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INDUSTRIALIZATION AND RACIAL INEQUALITY IN EMPLOYMENT: THE BRAZILIAN EXAMPLE*

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In Brazil, the relationship between industrialization and racial inequality has been central to the discussion of post-Abolition race relations because the country has had high levels of racial inequality along with rapid but uneven industrialization. I examine how racial inequality in occupations varies with levels of industrialization across 74 Brazilian metropolitan areas in 1980. I find that industrialized areas have lower occupational inequality overall and especially in blue-collar occupations; but at higher occupational levels, racial inequality is either greater or is unaffected by industrialization. These results persist despite controls for the percent nonwhite in the population and educational inequality. Thus, this study supports the conventional view that race loses salience to class as industrial development increases, but only for blue-collar occupations; inequality at the white-collar level is unaffected or even increases with industrialization. Increased educational opportunity has effects on inequality similar to those of industrialization. Implications for Brazilian race relations are discussed.

The relationship between industrialization and racial inequality has long been a topic of debate among sociologists. With industrialization comes the profound restructuring of labor market positions and the potential of unprecedented opportunities for subordinate racial groups. A conventional view holds that the greater opportunity and increased competitiveness associated with industrialization reduce racial inequality because employers are forced to reward labor on the basis of universalistic criteria (Turner 1951; Van den Berghe 1967; Fernandes 1965; Souza 1968). Others disagree, arguing that industrialization perpetuates inequality because industrial employers continue to profit from maintaining the traditional racial order (Blumer 1965; Wilson 1978; Hasenbalg 1979). The case of Brazil offers an opportunity to reexamine the debate.

According to students of Brazilian society, changes in race relations have been especially great in the southeastern and southern regions

of Brazil, where “the dynamics of industrialization, rapid urbanization and massive European immigration have profoundly transformed race relations” (Van den Berghe 1967: 70; see also Bastide 1965; Fernandes 1965; Ianni [1970]1987; Hasenbalg 1979). In these regions, according to Van den Berghe (1967), race relations have clearly moved toward a competitive model and away from the paternalistic model extant in other regions, where labor is divided along racial lines and thus racial inequality is high. While analysts acknowledge that racial composition, urbanization, and immigration patterns all influence regional differences, they often point to industrialization as the key factor causing regional variations in race relations and racial inequality (Fernandes 1965; Ianni 1987; Hasenbalg 1979). Such conclusions for Brazil are unwarranted, however, when based only on the limited evidence from a few regions.

I examine how levels of industrialization and other related factors have influenced patterns of racial inequality in occupations across 74 of the 75 largest metropolitan areas in Brazil in 1980. In Brazil, levels of industrialization vary widely, and in recent decades there has been virtually no state intervention in racial affairs, a very low level of race-based collective action, and no racially segmented labor markets. Thus, the lack of such mediating variables

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makes Brazil a particularly good social laboratory for investigating how metropolitan area characteristics like industrialization affect racial inequality. I use a cross-sectional approach, primarily because a suitable historical data series suitable for analyzing the industrial period is not available for Brazil, at least not from government statistics.

BACKGROUND

Industrialization and Racial Inequality

The conventional view. According to the conventional view, industrialization can be expected to undermine traditional social orders in pre-industrial societies, where, after slavery, patriarchal social systems continued to keep blacks and mulattoes in low-level, racially defined positions (Turner 1951; Van den Berghe 1967; Fernandes 1965). Theoretically, the new industrialized economic system dislodges persons from their old social positions and forces new relationships between races; active competition replaces the structured domination of the old paternalistic system (Van den Berghe 1967). Job opportunities expand for all, and heightened competitiveness requires industrial employers to evaluate workers on the basis of productivity rather than ascription. Moreover, sentimentality is replaced by rationality and status, and contractual and impersonal relations replace personal ones (Blumer 1965). This perspective draws largely from Durkheim's ([1893] 1964) belief that modern societies rationally allocate labor on the basis of workers' achieved rather than ascribed characteristics. According to this conventional view, given greater overall universalism, racial inequality in education decreases.

Industrialization has been central to the work on race relations in Brazil, especially during the 1960s when such work focused on the integration of blacks¹ into the newly industrializ-

ing Brazilian economy. Fernandes (1965) claimed that racism was a legacy of slavery, but that capitalism and industrial development would transform Brazil into a modern society based on class identification, which would eventually displace racial ascription. He argued that white hostility and the "social deficiencies" inherited from the dehumanizing system of slavery² had kept Afro-Brazilians from competing with whites; but such effects, he maintained, were beginning to disappear. Other analysts agreed that industrialization would break down racial barriers in the labor market, but thought it would lead to greater interpersonal racism because majority group members would seek to maintain the old racial order in the new labor market (Bastide 1965:18; Van den Berghe 1967).

In addition to transforming social relationships and values, industrialization brings about specific organizational changes that support this conventional view. Industrialization tends to concentrate workers in factories so that hiring, firing, and promotion are more impersonal and often decided by several supervisors. Absentee company owners interested in maximum returns on their capital may be solely concerned with productivity and thus focus only on the human capital that workers bring to their jobs. In an increasingly competitive environment, even the most racist owners are forced to hire the most productive workers available. A high level of capital investment puts similar pressure on owners. Greater industrial specialization and complexity also ensure greater mobility of workers, thus leading to greater opportunity for underrepresented groups. The same phenomenon may obtain in modernized service sectors, which also become increasingly competitive and often ancillary to manufacturing. So goes the conventional view.

pretos and mulattoes collectively, claiming that distinctions like black and brown are typologies that reflect perceptual categories constructed by whites (Fernandes 1979). However, these are common perceptions among Brazilians of all races where *preto*, the Portuguese translation of black, refers to persons at the darkest end of the color continuum.

² Fernandes' argument about the social deficiencies inherited from slavery has been repeatedly questioned (Hasenbalg 1979; Andrews 1991), but this should not detract from his central argument about the effects of industrial development.

¹ Fernandes uses the term "black," although he means both persons with black skin color (in Portuguese, *pretos*) and mulattoes. The term is a translation of the Portuguese "*negro*" which often, but not always, includes *pretos* and mulattoes. I prefer to use the term "nonwhite" in this study to refer to persons identify in the Brazilian Census as *preto* and *pardo* (brown skin colored persons, but not exclusively mulatto). The Afro-Brazilian movement prefers the term "*negro*" in Portuguese to refer to

Blumer's perspective. This view was challenged by Blumer (1965) and later by Hasenbalg (1979) with regard to industrialization in Brazil. Blumer, while recognizing the great transformative influence of industrialization, proposed that industrialization might actually reinforce the traditional racial order. Where subordinate groups are highly differentiated and marginalized, industrial organizations may find material advantages in maintaining the racial order, such as avoiding labor conflicts where dominant group workers benefit from the elimination of subordinate group members as potential competitors for jobs (Blumer 1965; Hasenbalg 1979). Thus, industrialization would reinforce the prevailing racial ideology, ensuring the continuation of racial inequality: Industrialization's effect would be neutral, although racial group membership may have acquired a new meaning and function. For the Brazilian case, the denial of racism by much of the elite and middle class (Hanchard forthcoming) may reinforce the perception that there is no problem to fix, entrenching the old racial order.

Supporters of Blumer's view have stressed that the role of the state is especially important. Blumer maintained that only social policy could intervene to affect the racial order (Blumer 1990:165).³ From a similar perspective, Wilson (1978) demonstrated that racial norms from pre-industrial times have generally maintained pre-industrial inequalities after industrialization, and the continuation of such inequalities in turn reinforced the norms. He noted that in the United States it has been the state, acting in response to political pressures, that has been powerful enough to change racial norms. Most notably, the U.S. state instituted Jim Crow legislation, and more recently, affirmative action policies (Wilson 1978). Likewise, in countries like the United States and Brazil, the state implements most educational reform and development, independent from industrialization.

³ Perhaps Blumer's view generalized from an in-depth knowledge of Brazil. His views are presented in a compilation of materials that he wrote in the early 1960s, mostly while at UNESCO in Brazil (Blumer 1990: ix). At the time, UNESCO was sponsoring the most intensive series of studies of Brazilian race relations to date (e.g., Bastide 1965; Harris 1964; Fernandes 1965; Ianni 1987; Van den Berghe 1967).

A third perspective. I propose another perspective, in addition to the conventional view and Blumer's view: that industrialization may actually *increase* racial inequality at specific points in the occupational structure. In a country with strong racial biases, increasing competitiveness strengthens those business practices that restrict the entry of subordinate group members into high-status positions. This is especially true in a society like Brazil's, where consumers of all but the most basic products are members of the dominant group, and where the state makes no efforts to rectify discriminatory practices. An official investigation of hiring practices by the state of São Paulo showed that employers resist hiring Afro-Brazilians at white-collar levels (Andrews 1991). The study found that many employers feel that blacks working in highly visible positions harm a company's reputation. Employers want to prevent blacks from supervising white workers and to minimize their own interaction with blacks as well (Andrews 1991). Advertisements often require "good appearance" (*boa aparência*), a term commonly understood to exclude nonwhites. (Hasenbalg 1979; Eccles 1991; Andrews 1991). Historical evidence from two São Paulo factories shows that with industrialization and the end of European immigration, racial discrimination may have increased in the white-collar sector as racial segmentation in the blue-collar jobs diminished (Andrews 1991). Thus the effect of industrialization may be mixed: increasing, maintaining, or reducing inequality, depending on the particular occupational sector.

The Brazilian Context

Shortly after World War II, Brazil embarked on an "import-substitution" plan. The objective of this plan was to modernize the economy and increase the economic growth by diminishing dependence on foreign-manufactured goods. Brazil's economy had depended mostly on only a few primary exports such as coffee. Industrial growth was high throughout most of the post-war period, however, and by the early 1970s manufactured goods surpassed coffee as the greater proportion of exports (Evans 1979:66). Economic growth was particularly intense between 1968 and 1974, averaging 13 percent per year (Baer 1979:95), and by 1980 Brazil was the seventh largest economy in the capitalist

world. Industrialization was concentrated in certain areas, however, causing great regional differences (Baer 1979; Haller 1982). Meanwhile, high fertility and rural-urban migration caused rapid population growth, and the capacity of various regions to absorb increasing numbers into the modern job sector varied widely as well (Merrick and Graham 1980). Modern, highly industrialized areas like São Paulo fared far better than those like Fortaleza and Teresina, which had bloated informal economies and almost no industrialization. Since 1981, a year of negative growth, the pace of industrialization slowed dramatically throughout Brazil.

Industrialization expanded opportunities for education, particularly at the university level. Throughout the 1970s, federal and state universities were established in major cities throughout all Brazilian regions (Castro 1985; Durham and Schwartzman 1989). However, the availability of quality higher education was clearly greater in industrialized regions: In 1982, not one of the top 20 universities (measured in terms of overall and per capita faculty publications) was to be found in the less developed northeast region of Brazil (Castro 1985).

Prior to industrialization, the racial order had changed somewhat. By the time Brazil abolished slavery in 1888, most blacks and mulattoes were already free laborers (Degler [1971]1986; Skidmore 1974). Nonwhites filled the majority of manual occupations throughout the country; many nonwhites had also become artisans and entrepreneurs. During slavery, many freed blacks, and especially mulattoes, held high-skilled jobs, including those required in the production of sugar (Schwartz 1992). However, from about the time of Abolition to almost 1930, large numbers of Europeans immigrated to Brazil, under the encouragement of the Brazilian state and subsidized for a time by the state of São Paulo in an explicit effort to *whiten* the largely nonwhite population. These Europeans would soon flood the labor markets of São Paulo state and, to a lesser extent, the southernmost states, bringing unprecedented racial competition for jobs (Skidmore 1974; Hasenbalg 1979). The immigrants often displaced resident black and mulatto workers, as employers clearly preferred the low-skilled European workers (Van den Berghe 1967; Hasenbalg 1979; Andrews 1991). By the 1920s, when this massive immigration had subsided, the immigrants and their children al-

ready dominated many high-status positions. Only then did nonwhites begin filling jobs in the industrializing economy (Andrews 1991).

In Brazil, the state has not implemented race-specific policies since it encouraged European immigration in the early part of this century. The only other exception to the state's involvement with racial issues is a 1951 law, revised in the Constitution of 1989, which makes racial discrimination illegal. Unfortunately, the law has only rarely been used and only against the most blatant acts of racism (Eccles 1991; Andrews 1992). No doubt one reason for the lack of state intervention is the widely held ideology that Brazil is a *racial democracy*—an ideology that supports the illusion that race does not significantly affect life chances (Skidmore 1974; Hanchard forthcoming). Although a small but growing black consciousness movement questions this ideology,⁴ it continues to be the conventional wisdom throughout much of Brazil. The strength of the idea of a racial democracy is supported by comparatively high levels of racial interaction, at least among the poor (Telles 1992; Telles 1993), and by a glorification of the African component of national culture (Hanchard forthcoming). Nevertheless, in a context where Brazilian workers of all races still lack even rudimentary civil rights, nonwhite workers are further discriminated against on the basis of race and without recourse to legal protection (Eccles 1991; Hanchard forthcoming).

DATA AND RACIAL CATEGORIES

Data are from the 1980 Census of Brazil. The units of analysis are 74 Brazilian metropolitan areas with populations greater than 100,000.⁵

⁴ In 1980, the racial democracy idea was still very popular. However, consciousness of the situation of Afro-Brazilians increased greatly with the end of military governments in 1985, and especially in 1988 with national events marking 100 years since Abolition (Andrews 1992; Hanchard forthcoming):

⁵ The 74 areas include 26 metropolitan areas with nonwhite numerical majorities and 48 metropolitan areas with white numerical majorities. Details available from the author.

I eliminated one metropolitan area with a population greater than 100,000: Blumenau. Regression analysis identified Blumenau as a statistical outlier; it had exceptionally low levels of inequality, apparently because of its very small (2 percent) nonwhite

Because data for metropolitan areas are available for only the 10 largest cities (in published form or in public use microdata samples), I contracted the *Instituto Brasileiro de Geografia e Estatística* (IBGE) to create a data set which included additional metropolitan areas (Vetter 1988) from the full sample of persons that responded to the 1980 Census long form (administered to 25 percent of the population).

I analyze racial occupational inequality between the white (*brancos*) and the occupationally subordinate nonwhite populations of metropolitan areas. I combine blacks (*pretos*) and browns (*pardos*) into a single nonwhite category because of a relatively small brown-black income gap (Silva 1985; Lovell 1989) and for reasons of Brazilian racial categorization. Racial categories are based on census respondents' self-identification of skin color from four categories including white, black, brown, and yellow (*amarelo*; Asian); thus in this study racial categories are categories of skin color. Self-identification usually occurs in the presence of a census-taker, reducing the likelihood of deviating from the respondent's phenotype. The brown category includes primarily mixed-race persons with varying mixtures of African, European, and Indian ancestry, but also includes Brazil's small indigenous population. This heterogeneous brown category is often criticized as an oversimplification of Brazilian racial composition, since in Brazil many more categories are often used to identify mixed race persons (Harris 1964; Hutchinson 1957). I exclude the yellow category from this analysis because, along with a small "other" and "undeclared" group, it comprises only up to 5 percent of any metropolitan area's population, and the social status of Asian-Brazilians is much more like that of whites than of browns or blacks.

Although skin color was fundamental to slavery and continues to influence life chances in Brazil, racial categories have never been imposed, at least since the colonial period (Carneiro 1983; Castro and Guimarães 1992). Thus racial categorization has become somewhat flexible. Race is defined above all by skin color (the census question asks "What is your color?" rather than "What is your race?").

population, suggesting either random error due to a small sample or to the peculiarities often found in a population of this size.

There is a social preference for lighter categories. High status, in particular, often allows a person to be categorized lighter than his or her phenotype would indicate. Using a single nonwhite category is justified as a measure for race because racial identification tends to be more flexible between brown and black than between white and brown—presumably because of a strong resistance to identifying as *black* (Degler 1986; Wood 1991). Also, there may be large regional differences in resistance to black identification, particularly in the Northeast where brown is comprised of more numerous color categories and black is only one category at the end of a continuous color spectrum.⁶

VARIABLES, MEASURES AND MODELS

Racial Inequality in Occupations

Racial occupational inequality may be conceptualized as the net occupational advantage of one group over another along a scale of ranked occupational groups. To measure such inequality, I used the index of net difference (*ND*) (Lieberson 1975; Fosset 1984). Intuitively, net difference can be interpreted as the probability that individuals from one or the other racial group will be in higher ranked occupational groups when individuals in the two racial groups are randomly paired. I calculated net difference scores for employed males (age 10 and older) in nonfarm occupations: In this study,

$$ND = 100 (\sum W_i CN_i - \sum N_i CW_i),$$

where W_i and N_i are the proportions of white males and nonwhite males in occupation i , and CW_i and CN_i are the cumulative proportions of white males and nonwhite males in occupations ranked below occupation i . *ND*'s values can range from 100 to -100; 100 means that all white males are in higher status occupations than nonwhite males; -100 means that all nonwhite males are in higher status occupations

⁶ A large number of racial categories occurs, especially among the older and more racially mixed Northeast (Hutchinson 1957; Harris 1964; Degler 1986), evidenced by a strong negative correlation (-.68) across the 74 metropolitan areas between the percent nonwhite and the percent of the nonwhite population identifying as black.

than all white males; and 0 means whites and nonwhites are distributed equally. *ND* is based on three groups of occupations. From highest to lowest rank, these groups are (1) managerial/professional occupations (employers, managers, and high-level professionals); (2) intermediate occupations (semi-professionals, clerical, sales, skilled manual, and transport workers); and (3) unskilled blue-collar occupations (unskilled manual and personal service workers).⁷ Net difference scores were limited to these three clearly hierarchical occupational groups because there is little consensus about ranking intermediate occupations (Semyonov, Hoyt, and Scott 1984a:268).

Alternatively, inequality may stem from the relative rigidity of critical boundaries in the occupational structure, such as those between blue-collar and white-collar occupations or between skilled and unskilled blue collar occupations. To evaluate the extent of these differences, I constructed three additional indexes of inequality based on odds ratios (these are defined later in Table 2). Also, while *ND* may be the best single index for capturing overall inequality, it may be overly sensitive to local differences in occupational structure. Odds ratios, which are marginal invariant, specifically measure access to occupations independent of the occupational structure (although they are limited because they measure differentiation between only two categories). On the other hand, odds ratios are problematic when the meaning of access varies with the margins of the occupational distribution. For example, if a given occupational category represents the top 5 percent of all jobs in one metropolitan area and the top 20 percent of jobs in another, differential access to that occupation usually does not mean the same thing in each of the two areas; in the former it means access to an elite position, whereas in the latter it means access to a more "average" job. Although odds ratios are considered differentiation measures, they become inequality measures when two categories are ranked categories, as they are in this study. Despite a debate in *Demography* about the usefulness of a number of inequality and differentiation measures, the debating authors reached a consensus that both the net difference and odds ratio measures are particularly good mea-

asures once their limitations are understood (Semyonov, Hoyt, and Scott 1984a, 1984b; Fossett 1984). Finally, levels of inequality based on such inclusive occupational categorizations as these are in this study may understate the real racial inequality in Brazil because of large variations in occupational status within these occupational groups and because nonwhites tend to earn less than whites in the same occupation (Oliveira, Porcaro, and Costa 1983; Lovell 1989).

Independent Variables and Models

The independent variables are defined later in Table 2 on page 54. I estimated the extent of industrialization by the percent of the total labor force employed in manufacturing industries. Other independent variables are also included in the regression models because whites and nonwhites vary with respect to other factors that may also influence inequality.

I employed four models in the analysis. The first model regresses net difference scores on industrialization (percent in manufacturing) and two control variables. Because whites and nonwhites in Brazil vary in the extent to which they are natives or migrants, I controlled for the relative odds that whites and nonwhites were natives. This has been shown to be especially important in the Northeast, where white migrants dominate in high-level jobs (Castro and Guimarães 1992); in the Southeast migrants dominate in low level jobs, but there the migrants tend to be racially heterogenous. I employ a dummy variable to assess whether or not a metropolitan area is in the state of São Paulo because that state has some peculiar characteristics (Andrews 1991; Merrick and Graham 1979) and because its metropolitan areas are close together geographically, a situation that might lead to correlated errors.⁸

⁸ Two *ASR* reviewers suggested I use a dummy variable for metropolitan areas in the state of São Paulo. Controls for the color continuum, urbanization, and immigration are absent because adding them to the multivariate model had almost no effect. For the color continuum, I considered including the percent of the nonwhite population that identifies as black, but it yielded no statistically significant results, suggesting that this indicator either does not capture the real extent of the racial continuum across regions or that blacks and browns do

⁷ I considered street vendors to be unskilled blue-collar workers rather than salesworkers.

The second model adds a control for the percent of the total population that is nonwhite, which is represented by a square-root transformation to capture its curvilinear effects.⁹ Because industrialization and racial composition are clearly related at the regional level, it may be the percentage nonwhite that drives the regional differences in racial inequality, rather than industrialization as is generally assumed (Fernandes 1965; Ianni 1987; Hasenbalg 1979). The large number of cases ($N = 74$) in this study reduces the high correlation that would be obtained across a few regions. (The Appendix presents a full correlation matrix; it shows a correlation of $-.532$ between percent in manufacturing and percent nonwhite.)

Racial composition is also expected to affect racial occupational inequality, although the direction and the reasons for its effect vary widely. Based on the structure in the United States, researchers have claimed a positive relationship between the proportion of the population that is nonwhite and local levels of racial inequality (Turner 1951; Glenn 1964; Blalock 1967; Frisbie and Neidert 1977; Galle et al. 1988). They reason that as the proportionate size of subordinate groups increase, members of the dominant group perceive subordinates as a greater economic and political threat and thus are more motivated to discriminate against them.¹⁰ Others, however, expect a

not differ greatly in occupational status. Urbanization was operationalized with three variables (percent migrant, recent growth rate, and logged population size), but these also had no significant effect on inequality. This may be because the hypothesized effects of urbanization on inequality refer to a transition from living in rural areas or towns to cities rather than to varying urbanization rates among large cities. Finally, I used the percent of the population aged 60 and over that was born in Italy, Portugal, Spain, and/or Germany to estimate the effect of European immigration earlier in the century since neither ancestry nor ethnicity data was available. None of these indicators, either separately or aggregately, yielded significant effects.

⁹ A spline function in which the percent nonwhite was modeled separately for majority white and majority nonwhite areas (Greene 1990) provided a slightly better fit of the data, but did not alter the results for industrialization.

¹⁰ Blalock (1967), who is most associated with this position, has characterized Brazil as a society

queuing effect in which a negative relationship occurs between subordinate group proportions and discrimination. When subordinate group proportions are large, group members are better able to mobilize economic and political resources (Liebersohn 1980; Semyonov et al. 1984a; Tienda and Lii 1987). Also, there will be community support for nonwhite professionals and increased opportunities for entrepreneurship (Liebersohn 1980). The greater proportion nonwhite may even lead to a spill-over effect in which nonwhites must fill higher status positions because there are not enough whites to fill them. Such gains would overshadow any population size threats to the dominant group. The fact that metropolitan areas in Brazil are up to 85 percent nonwhite (e.g., Teresina) means that nonwhite spillover may affect even the highest occupational positions. Finally, there may be no relationship between the percentage of the population that is nonwhite and inequality in Brazil, because nonwhite persons there are not commonly perceived as acting as or even constituting a single or unified social group. This factor would undermine the threat hypothesis.

My third model includes variables to control for education. At least one study suggests that occupational inequality in modern Brazilian industry is due to educational differences rather than to job discrimination (Castro and Guimarães 1992), suggesting that if industrialization has affected inequality in Brazil, it has done so via education. I used two odds-ratio measures to assess educational inequality at the fourth and the twelfth grade levels. Mean years of schooling is also included because levels of education are vital to occupational outcomes.

Finally, the fourth model includes both the percent nonwhite and educational variables.

FINDINGS

Occupational Distribution by Race in Brazil

Table 1 shows the average occupational distribution among four major occupational cat-

where nonwhites pose a "pure" *economic* or *fear of competition* (and not political) threat to whites (1967:145,169-71). In Brazil, he would expect a positive and nonlinear relationship with an ever decreasing slope between relative minority population and inequality.

Table 1. Mean Percentages of Employed Males, Age 10 and Older, in Four Occupational Groups, by Skin Color: 74 Metropolitan Areas in Brazil, 1980

Occupational Groups	Skin Color			
	White	Nonwhite		
		Total	Black	Brown
<i>Managerial/Professional Occupations</i> (Employers, managers, high-level professionals)	14.6	3.7	2.0	4.0
<i>Intermediate Occupations</i>				
White-collar (semi-professionals, clerical, sales)	33.5	21.3	16.6	22.2
Blue-collar (skilled manual and transport)	22.4	24.4	23.5	24.6
<i>Unskilled Blue-Collar Occupations</i> (unskilled manual and personal service workers)	29.7	50.6	58.0	49.1
Total	100.2	100.0	100.1	99.9
Number of cases	74	74	74	74
Mean composition of metropolitan areas	61.5 ^a	37.5 ^a	5.3	32.2

^a Asians and others averaged 1.0 percent and were not included.

egories of employed males, age 10 and older, by race, in the 74 metropolitan areas of Brazil. The intermediate category described earlier is further broken down into white-collar and skilled blue-collar occupations. Whites (14.6 percent) are about four times more likely than nonwhites (3.7 percent) to hold jobs in the highest occupational group. In the lowest occupational group, the unskilled blue-collar category, nonwhites are twice as likely as whites to hold jobs (29.7 percent of whites and 50.6 percent of nonwhites). Among intermediate occupations, whites (33.5 percent) are better represented in white-collar occupations than nonwhites (21.3 percent). As reported earlier, browns tend to have better jobs than blacks but these differences are slight compared to white/nonwhite differences. Along with evidence from other studies (Silva 1985; Oliveira, Porcaro, and Castro 1983; Lovell 1989), this finding further justifies using a single nonwhite group for analysis, as I do henceforth in this article.

To help U.S. readers to understand the position of the Afro-Brazilian population in the occupational structure, it may be useful to compare occupational distribution by race in Brazil with its equivalent in the United States. In Brazil, nonwhites are more seriously underrepresented in high level occupations than they are in the United States; however, whites in Brazil are more likely than U.S. whites to share unskilled blue-collar occupations with nonwhites.

According to Farley and Allen (1987:264), white males in the United States were about 80 percent more likely than blacks to be in a managerial/professional category (31.4 percent whites compared to 17.4 percent blacks), while almost half as many whites as blacks were in the lowest category of urban occupational groups (14.5 percent compared to 28.0 percent). However, compared to the United States, the occupational structure in Brazil is clearly smaller at the top and has a much wider base at the bottom. Persons in managerial/professional occupations constitute a more elite group in Brazil than in the United States because of the smaller relative size of the occupational category and because managerial/professional mean incomes are roughly double the incomes for intermediate white-collar occupations. In contrast, in the United States there is no more than a 30 percent difference in income between the comparable occupational groups (Jorge, Izhaki, Oliveira, Porcaro, and Costa 1983; Farley and Allen 1987:272).

Description of Variables

In Table 2, the means and standard deviations for dependent variables in the 74 metropolitan areas are shown in the "total" column. Mean values for net difference scores indicate that when employed white and nonwhite males are randomly paired, whites are 25.6 percent more likely to be in higher status occupational groups

Table 2. Definitions, Means and Standard Deviations of Dependent and Independent Variables for Total, Majority White, and Majority Nonwhite Metropolitan Areas: Brazil, 1980

Variable	Total	Majority White ^a Metropolitan Areas	Majority Nonwhite ^a Metropolitan Areas
<i>Dependent Variables</i> ^b			
Occupational net difference	25.6 (5.1)	26.1 (4.6)	24.6 (6.0)
Odds (white:nonwhite) of being in managerial/professional occupations	5.3 (2.4)	6.2 (2.4)	3.7 (1.2)
Odds (white:nonwhite) of being in white-collar occupations	2.9 (.6)	3.1 (.5)	2.6 (.6)
Odds (white:nonwhite) of being in skilled blue-collar occupations among all blue-collar occupations	1.6 (.2)	1.6 (.2)	1.5 (.2)
<i>Independent Variables</i> ^b			
Percent of total employed labor force in manufacturing	20.6 (12.1)	24.4 (13.3)	13.6 (4.4)
São Paulo state (1 if in São Paulo state; 0 if otherwise)	.3 (.5)	.4 (.5)	—
Odds (white:nonwhite) of being a migrant among total population	1.0 (.3)	.9 (.3)	1.3 (.2)
Percent of total population that is nonwhite (not transformed)	37.5 (24.1)	21.5 (10.5)	67.0 (10.1)
Odds (white:nonwhite) of having 4+ years of schooling among total population age 10+	2.0 (.3)	2.1 (.3)	2.0 (.4)
Odds (white:nonwhite) having 12+ years of schooling among total population age 10+	5.9 (2.5)	7.0 (2.4)	3.9 (1.1)
Mean years of schooling for total population age 10+	5.4 (.4)	5.5 (.3)	5.3 (.4)
Number of metropolitan areas	74	48	26

^a White majorities occurred in "southern" Brazil (roughly Southeast, Central-West and South regions); nonwhite majorities occurred in "northern Brazil (roughly North and Northeast regions).

^b Dependent variables refer to male employed workers, age 10 and older, and independent variables refer to the total (male and female) population, with further criteria as indicated.

Note: Numbers in parentheses are standard deviations.

than are nonwhites. Odds ratios indicate that racial differences are clearly greater at the top of the occupational structure. Specifically, for whites as compared to nonwhites, the odds of being in managerial/professional jobs are 5.3 times greater with substantial variation (s.d. = 2.4); the odds of being in white collar jobs are 2.9 times greater; and the odds of being in skilled blue-collar jobs among all (skilled and unskilled) blue-collar workers are 1.6 times greater with little variation (s.d. = .2). An average of 20.6 percent of metropolitan area labor forces are employed in manufacturing, but a standard deviation of 12.1 indicates substantial variation. Mean percent nonwhite is presented in untransformed values and is 37.5 percent and varies widely (s.d. = 24.1).

The second and third columns of Table 2 show the means and standard deviations for all variables for majority white and majority non-white areas. Besides allowing a grouping based on racial composition, this division conveniently provides a North-South geographic distinction¹¹ and illustrates Brazil's notorious regional differences in industrialization as well

¹¹ All metropolitan areas with white majorities are in the nine southernmost states (among Brazil's officially recognized regions, South and Southeast regions, and one state from the Center-West), while almost all the nonwhite majority areas are in the northern states (Northeast and North and two states from the Center-West). The exceptions are three metropolitan areas in the southern states but which are close geographically to the northern states.

Table 3. OLS Coefficients for Regressions of Occupational Net Difference Scores on Selected Independent Variables: 74 Metropolitan Areas in Brazil, 1980

Independent Variable	Model 1	Model 2	Model 3	Model 4
Percent in manufacturing	-.135* (.059)	-.159** (.059)	-.120** (.027)	-.115** (.028)
São Paulo state	5.275** (1.670)	5.181** (1.636)	2.592** (.719)	2.536** (.721)
Odds ratio of being a migrant	3.565 (2.702)	6.887* (3.384)	5.841** (1.182)	5.294** (1.308)
Percent nonwhite (square root)	—	-.768* (.384)	—	.176 (.181)
Odds ratio of having 4+ years of schooling	—	—	8.036** (1.011)	7.930** (1.017)
Odds ratio of having 12+ years of schooling	—	—	.877** (.159)	.910** (.163)
Mean years of schooling	—	—	4.111** (.656)	4.355** (.703)
Intercept	23.174	25.323	-22.580	-24.450
R ²	.163	.209	.862	.864

* $p < .05$ ** $p < .01$ (two-tailed tests)

Note: Numbers in parentheses are standard errors.

as in racial composition (Merrick and Graham 1979; Evans 1979). Net difference scores indicate greater inequalities across the full occupational distribution in places where whites are the majority—in the South. For whites, the odds of being in managerial/professional jobs are much greater in majority white metropolitan areas; for nonwhites, in contrast, the odds of being in white-collar jobs and in skilled versus unskilled blue-collar jobs are only slightly better in majority nonwhite areas. In majority white areas, fully 24.4 percent of the labor force is employed in manufacturing, compared to only 13.3 percent in majority nonwhite areas, even though standard deviations indicate that industrialization varies substantially in the majority white area (13.6) and is consistently underdeveloped in the majority nonwhite one (4.4). Nonwhite people average 21.5 percent of the population in majority white areas, and 67.0 percent in majority nonwhite areas. The means of the other independent variables are roughly similar by region, with one exception: The odds that whites will complete 12 or more years of schooling are 7.0 times those of nonwhites in the mostly white South, compared to only 3.9 in the North. This is consistent with the fact that North-South differences in racial inequality are especially great in the highest occupational level.

Explaining Net Difference

Regression results for net differences in occupations between whites and nonwhites are presented in Table 3. Coefficients for industrialization (percent in manufacturing) are negative and statistically significant in all models, supporting the conventional view that increases in industrial development lead to decreases in racial inequality in occupations. However, the coefficients are small; this indicates that the net difference between a highly industrialized area with about 35 percent of its labor force in manufacturing and a poorly industrialized area with about 10 percent employed in manufacturing would be only 3 to 5 points—roughly 12 to 20 percent of the mean net difference—thus providing only a small change in inequality across the full occupational distribution. Location in São Paulo state raises net difference by over 5 points, but raises it only by about 2.5 points when education is controlled.

The introduction of percent nonwhite in Models 2 and 4 has no effect on the direction or statistical significance of industrialization, suggesting that the variables have independent effects on inequality. Also, a greater percent nonwhite population reduces inequality, but only in Model 2, the model without educational controls. When educational differences are

controlled, the effect of nonwhite population percentage disappears, suggesting that its effect works primarily via education.

When educational differences are controlled (Models 3 and 4), the industrialization-inequality relationship also remains strong and indeed sharpens, as indicated by the halving of standard errors. Thus industrialization has a direct negative effect on inequality in the labor market. However, controlling for education reduces the magnitude of the coefficient, suggesting that industrialization also increases labor market inequality via formal education. Finally, the improvement in R^2 with the introduction of the education control variables demonstrates that most of the variation in inequality across metropolitan areas can be attributed to variations in education.

Odds Ratios

Table 4 presents the regression results for white-nonwhite odds ratios for each occupational group. In Model 1, percent in manufacturing is associated with greater inequality at the managerial/professional level but with less inequality at the blue-collar level. Both relationships are statistically significant. A similar tendency is shown for Models 2 to 4, although only the blue-collar coefficients were statistically significant. Despite the lack of statistical significance at the higher levels, however, the magnitude of the coefficients suggests that industrialization may have more than twice as large an effect on inequality at the managerial/professional as at the blue-collar level, although we cannot be sure that inequality at higher levels is affected. I conclude that industrialization clearly affects access to major occupational groups: The effect seems to be negative at the top and is clearly positive at the bottom. Finally, industrialization has virtually no effect on the racial barriers to white-collar employment.¹²

A separate analysis of a model that included variables representing the percent of the employed labor force in managerial/professional occupations and the percent of blue-collar

¹² The relationship between industrialization and inequality across all 74 metropolitan areas is supported in separate analyses I completed for the North and South regions (data available from the author). This remarkable consistency by region makes the findings particularly robust.

workers in skilled occupations had virtually no effect (t -values < 1.0) on models predicting the odds ratios of being in the respective occupations. In other words, variations in odds ratios or access to an occupational group cannot be explained by variations in the sizes of the occupational groups. This suggests that the extent of racial discrimination can be more directly attributed to industrialization.

Being a metropolitan area in the state of São Paulo is significant and positively associated with racial inequality at all levels in all but two of the twelve regressions.¹³ The exceptions occur at the top of the occupational structure when education is controlled (Models 3 and 4), suggesting that the advantage of whites at high levels in São Paulo is due primarily to unequal access to a university education.¹⁴ The decrease in inequality at the managerial/professional level seems to explain the large drop in inequality across the full occupational distribution that also occurred when educational controls were used. As expected, education variables explain most of the differences at the highest two occupational levels, but they are a less important set of predictors at the blue-collar level. Interestingly, the Model 4 regression for skilled blue-collar occupations shows less racial inequality where mean education is greater, suggesting that improvements in overall education extend advantages to nonwhites only at the level in which most nonwhites are employed. Why metropolitan areas in São Paulo state have greater racial inequality than other parts of Brazil is not clear, but the difference may be due to the waning of benefits from the state's relatively early industrialization or to the massive European immigration to the state which affected this state more than any other. Because Afro-Brazilians were systematically excluded from labor market competition there, racial inequality may have been en-

¹³ Omitting São Paulo from the models shown in Tables 3 and 4 generally had no effect on the magnitude or statistical significance of coefficients representing industrialization, except in Model 1 where the coefficient was significant only in predicting odds ratios in skilled blue-collar occupations.

¹⁴ São Paulo's two large state universities, the University of São Paulo and the State University of Campinas, are arguably Brazil's premier institutions. Each has a student body that includes only small numbers of blacks and mulattoes, many of whom are from African countries.

Table 4. OLS Coefficients for Regressions of White:Nonwhite Odds Ratios of Being in Selected Occupational Groups on Selected Independent Variables: 74 Metropolitan Areas in Brazil, 1980

Independent Variables	Model 1		Model 2		Model 3		Model 4	
	Managerial/ Professional Collar	Skilled Blue-Collar ^a						
Percent in manufacturing	.055* (.025)	-.006* (.003)	.040 (.024)	-.008** (.003)	.026 (.017)	-.006* (.002)	.022 (.017)	-.008** (.002)
São Paulo state	1.506* (.717)	.174* (.081)	.601** (.198)	.169* (.078)	.249 (.456)	.148* (.070)	.278 (.458)	.156* (.067)
Odds ratio of being a migrant	-.711 (1.160)	-.021 (.131)	.935 (1.242)	.138 (.142)	1.155 (.740)	-.014 (.112)	1.474 (.828)	.164 (.122)
Percent nonwhite (square root)	—	—	-.111** (.046)	-.045* (.018)	—	—	-.099 (.114)	-.050** (.017)
Odds ratio of having 4+ years of schooling	—	—	—	—	—	.424** (.082)	—	.419** (.078)
Odds ratio of having 12+ years of schooling	—	—	—	—	.772** (.082)	.148** (.022)	.758** (.084)	.148** (.022)
Mean years of schooling	—	—	—	—	1.169** (.413)	.416** (.089)	1.037* (.441)	-.160* (.066)
Intercept	4.506	2.209	5.799	1.811	-7.376	-2.728	-6.272	1.850
R ²	.306	.162	.381	.175	.745	.832	.748	.433

* p < .05 ** p < .01 (two-tailed tests)
^a Refers to the odds of being in skilled blue-collar occupations among all (skilled and unskilled) blue-collar occupations.
 Note: Numbers in parentheses are standard errors.

hanced there relative to other areas (Andrews 1991).¹⁵

Negative and statistically significant coefficients for the square root of the percent nonwhite in Model 2 indicate that inequality is reduced at all occupational levels, but particularly at the white-collar level. Also, the square root transformation, which was a better fit than a linear measure, reveals that the rate of reduction is especially great at low percentage nonwhite and diminishes as the nonwhite percentage increases. These findings are supported only when education is not controlled, which is consistent with findings for net difference scores (Table 3). This suggests that queuing occurs in education—that educational opportunities for nonwhites increase as percent nonwhite increases.¹⁶

When education is controlled (Model 4), the positive effects of relatively greater percent nonwhite remain only at the blue-collar level (i.e., the effect of percent nonwhite operates via education). Access to skilled blue-collar occupations is greater for nonwhites in places where more nonwhites live, even when education is controlled. This suggests that as the percentage nonwhite increases, nonwhites move into these jobs from unskilled jobs; but the corresponding decreases in percent white may mean, conversely, that whites are also moving out of skilled blue-collar jobs. This observation

¹⁵ I substituted the immigration variable described earlier for the state of São Paulo variable because of modest correlation ($r = .526$). Regression results with the substitution showed that places with high European immigration had greater inequality overall and had greater inequality at the two highest levels only when education was *not* controlled. There was no relationship between education and inequality at these levels when education was controlled, suggesting that immigration may have led to especially large inequalities in education, perhaps at a period soon after immigration. In 1980, inequalities in the labor market were no longer significantly greater in places experiencing greater European immigration, when the effect of educational inequality was held constant.

¹⁶ These findings on education appear to be driven by the large North-South differences in racial composition, but they are not apparent for the limited ranges of racial composition among areas within the North or South. Interestingly, an exception occurs for the North when education is controlled, suggesting that whites may perceive a threat from nonwhite numbers only when nonwhites constitute a majority of the population.

is consistent with the finding of racial inequality across the full occupational distribution being unrelated to percent nonwhite, as findings for net difference scores demonstrate (Model 4 in Table 3).

Finally, metropolitan areas with greater mean years of schooling have greater racial inequality across all occupational groups. However, while the schooling variable is positively related to inequality at high occupational levels, it is negatively related, but to a lesser degree, to racial inequality at the blue-collar level.¹⁷ Thus educational expansion in Brazil seems to provide greater occupational benefits to whites vis-à-vis nonwhites at white-collar levels than it does to nonwhites at the blue-collar level. Also, zero-order coefficients reveal that mean years of schooling is not correlated with percent in manufacturing or the odds ratios of having either a fourth or twelfth grade education, suggesting that educational expansion has an effect on inequality that is independent of local levels of industrialization and educational inequality.

DISCUSSION AND CONCLUSION

Industrialization decreases, maintains, and even increases racial inequality in Brazil, depending on the level of the occupational structure examined. Thus the expectations that industrialization would either decrease (Fernandes 1965; Bastide 1965; Van den Berghe 1967; Souza 1968) or maintain (Blumer 1965; Ianni 1987; Hasenbalg 1979) racial inequality are only partially correct. Previous studies have failed to consider that industrialization, as well as other structural processes, may affect racial or ethnic inequality in ways that are quite distinct across societies and by class within a society. The relation between industrialization and racial inequality depends largely on the social meanings that are given to race in a particular society and the potential benefits that inequality provides to the dominant group when that society becomes industrialized.

Specifically, the cross-sectional analysis of employed males across 74 Brazilian metropolitan areas demonstrates that industrialization is associated with decreased racial inequality across the full occupational distribution and at

¹⁷ These results are also supported in separate analyses of the North and South regions.

the bottom of the occupational structure. On the other hand, the findings also show that industrialized areas have greater racial inequality at the top of the occupational structure than do less industrialized areas, although the results in this study are not significant on this point. Furthermore, the magnitude of the effects at the top are clearly greater than those at the bottom. The negative relationship between industrialization and inequality across the full occupational distribution is driven by results at the blue-collar level because most jobs in Brazil are blue-collar—these results remain with or without controls for education, suggesting that industrialization has both direct effects on the labor market and indirect effects via the educational system.

Interestingly, educational development, which is unrelated to industrialization, has similar effects on occupational inequality. Greater mean years of schooling disproportionately benefited whites compared to nonwhites, increasing inequality at managerial/professional and white collar levels, although it slightly decreased inequality in skilled blue-collar occupations. Separate analyses of majority nonwhite (North) and majority white (South) areas lend further support to these findings. Thus the evidence in this study is consistent: Development in Brazil, whether measured by industrialization or educational expansion, or whether analyzed for all of Brazil or separately for the North or the South, has clearly increased racial inequalities in professional and white-collar occupations while decreasing inequality in skilled blue-collar occupations.

Support for the conventional view for blue-collar occupations, that industrialization reduces inequality, may occur because white workers have not systematically opposed the entrance of nonwhites into the industrial working class (Hasenbalg 1979; Andrews 1991). In fact, since 1930, a white-dominated labor movement has often perceived racial unity as key to its survival (Andrews 1991). There have been attempts to divide the labor movement along racial lines, but these attempts have had little success (Maram 1977).

The finding that industrialization reduces inequality only at the bottom of the occupational structure is also consistent with previous findings on residential segregation—that racism in Brazil increases with income (Telles 1992) and

that negative racial attitudes are clearly less intense among poor whites when compared to middle class whites throughout Brazil (Ianni 1987: 65). Relatedly, many Brazilian whites seem to accept blacks and browns in even highly skilled blue-collar jobs, whereas they are often discomforted by their presence in white-collar jobs.

The newer middle class of industrialized areas has a proportionately smaller Afro-Brazilian component than the older middle class of the less industrialized areas. Findings indicate that the negative effect of industrialization on racial inequality at this level cannot be blamed solely on racial inequality in education. Reasons for not employing or promoting nonwhites in higher occupations may have shifted from instances of prejudice by individual employers to depersonalized, institutionalized racism; companies claim that hiring nonwhites at high levels hurt a company's reputation and that white workers do not want nonwhite supervisors (Hasenbalg 1979; Andrews 1991). On the other hand, the personal disdain that employers have for working in close contact with nonwhites continues as a reason for not hiring nonwhites in white-collar jobs, even in highly industrialized areas (Andrews 1991). That the white middle class may feel more uncomfortable than the white working class with the presence of nonwhites is not surprising given the rather extensive inter-racial contact at the lower level and the near absence of an Afro-Brazilian middle class (Telles 1992). The inefficiency of this system of racism may be tolerated in Brazil because of the exceptionally high profit margins of its manufacturing industries (Braga and Rossi 1986).

The strengthening of racial barriers to middle class employment may reshape norms and values regarding the appropriate "place of blacks" (to use a Brazilian-Portuguese term), norms that in themselves tend to reinforce and even increase inequality at certain occupational levels. That Afro-Brazilians are not represented in the middle class is often perceived as normal by Euro-Brazilians. Furthermore, whites often do not perceive these divisions as resulting from racism, largely because of the widely held ideology of racial democracy (Degler 1986; Hanchard forthcoming). In turn, Afro-Brazilians may internalize the idea that blue-collar work is "their place" and thus may re-

duce their aspirations and avoid the humiliation of discrimination by not competing for managerial/professional jobs.

Some authors have argued that because industrialization provides greater opportunities for nonwhites in the labor market, racial competitiveness is heightened, and thus so is white racism (Bastide and Van den Berghe 1957; Bastide 1965; Van den Berghe 1967). The evidence from this study partially supports this claim for the labor market, but evidence on increasing racism in interpersonal relations is not supported. While inequality in the labor market may decline with increased industrialization, evidence shows that interpersonal barriers between racial groups, measured by intermarriage and residential segregation, are unaffected by industrialization. (Telles 1992; 1993).

Racial composition and industrialization are highly related across Brazilian regions, but the analysis of many metropolitan areas permits separate analysis of these variables. The effects of nonwhite population percentages are mixed. Spill-over or queuing theory was supported only when the effects of education were not controlled (Liebersohn 1980; Semyonov, Hoyt, and Scott 1984a; Tienda and Lii 1987). However, this finding seems to be driven by large differences in racial composition and was not supported when the range of metropolitan areas was limited to majority white or majority nonwhite areas. The strongest percent nonwhite effect is in the mostly nonwhite areas (North), where it seems that an educational spillover operates in which nonwhites encounter less competition from the white minority in higher education. As a result, a significant, though small, black and mulatto middle class is especially likely to exist in these areas (Azevedo 1953; Telles 1992). However, although the expansion of higher education in the 1970s may have led to unprecedented mobility for some nonwhites, higher education has mostly benefited the almost entirely white, middle, and upper-middle classes (Castro 1985; Durham and Schwartzman 1989). Higher education is concentrated in the mostly white regions of Brazil, and in such places the odds of Afro-Brazilians gaining access to it are quite low.

Racial identification in Brazil may be conditioned by region and class. The boundary separating white and nonwhite may vary by region

as whites in places experiencing large scale European immigration are more likely to be of purely European origin than whites in places with little European immigration and centuries of miscegenation. However, because race is socially defined, local constructions of race, at least in terms of the white-nonwhite dichotomy, are more valid than more universal indicators based on color or phenotype. The influence of class on racial identification may be more problematic to this study as upward mobility may have a "whitening" effect. The extent to which this occurs and how it varies by region is not at all clear, as available evidence tends to be based on small and isolated communities (Hutchinson 1957; Harris 1964; Kottack 1967). However, there is no indication that this effect varies with local levels of industrialization, so that variations in the extent to which class affects racial identification is not likely to change the relation of industrialization with inequality.

Although racial inequality in general has decreased with industrialization, it nevertheless remains high throughout Brazil. No amount of economic development is likely to change the situation substantially, and development will sustain or increase inequality at white collar occupational levels. It would seem that only direct state intervention could make any real difference in the racial order. However, the false perception that racism is only a minor problem in Brazil and that any legal recognition of race will actually create a racial problem has led to a persistent avoidance of the race issue. The Brazilian state does nothing to protect its citizens against racism, allowing employers to discriminate at will without fear of legal consequences, leading to the persistence of low status among nonwhites. Brazilian nonracialism and reliance on industrialization to reduce racial inequalities, when such inequalities are acknowledged, has produced little to be optimistic about.

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Appendix: Correlations Among Variables: 74 Metropolitan Areas in Brazil, 1980

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<i>Dependent Variables</i>											
(1) Net Difference	1.000	—	—	—	—	—	—	—	—	—	—
(2) Odds (whites:nonwhites) of being managerial/professional	.504	1.000	—	—	—	—	—	—	—	—	—
(3) Odds (whites:nonwhites) of being white collar	.808	.723	1.000	—	—	—	—	—	—	—	—
<i>Independent Variables</i>											
(4) Odds (whites:nonwhites) of being skilled blue-collar among all blue-collar	.652	.401	.315	1.000	—	—	—	—	—	—	—
(5) Percent in manufacturing	-.205	.474	.230	-.128	1.000	—	—	—	—	—	—
(6) São Paulo State	.167	.483	.376	.188	.511	1.000	—	—	—	—	—
(7) Odds (whites:nonwhites) of being a migrant	.092	-.440	-.166	-.058	-.597	-.659	1.000	—	—	—	—
(8) Percent nonwhite (square root)	-.070	-.328	-.540	-.203	-.532	-.484	.675	1.000	—	—	—
(9) Odds (whites:nonwhites) of having 4+ years schooling	.773	.453	.711	.525	-.037	-.103	-.041	.096	1.000	—	—
(10) Odds (whites:nonwhites) of having 12+ years schooling	.465	.839	.731	.335	.546	-.587	.476	.564	.476	1.000	—
(11) Mean years of schooling	.572	.293	.451	.077	-.163	-.231	.279	.154	.279	.154	1.000

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