X]$  and the unobserved variable  $[e]$  are not correlated when  $X$  does not include race.) Given the effort function and the appropriate set of substitutions, the reduced form equations are:

$$(2.1) \quad E = \delta_0 + X\beta + \delta_1 \text{race} + \epsilon_3 + \epsilon_1$$

$$= \kappa_0 + X\kappa_1 + \delta_1 \text{race} + \mu_1, \text{ where } \kappa_0 \text{ includes } \delta_0 \text{ and the constant term from } \beta, \text{ and}$$



**GRAPH 1**  
**Individual Effort—Group Culture Function**



$$\begin{aligned}
 (3.1) \quad W &= (\gamma_1 \alpha_1 \delta_0 + \gamma_1 \delta_0) + X\beta(\gamma_1 \alpha_1 + \gamma_2) + (\gamma_1 \alpha_1 \delta_1 + \gamma_1 \delta_1) \text{race} + \\
 &\quad (\gamma_1 \varepsilon_3 + \varepsilon_2 + \gamma_1 \alpha_1 \varepsilon_3 + \gamma_1 \alpha_1 \varepsilon_1) \\
 &= \phi_0 + X\phi_1 + \phi_2 \text{race} + \mu_2
 \end{aligned}$$

The critical coefficient is  $\delta_1$ , the race-specific effect (of African Americans and Latinos) on education. If the estimated value of  $\delta_1$  is  $< 0$ , then the results are inconsistent with the notion of relatively greater African American or Latino achievement effort. Since the marginal effect of education on skill ( $\alpha_1$ ) and the marginal effect of skill on the wage rate ( $\gamma_1$ ) are both positive, the sign of  $\delta_1$  provides a straightforward method of detecting the presence of wage discrimination. In a nondiscriminatory environment  $\delta_1 > (=) 0$  implies  $\phi_2 > (=) 0$ . Empirical violations of this nondiscrimination condition allows one to determine the nature of the discriminatory process. A strong finding for the presence of wage discrimination may be said to exist if: i)  $\delta_1 > 0$  and  $\phi_2 < 0$ , or ii)  $\delta_1 > 0$  and  $\phi_2 = 0$ . A weak finding for the presence of wage discrimination may be said to occur when  $\delta_1 = 0$  and  $\phi_2 < 0$ . When  $\delta_1 < 0$  and  $\phi_2 < 0$  it is not possible to distinguish between the effects of differential behavior across racial groups and differential interracial treatment in the educational and earnings processes. The null hypotheses are  $\delta_1 = 0$  and  $\phi_2 = 0$ .

Equations 2.1 and 3.1 are estimated separately. Ordinary least squares is used to estimate equation 3.1. Ordinary least squares is also used to estimate 2.1 when the dependent variable is years of education; however, both a bivariate probit model with sample selection and single equation

binomial probit models are used to estimate this equation when the dependent variable is whether or not the individual graduated from high school and whether or not the individual obtained any post-secondary education.<sup>7</sup>

The results show strong evidence of wage discrimination against African Americans and weak evidence of wage discrimination against Latinos. The results on African American–white differences in educational attainment are not novel. However, the discussion of Latino–white differences in the education and earnings processes does provide some empirical insight into an understudied area. The primary novelty of this article resides in its attempt to connect the educational attainment process to the economics of discrimination.

### *Data*

I use The 1990 Panel Study on Income Dynamics/Latino National Political Survey Early Release File to examine the educational and income attainment of three groups of men: African Americans, Latinos, and whites.<sup>8</sup> Although the PSID/LNPS does not contain information on the characteristics of academic institutions attended by students, it does contain a rather rich set of family background variables which I exploit to determine the relationship among race, education and wage rates for the three groups of men.<sup>9</sup> This is a sample of working age adult male heads of household. Observations with missing values, zero earnings, or wage rates greater than \$100 per hour were deleted from the sample. The Latino data were collected in a 1990 survey, while all other data were collected in a 1989 survey.

Table 1 lists the variables and their definitions. Educational attainment is captured separately by years of education (EDUCATION) and the dichotomous outcomes, whether or not the individual graduated from high school (HIGHSCHL) and whether or not high school graduates have gone on to obtain any completed years of post-secondary education (COLLEGE). LOGWAGE, the income variable, is the average hourly wage rate for all labor earnings.

AGE captures the lifecycle affects associated with educational attainment. Given that educational attainment takes time, age should be positively correlated with educational attainment. AGE also captures intertemporal changes in the social conditions and institutions faced by different educational cohorts. If there has been a positive structural change for

**TABLE 1**  
**Definition and Identification of Variables**

LOGWAGE	= natural logarithm of annual labor earnings divided by annual hours worked
EDUCATION	= years of education, capped at 17
HIGHSCHL	= 1 if individual graduated from high school; 0, otherwise
COLLEGE	= 1 if individual graduated from high school and obtained postsecondary education; 0, if graduated from high school with no additional years of completed education
NRTHEAST	= 1 if individual lives in the Northeastern U.S.; 0, otherwise
NRTHCENT	= 1 if individual lives in the Northcentral U.S.; 0, otherwise
WEST	= 1 if individual lives in the Western U.S.; 0, otherwise
WORKEXP	= years of post age 18 work experience
TENURE	= number of months employed at present job
TENURE2	= tenure squared
AGE	= age of individual
HEALTH	= 1 if individual's health limits the type or amount of work he can perform; 0, otherwise
MARRIED	= 1 if individual is currently married; 0, otherwise
XJOB1	= 1 if man works more than one job; 0, otherwise
JOBUNION	= 1 if job is unionized; 0, otherwise
PARPOOR	= 1 if parents were "poor" during childhood; 0, otherwise
PARRICH	= 1 if parents were "pretty well off" during childhood; 0, otherwise
TOPARENT	= 1 if individual lived with both parents most of the time until age 16; 0, otherwise
EFA_LTHS	= 1 if father did not complete high school; 0, otherwise
EFA_GTHS	= 1 if father has some post high school education; 0, otherwise
EFA_DEG	= 1 if father obtained a college degree; 0, otherwise
EMO_LTHS	= 1 if mother did not complete high school; 0, otherwise
EMO_GTHS	= 1 if mother has some post high school education; 0, otherwise
EMO_DEG	= 1 if mother obtained a college degree; 0, otherwise
PROJECTS	= 1 if individual resides in a public housing project; 0, otherwise
HEADBROS	= number of brothers
HEADSIST	= number of sisters
GRADELAG	= 1 if the individual experienced grade delay; 0, otherwise
FA_IMMIG	= 1 if father was raised outside of the U.S.; 0, otherwise
FA_SOUTH	= 1 if father was raised in the South; 0, otherwise
MO_IMMIG	= 1 if mother was raised outside of the U.S.; 0, otherwise

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TABLE 1 (continued)

MO_SOUTH	= 1 if mother was raised in the South; 0, otherwise
HD_IMMIG	= 1 if individual was raised outside of the U.S.; 0, otherwise
HD_SOUTH	= 1 if individual was raised in the South; 0, otherwise
GREWRURL	= 1 if individual was raised in a rural area; 0, otherwise
FAPMT	= 1 if father was a professional, technical, or kindred worker; 0, otherwise
FABUSOWN	= 1 if father was a self-employed business owner; 0, otherwise
CATHOLIC	= 1 if individual is Catholic; 0, otherwise
JEWISH	= 1 if individual is Jewish; 0, otherwise
MUSLIM	= 1 if individual is Muslim; 0, otherwise
NORELIGN	= 1 if individual has no religious affiliation; 0, otherwise
MEXICAN	= 1 if individual (LATINO) is of Mexican national origin; 0, otherwise
CUBAN	= 1 if individual (LATINO) is of Cuban national origin; 0, otherwise
PRICAN	= 1 if individual (LATINO) is of Puerto Rican origin; 0, otherwise
OTHLAT	= 1 if individual (LATINO) is not of Mexican, Cuban, or Puerto Rican origin; 0, otherwise
BROWN	= 1 if individual (LATINO) self-identified his race as "brown"; 0, otherwise
SPANDOMN	= 1 if individual (LATINO) reported that Spanish is the language spoken at home all or most of the time, or if individual reported that he does speak English at all or speaks Spanish very poorly; 0, otherwise
ENGLDOMN	= 1 if individual (LATINO) reported that English is the language spoken at home all or most of the time, or if individual reported that he does speak Spanish at all or speaks Spanish very poorly; 0, otherwise

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younger cohorts, AGE may have a negative correlation with educational attainment. In the earnings equation, AGE represents potential experience and is expected to have a positive effect on the wage rate.

HEADBROS and HEADSIST capture the gender-specific effect of family size on educational attainment. Individuals from larger families have proportionately less social capital (or fewer resources) and thereby will have lower educational attainment. If parents have gender biases,

e.g., they favor boys' education over girls' education, then HEADBROS should have a larger (negative) impact on educational attainment than HEADSIST (Pattnayak and Todorov, 1992; Taubman, 1991).

Individuals from two-parent families (TOPARENT) have access to proportionately larger levels of social capital and therefore should obtain higher levels of education. Similarly, increases in the level of parental education (EFA\_LTHS, EFA\_GTHS, EFA\_DEG, EMO\_LTHS, EMO\_GTHS, EMO\_DEG) imply a higher quality of social capital and is expected to raise educational attainment.

In comparison to middle income families, persons raised in poor households have access to lower levels of social capital and other resources while those raised in upper income households have access to higher levels of social capital and other resources. Accordingly, PARPOOR should be negatively correlated with educational attainment while we expect PARRICH to be positively correlated with educational attainment.

Father's occupation (FAPMT, FABUSOWN) provides an additional direct measure of social background.

Fligstein and Fernandez (1985) argue that age-based grade delay (GRADELAG) is negatively correlated with educational attainment. However, there is some ambivalence regarding the causal interpretation of the coefficient on GRADELAG. Individuals may experience grade delay because of personal shortcomings, institutional bias, suboptimal individual-institutional pairing, or social class (background) disadvantages. Any one of these items would reduce educational attainment and all of them may have a greater or lesser role in explaining grade delay. Lastly, grade delay may indicate lower acquired cognitive skills and hence should have a negative correlation with income.

Among others, Rodgers, Spriggs, and Waaler (1997) show that among 15–18-year-olds in 1980, at each age, African Americans have less years of schooling than whites. The regression equations adjust these gross interracial differences in outcomes for all observable differences in age, social capital, and socioeconomic status. Hence, including GRADELAG in the wage and education equations allows us to control for unobserved individual-specific (ability, motivation, etc.) and institutional (quality of school) differences which influence earnings and educational attainment.

GREWRURL controls for possible intraregional differences in resources available to educational institutions. Specifically, if rural locations are characterized by fewer resources per student (and therefore provide a

relatively lower quality of education) we may expect that men raised in rural areas will have lower educational attainment.

By including HD\_IMMIG and HD\_SOUTH I also recognize that international and interregional differences, respectively, in educational attainment may occur because of interregional and international differences in resources, culture, potential differences in expected rates of return to education, and the cost of education.

Moreover, the quality of social capital derived from parents may vary according to interregional and international differences in where parents were raised; hence, our inclusion of FA\_IMMIG, FA\_SOUTH, MO\_IMMIG, and MO\_SOUTH. For example, the social capital of immigrant parents (the omitted category) may be of lower quality than that of parents raised in the Northeastern U.S. or greater than the quality of social capital of parents raised in the South.

Both the wage and education equations include religious affiliation variables (CATHOLIC, JEWISH, MUSLIM, NORELIGN) as additional controls for social capital.<sup>10</sup>

The wage equation also includes contemporary region controls (NRTHEAST, NRTHCENT, WEST), health status (HEALTH), union status (JOBUNION), marital status (MARRIED), residential location (PROJECTS), multiple jobs (XJOB1), and the number of months on the job and its square (TENURE, TENURE2).

I follow Bean and Teinda (1987) in recognizing that Latino educational and income attainment is not invariant across national origin. Thereby, I have included MEXICAN, CUBAN, PRICAN, and OTHRLAT to control for national origin differences among Latinos. BROWN allows us to control for racial differences among Latinos, while ENGLDOMN and SPANDOMN control for varying degrees of language fluency.

Finally, AFRICAN is a dichotomous variable for whether or not the individual is an African American.

Tables 2 lists the variable means. Mean African American and Latino wages are 0.31 and 0.29 log points, respectively, less than the mean of white wages. Whites have an average of 13.37 years of education, while Latinos and African Americans have averages of 10.79 and 12.12 years of education, respectively. The educational differential between native-born and immigrant Latinos (3.76 years) exceeds the differential between whites and Latinos (2.78 years), while the wage differential is about the same (0.26 log points).

Approximately 1/2 of all whites were raised in middle income house-

**TABLE 2**  
**Sample Means, by Race and Latino Birth Origin**

VARIABLE	African (610)	White (1688)	Latino All (885)	Latino Immigrant (538)	Latino Native-Born (347)
LOGWAGE	2.23	2.54	2.25	2.10	2.36
EDUCATION	12.12	13.37	10.79	8.62	12.38
HIGHSCHL	0.7581	0.8642	0.6235	0.3645	0.8148
COLLEGE	0.3193	0.5019	0.2896	0.1349	0.4038
NRTHEAST	0.0772	0.2110	0.1035	0.1296	0.0843
NRTHCENT	0.1458	0.2686	0.0998	0.1002	0.0995
WEST	0.0544	0.1714	0.5700	0.5449	0.5886
TENURE	99	94	83	82	84
TENURE2	19239	18651	14211	13123	15014
AGE	36.95	38.21	38.00	40.04	36.48
HEALTH	0.1017	0.0977	0.0989	0.1253	0.0794
MARRIED	0.8275	0.8963	0.9321	0.9258	0.9368
XJOB1	0.1606	0.2095	0.1554	0.0627	0.2239
JOBUNION	0.2930	0.1977	0.3098	0.2618	0.3452
PARPOOR	0.5235	0.2274	0.5701	0.6541	0.5080
PARRICH	0.1948	0.2473	0.1422	0.1181	0.1599
TOPARENT	0.6524	0.8262	0.7632	0.8100	0.7287
EFA_LTHS	0.6526	0.4070	0.7349	0.8630	0.6403
EFA_GTHS	0.0191	0.0999	0.0297	0.0062	0.0470
EFA_DEG	0.0274	0.1201	0.0287	0.0321	0.0261
EMO_LTHS	0.5752	0.3003	0.7271	0.8833	0.6118
EMO_GTHS	0.0500	0.1028	0.0414	0.0083	0.0658
EMO_DEG	0.0266	0.0945	0.0227	0.0109	0.0314
PROJECTS	0.0574	0.0103	0.0349	0.0522	0.0221
HEADBROS	3.0602	1.6579	2.9716	3.4821	2.5947
HEADSIST	2.9724	1.4710	2.5987	2.9426	2.3448
GRADELAG	0.3196	0.1293	0.3793	0.5874	0.2257
FA_IMMIG	0.0621	0.0821	0.5818	0.9815	0.2868
FA_SOUTH	0.8466	0.2976	0.1649	0.0067	0.2817
MO_IMMIG	0.0373	0.0702	0.5414	0.9636	0.2297
MO_SOUTH	0.8872	0.2956	0.1766	0.0026	0.3050
HD_IMMIG	0.0194	0.0215	0.4247	n.a.	n.a.
HD_SOUTH	0.7734	0.2918	0.1369	n.a.	0.2380
GREWRURL	0.2131	0.1892	0.1733	0.2620	0.1078
FAPMT	0.0280	0.1986	0.0657	0.0789	0.0560
FABUSOWN	0.0103	0.0333	0.0319	0.0444	0.0227
CATHOLIC	0.0580	0.2609	0.7915	0.8056	0.7811
JEWISH	0.0002	0.0198	0.0003	0.0005	0.0002
MUSLIM	0.0073	0.0057	0.0007	0.0017	0.0000
NORELIGN	0.0805	0.0939	0.0477	0.0386	0.0544
MEXICAN	n.a.	n.a.	0.7212	0.6545	0.7704
CUBAN	n.a.	n.a.	0.0534	0.1079	0.0133
PRICAN	n.a.	n.a.	0.1274	0.1347	0.1220
OTHLAT	n.a.	n.a.	0.0980	0.1029	0.0944
BROWN	n.a.	n.a.	0.3380	0.2875	0.3753
SPANDOMN	n.a.	n.a.	0.1415	0.3129	0.0149
ENGLDOMN	n.a.	n.a.	0.1370	0.0441	0.2056

holds, while well over one-half of African Americans and over three-fifths of Latinos were raised in poor households. Among all groups, African Americans were the least likely to have been raised in a two-parent home (65 percent) and whites were the most likely (83 percent), while Latinos were in the middle (76 percent).

The parents of African Americans and Latinos are considerably less educated than the parents of whites. Similarly, white men were raised in smaller families than African Americans and Latinos and they have an average age one year greater than African Americans and two years greater than native-born Latinos.

Thirty-eight percent of Latinos experience grade delay, versus under 32 percent and 13 percent of African Americans and whites, respectively.<sup>11</sup>

At least 85 percent of African Americans' parents were raised in the South, while 54–58 percent of Latinos' parents were raised outside of the continental United States. These patterns are moderated among the current generation. Seventy-seven percent of African American men were raised in the South and 43 percent of Latinos were raised outside of the continental United States.

Among Latinos, immigrant men come from larger families, have lower income and more poorly educated parents, but are more likely to come from two-parent households than native-born men. Not surprisingly, immigrant men are much more likely than native-born men to be Spanish dominant (31 percent versus 1.5 percent) and much less likely to be English dominant (4.5 percent versus 21 percent). However, these differences in English-speaking ability do not imply that native-born Latinos are more assimilative. About 65 percent of immigrants are bilingual, while 78 percent of native-born Latinos are bilingual. Further evidence that native-born men are less assimilative than immigrants can be gauged from racial identification: 29 percent of immigrants describe themselves as brown, while 38 percent of native-born men describe themselves as brown; 71 percent of immigrants describe themselves as white, while 62 percent of native-born men describe themselves as white.

Table 3 presents the results when years of education is used as the measure of educational attainment. The first set of results are for the complete sample of men. The second set of results are for a restricted sample of only native-born men. Over 42 percent of Latinos are foreign-born, versus under 2 percent of African Americans and whites. Beyond the aforementioned differences between native and immigrant Latinos, both the Latino income and educational attainment processes



**TABLE 3**  
**Completed Years of Education**

	Full Sample		Full Sample		Native-Born		Native-Born	
	Eduation	12.86	Eduation	12.86	Eduation	12.99	Eduation	12.99
	R2	0.3431	R2	0.3353	R2	0.3141	R2	0.3128
	Adj R2	0.3365	Adj R2	0.3291	Adj R2	0.3058	Adj R2	0.3052
	Log-L	-8214	Log-L	-8233	Log-L	-6364	Log-L	-6363
	Rest Log-L	-8883	Rest Log-L	-8883	Rest Log-L	-6850	Rest Log-L	-6850
	N	3183	N	3183	N	2580	N	2580
VARIABLE	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT
CONSTANT	14.1300	72.71	14.0840	72.23	13.8950	67.65	13.8830	67.64
PARPOOR	-0.4169	-4.13	-0.4115	-4.06	-0.4133	-3.87	-0.4135	-3.87
PARRICH	-0.0076	-0.07	0.0069	0.07	-0.0030	-0.03	0.0012	0.01
TOPARENT	0.0566	0.57	0.0663	0.67	0.1077	1.03	0.1074	1.02
EFA_LTHS	-0.5744	-5.69	-0.5845	-5.76	-0.5566	-5.24	-0.5536	-5.21
EFA_GTHS	0.2849	1.66	0.2991	1.73	0.2929	1.65	0.3023	1.70
EFA_DEG	0.6080	3.23	0.6003	3.17	0.5744	2.92	0.5644	2.86
EMO_LTHS	-0.4149	-4.09	-0.4399	-4.32	-0.4239	-3.97	-0.4334	-4.06
EMO_GTHS	0.5248	3.39	0.5023	3.23	0.4772	2.94	0.4694	2.90
EMO_DEG	0.5429	2.96	0.5579	3.02	0.5858	3.07	0.5978	3.13
AGE	0.0012	0.29	0.0022	0.53	0.0028	0.64	0.0030	0.68
HEADBROS	-0.0321	-1.44	-0.0335	-1.50	-0.0173	-0.73	-0.0165	-0.70
HEADSIST	-0.1084	-4.32	-0.1107	-4.40	-0.1131	-4.26	-0.1143	-4.31
GRADELAG	-1.6908	-15.78	-1.6746	-15.54	-1.7041	-14.77	-1.6997	-14.73
FA_IMMIG	0.0227	0.12	0.0729	0.38	0.0725	0.36	0.0643	0.32
FA_SOUTH	-0.1091	-0.61	-0.1040	-0.58	-0.1022	-0.55	-0.1062	-0.57
MO_IMMIG	0.0922	0.44	0.0816	0.39	0.2108	0.94	0.2149	0.96
MO_SOUTH	-0.3515	-2.01	-0.3564	-2.02	-0.3631	-1.99	-0.3579	-1.96
HD_IMMIG	-1.2532	-5.23	-1.2177	-5.09	n.a.		n.a.	
HD_SOUTH	-0.0235	-0.15	-0.0071	-0.05	0.0305	0.19	0.0369	0.23
GREWRURL	-0.4390	-4.18	-0.4419	-4.19	-0.3470	-3.11	-0.3436	-3.08
FAPMT	0.4334	3.12	0.4542	3.26	0.4593	3.16	0.4672	3.22
FABUSOWN	0.9028	3.70	0.9012	3.68	0.7949	3.08	0.7887	3.05
CATHOLIC	-0.1572	-1.46	-0.1640	-1.52	-0.0445	-0.39	-0.0424	-0.37
JEWISH	1.2509	3.55	1.2281	3.46	1.3306	3.65	1.3297	3.65
MUSLIM	2.5928	4.92	2.5771	4.87	2.3627	3.98	2.3710	4.00
NORELIGN	-0.4223	-2.93	-0.4074	-2.81	-0.4330	-2.84	-0.4224	-2.77
AFRICAN	0.1789	1.49	0.1878	1.56	0.1907	1.52	0.1909	1.52
MEXICAN	-1.1240	-4.63	n.a.		-0.0145	-0.05	n.a.	
CUBAN	-0.0725	-0.11	n.a.		-0.8811	-0.52	n.a.	
PRICAN	-0.0652	-0.15	n.a.		0.0641	0.11	n.a.	
OTHRLAT	1.7955	3.78	n.a.		1.4462	2.26	n.a.	
BROWN	-0.4464	-1.44	-0.8113	-2.66	-0.6816	-1.67	-0.8139	-2.02
LATINO	n.a.		-0.5338	-2.42	n.a.		0.1761	0.67

may have a crucial missing variable—whether or not the individual is a legal worker in the United States. There is no way of identifying legal status within the data.<sup>12</sup> Presumably, the model will predict less well for undocumented persons because they have less access to resources and social opportunities and are much more vulnerable to discrimination.

There are some similarities in the two sets of results: a positive race-specific effect for Other Latinos, a negative race-specific effect for Brown Latinos (especially when national origin is excluded), and no statistically significant effect for men of Cuban or Puerto Rican origin. The coefficient for Mexican Americans is small, negative, and insignificant in the native-born sample but becomes considerably larger and significant in the full sample; hence, immigrant Mexican Americans do less well than native-born Mexican Americans or other Latino and Non-Latino social groups. Finally, the race-specific effect for African Americans is large and positive, but not significant.

When Latinos are identified without regard to national origin, there is no significant race-specific effect among the native-born but there is more than a one-half grade effect in the full sample. When Latinos are identified by race and national origin there is a negative effect for Brown Latinos, but the coefficient in the full sample is insignificant and the coefficient in the native-born sample is only marginally significant. Collectively, these patterns suggest a negative race-specific effect among immigrant Latinos of Mexican national origin and brown Latinos, a positive race-specific effect among Other Latinos, but no race-specific effect on educational attainment for all other groups of Latinos.

As a measure of educational attainment, years of education does not control for significant threshold events, such as whether or not the individual graduated from high school. Given the substantial cost differential between secondary and post-secondary schooling, it is entirely possible that the unconditional impact of race-specific effects may decline as years of schooling increases. Focusing then on mean years of education may cloud one's understanding of what happens at various critical points along the distribution of educational outcomes.

Consider then Tables 4 and 5. These tables present the bivariate probit with sample selection results for the full and native-born samples, respectively. Since the value of  $\rho$  for these equations is statistically insignificant, I have also estimated the HIGHSCHL and COLLEGE equations as separate binomial probit models. The latter results are presented in Tables 6 and 7.

**TABLE 4**  
**Probabilities of Graduation from High School and Obtaining**  
**Postsecondary Education: Full Sample, Bivariate Probit Specification**

Log-L N	-2644 3183				Log-L N	-2650 3183				
Highschl		College			Highschl		College			
VARIABLE	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT
CONSTANT	2.3090	16.06	-0.3327	-2.35	2.2923	16.03	-0.3512	-2.52		
PARPOOR	-0.3147	-4.16	0.0411	0.52	-0.3112	-4.13	0.0545	0.70		
PARRICH	-0.0946	-0.94	-0.0227	-0.32	-0.0931	-0.93	-0.0185	-0.26		
TOPARENT	0.2158	2.88	-0.0541	-0.77	0.2230	2.98	-0.0541	-0.78		
EFA_LTHS	-0.1415	-1.71	-0.3203	-4.69	-0.1463	-1.78	-0.3142	-4.57		
EFA_GTHS	0.1604	0.70	0.3909	3.53	0.1705	0.74	0.3931	3.55		
EFA_DEG	0.4126	0.92	0.5119	4.08	0.4424	1.09	0.5102	4.06		
EMO_LTHS	-0.3263	-4.23	-0.1928	-2.40	-0.3338	-4.34	-0.1886	-2.34		
EMO_GTHS	0.5557	2.28	0.3112	3.10	0.5441	2.23	0.3011	3.01		
EMO_DEG	0.5976	1.23	0.5275	4.16	0.6325	1.45	0.5249	4.14		
AGE	-0.0144	-4.83	0.0183	5.64	-0.0142	-4.80	0.0187	5.95		
HEADBROS	-0.0259	-1.63	-0.0062	-0.36	-0.0263	-1.65	-0.0056	-0.33		
HEADSIST	-0.0692	-3.70	-0.0378	-1.93	-0.0695	-3.73	-0.0360	-1.83		
GRADELAG	-0.9808	-14.38	-0.3381	-1.93	-0.9703	-14.30	-0.2981	-1.74		
FA_IMMIG	0.0093	0.05	0.0748	0.58	0.0373	0.19	0.0807	0.62		
FA_SOUTH	-0.0628	-0.35	0.0875	0.75	-0.0489	-0.27	0.0913	0.78		
MO_IMMIG	-0.0225	-0.10	-0.0332	-0.24	-0.0509	-0.23	-0.0476	-0.35		
MO_SOUTH	-0.1334	-0.72	-0.3760	-3.42	-0.1440	-0.77	-0.3749	-3.40		
HD_IMMIG	-0.4725	-2.69	0.1650	0.90	-0.4373	-2.56	0.2024	1.14		
HD_SOUTH	-0.1628	-1.41	0.2102	1.96	-0.1635	-1.42	0.2178	2.05		
GREWRURI	-0.1962	-2.54	-0.1175	-1.50	-0.1956	-2.54	-0.1088	-1.40		
FAPMT	0.0296	0.20	0.1750	1.94	0.0410	0.28	0.1763	1.96		
FABUSOWM	0.6473	2.13	0.4125	2.36	0.6496	2.14	0.3932	2.25		
CATHOLIC	0.0502	0.50	-0.1619	-2.29	0.0454	0.46	-0.1577	-2.26		
JEWISH	1.4867	0.73	0.9503	2.69	1.4603	0.77	0.9503	2.67		
MUSLIM	1.7050	1.28	0.8063	2.37	1.6768	1.30	0.7789	2.29		
NORELIGN	-0.3825	-3.33	-0.2567	-2.39	-0.3798	-3.31	-0.2451	-2.30		
AFRICAN	0.3416	3.92	0.0529	0.53	0.3448	3.95	0.0427	0.43		
MEXICAN	-0.2592	-1.49	0.0744	0.44	n.a.		n.a.			
CUBAN	0.1543	0.31	-0.0451	-0.10	n.a.		n.a.			
PRICAN	0.0456	0.16	0.0313	0.11	n.a.		n.a.			
OTHLAT	0.9387	2.27	0.5174	1.46	n.a.		n.a.			
BROWN	-0.0829	-0.41	0.0430	0.18	-0.2022	-1.01	-0.0117	-0.05		
LATINO	n.a.		n.a.		-0.0684	-0.42	0.1372	0.95		
RHO(1,2)			-0.0197	-0.06			-0.0985	-0.30		

**TABLE 5**  
**Probabilities of Graduation from High School and Obtaining Postsecondary Education: Native-Born Sample, Bivariate Probit Specification**

Bivariate	-2142				-2145			
	Log-L		N		Log-L		N	
Highschl	2580		College		Highschl		College	
VARIABLE	BETA t-STAT		BETA t-STAT		BETA t-STAT		BETA t-STAT	
CONSTANT	2.2772	14.19	-0.3976	-2.59	2 2783	14 23	-0.4086	-2 68
PARPOOR	-0.3641	-4.28	0 0751	0 86	-0 3644	-4 30	0.0801	0 92
PARRICH	-0.1116	-0.98	-0 0016	-0 02	-0 1114	-0.98	0.0007	0 01
TOPARENT	0.2238	2.62	-0.0246	-0.32	0.2240	2.63	-0.0229	-0 30
EFA_LTHS	-0.1186	-1.29	-0.3178	-4.22	-0.1184	-1.30	-0 3136	-4 17
EFA_GTHS	0.1840	0.73	0.3858	3 18	0.1858	0 74	0.3894	3 22
EFA_DEG	0.3514	0.63	0.5009	3 63	0.3453	0 63	0.4960	3 60
EMO_LTHS	-0.3488	-4.09	-0 1782	-1 97	-0 3491	-4 10	-0.1818	-2 02
EMO_GTHS	0.5366	1.97	0 2912	2 64	0 5376	1 97	0.2853	2 59
EMO_DEG	0.6434	1.10	0 5245	3 76	0 6623	1 15	0 5312	3 82
AGE	-0 0143	-4.22	0 0189	5 45	-0.0143	-4.25	0 0191	5 55
HEADBROS	-0.0187	-1.04	-0.0049	-0.26	-0.0184	-1.02	-0 0051	-0 27
HEADSIST	-0.0751	-3.52	-0.0314	-1.41	-0 0753	-3 53	-0.0320	-1 44
GRADELAG	-0.9890	-12.79	-0.3106	-1.57	-0 9877	-12 79	-0.2955	-1 51
FA_IMMIG	0.0582	0.26	0 1112	0 77	0 0577	0 26	0.1123	0 78
FA_SOUTH	-0.0650	-0.32	0.1064	0 83	-0 0626	-0 31	0 1100	0 86
MO_IMMIG	0.0544	0.21	-0 0882	-0 56	0.0569	0 22	-0.0880	-0 57
MO_SOUTH	-0.1239	-0.59	-0 4091	-3 36	-0.1226	-0 59	-0 4018	-3 31
HD_SOUTH	-0.1666	-1.30	0.2427	2 05	-0 1701	-1 33	0.2420	2 07
GREWRURL	-0.1535	-1.76	-0.1142	-1.36	-0 1519	-1 74	-0 1075	-1 29
FAPMT	0.0370	0.22	0.1660	1 67	0 0374	0 22	0 1697	1 72
FABUSOWN	0.6284	1.70	0.3817	1 98	0.6264	1 70	0.3735	1 93
CATHOLIC	0 0727	0 64	-0 1432	-1 84	0 0719	0 63	-0.1395	-1 81
JEWISH	n.a.		0.9668	2 48	n.a.		0 9709	2 48
MUSLIM	n.a.		0 7367	2 06	n.a		0 7380	2 07
NORELIGN	-0.4365	-3.37	-0.2168	-1 80	-0.4352	-3 37	-0.2065	-1 73
AFRICAN	0.3792	3.97	0.0428	0 39	0.3788	3 96	0 0399	0 37
MEXICAN	0.1752	0.79	0 1287	0 66	n.a		n.a	
CUBAN	0.1462	0.07	-0.1022	-0 09	n.a		n.a	
PRICAN	0.2434	0.60	0.1534	0 40	n.a		n.a	
OTHLAT	0.4772	0.70	1.5130	2 52	n.a		n.a	
BROWN	-0.2633	-0.91	0.0323	0 12	-0 2820	-0 98	-0.0843	-0 31
LATINO	n.a		n.a		0 2150	1 01	0 2682	1 51
RHO(1,2)			-0 1570	-0 43			-0.1790	-0 50

**TABLE 6**  
**Single Equation Probit Models of the Probabilities of Graduating from High School and of Obtaining**  
**Postsecondary Education, Full Sample**

VARIABLE	Highschl			College			Highschl			College		
	BETA t-STAT	dy/dx		BETA t-STAT	dy/dx		BETA t-STAT	dy/dx		BETA t-STAT	dy/dx	
CONSTANT	2.3064	15.44	0.4173	-0.0965	-0.80	-0.0379	2.2806	15.35	0.4117	-0.1117	-0.93	-0.0439
PARPOOR	-0.3145	-4.26	-0.0569	-0.0565	-0.91	-0.0222	-0.3102	-4.21	-0.0560	-0.0526	-0.85	-0.0207
PARRICH	-0.0936	-1.02	-0.0169	-0.0511	-0.79	-0.0201	-0.0885	-0.97	-0.0160	-0.0467	-0.73	-0.0184
TOPARENT	0.2159	2.98	0.0391	-0.0036	-0.06	-0.0014	0.2239	3.09	0.0404	0.0014	0.02	0.0006
EFA_LTHS	-0.1422	-1.80	-0.0257	-0.3270	-5.42	-0.1286	-0.1489	-1.89	-0.0269	-0.3276	-5.44	-0.1289
EFA_GTHS	0.1591	0.85	0.0288	0.3717	3.56	0.1462	0.1643	0.88	0.0297	0.3755	3.60	0.1477
EFA_DEG	0.4122	1.70	0.0746	0.4970	4.17	0.1954	0.4400	1.79	0.0794	0.4980	4.18	0.1959
EMO_LTHS	-0.3264	-4.40	-0.0590	-0.2540	-4.12	-0.0999	-0.3347	-4.53	-0.0604	-0.2608	-4.24	-0.1026
EMO_GTHS	0.5551	2.91	0.1004	0.3696	3.93	0.1453	0.5409	2.84	0.0976	0.3638	3.87	0.1431
EMO_DEG	0.5976	2.21	0.1081	0.5715	4.79	0.2247	0.6315	2.33	0.1140	0.5799	4.86	0.2281
AGE	-0.0144	-4.75	-0.0026	0.0109	4.17	0.0043	-0.0139	-4.63	-0.0025	0.0110	4.26	0.0043
HEADBROS	-0.0260	-1.68	-0.0047	-0.0178	-1.23	-0.0070	-0.0269	-1.74	-0.0049	-0.0181	-1.26	-0.0071
HEADSIST	-0.0693	-3.83	-0.0125	-0.0527	-3.30	-0.0207	-0.0696	-3.86	-0.0126	-0.0531	-3.34	-0.0209
GRADELAGE	-0.9815	-14.48	-0.1776	-0.6298	-8.89	-0.2477	-0.9733	-14.41	-0.1757	-0.6235	-8.83	-0.2453
	Log-L	-1058		Log-L	-1799		Log-L	-1064		Log-L	-1803	
	Rest Log-L	-1782		Rest Log-L	-2130		Rest Log-L	-1782		Rest Log-L	-2130	
	N	3183		N	3183		N	3183		N	3183	

TABLE 6 (continued)

FA_IMMIG	0.0089	0.06	0.0016	0.0561	0.47	0.0221	0.0370	0.23	0.0067	0.0670	0.57	0.0263
FA_SOUTH	-0.0632	-0.41	-0.0114	0.0760	0.70	0.0299	-0.0497	-0.32	-0.0090	0.0786	0.72	0.0309
MO_IMMIG	-0.0227	-0.13	-0.0041	-0.0118	-0.09	-0.0047	-0.0532	-0.31	-0.0096	-0.0272	-0.21	-0.0107
MO_SOUTH	-0.1317	-0.85	-0.0238	-0.3736	-3.52	-0.1469	-0.1371	-0.88	-0.0247	-0.3740	-3.52	-0.1471
HD_IMMIG	-0.4721	-2.80	-0.0854	-0.0347	-0.23	-0.0136	-0.4340	-2.63	-0.0783	-0.0144	-0.10	-0.0056
HD_SOUTH	-0.1628	-1.32	-0.0294	0.1373	1.43	0.0540	-0.1628	-1.33	-0.0294	0.1415	1.48	0.0557
GREWRURL	-0.1965	-2.65	-0.0355	-0.1576	-2.39	-0.0620	-0.1975	-2.67	-0.0357	-0.1550	-2.36	-0.0610
FAPMT	0.0294	0.22	0.0053	0.1708	2.01	0.0672	0.0391	0.29	0.0071	0.1747	2.06	0.0687
FABUSOWN	0.6485	2.35	0.1173	0.5363	3.52	0.2109	0.6554	2.39	0.1183	0.5300	3.48	0.2085
CATHOLIC	0.0510	0.55	0.0092	-0.1447	-2.20	-0.0569	0.0502	0.55	0.0091	-0.1409	-2.16	-0.0554
JEWISH	1.4877	0.89	0.2691	1.0120	3.01	0.3980	1.4537	0.89	0.2624	1.0133	3.01	0.3985
MUSLIM	1.7054	1.57	0.3085	1.0460	3.14	0.4113	1.6843	1.57	0.3041	1.0461	3.14	0.4114
NORELIGN	-0.3819	-3.61	-0.0691	-0.3065	-3.32	-0.1205	-0.3770	-3.57	-0.0681	-0.3004	-3.26	-0.1181
AFRICAN	0.3415	3.96	0.0618	0.1301	1.73	0.0512	0.3441	3.99	0.0621	0.1307	1.74	0.0514
MEXICAN	-0.2587	-1.52	-0.0468	-0.0646	-0.42	-0.0254	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
CUBAN	0.1537	0.34	0.0278	-0.0092	-0.02	-0.0036	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PRICAN	0.0456	0.16	0.0083	0.0123	0.05	0.0048	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
OTHLRAT	0.9424	2.29	0.1705	0.7878	2.66	0.3098	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
BROWN	-0.0825	-0.41	-0.0149	0.0270	0.13	0.0106	-0.1980	-1.00	-0.0357	-0.0750	-0.38	-0.0295
LATINO							-0.0684	-0.44	-0.0123	0.0715	0.53	0.0281

**TABLE 7**  
**Single Equation Probit Models of the Probabilities of Graduating from High School and of**  
**Obtaining Postsecondary Education, Native-Born Sample**

VARIABLE	Highschl				College				Highschl				College			
	BETA	t-STAT	dy/dx	BETA	t-STAT	dy/dx	BETA	t-STAT	dy/dx	BETA	t-STAT	dy/dx	BETA	t-STAT	dy/dx	
CONSTANT	2.2567	13.57	0.3929	-0.1748	-1.31	-0.0690	2.2552	13.58	0.3925	-0.1837	-1.38	-0.0725	-0.1837	-1.38	-0.0725	
PARPOOR	-0.3828	-4.39	-0.0632	-0.0471	-0.69	-0.0186	-0.3630	-4.40	-0.0632	-0.0466	-0.68	-0.0184	-0.0466	-0.68	-0.0184	
PARRICH	-0.1041	-1.01	-0.0181	-0.0347	-0.49	-0.0137	-0.1030	-1.00	-0.0179	-0.0316	-0.45	-0.0125	-0.0316	-0.45	-0.0125	
TOPARENT	0.2259	2.77	0.0393	0.0355	0.52	0.0140	0.2262	2.78	0.0394	0.0370	0.55	0.0146	0.0370	0.55	0.0146	
EFA_LTHS	-0.1219	-1.39	-0.0212	-0.3251	-4.87	-0.1283	-0.1219	-1.39	-0.0212	-0.3229	-4.85	-0.1274	-0.3229	-4.85	-0.1274	
EFA_GTHS	0.1722	0.84	0.0300	0.3738	3.28	0.1475	0.1727	0.84	0.0300	0.3769	3.31	0.1486	0.3769	3.31	0.1486	
EFA_DEG	0.3503	1.30	0.0610	0.4849	3.70	0.1914	0.3448	1.29	0.0600	0.4790	3.66	0.1891	0.4790	3.66	0.1891	
EMO_LTHS	-0.3498	-4.27	-0.0609	-0.2627	-3.84	-0.1037	-0.3507	-4.28	-0.0610	-0.2678	-3.93	-0.1057	-0.2678	-3.93	-0.1057	
EMO_GTHS	0.5345	2.53	0.0930	0.3549	3.43	0.1401	0.5347	2.54	0.0931	0.3517	3.41	0.1386	0.3517	3.41	0.1386	
EMO_DEG	0.6448	2.17	0.1123	0.5851	4.48	0.2309	0.6594	2.23	0.1148	0.5965	4.57	0.2354	0.5965	4.57	0.2354	
AGE	-0.0138	-4.03	-0.0024	0.0112	3.86	0.0044	-0.0138	-4.04	-0.0024	0.0113	3.90	0.0045	0.0113	3.90	0.0045	
HEADBROS	-0.0197	-1.13	-0.0034	-0.0153	-0.95	-0.0060	-0.0195	-1.12	-0.0034	-0.0149	-0.93	-0.0059	-0.0149	-0.93	-0.0059	
HEADSIST	-0.0753	-3.71	-0.0131	-0.0515	-2.91	-0.0203	-0.0755	-3.72	-0.0131	-0.0524	-2.97	-0.0207	-0.0524	-2.97	-0.0207	
GRADELAG	-0.9931	-12.97	-0.1729	-0.6577	-8.17	-0.2596	-0.9922	-12.96	-0.1727	-0.6527	-8.13	-0.2576	-0.6527	-8.13	-0.2576	

TABLE 7 (continued)

FA_IMMIG	0.0539	0.30	0.0094	0.0893	0.67	0.0348	0.0528	0.29	0.0092	0.0865	0.66	0.0341
FA_SOUTH	-0.0663	-0.39	-0.0115	0.0922	0.77	0.0364	-0.0650	-0.39	-0.0113	0.0935	0.78	0.0369
MO_IMMIG	0.0545	0.27	0.0095	-0.0214	-0.15	-0.0085	0.0572	0.28	0.0100	-0.0194	-0.14	-0.0077
MO_SOUTH	-0.1119	-0.65	-0.0195	-0.4081	-3.49	-0.1611	-0.1096	-0.64	-0.0191	-0.4014	-3.44	-0.1584
HD_SOUTH	-0.1669	-1.22	-0.0291	0.1666	1.58	0.0658	-0.1691	-1.25	-0.0294	0.1656	1.58	0.0653
GREWRURL	-0.1570	-1.88	-0.0273	-0.1438	-1.97	-0.0567	-0.1562	-1.87	-0.0272	-0.1396	-1.92	-0.0551
FAPMT	0.0359	0.24	0.0063	0.1693	1.80	0.0664	0.0364	0.24	0.0063	0.1716	1.84	0.0677
FABUSOWN	0.6354	1.99	0.1106	0.5241	3.09	0.2068	0.6344	1.99	0.1104	0.5197	3.06	0.2051
CATHOLIC	0.0785	0.75	0.0137	-0.1203	-1.65	-0.0475	0.0785	0.75	0.0137	-0.1181	-1.63	-0.0466
NORELIGN	-0.4325	-3.68	-0.0753	1.0411	2.82	0.4109	n.a.			1.0447	2.83	0.4123
MUSLIM	n.a.			1.0018	2.62	0.3954	n.a.			1.0056	2.63	0.3968
NORELIGN	n.a.			-0.2935	-2.85	-0.1158	-0.4309	-3.67	-0.0750	-0.2852	-2.78	-0.1126
AFRICAN	0.3771	3.96	0.0656	0.1399	1.68	0.0552	0.3765	3.96	0.0655	0.1383	1.67	0.0546
MEXICAN	0.1681	0.71	0.0293	0.1660	0.90	0.0655	n.a.			n.a.		
CUBAN	0.1596	0.08	0.0278	-0.0668	-0.06	-0.0263	n.a.			n.a.		
PRICAN	0.2290	0.51	0.0399	0.2512	0.68	0.0992	n.a.			n.a.		
OTHLRAT	0.4653	0.78	0.0810	1.3831	2.85	0.5459	0.2053	0.93	0.0357	0.3080	1.85	0.1215
BROWN	-0.2469	-0.81	-0.0430	-0.0410	-0.16	-0.0162	-0.2635	-0.87	-0.0459	-0.1345	-0.53	-0.0531
LATINO	n.a.			n.a.			0.2053	0.93	0.0357	0.3080	1.85	0.1215



The patterns here add detail to the results obtained when educational attainment is measured by years of education. Examining the results for the bivariate probit specifications (Tables 4 and 5), African Americans are more likely to graduate from high school than otherwise identical whites; however, the relative impact of supra-normal effort among African Americans is positive but not statistically significant in the COLLEGE equation. For the single equation estimates of the COLLEGE equation, the coefficient on AFRICAN is larger than in the respective bivariate probit specification and it is statistically significant, even though the magnitude of the AFRICAN coefficient is nearly the same across the bivariate and single equation procedures for estimating the HIGHSCHL equation. From the binomial probit equations, African Americans are 6–7 percent more likely than whites to graduate from high school and 5–6 percent more likely to obtain post-secondary education (given that they have graduated from high school).

These results suggest that supra-normal effort does increase the probability an African American will graduate from high school, and among those who have graduated from high school there is a relatively greater probability of attaining post-secondary education. The positive race-specific effect for African Americans however is not sufficient to overcome the impact of a more disadvantageous socioeconomic background (compared to white males), especially since the positive covariance between the cost of education and years of education implies that the impact of culture on education (supra-normal effort) will become attenuated at higher levels of education. When one examines, therefore, mean years of education rather than alternative points of the distribution of educational attainment, the race-specific effect for African Americans appears somewhat muted.

Regardless of the estimation procedure, there are no race-specific effects for men of Mexican, Cuban, or Puerto Rican origin, although nearly all of the coefficients are positive (when the sample is restricted to native-born men). For Other Latinos, there are positive and statistically significant race effects in both the bivariate and single equation specifications and for both the full and native-born samples. The coefficient on BROWN is statistically insignificant, regardless of statistical specification and whether or not immigrants are included in the sample.

For Latinos, I draw the following conclusions from the ordinary least squares and probit specifications of the educational attainment process. Among the native-born and for a given level of resources, Latinos as an

undifferentiated group are likely to obtain the same level of education as white men; although, Other Latinos are likely to obtain a higher level of education than whites, this is especially so for post-secondary education. When immigrants are included in the sample, immigrant (but not native) Mexican Americans are likely to obtain a lower level of education than white men, while Other Latinos are likely to obtain a higher level of education. Finally, for Brown Latinos the results are indeterminate. The probit specifications show no effect, regardless of specification or sample; however, the coefficient on BROWN is negative in each of the high school graduation equations and often positive in each of the post-secondary education equations. The ordinary least squares specification shows that the BROWN coefficient is negative and quite significant when national origin is omitted. Perhaps the latter results imply that Brown Latinos face considerable challenges graduating from high school, but once they have graduated they tend to do as well or better than whites in the education process.

Moreover, BROWN is a self-identified and residual category. After giving their national origin, sample respondents were queried on their racial identity. Nearly two-thirds of Latino respondents self-identified as "white." All other responses were coded as "brown," although the responses ranged from political (Chicano), to descriptive (olive, black, brown, light-skinned, etc.), to national origin, to ethnic (Latino Indian, Mestizo, Cholo, Pocho), to "other." One clear commonality among these terms is a desire to self-identify as "not white." And, as is indicated in Table 2, nearly 38 percent of native-born Latinos self-identify as brown while only 17 percent of foreign-born Latinos self-identify as brown. This pattern of self-identification among Latinos may reflect a certain degree of alienation or non-assimilation, and this alienation appears to increase with the Americanization of Latinos. Hence, this non-assimilation may be a response to discrimination against Latinos. Accordingly, the interpretation of the coefficient on BROWN remains uncertain.

Table 8 contains four estimates of equation 3.1. There are two equations each for the full and native-born samples. For both samples, there is one equation which considers Latinos as an aggregate and one which differentiates Latinos by national origin.

For each equation, the coefficient on AFRICAN is negative and significant. This is precisely the opposite of what would expect in a discrimination-free environment since African Americans have a positive race-specific effect in the educational attainment process. This represents

**TABLE 8**  
**Reduced Form LOGWAGE Regressions,**  
**Full and Native-Born Samples (All Men)**

	Full Sample		Full Sample		Native-Born		Native-Born	
	Logwage	2.44	Logwage	2.44	Logwage	2.45	Logwage	2.45
	R2	0.3503	R2	0.3498	R2	0.3453	R2	0.3449
	Adj R2	0.3414	Adj R2	0.3415	Adj R2	0.3345	Adj R2	0.3348
	Log-L	-3506	Log-L	-3507	Log-L	-2679	Log-L	-2679
	Rest Log-L	-4192	Rest Log-L	-4192	Rest Log-L	-3225	Rest Log-L	-3225
	N	3183	N	3183	N	2580	N	2580
VARIABLE	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT	BETA	t-STAT
CONSTANT	1.8426	30.95	1.8408	30.94	1.8637	27.95	1.8623	27.94
NRTHEAST	0.1600	4.51	0.1661	4.73	0.1391	3.49	0.1408	3.55
NRTHCENT	-0.0070	-0.21	-0.0058	-0.18	-0.0279	-0.76	-0.0276	-0.75
WEST	0.1265	3.69	0.1220	3.59	0.1181	3.02	0.1160	2.97
TENURE	0.0036	14.39	0.0036	14.41	0.0035	12.91	0.0035	12.92
TENURE2	-0.000006	-8.28	-0.000006	-8.31	-0.000006	-7.51	-0.000006	-7.52
AGE	0.0118	10.96	0.0119	11.03	0.0115	9.45	0.0115	9.45
HEALTH	-0.1970	-6.45	-0.1964	-6.43	-0.1860	-5.46	-0.1861	-5.46
MARRIED1	0.1066	3.70	0.1070	3.72	0.1040	3.28	0.1044	3.30
XJOB1	-0.0047	-0.20	-0.0037	-0.16	-0.0005	-0.02	0.0014	0.06
JOBUNION	0.1029	4.53	0.1030	4.54	0.1028	4.07	0.1029	4.07
PARPOOR	-0.0781	-3.38	-0.0783	-3.39	-0.0691	-2.68	-0.0692	-2.69
PARRICH	-0.0353	-1.49	-0.0348	-1.47	-0.0382	-1.45	-0.0372	-1.42
TOPARENT	0.0026	0.12	0.0020	0.09	0.0076	0.30	0.0075	0.30
EFA_LTHS	-0.1003	-4.34	-0.1011	-4.38	-0.1018	-3.98	-0.1017	-3.98
EFA_GTHS	0.0181	0.46	0.0186	0.47	0.0122	0.29	0.0130	0.30
EFA_DEG	0.0843	1.95	0.0846	1.96	0.0571	1.20	0.0559	1.18
EMO_LTHS	-0.1002	-4.30	-0.1006	-4.32	-0.1008	-3.90	-0.1017	-3.94
EMO_GTHS	-0.0417	-1.17	-0.0416	-1.17	-0.0521	-1.33	-0.0522	-1.33
EMO_DEG	-0.0280	-0.66	-0.0276	-0.66	-0.0258	-0.56	-0.0242	-0.53
PROJECTS	-0.2120	-3.55	-0.2077	-3.48	-0.2239	-3.34	-0.2242	-3.35
HEADBROS	0.0047	0.92	0.0047	0.93	0.0043	0.76	0.0043	0.76
HEADSIST	-0.0100	-1.74	-0.0100	-1.75	-0.0072	-1.12	-0.0074	-1.15
GRADELAG	-0.2045	-8.29	-0.2040	-8.28	-0.2194	-7.84	-0.2185	-7.81
FA_IMMIG	-0.0651	-1.48	-0.0614	-1.40	-0.0466	-0.95	-0.0442	-0.91
FA_SOUTH	0.0355	0.87	0.0367	0.90	0.0310	0.69	0.0311	0.70
MO_IMMIG	0.1528	3.18	0.1585	3.31	0.1637	3.00	0.1681	3.10
MO_SOUTH	-0.0532	-1.32	-0.0523	-1.30	-0.0686	-1.55	-0.0683	-1.54
HD_IMMIG	-0.1241	-2.19	-0.1255	-2.23	n.a.		n.a.	
HD_SOUTH	-0.0094	-0.23	-0.0105	-0.26	-0.0018	-0.04	-0.0012	-0.03
GREWRURL	-0.1370	-5.67	-0.1375	-5.70	-0.1421	-5.27	-0.1419	-5.27
FAPMT	0.0452	1.42	0.0450	1.42	0.0550	1.57	0.0557	1.59
FABUSOWN	-0.0277	-0.50	-0.0274	-0.49	-0.0504	-0.81	-0.0513	-0.83
CATHOLIC	0.0794	3.11	0.0754	2.98	0.0945	3.33	0.0936	3.32
JEWISH	0.2433	3.00	0.2401	2.97	0.2507	2.84	0.2493	2.83
MUSLIM	0.1761	1.46	0.1747	1.45	0.2573	1.80	0.2577	1.80
NORELIGN	-0.0566	-1.69	-0.0562	-1.68	-0.0567	-1.53	-0.0556	-1.50
AFRICAN	-0.0966	-3.47	-0.0972	-3.50	-0.0964	-3.15	-0.0963	-3.14
MEXICAN	-0.1316	-2.25	n.a.		-0.1032	-1.43	n.a.	
CUBAN	-0.0739	-0.49	n.a.		0.1133	0.28	n.a.	
PRICAN	0.0144	0.14	n.a.		-0.0209	-0.14	n.a.	
OTHLAT	-0.0678	-0.62	n.a.		0.0752	0.49	n.a.	
BROWN	-0.2076	-2.92	-0.2188	-3.15	-0.2664	-2.70	-0.2828	-2.91
SPANDOMN	-0.1346	-1.36	-0.1420	-1.44	-0.3601	-0.96	-0.3520	-0.92
LATINO	n.a.		-0.0977	-1.88	n.a.		-0.0665	-1.02

a strong finding of wage discrimination in the labor market. Also, regardless of the sample, the coefficient on MEXICAN is negative, but it is significant only in the full sample. (If BROWN is omitted from the regression the coefficient on MEXICAN is also significant and negative in the native-born sample.) The negative sign on MEXICAN when immigrants are included in the sample is consistent with the negative race-specific effect in educational attainment when immigrants are included. However, for native-born Mexican Americans there is no race-specific effect in educational attainment; hence, the negative coefficient on MEXICAN in the wage equation is at least weakly indicative of discrimination.

This is also strong evidence of discrimination against Other Latinos. There is a positive race-specific effect for this group in educational attainment, but the coefficient on OTHRLAT in the wage equation is insignificant. In the absence of discrimination, this coefficient would be positive and significant.

The insignificant coefficients on CUBAN and PRICAN are not consistent with either a strong or a weak indication of discrimination against these groups. On the other hand, the negative coefficients on BROWN and LATINO indicates the likely presence of wage discrimination against Latinos as a whole, especially non-white Latinos.

## SUMMARY AND DISCUSSION

This article has examined the interrelationships among race, culture, skill, and the distribution of wages. I utilized a three-equation system to explore this process: skill is a multidimensional productive attribute measured by years of education and work effort; educational attainment is a function of class background and individual effort; and, individual wage rates are a function of skill and class background. By further assuming that effort is differentially distributed across individuals and social groups, I was able to estimate reduced form equations for educational and earnings attainment, where both equations are functions of the class backgrounds and race of individuals.

For the high school diploma or less, African Americans have utilized supra-normal effort to reduce the white-African American education gap. For the high school diploma or less, I cannot reject the null hypothesis of equal educational effort between whites and individuals of Cuban or

Puerto Rican origin or between whites and native-born Mexican American and Other Latinos; and, there is a negative race-specific effect for immigrant men of Mexican origin and foreign-born Other Latinos. With respect to post-secondary education, I cannot conclusively reject the null hypothesis of equal intergroup educational effort between whites and African Americans, between whites and Mexican, Cuban, and Puerto Rican men, but there is a positive race-specific effect for Other Latinos. Also, for post-secondary education, there is moderate evidence of a positive race-specific effect for African American men.

The results also highlight the importance of race and national origin among Latinos. In particular, self-identified white Latinos tend to obtain higher amounts of education than brown Latinos and tend to have a positive earnings differential I do not present the results here, but I also found that the positive earnings differential for white Latinos remains statistically significant when years of education is included as a regressor; hence, self-identified white and brown Latinos may have differential returns to productive attributes. This is an area for further investigation.

In the earnings process, African Americans are paid about 0.10 log points less than whites, so at least one-third of the gross African American–white wage differential is unexplained. Given the positive race-specific effect for African Americans in the skill acquisition process, there is strong evidence that this unexplained differential is in fact pure wage discrimination.

Similarly, there is strong evidence of discrimination against Other Latinos, who have an 8–17 percent greater probability of graduating from high school than otherwise identical white men and a 31–55 percent greater probability of obtaining post-secondary education (given that they have graduated from high school). Yet, the race-specific effect in the wage equation is negative and insignificant. With their greater effort in skill acquisition, the latter race-specific effect in the wage equation should be clearly positive.

The negative race-specific for Mexican Americans in both the educational attainment and wage equation, when immigrants are included in the sample, makes it difficult to assert strong conclusions regarding the presence of discrimination. For native-born Mexican Americans there is no race-specific effect in educational attainment; hence, the negative race-specific effect in the wage equation is at least weak confirmation of discrimination against native-born Mexican Americans.

I found no race-specific effect for either Cuban or Puerto Rican men, in either the educational attainment or wage equations.

For Latinos as a whole, especially self-identified brown Latinos, the results are mixed and it is difficult to draw firm conclusions. For brown Latinos, there is a negative race-specific in the wage equation and (more likely than not) a negative race-specific effect in the educational attainment process. But, the very process of self-identifying as brown may be a result of social and economic discrimination. For all Latinos, there is no negative race-specific effect in educational attainment among the native-born; indeed, this coefficient is positive but insignificant. However, the coefficient for all Latinos in the native-born wage equation is negative and insignificant. When immigrants are included in the sample, there is a negative race-specific years of education effect and a negative race-specific wage effect for all Latinos. Clearly, considerably more research needs to be done on the interrelationships between citizenship status, racial identity, national origin, and the distribution of wages among Latinos.

Collectively, the results of this article challenge the conventional wisdom among economists that African American and Latino job skills are of a lower quality than white job skills. To the extent that effort is an important element of worker skill our results suggest that neither African American nor Latino labor is of lower quality than white labor. The results regarding African American–white differences in educational attainment, i.e., African Americans are able to translate a given level of resources into higher levels of educational attainment, reaffirm previous findings in the literature. The results on Latino–white educational attainment differences are novel. Additionally, unlike previous research, this article connects racial differences in the skill acquisition process to the economics of discrimination. Thus, it brings together two pieces of the empirical literature that no one else has attempted to link.

To reiterate, the major empirical issue in the economics of discrimination is whether the race variable in the wage equation captures discrimination against Latinos and African Americans or whether the mean individual from these social groups has lower amounts of unobserved productive attributes than the mean white. Rather than continuously repeat the cumbersome phrase “unobserved productive attributes,” I have employed the word “effort.” This article finds that the data is not consistent with the assertion that unobserved labor quality or effort is lower among African Americans and Latinos; hence, the coefficient on race in the standard wage equation is best interpreted as a pure measure of discrimination. Moreover, I have also pointed to several additional sources whose results are complementary to the work I present here.

Nevertheless, critics may take issue with the success of this article in linking educational effort to labor market effort as a strategy for interpreting the race coefficient in the wage equation. For example, critics might well argue that employers' evaluations of effort in the labor market process are not conditioned on family background; hence, the conclusions of the article would be more palatable if there were some direct empirical links between educational effort and work effort. Such criticism is correct as far as it goes: it is always better to have more observable information. Given this, exactly how does one go about establishing direct empirical links to unobserved attributes? If this data were available, I would directly include the variables in the wage equation. However, unless one believes that the distribution of unobserved labor quality is genetically determined, it is reasonable to use family background to control for at least some of an individual's unobserved characteristics, especially the extent of class privilege and degree of access to persons with decision-making authority and control over resources. Moreover, even if one were to accept that employers do not condition on family background in assessing effort, some employers may very well condition on race in assessing effort (unobserved ability)—which, again, supports the main point of this article.

A second line of criticism might suggest that the estimated model of educational attainment has omitted variables. For example, holding family background constant, African Americans and Latinos may have preferential access to scholarships, loans, or other funds. Presumably, this line of criticism would suggest that if it is easier for African Americans or Latinos of a given social background to be admitted to a good college than an otherwise identical white, then the average African American may actually put forth less effort than the average white. Or, if African Americans and Latinos attend primary and secondary schools with less challenging promotional requirements than those attended by whites then the positive coefficient on race in the educational attainment equation may simply reflect these less challenging promotion policies rather than supra-normal effort.

Again, this line of criticism is correct as far as it goes: a) interracial improvements in years of education does not necessarily imply any interracial gain in the quality of education; and b) if the average African American or Latino received systematic preferential treatment in college admissions at good colleges then there might be some effect on African American and Latino educational effort. Yet, this line of criticism would

be unnecessary speculation. As I have indicated in the introduction, from 1865 to the present both African American and white years of education have been increasing but African American years of education increased faster. There was a substantial amount of racially preferential treatment in American society from at least 1877 to at least 1965, but none of this preferential treatment in the education process or the labor market was directed at either African Americans or Latinos. Hence, none of the interracial gains made prior to the mid-1960s could possibly be linked to systematic bias toward African Americans. And, Jaynes and Williams also establish that it is simply wrong to conclude that government policy alone is responsible for the substantial interracial educational improvement of African Americans during the post-1965 era.

Also, even if one were to grant the assertion of preferential treatment for African Americans and Latinos (and opposed to all individuals from economically disadvantaged backgrounds) at good colleges, it does not immediately follow that this should reduce the average level of educational effort of the members of either group. The results presented here show that the major impact of racial differences in effort occurs during the pre-college years. Hence, any alleged admissions policy of preferential treatment at good colleges for Latinos and African Americans is of very little consequence since those policies clearly do not outweigh the other interracial differences in impediments to college attendance.

Additionally, if the gains in years of education are due to African Americans and Latinos having to meet less rigid standards for promotion than whites, then critics of the results presented here must explain why standardized test scores of African Americans and Latinos relative to whites increased substantially from 1970 to about 1989. (See references in introduction.)

A third line of criticism is that educational attainment has been modeled in an ad hoc manner. Perhaps. Nevertheless, I have utilized a model that is quite common in the received literature. The specific model of educational achievement employed in this article was more or less identical to the model found in the widely cited work of Haveman and Wolfe. (This article also utilizes the same dataset.) The citation by Haveman and Wolfe also contains references to other researchers who have employed the same model, both in sociology and in economics. In a commonly used equation with a common set of explanatory variables, it would be somewhat redundant to explain why each variable is included in the model.



I am certain that I have not exhausted the set of objections skeptics may wish to raise regarding this article's statistical results. After all, they dramatically challenge the conventional wisdom. In the large set of unobserved variables that may be omitted from educational attainment and wage equations it is at least conceptually possible that African Americans may possess higher levels (or qualities) of some subset of those variables. Hence, single equation models of interracial wage differentials may actually underestimate the extent of discrimination. Given that supra-normal effort (higher levels of unobserved ability) is often an important explanatory factor in the upward mobility of selected groups of whites, i.e., immigrants and Jews, it is somewhat surprising that a similar hypothesis has not been seriously investigated by economists with respect to African American education and earnings.

This article remains agnostic on whether supra-normal effort is an imbedded ethno-cultural pattern or merely a response to social and economic discrimination. In any case, the African American-white racial gap in educational achievement (as measured by the National Assessment of Educational Progress) reversed its historic declining trend during the late 1980s. However, the preliminary findings of the 1994 NAEP suggests that the divergence may have come to a halt (Hauser, 1996:22). Additional research is needed to determine if these changes are the result of a cultural gap between today's youth and older generations, or, are the result of government policy ushered in during the early 1980s.

## NOTES

1. See Mason (1995b) for a competitive theory of discrimination that does not rely on equal market treatment of economically identical workers. See Oaxaca (1994) for a review and further development of discrimination indexes.

2. For this article, "whites" is shorthand for the more cumbersome phrase "Non-Hispanic white males." For the dataset, "Latino" is not inclusive of individuals of Spanish national origin. Where designated, "white Latinos" refers to Latinos who have self-identified as white, while "brown Latinos" refers to individuals who have self-identified as brown, Chicano, Boricua, black, Moreno, or other Spanish descriptor when queried on their racial identification (as opposed to national origin).

The U.S. census identifies Hispanics as individuals who may be either "black" or "white." Therefore, in the census, Hispanics are not a racial group. However, it becomes a bit cumbersome to continually refer to "racial/ethnic" differences among African Americans, whites, and Hispanics—especially when there are ethnic differences within each of these groups. Thereby, we treat Hispanics as a racial group within this article and employ the term Latino in order to emphasize that distinction.

3. Bernstein presents evidence that this may have come to a halt, or even reversed, during the very late 1980s.

4. For example, it is still the case that African Americans are more likely to be in schools with larger average class sizes than whites and are more likely to be in larger classes within a particular school type (Boozer and Rouse, 1995).

5. Equation (2) does not neglect the price and income variables central to the human capital analysis of the demand for education. As Freeman (1986a:369) summarizes, "There is a powerful positive relation between one's family background, measured by family income, occupation or education of parents, and schooling."

6. Individuals from elite social class backgrounds are able to obtain higher earnings because they have greater access to persons embedded into positions of power and authority in the job market (Granovetter, 1988) and because their wealth provides greater bargaining power in the labor market (Bowles and Gintis, 1990).

7. Haveman and Wolfe (1994:143–187) also employ a simultaneous bivariate probit model of educational attainment and obtain results analogous to those reported in the text. For the technical details on estimating a bivariate probit model, see Greene (1993:660–663).

8. Survey Research Center, "The 1990 Panel Study on Income Dynamics/Latino National Political Survey," Ann Arbor, MI: University of Michigan, April, 1992.

9. The National Longitudinal Survey of Youth does contain information on school characteristics. However, both Maxwell (1995) and O'Neill (1990) found school characteristics to be statistically insignificant determinants of educational attainment when class (socioeconomic background) is adequately controlled for in the regression.

10. Freeman (1986b) and Datcher-Loury and Loury (1986) provide interesting studies on the role of religion and labor market outcomes for young African American males. These studies provide some limited affirmation of the notion that the process of attending church does produce values and behaviors that are conducive to increasing labor supply and increasing earnings. However, the current study measures only religious affiliation—not worship attendance—and this study is not limited to young males. Freeman makes the careful observation that, "it is the act of churchgoing, not religious attitudes that affects behavior" (p. 369).

11. Among others, Rodgers, Spriggs, and Waaler (1997) provide data that the unadjusted distributions of highest grade completed by age and by race show that African American men obtain fewer years of education for any given grade level.

12. See Borjas (1990) for an estimate of the quantitative importance of this problem.

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