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Beyond Hispanic/Latino: The importance of gender/ethnicity-specific earnings analyses

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Abstract

The effect of economic change on the Latino to non-Latino White earnings gap has been well documented; however much of this research has focused on Latinos as a general category with little focus on subgroup variations. Despite varied histories and demographic characteristics Mexicans, Puerto Ricans and Cubans, the largest Hispanic subgroups, have usually been combined in analyses of earnings gaps. Consequently, we know little about differential effects of the "new economy" on earnings by subgroup across labor markets. Using a sample consisting of Mexicans, Cubans, Puerto Ricans, and non-Hispanic Whites residing in 106 metropolitan statistical areas (MSA) from the 2000 1-percent I-PUMS, we examine the influence of human capital, deindustrialization, immigration, and "new economy" measures on Latino/a earnings gaps. Multi-level model analyses reveal that Latino subgroups have differently sized earnings gaps, that human capital and demographic characteristics reduce the gaps by more than seventy percent, that the gaps vary independently across MSAs and that the effects of labor market characteristics on these gaps vary by subgroup. New economy characteristics are most important for non-Hispanic White males, thereby indirectly modifying gender-ethnicity gaps. These findings highlight the importance of gender/ethnicity-specific earnings analyses.

Keywords: Hispanic, Latino, earnings gap, labor market conditions, new economy, deindustrialization, immigration, human capital, multi-level analysis, metropolitan statistical area, race/ethnicity, gender

1. Introduction

It is well known that Hispanics as a whole fare worse than non-Hispanic Whites on many socioeconomic status indicators (Therrien and Ramirez, 2000). For example, among full-time, year round workers in 2002, 26.3% of Hispanics and 53.8% of non-Hispanic Whites earned $35,000 or more. This difference is not consistent, however, across Latino subgroups. Mexicans are least likely, among Latino full-time, year-round workers, to earn at least $35,000 (23.6%) followed by Cubans (34.3%) and Puerto Ricans (34.8%) (Ramirez and Patricia de la Cruz, 2002). The effect of economic change on the Latino to non-Hispanic White earnings gap has been well documented; however most of this research has focused on Latinos as a general category with little focus on subgroup variations (Allensworth, 1997; McCall, 2001; Trejo, 1997). The dramatic rise in the Latino population make exploration of the effects of the important differences in immigration patterns and demographic characteristics acknowledged by many scholars (e.g., Bean and Tienda, 1987) possible to model and explore.

Variations in human capital characteristics, immigration experiences, and the consequences of deindustrialization are most often used to explain variations in socioeconomic conditions by ethnicity. McCall (2001) found that economic changes resulting in a "new economy" (e.g., high technology industries) were associated with lower relative wages for Hispanics compared to non-Hispanic Whites (McCall, 2001). But few studies have examined Hispanic[1] subgroup variations, such as migration histories, immigration patterns, and other background characteristics of groups. Ethnicity-specific research often focuses on one group and/or one labor market at a time (Allensworth, 1997; Trejo, 1997), thus providing rich descriptions of processes unique to each group but with limited generalizability.

These two lines of research (pan-ethnic labor market studies of earnings and ethnicity-specific studies of economic integration) suggest a strategy for separating Hispanic/Latino into ethnic subgroups for better understanding individual level and labor market level influences on earnings. Because ethnicity-based earnings gaps relative to non-Hispanic Whites are an indicator of potential social inequality, we focus more on earnings gaps rather than earnings per se. Because earnings are also gendered, we separate Latinas in all of the analyses. Our goal is to assess the need for gender/ethnicity-specific analyses by simultaneously examining individual and labor market level explanations for earnings gaps among Puerto Ricans, Mexicans, and Cubans across all 106 labor markets in the Public Use Microdata Sample (1%) 2000 data.

2. Background

Latinos comprise one of the fastest growing ethnic groups in the United States since 1990 (Ramirez and Patricia de la Cruz, 2002). In 2002, there were 37.4 million Latinos in the civilian non-institutional population. Of the total U.S. Latino population, the largest group is Mexican (66.9%) followed by Puerto Rican (8.6%), and Cuban (3.7%). The remaining groups are combined by the census into Central and South American (14.3%) and other Hispanic (6.5%).

[1] We use Hispanic and Latino interchangeably in the paper, recognizing that any term we use has social and political implications for various groups. We also use the Census categories that individuals in the sample selected to represent their ethnic identity (e.g., Mexican, Puerto Rican or Cuban).

Although Latinos share a common language, they vary in their labor market incorporation. These variations are due to U.S. historical social and political relationships with sending countries, the economic situation in the United States at the time of arrival, characteristics of residential communities, geographic concentration, educational attainment, and labor market experience (Bean and Tienda, 1987). Portes and Manning (1986) have shown that these characteristics contributed to the economic success of Cuban immigrants. For example, because of their political status as refugees, unlike Puerto Ricans and Mexicans, Cubans received a favorable welcome at their arrival by the U.S. government. Cubans received government assistance in the form of educational loans and resettlement programs. Moreover, Cubans were able to monopolize on their entrepreneurial skills acquired in Cuba to establish successful ethnic enclaves. Ethnic enclaves have provided successive immigrants with economic opportunities above and beyond official assistance programs (Portes and Manning, 1986).

The "pull factors" to the United States were similar for Mexicans and Puerto Ricans, that is, both groups sought unskilled blue-collar jobs (Falcon and Hirschman, 1992); however their migration experiences were quite different. Puerto Ricans migrated to the industrial northeast during the last half century and Mexicans settled in the agricultural southwest continuously over hundreds of years with more recent migration to the Midwest (Ramirez and Patricia de la Cruz, 2002). Puerto Ricans are highly concentrated in the northeast (61%), Cubans mostly in the south (74%), and Mexicans mostly in the west (55%). Today, 91% of Latinos live in predominantly urban areas (Marotta and Garcia, 2003).

Human capital characteristics also vary among the groups and contribute to different labor market outcomes. For example, as primarily political refugees, Cubans tend to be better educated, have higher labor force participation, have higher family income and lower poverty levels than Mexicans and Puerto Ricans who generally come to the U.S. for economic opportunities. Puerto Ricans, especially women, have the lowest labor force participation (Therrien and Ramirez, 2000). Thus, grouping Mexicans, Puerto Ricans, and Cubans into one pan-ethnic group such as 'Hispanic' or 'Latino' is likely to distort explanations of labor market outcomes. As Bean and Tienda (1987) have pointed out "the diverse settlement and immigration experiences of Mexicans, Puerto Ricans, and Cubans, and other Hispanic groups have created distinct subpopulations with discernible demographic and economic characteristics" (p.7). Gender stratification suggests that ethnicity effects are also likely to differ for men and women (Browne and Misra, 2003; Cotter et al., 1999).

2.1. Race/Gender and earnings

Collins' (2000) conceptualization of intersectionality provides a framework for examining how race and gender interact to affect earnings (Baca Zinn, 1994). Collins (2000) argues that "African-American women encounter the common theme of having our work and family experiences shaped by intersecting oppressions of race, gender, and class. But, this commonality is experienced differently by working-class women… and by middle-class women" (Collins, 2000, p. 66). That working-class and middle-class women often have different experiences is one illustration of the importance of considering variations across women's experiences. According to recent research, the labor market is one arena where the intersection of race/ethnicity and gender is evident (Browne and Misra, 2003; Cotter et al., 1999).

Race and gender are interlocking systems of economic stratification that create different experiences and labor market opportunities for all groups (Browne and Misra, 2003). For ex-

ample, the declining economic opportunities in manufacturing in the northeast disproportionately affected Puerto Rican women's labor force participation in the 1970s. By the end of the 1980s, Puerto Rican women had lower labor force participation rates than did Mexican, African American, and White women (Bean and Tienda, 1987). Because of these employment patterns and following the example of Cotter et al. (1999), we create six Latino/a subgroups based on ethnicity and gender (e.g., Puerto Rican men/women, Mexican men/women, and Cuban men/women).

2.2. Human capital characteristics and earnings

There is ample evidence that differentials in earnings between Hispanic and non-Hispanic Whites reflect different initial and continuing investments in productivity-related skills such as education and English language proficiency (Allensworth, 1997; Avalos, 1996; Becker, 1981; Grenier, 1984; McManus et al., 1983; Stier and Tienda, 1992; Stolzenberg, 1990; Trejo, 1997). Several scholars have found that education and English language proficiency influence the Hispanic/non-Hispanic White earnings gaps (Chiswick, 1979; Chiswick and Miller, 1995; Grenier, 1984; McManus et al., 1983). For example, three-quarters of the Mexican-White earning gap[2] were attributable to the relative youth, English language deficiencies, and the lower educational attainment of Mexican Americans (by itself schooling accounted for roughly half the wage gap (Trejo, 1997)). Allensworth (1997) examined earnings of 7456 full-time men and women workers ages 25–35 (1990 Public Use Microdata sample census data) and found that non-Hispanic White men and women received much higher returns to a college education than U.S.-born Mexican Americans. Men who spoke English poorly earned significantly less ($1,922) than those who spoke well, while those who spoke English very well earned significantly more ($1,854) than those who spoke English adequately (Allensworth, 1997).

Although women have made economic gains in the past decades, a gender gap in earnings compared to non-Hispanic White men remains. This gap is often attributed to human capital differences (e.g., education and labor force experience) (Becker, 1981, Marini and Fan, 1997, O'Neill and Polacheck, 1993 and Reskin and Padavic, 1994); however, Bernhardt et al.'s (1995) study of trends in wage inequality by gender and race revealed that the gender wage gap between White men and White women was not independent of White men's economic position (Bernhardt et al., 1995). They found that non-Hispanic White men's economic disadvantage in the 1980's primarily contributed to the economic gain of non-Hispanic White women. Although important for Black women, the effect of White men's economic position did not have as strong of an effect as it did for White women.

Because of the findings just reviewed, we control for several human capital variables including years of education, English language proficiency, work experience, occupation (professional, managerial, clerical, sales, craft, operator, service, laborer), and self-employment status.

2.3. Deindustrialization

The increase in service jobs and the flight of low skill, high wage manufacturing jobs to non-U.S. sites in the 1970s contributed to the economic disadvantage of Hispanics, especially Puerto Ricans (Kasarda, 1989; Kasarda, 1990). The majority of Puerto Ricans arrived af-

[2] Among men who were at least third generation immigrants.

ter the 1950s and settled in the northeast where low skill manufacturing jobs were available. Kasarda (1995) described how New York lost 9000 jobs between 1953 and 1970 in those industries in which the educational level of the average jobholder was less than high-school completion. Between 1970 and 1986, New York City lost more than half a million jobs in low skill industries. The exodus of these industries from the Northeast and Midwest created job growth in manufacturing industries in the South and West. Given their high concentration in the South and West, some researchers argue that deindustrialization did not have the same ramifications for Mexicans and Cubans as it did for Puerto Ricans (Kasarda, 1995). The economic fluctuation lowered employment opportunities for Puerto Ricans residing in the Northeast (Enchautegui, 1992) and created more informal, part-time, low wage jobs (e.g., clerical) mostly occupied by women (Falcon and Hirschman, 1992; Moore Pinderhughes, 1993; Morales and Bonilla, 1993). It is likely that deindustrialization will differentially affect women because of gendered occupational segregation (Reskin and Roos, 1990). We include measures of deindustrialization, high-end, and low-end service industry jobs in the labor market level models to assess likely differential effects across Latino/a subgroups.

2.4. Immigration and earnings

The increase in low- or unskilled immigrant populations has drawn the attention of stratification researchers seeking to explain income inequality. Of the total U.S. Latino population in 2002, 40.2% (or 15 million) were foreign born (U.S. Census, 2003). Among the foreign born, 52.2% were recent immigrants who entered the United States between 1990 and 2002, another 25.6% came in the 1980s, and the remaining 22.3% entered before 1980. More recent immigrants tend to have low education levels and are typically concentrated in low status occupations (Ortiz, 1986). Fewer adults (over 25 years) born in Latin America had a high-school education or higher (47%) than those born in the U.S. (65%) and occupational concentration differs by immigrant status (e.g., operators, fabricators, and laborers accounted for 24.8% of foreign-born workers compared to 12.7% of native-born workers). To capture the effects of immigration we include measures of "foreign born," education, and type of occupation in the analyses.

Several scholars have examined whether the influx of unskilled workers has had a negative impact on the wages of less-skilled or unskilled native workers (Howell and Mueller, 2000). Some researchers have found no evidence of an effect (Borjas et al., 1996), while others have found that the increases in immigration has had a significant negative impact on minority employment and earnings (Aponte, 1993; Kposowa, 1995) and of less-skilled native workers (Camarota, 1998; Howell and Mueller, 2000; Topel, 1994). The increase in the proportion of immigrants who are unskilled has also increased unemployment and reduced labor force participation among low-skilled and unskilled workers (Schoeni et al., 1997).

Alternatively, researchers studying geographic areas of concentrated immigrant entrepreneurship argue that economic enclaves provide alternative opportunities for economic mobility that are usually unavailable. For example, many ethnic minority business owners hire members of their own group who might otherwise not be employed. Ethnic enclaves provide immigrant and native ethnic minority workers opportunities for career mobility and self-employment that are unavailable in secondary labor markets (Portes and Bach, 1985; Portes and Zhou, 1996). Ethnic minority enclaves also enable immigrants to achieve wages or returns to human capital comparable to those in the primary labor market (Portes and Stepick, 1985;

Wilson and Portes, 1980), providing, for example, jobs with relatively high wages, low turnover rates, career ladders, and employment stability. The secondary labor market lacks these good job characteristics (Edwards et al., 1975; Kalleberg et al., 1981).[3] Because of these important differences between foreign and native-born ethnic minority members, we include a variable to indicate "foreign born" status.

2.5. New economy and earnings

The rise in income inequality since the 1970s between the richest and poorest segments of the U.S. population has often been attributed to skill-based technological changes. These changes lowered the demand for unskilled or low-skilled workers, increased demand for high technologically skilled workers (Danziger and Gottschalk, 1995; Levy, 1998), and has disproportionately affected racial/ethnic minorities and non-Hispanic White women (McCall, 2001; Reid and Rubin, 2003; Wilson, 1987).

In the new economy, demand for high-tech workers (those engaged in research and development in any given high-tech industry) has shifted towards occupations that are more involved in production of services than the production of goods (Luker and Lyons, 1997). This growth has been especially pronounced in the business service sector, specifically the personnel supply service industries. The personnel service supply industry has increased about 20% annually since 1990 (Melchionno, 1999; Morris and Vekker, 2001). The personnel supply service firms consist of both permanent and temporary employees. Temporary work typically consists of lower wages, lack of security, and fewer benefits than permanent work arrangements (Segal and Sullivan, 1997).

Recent studies have examined the effect of these new economic changes on race/gender gaps in wages (McCall, 2001). McCall (2001) found that similar economic conditions affected Hispanic and African American wage gaps, but that there were variations within and between race/gender gaps. For Latino/as, percent immigrant and percent unemployment in metropolitan statistical areas had negative effects on the relative wages of Latino/as, but manufacturing growth and percent union coverage had a small positive effect on Hispanic women's wages, and no significant effect on the relative wages of Hispanic men. These findings indicate that the sources of inequality vary across race and gender groups. Following McCall's (2001) example, we also examine several labor market level indicators of new economic changes (e.g., percent casual employment, percent high-tech service, percent durable and non-durable manufacturing) in our earnings gap analyses.

3. Hypotheses

Guided by the theoretical perspectives discussed and past research, we propose the following hypotheses:

H1. Earnings and individual characteristics will vary by ethnic subgroup.
H2. Earnings gaps will vary by gender/ethnicity.
H3. Human capital characteristics will reduce the gender/ethnicity earnings gaps.
H4. Earnings gaps will vary across metropolitan areas controlling for human capital and back-

[3] Nee et al. (1994) found that although ethnic economies help immigrants initially, the small scale and family orientation of most businesses limit career mobility for those who sell their labor to non-kin of the same ethnicity.

ground characteristics.

H5. Labor market characteristics will directly influence earnings and will modify the gender/ethnicity-specific earnings gaps; Specifically:

H5a. An increase in the percent immigrant in an area will result in a larger earnings gap for Puerto Ricans and Mexicans and a smaller earnings gap for Cubans.

H5b. Deindustrialization will result in a larger earnings gap for Puerto Ricans and have a smaller influence on Cubans and Mexicans.

H5c. An increase in high-tech and high-end service industries and casual employment will lead to larger gaps for all Hispanic Subgroups.

H5d. An increase in unionization and percent manufacturing will result in smaller gaps for all Hispanic Subgroups.

H6. Hispanic subgroups will share similar earnings privileges and disadvantages across labor markets.

4. Sample

To test our hypotheses we need both individual and labor market level data. The primary individual level data consist of 511,952 persons from the 1% 2000 Integrated Public Use Microdata Series (I-PUMS) (Ruggles et al., 2003) who reside in the 106 metropolitan statistical areas (MSAs) in the United States (Appendix B). The 2000 I-PUMS contains household data for sampled household units in the United States and the persons in them. Each person identified in the sample has an associated household record, containing information on household characteristics, such as household, family and persons in the household earnings. The labor market (MSA) level data were aggregated from level 1 or obtained from other sources (see Table 1 for details on each variable).

A labor market is defined as a "large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus" (U.S. Census Bureau, 2004). Cubans, Mexicans, Puerto Ricans, and non-Hispanic Whites between the ages of 18 and 64 who have positive earnings in 1999 and reside in a metropolitan statistical area are included in the sample.

We selected Mexicans, Cubans, and Puerto Ricans to examine ethnicity-specific earnings because they are the largest Latino subgroups in the United States. People who identified themselves as Mexican, Puerto Rican, Cuban or non-Hispanic White were included in the sample. There were insufficient numbers of people from remaining Latin American countries to allow detailed analyses of each separately by MSA (e.g., Nicaraguans, Ecuadorians, Peruvians, and Chileans). Because in some cases more than one person from a household is included in the sample, the data violate the assumption of independence. To address this problem we follow the I-PUMs codebook suggestion and control for the variables most likely to contribute to a design effect (e.g., gender, race, age), thereby minimizing the consequences of this assumption violation (Ruggles et al., 2003).

5. Methods

When combined, the two levels of data described above are nested, with hundreds of individuals in each labor market. This data structure violates the regression assumption of indepen-

Table 1. Descriptions of labor market variables and descriptive statistics (*N* = 106)

		Mean	SD	Min	Max
Control variables					
Population size	Residential population size aged 16 to 64	8697	9328	2114	60,564
Region	Northeast	0.20	0.40	0	1
	Midwest	0.19	0.39	0	1
	South	0.36	0.48	0	1
Demographic variables					
Percent immigrant	Percentage of foreign-born aged 16–64 in the residential population	15.92	12.68	2.26	64.28
Deindustrialization variables					
Manufacturing growth 1969–2000	Average annual employment growth in manufacturing 1969–2000	1.42	0.98	0.45	6.33
Percent durable manufacturing employment	Percent of total employment in the 1999 durable manufacturing industries	7.48	3.91	1.35	20.43
Percent non-durable manufacturing employment	Percent of total employment in the non-durable manufacturing industries 1999	3.73	1.78	0.90	10.52
High-end service industry	Percent of total employment in the top 10% of income earned	0.02	0.01	0.01	0.05
Low-end service industry	Percent of total employment in the bottom 10% of income earned	0.04	0	0.03	0.06
Percent union coverage	Percent of workers with union coverage, 1999	14.32	6.48	2.10	32.30
Percent high-tech services	Percent of total employment in research and development-intensive service industries	2.08	0.93	0.48	5.78
Flexible/insecure employment conditions variables					
Percent unemployed	Percentage of civilian labor force that is unemployed, 1999	3.93	2.04	1.80	14.10
Percent casual employment	Percentage of workers in casual employment, including part-timers (less than 35 h per week or 30 weeks per year), personnel supply industry workers, and the unincorporated self-employed	45.20	3.80	37.79	59.44

Sources. Data for manufacturing growth come from the Regional Economic Information System (REIS), Data for Union Coverage come from the Current Population Survey. All other data come from the Public Use Microdata Samples (1%) from the PUMS 2000. "Percent Immigrant" includes only individuals who completed census questionnaires and identified themselves as foreign born. Data on union coverage were compiled by Howell and Mueller (2000) .The typology of high-tech (e.g., research and development) intensive service industries was compiled by Hadlock et al. (1991) and includes management and public relations, computer and data processing, engineering and architectural, and research and testing services. Three MSA level variables had missing data. Of the 106 MSAs, 84 had complete data on population size and manufacturing growth and 92 had complete data on union coverage. To retain all of the MSAs, we estimated population size from the number of cases within each MSA in the I-Pums data. This variable has a .92 correlation with the census information. Missing information for the other two variables were imputed using the SPSS 11.5 EM missing imputation procedure using information from the other MSA variables. High-end service industries: include of advertising and related services, office physicians, management of companies and enterprises, business, professional, political, and similar organizations, labor unions, accounting, tax preparation, bookkeeping and payroll services, legal services, computer systems design and related service. Low-end service include private households, barber shops, footwear and leather goods repair, recreational vehicle parks and camps, and rooming and boarding houses, child care services, beauty salons, nail salons and other personal care services, landscaping services, drinking places, alcohol beverages, beauty salons, dry-cleaning and laundry services, personal and household good repair and maintenance, services to buildings and dwellings (Meisenheimer, 1998).

dent observations and therefore requires multi-level model analyses (MLM) (Goldstein, 2003; Raudenbush and Bryk, 2002). We estimate models using HLM5 (Raudenbush et al., 2000). MLM analyses also conveniently estimate separate error terms for each level of analysis (from individual respondents at level 1 and from the MSA area data at level 2).

We follow the conventional practice of providing the weighted data for the descriptive statistics and using the non-weighted data in the analysis. To obtain representative statistics using the 2000 I-PUMS data, we chose an unweighted subsample of the data. Because we are using person-level analyses in 2000 that do not involve sample-line characteristics, we applied the variable PERWT. The PERWT variable gives the population represented by each individual in the sample. The PERWT indicates how many persons in the U.S. population are represented by a given person in an IPUMS sample. Unlike weight variables adjusting for sample selection procedures, the person-weight variable calculates how many individuals each case represents, and therefore inflates the sample size (Ruggles et al., 2003, Chapter 2). Therefore the *N* increases from the 511,592 in the sample to 56,693,383 for the population. The sample excludes those who are not living in MSAs, do not claim the ethnicities studied or are not earning a wage (about 50% of the population).

We estimate four models to evaluate our hypotheses. First, we establish a baseline model to determine the amount of the variance in earnings within and between MSAs. We next assess the size of the Latino/a subgroup earnings gaps across all individuals and MSAs. The third model controls for individual level characteristics while estimating earnings gaps. The final model incorporates the MSA characteristics as predictors of the gap coefficients across the MSAs.

Because the specification of multi-level models is more apparent through equations, we provide summary equations here. The full individual level 1 equation is:

$$\begin{aligned} Lnearnings_{ij} = {} & \beta_{0j} + \beta_{1j} MexicanWomen_{ij} + \beta_{2j} PRWomen_{ij} + \beta_{3j} CubanWomen_{ij} + \\ & \beta_{4j} WhiteNHWomen_{ij} + \beta_{5j} MexicanMen_{ij} + \beta_{6j} PRMen_{ij} + \\ & \beta_{7j} CubanMen + \Sigma\beta_{\ldots j} ControlVariables_{ij} + \varepsilon_{ij}. \end{aligned} \quad (1)$$

The dependent variable, *Lnearnings,* is the total earnings[4] received for work performed as an employee during the calendar year 1999. The i subscript refers to individuals and the j subscript refers to labor market metropolitan areas. *MexicanWomen, PRWomen, CubanWomen, MexicanMen, PRMen,* and *CubanMen* are binary variables for individual i in labor market j, and the corresponding coefficients (β_{1j} to β_{7j}) indicate the size of the gap for each Latino/Latina subgroup compared to White, non-Hispanic men for each MSA ($N = 106$). When the control variables are included in the model, the coefficients indicate the adjusted earning gaps. The intercepts, β_{0j}, provide the expected log earnings for White, non-Hispanic men in each MSA. The individual error term, ε_{ij}, refers to the errors from each MSA model; it is assumed to have a normal distribution, mean of zero, and constant variance within labor markets.

The control variables (fixed across the labor markets) include education (in years), English language proficiency, work experience, work experience squared, occupation, self-employed, foreign born, married, number of children in the household, less than full time (<35 h), and

[4] Total earnings includes earnings, salary, commissions, bonuses, and tips from a job.

less than full time weeks (<30 weeks). English language proficiency is measured by one question asking the respondent to self-rate their perceived ability to speak English. Because one household member usually completes the census questionnaire, the responses may represent the perception of another household member. Survey participants were asked to "…indicate ability to speak English… 1 (Very well), 2 (Well), 3 (Not well), and 4 (Not at all)." This variable is recoded so that a high value indicates speaking English very well. Three digit census codes for occupation sector were recoded into dummy variables to capture the individual's type of occupation [professional, managerial, clerical, sales, craft, operator, service, laborer (omitted category)]. In addition to controlling for observed differences across labor markets by including the control variables, we also adjusted for unobserved differences by centering each control variable on the MSA means for continuous variables (Kreft et al., 1995).

The level 2 variables were calculated from various sources of data (e.g., regional economic information system, current population reports, 2000 public use microdata samples (1%)). Data for manufacturing growth come from the Regional Economic Information System (REIS), Data for Union Coverage come from the Current Population Survey. All other data come from the Public Use Microdata Samples (1%) from the PUMS 2000. "Percent Immigrant" includes only individuals who completed census questionnaires and identified themselves as foreign born. Data on union coverage were compiled by Hirsch and Macpherson (2003). The typology of high-tech service industries (e.g., research and development intensive service industries) was compiled by Hadlock et al. (1991) and includes management and public relations, computer and data processing, engineering and architectural, and research and testing services. Service industry workers were separated into low-end (earnings in the bottom 10% of this industry), high-end (earnings in the top 10% of this industry) by dummy variables and were compared to those service workers with earnings in between these extremes (Meisenheimer, 1998).

Three MSA level variables had missing data. Of the 106 MSAs, 84 had complete data on population size and manufacturing growth, and 92 had complete data on union coverage. To retain all of the MSAs, we estimated population size from the number of cases within each MSA in the I-PUMS data. This variable has a .92 correlation with the census information. Missing information for the other two variables were imputed using the SPSS 11.5 EM missing imputation procedure using information from the other MSA variables.

To assess why the earnings gaps might be larger in some MSAs compared to others, we estimated MSA labor market level 2 models. The dependent variables are the coefficients estimated at level 1, as indicated in the following abbreviated equations:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}LNpopulation + \gamma_{02}Midwest \ldots \gamma_{012}\%Casual\_Employment + U_{0j}$$
$$\beta_{1j} = \gamma_{10} + \gamma_{11}LNpopulation + \gamma_{12}Midwest \ldots \gamma_{112}\%Casual\_Employment + U_{1j}$$
$$\vdots$$
$$\beta_{7j} = \gamma_{70} + \gamma_{71}LNpopulation + \gamma_{72}Midwest \ldots \gamma_{712}\%Casual\_Employment + U_{7j}$$

The intercept equation, with the β_{0j}s as the outcome, provides the adjusted average log earnings for White, non-Hispanic men (coefficient γ_{00}) when all of the level 2 (MSA) variables have the value 0. The coefficients (γ_{01} to γ_{012}) for the MSA level 2 variables indicate the effects of labor market characteristics on the average earnings of non-Hispanic White men in each MSA (see Table 1 for descriptions). The coefficients representing the log earnings gaps

(β_{1j} to β_{7j}) are the outcomes for the remaining equations. Because these MSA level 2 outcomes represent the slopes from the level 1 model, all of the coefficients for the MSA level 2 models represent cross-level interactions. These coefficients indicate how the MSA characteristics modify the association between Latino/a subgroup membership and log earnings.

The MSA level 2 equations for the intercept and the gap coefficients are random [(have error terms (U_0 to U_7))]. The variances and covariances of the error terms (the Tau matrix) assess the correlations among the gap coefficients across the MSAs. These terms indicate how much each MSA coefficient varies from the average MSA coefficient across all MSAs. Positive correlations indicate that subgroups have gaps in the same direction across MSAs and negative correlations indicate that when one group has a positive gap the other group has a negative gap in the same MSA. Small correlations indicate that the earnings gaps for one group are not associated with the earnings gap of the other group. If the Latino/a subgroups have high positive correlations across MSAs, this suggests little need to separate the groups and reference simply to "Hispanics/Latinos" is sufficient.

We first estimated a baseline model to provide the variance within and between MSAs and a deviance statistic for comparing model fits. Next, the variables indicating Latino/a subgroup membership were entered with error terms/random effects. This model establishes the unadjusted size of the earning gaps (Table 2A, Table 2B, and Table 2C, model 2). The third model in Table 2A, Table 2B, and Table 2C incorporates the individual level human capital characteristics and control variables to assess if earnings gaps persist. We add the set of labor market (MSA) characteristics to the intercept and log earning gap models (the dependent variables are β_{0j} to β_{7j}) in Table 3A and Table 3B. All of the models were estimated using full (rather than restricted) information maximum likelihood to facilitate comparing models.

6. Results

6.1. H1. Earnings and individual characteristics will vary by ethnic subgroup

To assess hypothesis 1, we compare characteristics by ethnicity subgroups using an ANOVA test for means and a Chi-square test for proportions. The descriptive statistics (Appendix A) are weighted by the person-weight variable available in the I-PUMS data.

There is evidence for differences among groups in average earnings, human capital, and demographic background characteristics. For example, Appendix A shows that the average earnings for non-Hispanic White men are much higher ($40,490) than for the group with the next highest average earnings, Cubans ($31,100), followed by Puerto Ricans ($26,520), and Mexicans ($21,670). Appendix A also shows that at the individual level, Cubans have the highest average earnings, age, proportion married, percent self employed, and education level, but Puerto Ricans have the highest English language proficiency and Mexicans are more likely to be in craft, operations or farm occupations. ANOVA and Chi-square test results indicate that all of the differences are significant at the .0001 level. Descriptive information for the MSA level variables are provided in Table 1.

6.2. H2. Earnings gaps will vary by gender/ethnicity

To test hypothesis 2, we estimated a model with the separate ethnicity by gender coefficients to determine if there are gender/ethnicity-specific earning gaps. Table 2A, Table 2B, and Table

Table 2A. Multi-level models of log earnings by Latino/a subgroup membership (unadjusted and adjusted) (I-PUMS 2000 1%, $N = 511{,}952/106$)

		Model 1		Model 2		Model 3	
		B	**SE**	**B**	**SE**	**B**	**SE**
Fixed effects							
Intercept, non-Hispanic White men	γ_{00}	9.987	0.016***	10.309	0.015***	9.895	0.017***
Women, Puerto Rican	γ_{10}			−0.833	0.028***	−0.247	0.009***
Women, Mexican	γ_{20}			−1.001	0.019***	−0.220	0.009***
Women, Cuban	γ_{30}			−0.637	0.024***	−0.214	0.016***
Women, non-Hispanic White	γ_{40}			−0.543	0.008***	−0.234	0.004***
Men, Puerto Rican	γ_{50}			−0.421	0.022***	−0.040	0.011**
Men, Mexican	γ_{60}			−0.603	0.021***	−0.022	0.010*
Men, Cuban	γ_{70}			−0.191	0.033***	−0.020	0.023
		VC	SD	VC	SD	VC	SD
Variance components							
Between MSA error							
Intercept, non-Hispanic White men	U_0	0.026	0.163***	.024	.155***	.026	.161***
Women, Puerto Rican	U_1			.029	.171***	.002	.050
Women, Mexican	U_2			.022	.149***	.004	.065***
Women, Cuban	U_3			.005	.068	.010	.100
Women, White non-Hispanic	U_4			.005	.071***	.001	.028***
Men, Puerto Rican	U_5			.017	.131***	.003	.058
Men, Mexican	U_6			.031	.175***	.005	.072***
Men, Cuban	U_7			.017	.130**	.020	.143
Within MSA error	e_{ij}	1.301	1.141	1.20	1.095	.431	.656
FIML, deviance		1588026.00		1547045		1023445	
Number of parameters		3		45		302	
Change in deviance				40981		523600	
Change in DF				42		260	

Note. Model 3 controls for education, English language proficiency, work experience, work experience squared, occupation (professional, managerial, clerical, sales, craft, operator, service, laborer (omitted)), self employed, foreign born, married, number of children, weeks worked per year, hours worked per week. All of the control variables but foreign born have p values less than .05. All of the control variables but work experience and work experience squared have error terms because they were significant.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

2C, model 2 provide estimates of the ethnicity/gender gaps, and show that they are all statistically significant, and in each case White non-Hispanic men have the highest earnings (the dollar equivalent of 10.309 is $30,001). Cuban men have the next highest estimated average unadjusted earnings (exp(10.309 + −.191) = $24,785 or the smallest gap) and Mexican women have the lowest estimated average unadjusted earnings (exp(10.309 + −1.001) = $11,025.87 or the largest gap). The Latino/a subgroup coefficients explain about 8% of the within MSA variance in earnings ((1.301 − 1.200)/1.301 = .075). To determine if a single combined Hispanic category has a better fit to the data than the specific ethnic groups, we estimated a model with the coefficients for Puerto Ricans, Mexicans, and Cubans (not separated by gender) constrained to be equal and compared it to an unconstrained model. Because the model with equal

Table 2B. Correlations among the coefficients, no level 1 control variables (model 2)

	PR	Mexican	Cuban	
Among women				
Mexican	.360			
Cuban	.040	.389		
White, NH	.194	.289	−.022	
Among men				
Mexican	.500			
Cuban	.657	.410		
White, NH	−.094	−.725	−.137	
	Men, PR	**Men, Mexican**	**Men Cuban**	**Men, non-Hispanic**
White				
Across gender				
Women, Puerto Rican	.793	.239	.163	.155
Women, Mexican	.507	.890	.291	−.630
Women, Cuban	.308	.266	.571	−.016
Women, White non-Hispanic	−.238	−.039	−.585	−.095

Table 2C. Correlations among the coefficients, controlling for level 1 covariates (model 3)

	PR	Mexican	Cuban	
Among women				
Mexican	.436			
Cuban	.403	.133		
White, NH	.322	.501	.244	
Among men				
Mexican	.499			
Cuban	−.151	.032		
White, NH	.416	−.101	−.286	
	Men, PR	**Men, Mexican**	**Men Cuban**	**Men, non-Hispanic**
White				
Across gender				
Women, Puerto Rican	.496	.241	.183	.308
Women, Mexican	.488	.788	.005	.063
Women, Cuban	−.048	−.062	.719	−.019
Women, White non-Hispanic	−.031	.152	−.016	.121

coefficients had a significantly worse fit to the data (results not shown in a table, χ^2 difference between the constrained and unconstrained model is 45, 2 *df*, $p < .001$), we maintain the separate ethnic subgroups.

6.3. H3. Human capital characteristics will reduce the gender/ethnicity earnings gaps

As anticipated by hypothesis 3, human capital characteristics contribute significantly to the earning gaps across geographic places (Table 2A, Table 2B, and Table 2C, model 3). An additional 84% (=1.200 − .431/1.200) of the within MSA variance is explained by these characteristics and the model fit improves significantly (change in deviance $\chi^2 = 523{,}600$, $df = 260$, $p < .001$). In addition, the size of all of the gap coefficients decreased considerably when the

Table 3A. Multi-level model of Latino/a subgroup log earning gap coefficients by MSA characteristics controlling for individual human capital and demographic characteristics (I-PUMS 2000 1%, $N = 511{,}952$). The dependent variables are β_{0j} to β_{7j} from Table 2A, model 2

	Women, PR (β_1)		Women, Mexican (β_2)		Women, Cuban (β_3)		Women, NH White (β_4)	
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Adjusted mean	−.240	.019***	−.213	.0132***	−.232	.046***	−.234	.004***
Log population	−.030	.018[a]	−.011	.011	.004	.037	−.004	.004
Midwest	−.093	.062	.014	.030	−.133	.143	−.001	.011
Northeast	−.083	.050	−.073	.038[a]	.073	.095	.001	.011
South	−.060	.056	−.003	.020	−.025	.110	.008	.009
% Immigrant	.000	.001	−.003	.001*	−.002	.002	.001	.000**
Deindustrialization	−.005	.022	.008	.008	−.037	.039	−.005	.004
% Durable manufacturing	−.002	.006	−.003	.002	−.000	.012	−.002	.001*
% Non-durable manufacturing	−.002	.010	−.004	.006	−.027	.023	−.008	.002***
% High technology	.039	.043	−.037	.028	−.144	.097	−.011	.009
% Unionized	.005	.003	−.001	.002	.001	.006	−.000	.001
Unemployment rate	−.013	.018	.000	.006	−.039	.046	−.008	.003*
% Casual employment	−.001	.007	.000	.003	.000	.014	.002	.001
% Low end service	1.295	3.938	1.474	2.534	8.249	5.985	.474	.861
% High end service	−4.590	5.886	3.427	3.395	17.144	12.189	1.240	1.228

	Men, PR (β_5)		Men, Mexican (β_6)		Men, Cuban (β_7)		Men, NH White (β_0)	
	B	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Adjusted mean	−.039	.018*	−.018	.012	−.040	.043	9.895	.012* * *
Log population	−.017	.017	−.023	.010*	.070	.038[a]	.003	.009
Midwest	−.101	.060[a]	.012	.026	.070	.127	−.017	.023
Northeast	−.048	.048	−.147	.031***	−.216	.098*	.030	.023
South	−.062	.052	.015	.018	−.033	.107	−.020	.019
% Immigrant	.001	.001	−.004	.001***	−.004	.002*	.005	.001* * *
Deindustrialization	−.002	.021	−.010	.007	.063	.042	−.026	.008 * * *
% Durable manufacturing	.005	.005	−.005	.002*	−.002	.011	−.001	.002
% Non-durable manufacturing	−.006	.010	−.012	.005*	.022	.024	.002	.004
% High technology	.060	.043	.028	.026	−.055	.104	.015	.020
% Unionized	.002	.003	.002	.002	−.002	.007	.002	.001
Unemployment rate	.000	.019	.005	.005	.032	.042	−.003	.006
% Casual employment	−.011	.007	−.003	.003	.017	.014	−.021	.002* * *
% Low end service	−6.767	3.782[a]	5.028	2.227*	.399	7.220	.901	1.747
% High end service	−8.601	5.872	−5.576	3.151[a]	6.571	13.028	1.914	2.56

	VC	**SD**
Variance components		
Between MSA error		
Intercept	.011	.103 * * *
Education	.000	.008 * * *
English Language ability	.000	.021 * * *
Professional	.003	.054 * * *
Manager	.004	.063 * * *
Clerical	.003	.050 * * *
Sales	.005	.069 * * *
Craft	.001	.035 *
Operator	.003	.052* * *
Service	.003	.055 * * *

Table 3A. (continued)

	VC	SD
Self employment	.011	.104 * * *
Immigrant	.001	.036 * * *
Married	.000	.021 * * *
Number of children	.000	.011 * * *
Usual weeks worked	.000	.002 * * *
Usual hours worked	.000	.003 * * *
Women, Puerto Rican	.003	.058 *
Women, Mexican	.004	.064 * * *
Women, Cuban	.005	.070
Women, White non-Hispanic	.001	.025 * * *
Men, Puerto Rican	.002	.047 *
Men, Mexican	.004	.062 * * *
Men, Cuban	.026	.162 * * *
Within MSA error	.656	.431
FIML, deviance		1,023,207
Number of parameters		414
Change in deviance		238
Change in DF		112

Note. Controls for Education, English language proficiency, work experience, work experience squared, occupation (professional, managerial, clerical, sales, craft, operator, service, laborer (omitted)), self employed, foreign born, married, number of children, weeks worked per year and hours worked per week. All of the control variables but foreign born have p values less than .05. All of the control variables have error terms (are free to vary across MSAs) with the exception of work experience and work experience squared.

[a] Work experience and work experience squared did not have significant error terms.

* $p < .05$.

* * $p < .01$.

* * * $p < .001$.

Table 3B. Correlations among the coefficients from the full final model

	PR	Mexican	Cuban	
Among Women				
Mexican	.578			
Cuban	.547	.413		
White, NH	−.077	.322	.366	
Among Men				
Mexican	.680			
Cuban	.323	.338		
White, NH	.322	.391	−.112	
	Men, PR	**Men, Mexican**	**Men Cuban**	**Men, non-Hispanic White**
Across Gender				
Women, Puerto Rican	0.738	0.771	0.417	0.086
Women, Mexican	0.680	0.799	0.424	0.245
Women, Cuban	0.130	0.424	0.575	−0.354
Women, White NH	−0.042	0.050	−0.022	−0.080

control variables were added to the model[5]; but only the coefficient for Cuban men is no longer statistically significant. These results indicate that for many groups, the human capital characteristics explain most of the earning gaps. Because most of the effects of the individual level characteristics are also free to vary across places, some of the reduction in the coefficients may also be due to the differing effects of the characteristics on earnings across places.

6.4. H4. Earnings gaps will vary across metropolitan areas controlling for human capital and background characteristics

It is necessary to return to model 2 in Table 2A, Table 2B, and Table 2C to evaluate hypothesis 4 regarding the variance across places in gender/ethnicity-specific earnings gaps. The variance components initially differ significantly for all but Cuban women (Table 2A, model 2, no control variables).[6] It is interesting that there is considerable variance in the subgroup gaps across metropolitan areas, because there is very little between-MSA variance to explain (from Table 2A, model 1 variance components, 1.301/.026 + 1.301 = 98% within and therefore 2% between). After controlling for the individual level characteristics (Table 2A, Table 2B, and Table 2C, model 3), the variance components for the gap coefficients for Puerto Rican and Cuban women and men are no longer significant. This suggests that for Puerto Ricans and Cubans, the initial variance across places has more to do with the characteristics of the individuals clustering geographically than something about the labor markets themselves. For Mexican men and women, the variance components are significant, suggesting that something about the labor markets, not only the individual characteristics of people in the area, is contributing to Latino/a earning gaps relative non-Hispanic White men.

6.5. H5. Labor market characteristics will directly influence earnings and will modify the gender/ethnicity-specific earnings gaps

To evaluate the several specific expectations listed in hypothesis 5, we added labor market characteristics as predictors of the adjusted gap coefficients from Table 2A, model 3, and presented them in Table 3A. In Table 3A, the dependent variables are the ethnicity/gender-specific coefficients (slopes) estimated within each MSA (β_1–β_7), i.e., the log earning gaps (called "adjusted means" in Table 3A). For non-Hispanic White men the dependent variable is the intercept estimated at level 1 (β_0). For all of these models, the individual level control variables are included in the model and are free to vary across places (with the exception of work experience). The log earning gap for Mexican is no longer significant but the gaps persist for Latina women and Puerto Rican men. The consistent lower earnings for all of the women suggest a gender effect. The log earning gap for Cuban men remains non-significant.

[5] The gaps are reduced by the following amounts for each gender-Latino/a subgroup: Puerto Rican women 70%, Mexican women 78%, Cuban women 66%, non-Hispanic White women 57%, Puerto Rican men 90%, Mexican men 96%, Cuban men 89%.

[6] It is likely that the small number of Cuban women in the sample and the lack of any Cuban women in about 30 metropolitan areas contribute to the lack of variance across geographic places.

None of the labor market characteristics modify the associations for Puerto Rican women, Cuban women, or Puerto Rican men. Labor market characteristics have more of an impact on Mexican earning gaps than the other Latino subgroups. Mexicans are the largest and the most geographically dispersed of the three groups, therefore there is greater power to detect interaction effects for this group. For three groups (Mexican and Cuban men, and Mexican women) percent immigrant in an area makes the gap larger (e.g., the adjusted gap for Mexican men is −.018, but for each percent immigrant in an area we add −.004).

For non-Hispanic White men, earnings increase by .005 for each percent increase in immigrants in an area, and the gap for non-Hispanic White women decreases by .001. These patterns of coefficients suggest that immigrant concentration hurts Latino/as but helps non-Hispanic Whites. Living in the Northeast also widens the gap for Mexican men (−.018 + −.147 = −.165) and for Cuban men (−.040 + −.216 = −.256). The earnings gap for Mexican men is most sensitive to MSA level conditions. The gap widens in areas with more durable manufacturing (by −.005 for each percent), with more non-durable manufacturing (by −.012 for each percent), but is lowered considerably by more low end service industry jobs (−.018 + 5.028 = 5.01). These results suggest that service industry jobs are helping and manufacturing industry jobs are hurting earnings of Mexican men.

Non-Hispanic White women earn even less than non-Hispanic White men in higher percent durable manufacturing areas (by −.002), non-durable manufacturing areas (by −.008), and in areas with high unemployment rates (by −.008). In addition, as mentioned, these women benefit in areas with a high percent immigrant population; the gap gets smaller by .001 for each percent increase. This does not mean that non-Hispanic White women are not immigrants themselves, but as Appendix A shows, only 6% of the foreign born are non-Hispanic White compared to 46% of Puerto Ricans, 78% of Cubans, and 58% of Mexicans.

The labor market characteristics that influence non-Hispanic White men's earnings indirectly influence the earnings gaps by modifying the comparison group. Non-Hispanic White men also benefit from higher percent immigrant in an area (by .005) but are hurt by casual employment in an area (by −.021) and deindustrialization (by −.026).

6.6. H6. We expect that Hispanic subgroups will share similar earnings privileges and disadvantages across labor markets

To evaluate hypothesis 6 regarding shared earnings privileges and disadvantages across labor markets, we examine the correlations among the coefficients for the gaps and intercepts (Table 2B, Table 2C, and Table 3B). We focus on the correlations for the unadjusted coefficients (Table 2B) and the adjusted coefficients from the full model (Table 3B).

The low correlations (all below .40) among Latina coefficients (.360 for PR and Mexican, .040 for PR and Cuban, and .389 for Cuban and Mexican) in the unadjusted model (Table 2B with no level 1 controls) suggest that different processes are occurring for these subgroups across labor markets. The correlations between non-Hispanic White women and Latinas are also low (below .30) and even negative between Cuban women and non-Hispanic White women (−.022). The correlations are stronger among the men, but only for the Cubans and Puerto Ricans is it strong enough to say that there experiences are the same (r = .66). The strong negative correlation between non-Hispanic White men's coefficients and Mexican

men's earning gaps ($r = -.73$) suggests that one's advantage is tied to the other's disadvantage. The strong within subgroup ethnicity cross gender correlations indicate that members of these ethnic subgroups share earning experiences across MSAs regardless of gender, but the weak negative association between non-Hispanic White men and women suggests that racial privilege is not as strongly correlated across gender (see the "across gender" panel of Table 2B). The adjusted coefficients (or residual) from Table 2C, model 3 show similar patterns, but most of the correlations are stronger. We next focus on the correlations among the coefficients from the full model that includes the MSA characteristics (Table 3B).

The coefficients in the full model (Table 3B) no longer represent simply the gaps across the 106 MSAs. They now represent the residual gaps, left over after what has been explained by the individual and labor market characteristics. Because most of the relevant factors are specified in the model, we interpret the Latino/as subgroup coefficient correlations as indicating shared discrimination across MSAs. The correlations are much higher between the Mexican and Cuban women coefficients ($r = .413$) and Mexican and Puerto Rican women coefficients ($r = .578$), and Mexican and Cuban women (.547), suggesting that their experiences are similar across places but not identical. The correlations are now stronger between non-Hispanic White women and Mexican women ($r = .322$) as well as Cuban women ($r = .366$), indicating a shared gender discrimination effect. The correlations between the residuals for Puerto Rican women and non-Hispanic White women are negative and weak, indicating that these group have separate experiences.

The correlations among the men's residuals indicate that something unmeasured is shared by Puerto Rican and Cuban men ($r = .323$); Puerto Rican and Mexican ($r = .680$) and Mexican and Cuban ($r = .338$). The weak negative correlation between Cuban men and non-Hispanic White men ($r = -.112$) suggests that whatever privileges one group disadvantages the other group across MSAs.

The strong within Latino subgroup across gender correlations among the coefficients persist in the full model. The associations between the coefficients for women in all categories and non-Hispanic White men are mostly weak, but the strongest is a negative correlation with Cuban women ($r = -.354$) (Table 3B, the "across gender" panel). This pattern indicates that unmeasured characteristics associated with non-Hispanic White men's earnings have the opposite effect on Cuban women's earnings.

7. Conclusions

These analyses directly addressed our initial hypotheses. Earning gaps differ across labor markets, but much of these differences are due to individual level characteristics concentrated in different areas. Only a few labor market characteristics modify the associations between the gender-ethnicity coefficients and earnings (primarily percent immigrant and manufacturing in an area). Several labor market characteristics are associated with non-Hispanic White men's earnings, thereby indirectly influencing gender/ethnicity-specific earning gaps. For the most part earning gaps are not correlated across specific ethnicities. There is strong support for the long suspected need for ethnicity-specific research, but less support for the importance of specific labor market effects. There is evidence of a strong gender effect (all of the Latina gaps remain significant in the final model) but less evidence of ethnicity alone effects (much are ex-

plained by the characteristics of the groups). Within ethnicity across gender correlations were much higher for disadvantaged groups, but not for those in the dominant ethnic group (non-Hispanic Whites).

As expected, given their different modes of U.S. labor market incorporation, commonly known explanations of earnings inequality (i.e., human capital and background characteristics, migration status and labor market conditions) varied by Latino subgroup. In addition, for all groups, controlling for human capital and background characteristics considerably reduces the Latino subgroup/gender gap in earnings compared to non-Hispanic White males. Human capital and background characteristics explained over 80% of the variance in earnings. This is consistent with prior research finding that human capital accounted for the majority of the Latino earnings gap relative to non-Hispanic Whites (Allensworth, 1997; Avalos, 1996; Chiswick and Miller, 1995; Grenier, 1984; Stolzenberg, 1990; Trejo, 1997). Individual characteristics alone, however, are not sufficient to explain all of the gaps in earnings.

For all but Cuban men, the earning gaps persisted despite controlling for human capital characteristics. We expected, but did not find, that deindustrialization would modify the Puerto Rican men/women earning gaps. We also were surprised by the modifying effects of percent immigrant in an area on the earning gaps. Greater immigrant concentration lowered relative earnings for Cuban men and Mexican women and men. This finding is consistent with Sanders and Nee's (1987) challenge to the general consensus that enclaves benefit protected groups (Portes and Bach, 1985). This finding is not surprising for Mexicans. Gouveia and Saenz (2000) suggest that employers have sought out low-wage Mexican workers to help them remain competitive in a global economy. Kposowa (1995) found that an increase in ethnic immigrants in an area reduces the wages of the ethnic group members already living in that area.

The patterns for non-Hispanic White women are consistent with the intersectional approach to understanding labor market outcomes (Browne, 1999; McCall, 2001). Unlike the Latina subgroup members, non-Hispanic White women have higher relative earnings in areas with higher immigrant concentrations. Non-Hispanic White men also benefit from living in high population areas with higher percentages of immigrants. Some of these characteristics are the same ones that disadvantaged Mexican and Cuban men (e.g., percent immigrant). The low correlations among the earnings gaps coefficients also provide further evidence of the intersectional approach. The positive correlations among some of the coefficients indicate that women do share similar economic experiences across ethnicity. The correlations among the earnings gap coefficients for men are stronger, indicating that men share similar earning experiences across labor markets. Inconsistent with our hypotheses, the new economy measures did not directly modify the Latino/a earning gaps. However, new economic changes have influenced non-Hispanic White men's earnings. Both deindustrialization and casual employment lower earnings for non-Hispanic White men. Changes in non-Hispanic White men's earnings indirectly influence the ethnicity-specific earning gaps by altering the reference group. In addition, the modest correlation between non-Hispanic White men's coefficients and Mexican and Puerto Rican men's earning gaps suggests that one's advantage is tied to the other's disadvantage. The strong within subgroup ethnicity across gender correlations indicate that members of these ethnic subgroups share similar earning experiences across MSAs regardless of gender, but the weak negative association between non-Hispanic White men and women sug-

gests that racial privilege is not as strongly correlated across gender. Our findings also suggest that Latino/a earnings are not independent of White men's economic position. These findings concur with Bernhardt et al.'s (1995) study of trends in wage inequality by gender and race that revealed that the gender wage gap between White men and Black and White women is not independent of White men's economic position (Bernhardt et al., 1995).

This study has several limitations. Teachman and Crowder (2002) suggest that choosing the boundaries of places is important for accurate modeling of context effects. It is difficult to know if the metropolitan area is the best unit for capturing labor market boundaries. Additionally, our cross sectional analysis cannot fully capture the dynamic process of economic restructuring (see, e.g., Browne, 1999). We have no way of establishing empirically the order of influence between changes in worker characteristics and changes in labor market characteristics. In addition, our findings can only be generalized to non-Hispanic Whites and Hispanics or Latinos residing in metropolitan areas. In light of the differences between farm wages from non-farm wages and the disproportionate growth of Hispanics or Latinos in rural areas during the last decade, future studies should examine earnings patterns in rural and urban settings. It seems unlikely, however that our sample criteria undermine the ability to assess the actual differences in earnings between Latino subgroups given the high proportion of Hispanics or Latinos residing in urban areas. Out of the total Hispanic or Latino population, 93% live in urban areas (92% of the U.S. Mexican population), 96% of the Puerto Rican population, and 97% of the Cuban population (U.S. Census, 2000).

The strength of the sample and theory guiding these analyses somewhat mitigate these limitations. Therefore we confirm the suspicions of many researchers that ethnicity and gender-specific analyses of earnings are important for informing policies to reduce earnings inequality. Historical accounts of the creation of "Hispanic" as a coherent political group in the United States make clear that sub-groups often share little beyond a common language (Bean and Tienda, 1987). Recognizing the potential usefulness of Hispanic identity for furthering political coalitions should not inhibit research on the important differences among gender and ethnic subgroups. Policies designed to enhance earning opportunities for Hispanic Americans will be less effective if they fail to recognize important differences among subgroups, and if they underestimate the less important, but still relevant labor market place characteristics on earning opportunities.

There is no simple answer to why Latino/as subgroups differ in earnings. It is likely that racism and discrimination, dynamics without direct measures in this sample, are evident across labor markets. Improving individual human capital should also decrease the non-Hispanic White male earning advantage. It is important to recognize that there is considerable variation among non-Hispanic White men, and that some of that variation is related to MSA level "new economy" factors such as deindustrialization and increasing casual employment.

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Appendix A.

Descriptive statistics by ethnicity, person weighted data, I-Pums 2000 residing in MSAs

	Non-Hispanic White $N = 48,581,169$		Puerto Rican $N = 1,110,181$		Mexican $N = 6,505,287$		Cuban $N = 496,746$		Total $N = 56,693,383$	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Earnings (× $1,000)	40.49	46.37	26.52	27.26	21.67	22.68	31.10	34.95	37.97	44.33
Age	39.07	12.14	35.49	11.48	33.58	11.02	40.04	12.17	38.38	12.14
Women (%)	47		51		39		46		47	
Married (%)	59		51		58		63		59	
Has a child (%)	13		17		22		14		14	
No. of own children	0.77	1.07	0.95	1.19	1.15	1.43	0.82	1.02	0.81	1.13
No. of own children <5 years	0.17	0.47	0.21	0.51	0.28	0.60	0.17	0.45	0.18	0.48
Education, 1990	11.73	2.39	10.16	2.64	8.59	3.28	10.77	2.95	11.33	2.72
Education, 12 year (%)	8		7		4		8		7	
Education, 13–15 years (%)	31		13		7		19		28	
Foreign born (%)	6		46		58		78		14	
English proficiency	4.90	0.41	3.88	0.83	3.35	1.27	3.38	1.14	4.69	0.79
Work experience	21.34	11.99	19.33	11.81	18.99	11.67	23.27	12.82	21.05	11.98
Self employed (%)	5		2		2		7		4	
Weeks worked last year	46.02	12.03	43.95	13.81	43.12	13.78	45.14	12.67	45.64	12.33
Usual hours worked per week	40.34	12.14	38.86	10.81	39.73	10.83	40.73	10.72	40.25	11.97
Part time work hours (LT35) (%)	19		17		16		14		18	
Part time work weeks (lt 30) (%)	11		16		17		13		12	
Occupation (1950 categories)										
Professional (%)	28		17		10		19		26	
Manager (%)	15		8		6		12		14	
Clerical (%)	20		25		18		22		20	
Sales (%)	8		6		4		8		7	
Craft (%)	10		9		14		10		10	
Operations (%)	7		13		19		12		9	
Service (%)	10		18		18		12		11	
Farm fish lumber laborer (%)	3		5		11		4		4	

Note. All of the proportions and means differ significantly between groups at the .0001 level.

Appendix B.

Number of people by Latino subgroup and MSA, weighted by the person weight, I-PUMs 2000

MSA	Non-Hispanic White	Puerto Rican	Mexican	Cuban	Total
80 Akron, OH	297,582	174	1109	0	298,865
160 Albany-Schenectady-Troy, NY	319,486	3837	1022	660	325,005
200 Albuquerque, NM	140,621	1359	39,754	1069	182,803
240 Allentown-Bethlehem-Easton PA/NJ	270,164	12,353	2238	537	285,292
520 Atlanta, GA	1,201,837	10,406	78,866	3650	1,294,759
640 Austin, TX	306,558	2397	100,029	677	409,661
680 Bakersfield, CA	139,936	765	86,082	0	226,783
720 Baltimore, MD	743,260	5781	5432	338	754,811
760 Baton Rouge, LA	198,622	188	1817	1127	201,754
1000 Birmingham, AL	147,155	548	2850	94	150,647
1080 Boise City, ID	192,564	266	14,886	89	207,805
1120 Boston, MA	1,174,918	17,817	7505	1523	1,201,763
1280 Buffalo-Niagara Falls, NY	481,819	6413	1201	455	489,888
1320 Canton, OH	186,208	205	569	0	186,982
1440 Charleston-N.Charleston, SC	148,135	634	2509	256	151,534
1520 Charlotte-Gastonia-Rock Hill, SC	244,289	1599	10,104	893	256,885
1600 Chicago-Gary-Lake, IL	2,495,578	60,468	496,418	7540	3,060,004
1602 Gary-Hammond-East Chicago, IN	152,230	2736	17,076	90	172,132
1640 Cincinnati OH/KY/IN	308,364	743	1754	142	311,003
1680 Cleveland, OH	856,207	19,225	7472	222	883,126
1720 Colorado Springs, CO	165,026	2266	11,841	285	179,418
1760 Columbia, SC	175,308	1537	1596	332	178,773
1840 Columbus, OH	448,269	2658	7021	506	458,454
1920 Dallas-Fort Worth, TX	936,862	5379	279,247	3006	1,224,494
1921 Fort Worth-Arlington, TX	523,286	3787	103,468	555	631,096
2000 Dayton-Springfield, OH	212,051	458	1043	95	213,647
2080 Denver-Boulder-Longmont, CO	783,502	3815	119,126	1246	907,689
2160 Detroit, MI	1,477,729	7074	38,235	1274	1,524,312
2310 El Paso, TX	49,344	2545	175,952	346	228,187
2680 Fort Lauderdale-Hollywood-Pompano Beach, FL	433,769	27,370	8755	27,777	497,671
2760 Fort Wayne, IN	215,131	270	6784	0	222,185
2840 Fresno, CA	142,633	977	124,002	0	267,612
3000 Grand Rapids, MI	414,070	1844	19,890	959	436,763
3120 Greensboro-Winston Salem-High Point, NC	462,540	2915	22,477	407	488,339
3240 Harrisburg-Lebanon-Carlisle, PA	275,875	4033	1682	519	282,109
3280 Hartford-Bristol-Middleton-New Britain, CT	144,097	26,939	1092	181	172,309
3320 Honolulu, HI	66,087	4331	2784	0	73,202
3360 Houston-Brazoria, TX	1,015,120	7315	390,370	4316	1,417,121
3480 Indianapolis, IN	543,916	1641	12,351	314	558,222
3560 Jackson, MS	125,226	117	1414	216	126,973
3590 Jacksonville, FL	396,135	7349	3584	1657	408,725
3760 Kansas City, MO-KS	659,519	1118	24,418	277	685,332
3840 Knoxville, TN	206,376	489	596	270	207,731
3980 Lakeland-Winterhaven, FL	155,915	6785	9996	2468	175,164
4000 Lancaster, PA	208,981	10,192	502	0	219,675
4120 Las Vegas, NV	434,704	3907	93,448	5267	537,326
4400 Little Rock-North Little Rock, AR	214,873	467	3147	175	218,662
4480 Los Angeles-Long Beach, CA	1,403,883	18,274	1,229,674	14,946	2,666,777
4482 Orange County, CA	726,388	4847	310,552	3325	1,045,112
4520 Louisville, KY/IN	279,395	809	1941	1445	283,590
4880 McAllen-Edinburg-Pharr-Mission, TX	22,025	570	153,965	436	176,996
4900 Melbourne-Titusville-Cocoa-Palm Bay, FL	175,209	3668	1645	649	181,171
4920 Memphis, TN/AR/MS	89,873	668	7942	217	98,700
5000 Miami-Hialeah, FL	152,171	27,197	8290	268,142	455,800
5080 Milwaukee, WI	609,577	8873	27,746	982	647,178

Appendix B. (continued)

Number of people by Latino subgroup and MSA, weighted by the person weight, I-PUMs 2000

MSA	Non-Hispanic White	Puerto Rican	Mexican	Cuban	Total
5120 Minneapolis-St. Paul, MN	1,270,288	1803	31,237	699	1,304,027
5170 Modesto, CA	113,054	461	46,519	158	160,192
5190 Monmouth-Ocean, NJ	442,661	14,661	6808	2146	466,276
5360 Nashville, TN	347,381	769	12,973	900	362,023
5560 New Orleans, LA	213,635	1660	4594	1881	221,770
5600 New York-Northeastern, NJ	1,478,879	291,141	98,911	18,241	1,887,172
5601 Nassau Co, NY	1,002,509	32,907	6215	4164	1,045,795
5602 Bergen-Passaic, NJ	436,711	29,013	9006	6525	481,255
5603 Jersey City, NJ	111,959	27,182	5893	14,646	159,680
5604 Middlesex-Somerset-Hunterdon, NJ	342,723	21,304	7692	2011	373,730
5605 Newark, NJ	596,406	38,519	6356	9360	650,641
5720 Norfolk-VA Beach-Newport News, VA	478,003	6412	6816	700	491,931
5880 Oklahoma City, OK	165,800	796	18,855	252	185,703
5920 Omaha, NE/IA	267,161	570	17,537	0	285,268
5960 Orlando, FL	550,807	71,434	14,372	10,410	647,023
6080 Pensacola, FL	144,036	734	2244	479	147,493
6160 Philadelphia, PA/NJ	1,674,008	53,569	13,645	1828	1,743,050
6200 Phoenix, AZ	1,009,931	5433	270,055	1519	1,286,938
6280 Pittsburgh-Beaver Valley, PA	579,758	698	1989	107	582,552
6440 Portland-Vancouver, OR	622,588	1799	40,824	1373	666,584
6480 Providence-Fall River-Pawtucket, MA/RI	223,403	7119	2347	237	233,106
6640 Raleigh-Durham, NC	249,271	942	11,370	924	262,507
6760 Richmond-Petersburg, VA	192,654	1178	1853	197	195,882
6780 Riverside-San Bernadino, CA	539,485	6034	322,200	2333	870,052
6840 Rochester, NY	161,452	7534	132	367	169,485
6920 Sacramento, CA	516,395	2939	84,056	975	604,365
7040 St. Louis, MO-IL	1,053,157	1929	10,060	525	1,065,671
7160 Salt Lake City-Ogden, UT	572,920	781	48,803	181	622,685
7240 San Antonio, TX	242,710	4407	246,160	1607	494,884
7320 San Diego, CA	768,314	6653	260,957	2352	1,038,276
7360 San Fran.-Oakland-Vallejo, CA	385,723	3098	70,445	2553	461,819
7361 Oakland, CA	586,085	6957	140,037	1357	734,436
7362 Vallejo-Fairfield-Napa, CA	127,889	1646	34,095	145	163,775
7400 San Jose, CA	396,072	4438	154,500	1762	556,772
7510 Sarasota, FL	203,640	1338	8713	1535	215,226
7560 Scranton-Wilkes-Barre, PA	264,808	1305	608	0	266,721
7600 Seattle-Everett, WA	987,109	2708	43,473	1771	1,035,061
7840 Spokane, WA	174,796	159	2032	0	176,987
8000 Springfld-Holyoke-Chicopee, MA	190,446	19,284	821	202	210,753
8120 Stockton, CA	117,712	2503	58,437	93	178,745
8160 Syracuse, NY	306,811	2037	750	133	309,731
8200 Tacoma, WA	269,290	2974	12,536	392	285,192
8280 Tampa-St. Petersburg-Clearwater, FL	844,182	37,950	21,748	17,675	921,555
8400 Toledo, OH/MI	251,863	853	9806	252	262,774
8520 Tucson, AZ	242,923	1666	90,154	399	335,142
8560 Tulsa, OK	258,820	755	11,516	0	271,091
8730 Ventura-Oxnard-Simi Valley, CA	208,091	1871	91,939	342	302,243
8840 Washington, DC/MD/VA	1,297,702	14,724	30,514	5290	1,348,230
8960 West Palm Beach-Boca Raton-Delray Beach, FL	331,910	9986	13,975	13,796	369,667
9040 Wichita, KS	220,282	760	12,412	0	233,454
9320 Youngstown-Warren, OH-PA	196,558	2390	1028	0	199,976
Total	48,581,169	1,110,181	6,505,287	496,746	56,693,383

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