THE RELATIVE EARNINGS OF YOUNG MEXICAN, BLACK, AND WHITE WOMEN

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This analysis of data from the National Longitudinal Survey of Youth indicates that young Mexican women and young black women earned, respectively, 9.5% and 13.2% less than young white women in 1994. Differences in education appear to be the most important explanation for the Mexican-white wage gap, whereas differences in labor force attachment are the most important determinant of the black-white wage gap. The authors show that accounting for actual labor market experience, rather than simply imputing experience based on years since leaving school, is crucially important in such analyses.

Recent research has renewed interest in the relatively poor labor market performance of Mexican men (Trejo 1997, 1998; Reimers 1994; Chavez 1991; Chapa 1990). Trejo (1997) found that lower levels of education, English deficiencies, and the relative youth of Mexican men explain 75% of the gap between Mexican and white wages. In contrast, these factors explain less than 30% of the wage gap between black and white men. Despite the flurry of recent research exploring the poor performance of Mexican men, we are aware of only one study that includes women (Mora and Davila 1998), and it focused on the differential return to English fluency across gender. We therefore seek to contribute to the current debate regarding Mexican labor market performance by comparing the experiences of young Mexican women with those of their black and white counterparts.

Previous research has excluded women from study because their lower labor force participation reduces the accuracy of Mincer experience measures (which impute work experience based on time since completing schooling) and introduces potential selection bias. While Mincer experience may be a fairly good approximation of true work experience for men with high labor force attachment, it is a poor proxy

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for women and, possibly, for some minority groups. We are able to overcome this measurement problem using the National Longitudinal Survey of Youth (NLSY). In particular, the longitudinal nature of the NLSY allows us to construct true experience measures, as well as complete education, childbirth, and marital histories. Since these factors may play important roles in determining the labor market participation decisions and success of women, the NLSY is well suited to this study.

It is well established that women tend to move in and out of the labor market more frequently than men, and that job interruptions surrounding childbirth have long-term implications for women's wages (Jacobsen and Levin 1995; Waldfogel 1997, 1998). Waldfogel (1997, 1998) showed that children have a negative impact on earnings even in analyses that control for actual labor market experience. In her 1997 paper, Waldfogel found that among women whose work lives were interrupted by childbirth, coverage by a formal maternity leave program and return to the former employer after childbirth were positively associated with post-childbirth wages. Further, Waldfogel (1998) showed that the positive impact of maternity leave offset the negative effect of children by increasing the probability of return to the former employer. Echoing Waldfogel, Phipps, Burton, and Lethbridge (1998) found that returning to the pre-birth employer had a positive impact on wages for Canadian women. Unfortunately, we are unable to determine whether or not a woman returned to her pre-birth employer or had access to maternity leave in the NLSY for the entire cohort. We do, however, allow for the possibility that a woman's experience profile may change slope after successive childbirth experiences.

Accounting for the wage gap between race groups for women clearly requires a careful accounting of differences in labor market participation and family structure in addition to educational differences. In 1994, the average young Mexican woman earned 9.5% less, and the average young black woman 13.2% less, than the average young white woman.[1] Education, fertility, and labor force attachment differences at various points in the life cycle play a crucial role in determining differences across racial/ethnic groups.

Data

We use the National Longitudinal Survey of Youth (NLSY), which contains longitudinal data from 1979 to 1998 for a sample of men and women aged 14–22 in 1979. Several features of these data are crucial for our purposes. First, the NLSY contains information that allows us to construct actual (rather than potential) work experience. This is particularly important when studying women. Second, these data include detailed information regarding marital and childbirth patterns. Finally, the NLSY allows us to identify non-immigrants and to separate individuals into racial/ethnic origin groups.

The NLSY contains 2,350 non-immigrant Mexican, black, and white women who were employed, reported an hourly wage between $1 and $100 per hour in 1993 or 1994, and were not self-employed.[2] We use 1993 data only if the respondent failed to report the information required to construct an hourly wage measure in 1994, but did report this information in 1993. Like Waldfogel (1998), we use wage data for multiple years to maintain an adequate sample of young Mexican women and mitigate sample selection bias. Hourly wages for 1994 are defined as annual wages and salaries reported in 1994 for the previous calendar year divided by the number of annual hours worked in the past calendar year.[3] Hourly wages for 1993 are calculated

[1]These percentages are based on NLSY data from 1994 (or, when 1994 data are unavailable, 1993).

[2]An individual is considered self-employed if she reported being self-employed or working without pay in her current or most recent job.

[3]Alternatively, we could have used the "key" variable hourly rate of pay in the current/most recent job created by the NLSY. However, this variable presents problems at extreme values (see Section 1.35 of the

analogously but are inflated into 1994 dollars. All variables are matched to the hourly wage data. For instance, marital status in 1994 is replaced with marital status in 1993 if the hourly wage data are missing in 1994 but available in 1993.

Given our interest in the number of children present in 1993–94, we construct all child variables using the number of children ever born. The lone exception is children born during 1993. Since the number of children ever born was not reported in 1993, we use retrospective day, month, and year of birth reports from 1994 to 1998 and the month and day of the interview date in 1993 to calculate the number of children born in 1993. We then add the number of children born in 1993 to the number of children reported in 1992.

We use two measures of work experience: Mincer experience and actual experience. Mincer experience is calculated as age minus years of education minus six. Actual experience is years of employment for individuals greater than 18 years of age reported between 1976 and 1994 and is based on weeks worked since the last NLSY interview. We convert the weekly experience into annual experience by dividing total weekly experience by 52.

Individuals are assigned to a racial/ethnic origin group by reports of first, or only, racial/ethnic origin. We focus on three racial/ethnic groups: Mexicans, blacks, and whites. An individual is considered Mexican if she claims to be Mexican or Mexican American. Similarly, an individual is considered black if she claims to be black. A respondent is considered white if she claims to be American (and is not black or Mexican), English, French, German, Greek, Irish, Italian, Polish, Portuguese, Russian, Scottish, or Welsh.

Place of birth is used to define immigrant status. An individual is considered a non-immigrant if she was born in the United States. The results are not sensitive to this definition. All results are similar if we require that the respondent and both parents be U.S.-born, or require that the respondent and at least one parent be U.S.-born. Restricting our analysis to non-immigrants allows for easier comparison with previous work by Trejo (1997, 1998) and reduces the potential influence of English proficiency, for which we have no measure.

Socioeconomic Characteristics

Table 1 presents descriptive statistics for the main variables used in the cross-sectional analysis. Inspection of Table 1 reveals that the average young Mexican woman earned 9.5% less than the average young white woman, while the average young black woman earned 13.2% less than the average young white woman. An obvious question raised by this comparison is why young Mexican women fared relatively better than their black counterparts.

In seeking an answer, we begin by considering socioeconomic characteristics that could play a role in the relative success enjoyed by young Mexican women. For example, race-specific fertility differences may be an important determinant of wages. Waldfogel (1997, 1998) and Korenman and Neumark (1992) found that children have a negative effect on wages for women, all else equal. A finding of larger average family size among blacks than among Mexicans might therefore help explain the relative success of young Mexican women. However, while young white women had substantially fewer children than their Mexican and black counterparts, Table 1 reveals that the average Mexican woman had more rather than fewer children than her average black counterpart (albeit the difference is not statistically significant). It is therefore unlikely that differences in number of children played an important role in explaining differences in labor market per-

NLSY User's Guide). Furthermore, for the panel estimation discussed below, using all information corresponding with the past calendar year seems more reasonable than using only information since the last interview. For instance, some individuals had an hourly rate of pay but had not worked during the past calendar year. Having said this, we note that the cross-section results are similar when hourly rate of pay is used.

Table 1. Sample Means: Young Mexican, Black, and White Women in 1994.

	Mexican		*Black*		*White*	
Variable	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*	*Mean*	*Std. Dev.*
Log Hourly Wages	2.148	0.553	2.111	0.617	2.243	0.629
Age	32.557	2.424	32.647	2.342	32.660	2.336
Experience:						
Mincer	13.786	3.518	13.349	3.173	12.924	3.388
Actual	10.974	3.782	10.323	3.869	11.580	3.574
Education:						
Years of Education	12.770	2.646	13.298	2.125	13.736	2.507
Less Than High School	0.220	0.415	0.119	0.324	0.103	0.304
High School Graduate	0.327	0.470	0.354	0.478	0.352	0.478
Some College	0.298	0.458	0.345	0.476	0.236	0.425
College Graduate	0.155	0.362	0.182	0.386	0.309	0.462
Marital Status						
Married	0.618	0.487	0.366	0.482	0.659	0.474
Fertility:						
1 Child	0.157	0.364	0.212	0.409	0.219	0.414
2+ Children	0.639	0.481	0.561	0.497	0.468	0.499
Sample Size		250		854		1,246

All estimates based on 1994 weights.
Source: National Longitudinal Survey of Youth.

formance between Mexican and black women. Regarding a second dimension of childbearing with potential explanatory value—the timing of children—there is a difference that might be expected, *prima facie,* to favor Mexican women over black women, but it is very slight: the average black woman had her first child when she was 20, compared to age 21 for the average Mexican woman (both groups averaged age 24 for the second child).

Are young Mexican women more educated than young black women? Table 1 clearly shows that the answer again fails to help explain young Mexican women's relative earnings advantage. The average young Mexican woman had 12.8 years of education, compared to 13.3 years for black women and 13.7 years for white women.

Were young Mexican women more attached to the labor force than their black counterparts? The average Mexican woman had 11.0 years of post-schooling work experience, while her black counterpart had only 10.3 years. (By comparison, the average young white woman had 11.6 years.) However, factoring in educational differences, Mexicans and blacks had similar amounts of work experience.

The most pronounced difference across young female ethnic groups was in marriage patterns. In our sample, 61.8% of Mexican women and 65.9% of white women were married, compared to only 36.6% of black women. While it is not entirely clear how marital status differences affect labor market participation, Moffitt (1992) found that female heads with children under age eighteen work about the same amount as single women and more than married women, most of whom also have children. Although the average wages of married and single black women were almost identical, 87.2% of married black women were employed, versus only 72.7% of unmarried black women.[4] We will return to the possibility of non-random labor market participation below.

[4]Similarly, 86.0% of married black women with children worked, compared to only 67.8% of single black women with children.

The similarity in many socioeconomic characteristics across young Mexican and black women does not, of course, imply that the time patterns, the variation within race groups, or the returns to certain attributes were the same for those two groups. In fact, they clearly indicate that young Mexican and black women must have differed in some or all of those respects. In particular, we draw two main hypotheses from this preliminary perusal of descriptive statistics. First, if fertility rate differences played a role in explaining the wage gap between Mexicans and blacks, it must have been through the timing of childbirth and a differential impact on work experience. Second, education and experience differences between Mexicans and blacks must therefore have played an important role in explaining their respective wage gaps relative to white women. The remainder of the paper more formally explores these possibilities.

Wages

Following standard practice, we compare the wages of ethnic-specific groups by running log hourly wage regressions of the form[5]

$$(1) \qquad W_i^r = \alpha^r + X_i^r \beta^r + \varepsilon_i^r,$$

where W is the log hourly wage, r denotes race ($r = M$, B, or W), i denotes individual, and X includes experience, education, marital status, child variables, region of residence, SMSA, and a year dummy (set to 1 if the reporting year is 1994).[6]

Several noteworthy results are presented in the middle column of Panel A of Table 2. First, education had a positive impact on the wages of young women in all racial/ethnic origin groups. Second, consistent with Waldfogel (1997, 1998) and Neumark (1992), we find that children had a negative impact on wages for young white women. Third, while potential experience and experience squared are jointly statistically significant for young black women, they are not significantly related to white or Mexican wages.

There are, of course, many good reasons to be skeptical about estimates based on Mincer experience for women. The movement of women into and out of the labor market, especially in connection with childbirth, may render Mincer experience an extremely inaccurate proxy for actual work experience for many women. The right-hand column of panel A of Table 2 replicates the *base* regressions replacing Mincer experience with actual experience and age. Comparing these results to the *base* estimates highlights the importance of measuring actual experience.

In most cases, the experience and experience squared terms are not individually statistically significant, the one exception being the level experience term for black women, which is statistically significant at the 1% level. When all racial/ethnic groups are pooled, experience and experience squared are jointly significant at the 1% level.[7] Age is included along with actual

[5]All regressions and decompositions are estimated using STATA.

[6]We also ran regressions including parental education, number of siblings, and husband's employment status to check that we were not missing important variables. The results for these regressions are not reported, because the additional variables were generally statistically insignificant and their inclusion did not change the results presented. We also ran all regressions using Hispanic in place of Mexican as the race definition, and again the results did not differ in any substantive way.

[7]In order to allow for the possibility that experience profiles differ across birth patterns, we experimented with allowing the slope to change after childbirth experiences. To do this, we constructed three experience measures. The first measure is years of actual experience until the year in which the first child was born, or until the cut-off (1993–94) if there was no first child. The second measure is years of actual experience between the years of the first and second births, or until the cut-off if there was no second child, and zero otherwise. The third measure is years of actual experience after the year of the second birth, and zero if there was no second child. However, we find little evidence that experience pro

Table 2. Socioeconomic Characteristics and the Wages of Young Mexican, Black, and White Women in 1994: OLS Regressions. (Dependent Variable: Log Hourly Wages)

	Mincer Experience			*Actual Experience*		
Independent Variable	*Mexican*	*Black*	*White*	*Mexican*	*Black*	*White*
			Panel A			
Experience	−0.056	**0.075**	**0.057**	0.031	**0.071**	0.034
	(0.087)	(0.044)	(0.029)	(0.037)	(0.023)	(0.025)
Experience^2	0.003	−0.002	**−0.002**	0.001	−0.001	0.001
	(0.003)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
Age				−0.028	**−0.019**	**−0.048**
				(0.024)	(0.010)	(0.010)
Education	**0.062**	**0.123**	**0.087**	**0.029**	**0.077**	**0.077**
	(0.027)	(0.014)	(0.010)	(0.017)	(0.010)	(0.007)
Married	−0.027	0.050	**0.091**	−0.088	0.017	0.035
	(0.094)	(0.040)	(0.036)	(0.090)	(0.038)	(0.035)
1 Child	0.036	0.001	**−0.116**	0.083	−0.008	**−0.078**
	(0.134)	(0.061)	(0.045)	(0.135)	(0.057)	(0.043)
2+ Children	−0.119	−0.088	**−0.175**	−0.002	0.004	−0.034
	(0.096)	(0.055)	(0.041)	(0.085)	(0.052)	(0.040)
Sample Size	250	854	1246	250	854	1,246
R^2	0.140	0.225	0.210	0.233	0.310	0.287
P-Value: Joint Significance of Experience	0.501	0.041	0.141	0.000	0.000	0.000
			Panel B			
Experience	0.036	0.030	0.037	0.037	**0.074**	**0.043**
	(0.076)	(0.044)	(0.030)	(0.037)	(0.023)	(0.025)
Experience^2	−0.001	−0.001	−0.002	0.001	−0.001	0.001
	(0.003)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)
Age				**−0.042**	−0.016	**−0.049**
				(0.022)	(0.011)	(0.010)
High School Graduate	−0.021	**0.363**	**0.126**	**−0.195**	**0.200**	0.001
	(0.097)	(0.082)	(0.062)	(0.102)	(0.073)	(0.058)
Some College	0.148	**0.503**	**0.244**	−0.051	**0.274**	**0.106**
	(0.111)	(0.089)	(0.069)	(0.087)	(0.076)	(0.060)
College Graduate	**0.642**	**0.871**	**0.548**	**0.368**	**0.558**	**0.446**
	(0.158)	(0.105)	(0.076)	(0.116)	(0.083)	(0.060)
Married	−0.047	0.032	**0.087**	−0.105	0.007	0.030
	(0.089)	(0.041)	(0.036)	(0.086)	(0.039)	(0.034)
1 Child	0.054	0.011	**−0.123**	0.115	0.001	**−0.079**
	(0.123)	(0.062)	(0.045)	(0.116)	(0.058)	(0.043)
2+ Children	−0.101	−0.087	**−0.175**	0.053	0.002	−0.039
	(0.092)	(0.056)	(0.041)	(0.084)	(0.053)	(0.040)
Sample Size	250	854	1246	250	854	1,246
R^2	0.206	0.223	0.207	0.318	0.308	0.290
P-Value: Joint Significance of Experience	0.452	0.248	0.440	0.000	0.000	0.000

Notes: Absolute values of heteroskedastic-consistent standard errors are in parentheses. All regressions also include region of residence, SMSA, a dummy variable if 1993 data is used, and a constant. 1994 weights are used in all cases. Bold coefficients are statistically significant at the 10% level or better.

Source: National Longitudinal Survey of Youth.

experience and education to capture spells in which the women were out of the labor force, since older people—conditional on actual experience and education—had been out of the labor force longer. Time out of the labor force had a negative effect on wages for all groups, but only for white and black women was it statistically significant at the 10% level or better. White women faced a larger penalty for spells out of the labor force than did black women or Mexican women. In particular, each year of absence from the labor market reduced wages by 2.8%, 1.9%, and 4.8% for Mexican, black, and white women, respectively (although the Mexican estimates are quite imprecise). The large out-of-the-labor-force penalty faced by white women may have existed because they were more likely to work in high-skilled fields where both career advancement and skill depreciation proceed relatively quickly; return to work after an absence from the labor market would likely entail greater skill losses and missed promotion opportunities for such women than for women in lower-skill jobs.

The pattern of socioeconomic influences changes very little when Mincer experience is replaced by actual experience, although the magnitudes do change somewhat. Education continues to have a positive and statistically significant impact on wages, although it is smaller in magnitude for all racial/ethnic groups. Each additional year of education increases wages by 2.9%, 7.7%, and 7.7% for Mexican, black, and white women, respectively. In contrast, the presence of two or more children no longer has a statistically significant effect on earnings for black or white women.

Education enters all Panel A regressions as a continuous (linear) variable. Since it seems likely that the relationship between educational attainment and wages is non-linear for at least some racial/ethnic groups, Panel B replicates Panel A with education entering as three dummy variables: high school graduate, some college, and college graduate, with high school drop-out being the excluded category. The middle column of Panel B of Table 2 illustrates the instability in the estimates of the returns to experience based on potential experience rather than actual experience. In particular, adding controls for non-linear education leads to insignificant returns (both individually and jointly) for potential experience and potential experience squared for all racial/ethnic groups, confirming that potential experience is a poor proxy for actual labor market experience for young women. Therefore, focusing on the regression that includes actual labor market experience and age, it is clear that the impact of educational attainment differed substantially across racial/ethnic groups. Relative to whites, Mexicans earned a lower return from college graduation, and blacks earned a higher return from all levels of education.

files change slope after childbirth experiences for any of the racial/ethnic groups, and therefore we do not report the results.

What Explains the Wage Gap?

Quantification of racial earnings gaps requires computing what minority workers would earn if they had the same characteristics as non-minority workers. Following Oaxaca (1973), there are two ways to decompose the white/minority (w/m) earnings gap.

$$\text{(2a)} \qquad \overline{W^w} - \overline{W^m} = (\overline{X^w} - \overline{X^m})\hat{\beta}^w + \overline{X^m}(\hat{\beta}^w - \hat{\beta}^m) + (\hat{\alpha}^w - \hat{\alpha}^m), \text{ or}$$

$$\text{(2b)} \qquad \overline{W^w} - \overline{W^m} = (\overline{X^w} - \overline{X^m})\hat{\beta}^m + \overline{X^w}(\hat{\beta}^w - \hat{\beta}^m) + (\hat{\alpha}^w - \hat{\alpha}^m).$$

Bars denote means and hats denote predicted values from equation (1).

The decomposition results using both the white weights (2a) and the minority weights (2b) are reported in Table 3. The first row reports the total log wage differential. The second and third blocks report the proportion of the total wage differen-

Table 3. Decomposition of Log Hourly Wage Differences.

	Whites & Mexicans		*Whites & Blacks*	
Variable	*White Weight*	*Mexican Weight*	*White Weight*	*Black Weight*
Total Log Wage Differential	0.095	0.095	0.132	0.132
	Attributable to Differences in Characteristics			
Experience	0.039	0.038	0.081	0.071
	(41.228)	(40.364)	(61.916)	(53.698)
Age	−0.005	−0.004	−0.001	−0.000
	(−5.263)	(−4.513)	(−0.477)	(−0.160)
Education	0.062	0.055	0.045	0.041
	(65.545)	(57.968)	(34.351)	(31.006)
Marriage	0.001	−0.004	0.009	0.002
	(1.255)	(−4.484)	(6.566)	(1.462)
Children	0.002	−0.002	0.003	−0.000
	(1.916)	(−2.043)	(2.337)	(−0.104)
Other	−0.005	0.152	0.006	0.042
	(−5.075)	(159.428)	(4.847)	(31.988)
Total	0.095	0.235	0.144	0.155
	(99.605)	(246.719)	(109.541)	(117.888)
	Attributable to Differences in Coefficients			
Intercept	−0.082	−0.082	1.049	1.049
	(−86.662)	(−86.662)	(797.483)	(797.483)
Experience	0.038	0.039	−0.081	−0.070
	(39.965)	(40.829)	(−61.723)	(−53.504)
Age	−0.225	−0.226	−1.053	−1.053
	(−236.611)	(−237.360)	(−800.555)	(−800.872)
Education	0.123	0.131	−0.149	−0.144
	(129.643)	(137.221)	(−113.020)	(−109.675)
Marriage	0.083	0.089	0.008	0.015
	(87.744)	(93.483)	(6.389)	(11.493)
Children	−0.089	−0.085	−0.040	−0.036
	(−93.747)	(−89.788)	(−30.130)	(−27.689)
Other	0.152	−0.004	0.253	0.217
	(160.063)	(−4.440)	(192.015)	(164.875)
Total	0.000	−0.140	−0.013	−0.024
	(0.395)	(−146.719)	(−9.541)	(−17.888)

Notes: Based on regression results presented in Table 2, Panel B for actual experience. 1994 weights are used in all cases. In parentheses is the percentage of the total differential explained.

Source: National Longitudinal Survey of Youth.

tial attributable to differences in average socioeconomic characteristics and differences in the returns to these characteristics, respectively.

Unlike Trejo (1997), we do not find that observable characteristics played a larger role in explaining relative labor market performance for Mexicans than for blacks. We do, however, find that different factors are more important in explaining the Mexican/white gap and the black/white gap. All else equal, observable differences in education account for 31–34% of the black/white gap and 58–65% of the Mexican/white gap. Ranges bound the white- and minority-weighted decompositions. In contrast, observable differences in work experience account for 54–61% of the black/white gap but only 40–41% of the Mexican/white gap. Finally, observable differences

in childbearing account for 0–2% of both the black/white gap and the Mexican/white gap. Interestingly, when the Mexican weights are used, the other category, which includes region, SMSA, and a year dummy, can over-explain the entire Mexican/white gap. This is largely driven by the fact that the small number of Mexicans who lived in the Northeast earned higher wages than Mexicans who lived in the West. Overall, observable factors explain the entire black/white and Mexican/white wage gaps.

The differences in coefficients also yield some interesting results. In particular, the age effects in the bottom panel of Table 3 for Mexican (black) women and white women are very large. From an empirical point of view, this is mostly due to the fact that time out of the labor force has substantially more negative returns for white women than for Mexican (black) women. Despite this large age effect, the results in the last line of Table 3 suggest that Mexican, black, and white women all faced a similar wage structure.

To check that our results are not driven by the omission of occupational differences across racial/ethnic groups, we replicate the right-hand side of Panel B of Table 2 and the decomposition in Table 3, respectively, with the addition of three occupational dummy variables: professional, blue-collar (including farm laborers and the military), and services, with sales being the excluded category. The regression and decomposition results are largely similar.[8] Interestingly, occupation has no statistically significant relationship to wages for Mexican women, while black and white professionals earned a premium compared to saleswomen and white service workers earned less than saleswomen. Turning to the decomposition results, occupation explains 14–19% of the Mexican/white gap and 22–30% of the black/white gap, but it does not cause the magnitude of the other explanatory factors, in particular education and experience, to change very much. Given the possibility that labor market discrimination may be working through occupation, and given the similarity between the Table 3 results and those described above, the remainder of the analysis excludes occupation.

[8]As such, they are not reported in the paper. They are, however, available from the authors on request.

Selection

Selection effects that differ across racial lines may bias cross-sectional estimates of discrimination. Preferences for work, or work motivation, may differ across races in ways that are difficult to measure directly. Stated somewhat differently, the decision to participate in the labor market is not random and may differ systematically across ethnic groups. Wage gap measures that fail to account for such differences may be biased by unmeasured preference and motivational differences.

The Heckman selection model is one way to account for non-random labor market participation. However, in our sample very few women were not working: the 1994 employment rates were 81.8%, 77.4%, and 84.1% for Mexicans, blacks, and whites, respectively. Furthermore, we lack suitable controls for the participation equation. Although we have information on the education level of each individual's mother and father, the presence of a library card, newspaper subscription, and magazine subscription in the household at age 14, and non-labor income, many of these variables are not well reported. For example, 5% of the sample did not report mother's education, 15% did not report father's education, and 16% did not report non-labor income (defined as total family income minus the respondent's wages and salaries during the past calendar year). This non-reporting reduces the Mexican sample size to an unacceptable level.

We instead address selection using two-stage panel estimation. This approach has the advantage of separating individual-specific characteristics that are constant over time from other factors affecting earnings

by including individual-specific intercepts. Following a given individual purges the estimates of idiosyncratic person-specific and time-invariant factors, yielding unbiased estimates of labor market factors. More concretely, equation (1) is re-written in a form appropriate for panel data,

$$(3) \qquad W_{it}^r = X_{it}^r\beta^r + Z_i^r\gamma^r + \alpha_i^r + \varepsilon_{it}^r,$$

where X_{it}^r denotes time-varying characteristics, Z_i^r denotes time-invariant characteristics, α_i^r are unobservable individual fixed effects, and ε_{it}^r represents the usual residual, that is, it is mean zero, uncorrelated with itself, X, Z, and α, and homoskedastic.

Following Polachek and Kim (1994), we estimate equation (3) using a fixed effect model (within estimator). The fixed effect model transforms equation (3) into its mean deviation form, that is, we subtract each individual's mean variable values from each observation. Although this transformation eliminates the unobserved individual fixed effects, it also eliminates all time-invariant factors, making a second-stage analysis of residuals necessary to obtain estimates of the time-invariant coefficients.

In particular, we obtain consistent estimates of β using OLS from the first stage regression

$$(4) \qquad (W_{it}^r - \tilde{W}_i^r) = (X_{it}^r - \tilde{X}_i^r)\beta^r + (\varepsilon_{it}^r - \tilde{\varepsilon}_i^r),$$

where tildas denote averages over t and X contains all Table 2 variables with the exception of education.[9] To identify γ, we substitute $\hat{\beta}^r$ from the first stage into the individual-specific averaged version of equation (3). In other words, equation (3) is averaged for each individual over time to obtain

$$(5) \qquad \tilde{W}_i^r - \tilde{X}_i^r\hat{\beta}^r = Z_i^r\gamma^r + \tilde{X}_i^r(\beta^r - \hat{\beta}^r) + \alpha_i^r + \varepsilon_i^r = Z_i^r\gamma^r + v_i^r,$$

where $v_i^r = \tilde{X}_i^r(\beta^r - \hat{\beta}^r) + \alpha_i^r + \varepsilon_i^r$. Making the usual assumption that v_i^r is uncorrelated with Z_i^r, equation (5) can be estimated using OLS. Z includes education and a constant.

The panel estimates for each racial/ethnic group are reported in Table 4a. These regressions include all previously included variables and cover the period 1982–94.[10] Individuals do not enter the panel until they are 19 years of age or older and have completely finished their education. For example, an individual who was 19 in 1982 and had 12 years of education in 1982 and 1983, but in 1984 reported 13 years of education, and from 1985 onward had 14 years of education, would not enter the panel until 1986. As in the cross-section, we only include women who were employed, earning between \$1 per hour and \$100 per hour, and not self-employed. All remaining variables are as defined in the cross-section (see "Data").

While some results differ in magnitude across the panel and cross-sectional estimates, the pattern of results is remarkably similar. The most notable difference is the reappearance of a negative and statistically significant relationship between the presence of two or more children and wages for white women. These coefficients continue to be insignificantly different from zero for both Mexican and black women. The estimated returns to experience are also interesting. First, both experience and experience squared are significant at the 10% level or better for all racial/ethnic groups. Second, the returns to experience are now larger for Mexican women than for black women. Finally, marriage now has a negative and statistically significant effect on the wages of Mexican women.

Two-stage estimation makes decomposing the wage-gap between races somewhat more complicated. The race-specific mean

[9]The race-specific average fixed effects are given by

$$(1/n^r)\sum_{i=1}^{n^r}\hat{\alpha}_i^r = \bar{W}^r - \bar{X}^r\hat{\beta}^r,$$

where bars denote averages over i and t for time-varying variables and over i for time-invariant variables.

[10]Data from 1979–81 are not used in the analysis because of differences between that period and the period 1982–94 in the way the number of children born was reported.

Table 4a. Determinants of the Wages of Young Mexican, Black, and White Women in 1994: Two-Stage Panel Estimates.

Variable	*Mexican*	*Black*	*White*
Experience	**0.084**	**0.081**	**0.127**
	(0.022)	(0.011)	(0.009)
Experience^2	**–0.004**	**–0.003**	**–0.003**
	(0.001)	(0.000)	(0.000)
Age	0.020	0.006	**–0.030**
	(0.014)	(0.008)	(0.007)
High School Graduate	–0.008	**0.166**	0.005
	(0.070)	(0.037)	(0.028)
Some College	**0.133**	**0.298**	**0.146**
	(0.078)	(0.039)	(0.032)
College Graduate	**0.458**	**0.579**	**0.441**
	(0.102)	(0.042)	(0.031)
Married	**–0.071**	0.020	–0.011
	(0.035)	(0.017)	(0.012)
1 Child	–0.032	0.030	**–0.057**
	(0.046)	(0.026)	(0.015)
2+ Children	–0.048	0.016	**–0.044**
	(0.056)	(0.035)	(0.021)
Average Fixed Effect	**1.242**	**1.496**	**2.151**
	(0.289)	(0.181)	(0.134)
Number of Observations	2,288	8,056	15,324
Number of Groups	312	1,113	2,275
P-Value: Joint Significance of Experience	0.000	0.000	0.000

Notes: Bold coefficients are statistically significant at the 10% level or better. All regressions also include region of residence and SMSA. 1979 weights are used in all cases. All results are similar if year-specific weights are used in place of base year weights. The dependent variable is the mean differenced log hourly wage.
Source: National Longitudinal Survey of Youth.

wage is

$$\overline{W}^r = (1/n^r)\sum_{i=1}^{n^r}\hat{\alpha}_i^r + \overline{X}^r\hat{\beta}^r,$$

where bars denote averages over i and t for time-varying variables and over i for time-invariant variables. Removing education from the fixed-effects,

$$\hat{\alpha}^r = (1/n^r)\sum_{i=1}^{n^r}\hat{\alpha}_i^r - \overline{Z}^r\hat{\gamma}^r,$$

allows us to write average wages as $\overline{W}^r = \hat{\alpha}^r + \overline{X}^r\hat{\beta}^r + \overline{Z}^r\hat{\gamma}^r$. The Oaxaca (1973) decomposition is then given by

$$(6a)\quad \overline{W}^w - \overline{W}^m = (\overline{X}^w - \overline{X}^m)\hat{\beta}^w + \overline{X}^m(\hat{\beta}^w - \hat{\beta}^m) + (\overline{Z}^w - \overline{Z}^m)\hat{\gamma}^w + \overline{Z}^m(\hat{\gamma}^w - \hat{\gamma}^m) + (\hat{\alpha}^w - \hat{\alpha}^m),$$

or

$$(6b)\quad \overline{W}^w - \overline{W}^m = (\overline{X}^w - \overline{X}^m)\hat{\beta}^m + \overline{X}^w(\hat{\beta}^w - \hat{\beta}^m) + (\overline{Z}^w - \overline{Z}^m)\hat{\gamma}^m + \overline{Z}^w(\hat{\gamma}^w - \hat{\gamma}^m) + (\hat{\alpha}^w - \hat{\alpha}^m).$$

Table 4b reports the decomposition results for the panel estimates. The biggest difference between the panel and cross-section results lies in the raw wage gap; the Mexican/white gap is 0.8 percentage points smaller, while the black/white gap is 2.2 percentage points larger—raising the estimated advantage that Mexican women enjoy relative to black women. However, education and experience continue to be the driving explanatory factors. Experience explains approximately 20–49% of the Mexican/white gap and 19–37% of the black/white gap. Education accounts for 73–76% of

Table 4b. Decomposition of Log Hourly Wage Differences Based on the Two-Stage Panel Estimates.

	Whites & Mexicans		*Whites & Blacks*	
Variable	*White Weight*	*Mexican Weight*	*White Weight*	*Black Weight*
Total Log Wage Differential	0.087	0.087	0.154	0.154
	Attributable to Differences in Characteristics			
Experience	0.043	0.017	0.057	0.030
	(50.070)	(19.959)	(37.272)	(19.377)
Age	0.002	−0.001	0.013	−0.003
	(2.534)	(−1.685)	(8.525)	(−1.719)
Education	0.063	0.066	0.036	0.041
	(72.840)	(76.225)	(23.255)	(26.410)
Marriage	−0.000	−0.000	−0.003	0.005
	(−0.068)	(−0.445)	(−1.704)	(3.137)
Children	0.009	0.009	0.009	−0.004
	(10.477)	(10.526)	(5.758)	(−2.410)
Other	0.030	−0.088	−0.003	−0.002
	(35.193)	(−101.538)	(−1.626)	(−1.471)
Total	0.148	0.003	0.110	0.067
	(171.048)	(3.042)	(71.480)	(43.324)
	Attributable to Differences in Coefficients			
Experience	0.342	0.368	0.281	0.308
	(394.394)	(424.505)	(181.871)	(199.766)
Age	−1.363	−1.359	−0.997	−0.981
	(−1573.684)	(−1569.465)	(−646.349)	(−636.105)
Education	0.006	0.003	−0.130	−0.135
	(7.294)	(3.909)	(−84.055)	(−87.210)
Marriage	0.034	0.035	−0.010	−0.018
	(39.703)	(40.081)	(−6.599)	(−11.441)
Children	−0.004	−0.004	−0.047	−0.034
	(−4.915)	(−4.964)	(−30.232)	(−22.064)
Fixed Effects	0.839	0.839	0.749	0.749
	(968.495)	(968.495)	(485.311)	(485.311)
Other	0.085	0.203	0.198	0.198
	(97.664)	(234.396)	(128.573)	(128.418)
Total	−0.062	0.084	0.044	0.087
	(−71.048)	(96.958)	(28.520)	(56.676)

Notes: Based on regression results presented in Table 4a. 1979 weights are used in all cases. All results are similar if year-specific weights are used in place of base year weights. Percentage of the total differential explained is in parentheses.

Source: National Longitudinal Survey of Youth.

the Mexican/white gap but only 23–26% of the black/white gap.

Using the white weights, we are able to explain more than 100% of the Mexican/white gap and 71% of the black/white gap. In contrast, using minority weights we explain only 3% and 43% of the Mexican/white and black/white gaps, respectively. For the black/white gap, this is largely due to the decline in the relative importance of experience. The importance of experience falls in the black-weighted panel decomposition because the coefficient on experience in the black regression is simi-

lar in magnitude in both the cross-section and panel models, while the mean difference in experience between black and white women is smaller in the panel model. This is the result of averaging experience over both individuals and time in the panel model, which places less weight on individuals who are less attached to the labor market compared to the point-in-time cross-section experience mean. In the Mexican/white case, the difference is almost entirely due to the large negative effect of the "other" category.

In contrast to the cross-sectional analysis, the coefficient on Northeast is large and negative in the Mexican regression. Once fixed effects are accounted for, the small number of Mexican women who move into or out of the Northeast do relatively poorly while in the Northeast. Thus, in contrast to the Mexican-weighted cross-section decomposition, the Northeast enters the observable component as a large negative in the Mexican-weighted panel decomposition. The effect is further magnified because the average percentage of the white sample living in the Northeast, which is large, minus the average percentage of the Mexican sample living in the Northeast, which is small, is weighted by the negative coefficient.

Conclusion

There has been increasing interest in the relatively poor labor market outcomes of economically disadvantaged groups in the United States. However, with the exception of one study, all existing research focuses on the labor market outcomes of economically disadvantaged men. This paper examines, instead, the relative labor market outcomes of two economically disadvantaged groups of young women, Mexicans and blacks. We find that young Mexican and black women were earning 9.5% and 13.2% less, respectively, than young white women in 1994, but that the factors driving the relative wage gaps differed. The most important determinant of the Mexican/white wage gap was low levels of education, while low levels of labor force attachment were the most important determinant of the black/white wage gap.

The results presented in this paper are encouraging for Mexican women, but less so for black women, because programs to encourage young Mexican women to stay in school seem more apt to succeed than do efforts to encourage black women to participate in the labor market. Numerous studies (see Moffitt 1992 for a survey) have shown that female labor supply is highly inelastic and that welfare reforms, negative income tax schemes, and the like therefore have little impact on labor supply behavior. On the other hand, Head Start programs have proven somewhat successful with Hispanic children (Currie and Thomas 1997). A combination of childhood intervention and financial aid for post-secondary education might therefore significantly change educational attainment levels for Mexican women, and hence their wages and poverty status.

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