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**The Costs of Discrimination  
in Latin America**

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**The Costs of Discrimination  
in Latin America**

by  
**Harry Anthony Patrinos**

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## Abstract

Indigenous, ethnic, racial and linguistic minorities worldwide are in an inferior economic and social position vis-à-vis the "mainstream" population. The ethnic concentration of poverty and inequality is increasingly being recognized in the development literature. In this paper, studies from six Latin American countries that estimate the costs to an individual of being an economic minority are reviewed. The studies decompose the overall earnings gap into two components: one is the portion attributable to differences in the endowments of income-generating characteristics ("explained" differences); the other portion is attributable to differences in the returns that majority and minority workers receive for the same endowment of income-generating characteristics ("unexplained"). This latter component is often taken as reflecting the "upper bound" of wage discrimination. In economic terms, discrimination refers to differences in economic outcomes between groups that cannot be accounted for by the skills and productive characteristics of these groups. The "upper bound" of discrimination gives an indication of the "cost" of being a minority.

In two studies for Bolivia, one using a 1966 rural survey and the other a 1989 urban survey, decomposition of the differential between indigenous and nonindigenous earnings leads to the conclusion that most, if not all, of the overall differential is due to productivity and not discrimination. In other words, equalizing productive characteristics between ethnic groups will drastically reduce, if not eliminate, the entire earnings differential. However, in Guatemala, Mexico and Peru, only one-half of the earnings differential can be attributed to differences in productivity-enhancing characteristics. In other words, if indigenous workers were endowed with the same amounts of productive characteristics as are nonindigenous workers, the difference in earnings between them would narrow by about 50 percent. In Paraguay, decomposition of the overall earnings differential between monolingual Spanish speakers and Guarani speakers shows that most (80 percent) of the overall differential is explained by human capital differences. Thus, equality in educational attainment will go a long way towards equalizing labor market outcomes. In Brazil, however, there is a significant cost to "being non-white" irrespective of being *mulano* or black. Moreover, discrimination against non-whites appears to be increasing over time, despite reductions in the schooling gap between whites and non-whites. Nevertheless, in most cases much of the earnings disadvantage of minority group workers is due to lower human capital endowments. While the monetary benefits of schooling are lower for minority group populations, an increase in schooling levels would lead to a significant increase in earnings. The socioeconomic condition of minority groups can be improved because policy-influenced variables such as education and occupation are largely responsible for earnings differences. This provides considerable hope for the future. The question that remains, however, is how to improve the productive capabilities of the indigenous population. Given the fact that indigenous and minority group workers have fewer years of schooling vis-à-vis nonindigenous or majority group workers, it is necessary to make an effort to increase their human capital.

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## **Introduction**

Indigenous, ethnic, racial and linguistic minorities worldwide are in an inferior economic and social position vis-à-vis the "mainstream" population. The ethnic concentration of poverty and inequality is increasingly being recognized in the development literature (see, for example, Birdsall and Sabot, 1991; Klitgaard, 1992). Empirical analyses of ethnic earnings differentials concentrated in the past on Black-white differentials in the United States. While some have examined the experiences of other ethnic groups, very little investigation has been made of the differential economic experiences of indigenous people and other minority groups within a society. This particular literature is growing, however. Recent research documents extreme conditions of poverty among the indigenous population in some Latin American countries (Psacharopoulos and Patrinos, 1994; IFAD, 1992).

Only a few studies examine these issues in Latin America. Exceptions include Kelley's (1988) analysis of the "cost of being Indian" in rural Bolivia, three studies on racial discrimination in Brazil (Webster and Dwyer, 1988; Silva, 1992; 1985), the four-country study of indigenous people in Latin America (Psacharopoulos and Patrinos, 1994), and an examination of language-earnings differentials in Paraguay (Patrinos, Velez and Psacharopoulos, 1993).

The objective of this paper is to review estimates of the "costs" to an individual of being an economic minority. That is, some workers are paid more than others with the same endowment of productive economic characteristics by virtue of some non-economic personal characteristic (such as ethnicity, race, sex, class, caste, language). Studies in the United States have attempted to estimate this cost for females, Blacks and indigenous people. In general, for the same amount of productive characteristics, an economic minority receives lower returns to each productivity-enhancing characteristic such as education, training and experience. The residual is then seen as a cost to the individual. In this paper, the available studies are summarized and an attempt is made to build on the literature.

## **Poverty and Inequality**

Poverty among Latin America's indigenous population is pervasive and severe (see Table 1). In Bolivia, while more than half of the total population is poor, over two-thirds of the bilingual indigenous population and almost three-quarters of the monolingual indigenous population is poor. The majority (66 percent) of the population of Guatemala is poor. The indigenous population, however, is disproportionately poor; 87 percent of all indigenous households are below the poverty line. In Mexico, individuals in more indigenous *municipios* are in poorer socioeconomic condition than are individuals in less indigenous *municipios*. A positive correlation exists between *municipio* indigenous concentration and the incidence of poverty; *Municipios* of increasing indigenous concentration experience higher percentages of poverty and extreme poverty. Most of the indigenous population of Peru is poor, at 79 percent. In fact, indigenous people are one and a half times as likely to be poor than are nonindigenous people. Consequently, indigenous people account for 11 percent of the sample population, yet they comprise 19 percent of poor Peruvians. In Brazil, the black and *mulatto* populations are overrepresented in the bottom 10 and 20 percent of the per capita income distribution

(Psacharopoulos et al., 1993). Paraguay, the most bilingual nation in Latin America, has a large Guarani-speaking population. While most Guarani-speakers also speak Spanish, the relatively small group of monolingual Guarani speakers have a considerably higher rate of poverty. While 11 percent of Spanish-only speakers are poor, 24 and 37 percent of bilingual (Spanish-Guarani speakers) and monolingual Guarani speakers are poor (World Bank, 1993).

*Table 1: Poverty in Latin America  
(percent of population below poverty line)*

	All	Indigenous	Nonindigenous
Urban Bolivia	52.6	64.3	48.1
Guatemala	65.6	86.6	53.9
Mexico	22.6	80.6	17.9
Peru	53.0	79.0	49.7
Paraguay*	20.5	36.8	10.8

*Source:* Psacharopoulos and Patrinos, 1994; World Bank, 1993.

*Note:* \* Refers to Guarani and non-Guarani speakers.

### Decomposing Earnings Differentials

For earnings differentials, the use of multivariate regression analysis allows for the simulation of alternative outcomes and the decomposition of gross differentials. The decomposition method, the technique used for analyzing earnings differentials, was popularized in the economics literature by Oaxaca (1973) and Blinder (1973). It was used earlier in sociology (Siegel, 1965; Duncan, 1968), and before that in demography (Kitagawa, 1955). Although in the economics literature it was first used to analyze the determinants of male/female earnings differentials, the decomposition technique has been used since to analyze ethnic earnings differentials, public/private sector earnings differentials, earnings differentials by socioeconomic background, to test the screening hypothesis, and to test the effectiveness of a job training program. Most analyses have focused on developed countries, although some studies for developing nations exist (Psacharopoulos and Tzannatos, 1992; Birdsall and Sabot, 1991).

The standard procedure for analyzing the determinants of earnings differentials between two groups is to fit the following two equations, or earnings functions, for employed members of the economically dominant group and employed members of the marginal group:

$$\ln Y_n = b_n X_n + u_n \quad (1)$$

$$\ln Y_i = b_i X_i + u_i \quad (2)$$

where subscripts  $n$  and  $i$  represent nonindigenous (majority) and indigenous (minority) workers;  $Y$  symbolizes labor market earnings;  $X$  represents measured productivity-determining characteristics of the workers, such as education, experience and other control variables. The regression coefficient,  $b$ , reflects the returns that the market yields to a unit change in characteristics such as education and experience. The error term,  $u$ , reflects measurement error, as well as the effect of factors unmeasured or unobserved by the researcher.

It is known that the regression lines pass through the mean values of the variables so that,

$$\ln \bar{Y}_n = b_n \bar{X}_n \quad (3)$$

$$\ln \bar{Y}_i = b_i \bar{X}_i \quad (4)$$

where hats ( $\hat{\cdot}$ ) denote estimated values and bars ( $\bar{\cdot}$ ) represent mean values.

If indigenous (minority) workers received the same returns as do nonindigenous (majority) workers for their endowments of wage-determining characteristics, then their average earnings would be:

$$\ln \bar{Y}_i^* = b_n \bar{X}_i \quad (5)$$

which are the average earnings of indigenous (minority) workers that would prevail in the absence of wage discrimination. Subtracting Equation 5 from 3 gives the difference between average nonindigenous (majority) earnings and the average hypothetical indigenous (minority)

earnings that would prevail if indigenous (minority) workers were paid according to the pay structure faced by nonindigenous (majority) workers. This difference reflects their unequal endowments of income-generating characteristics, so that:

$$\ln \bar{Y}_n - \ln \bar{Y}_i^* = b_n \bar{X}_n - b_i \bar{X}_i = b_n (\bar{X}_n - \bar{X}_i) \quad (6)$$

Subtracting Equation 4 from 5 yields the difference between the hypothetical nondiscriminatory earnings of indigenous (minority) workers and their actual earnings. This difference reflects the different returns to the same income-generating characteristics:

$$\ln \bar{Y}_i^* - \ln \bar{Y}_i = b_n \bar{X}_i - b_i \bar{X}_i = \bar{X}_i (b_n - b_i) \quad (7)$$

Adding Equations 6 and 7 yields:

$$\ln \bar{Y}_n - \ln \bar{Y}_i = b_n (\bar{X}_n - \bar{X}_i) + \bar{X}_i (b_n - b_i) \quad (8)$$

Thus, the overall earnings gap can be decomposed into two components: one is the portion attributable to differences in the endowments of income generating characteristics ( $\bar{X}_n - \bar{X}_i$ ) evaluated with the nonindigenous (majority) worker pay structure ( $b_n$ ); the other portion is attributable to differences in the returns ( $b_n - b_i$ ) that nonindigenous (majority) and indigenous (minority) workers receive for the same endowment of income-generating characteristics ( $\bar{X}$ ). This latter component is often taken as reflecting wage discrimination. In economic terms, discrimination refers to differences in economic outcomes between groups that cannot be accounted for by the skills and productive characteristics of these groups (T.P. Schultz, 1991). This method, although illuminating since it allows one to determine the extent of discrimination in the labor market, does not allow one to determine the origins of discrimination. Direct discrimination in the labor market can affect earnings, occupational attainment and training access; it can also be indirect, through discrimination in the acquisition of skills (schooling), prior to entering the labor market (Chiswick, 1987).

The use of earnings functions to estimate discrimination means that there will always be a problem of omitted variables. This type of data problem means that the "unexplained" component is not only a measure of discrimination but also of our ignorance (Filer, 1983). It is because of omitted and unobserved factors that the "unexplained" component is seen as an "upper bound" estimate of wage discrimination in the labor market. Included among the omitted

variables that are expected to account for some of the "unexplained" component are: the quality of labor; attachment to the labor force; lack of specific training; interrupted work careers and tastes and personality.

There is also evidence to suggest that much of the discrimination against the minority group is due to occupational segregation, that is, the "crowding" of the minority group into certain occupations where rates of pay and chances for promotion are low. This, of course, suggests that prior discrimination has taken place, such as lack of access to jobs, training and schooling. The results of a number of studies has shown that the greater the number of variables used to control for differences in productivity-related factors, the smaller the productivity-adjusted earnings gap ("unexplained" component) relative to the unadjusted gap. Even when an extensive list of control variables is used, however, most studies find some residual gap that they attribute to discrimination. When the gap is close to zero, this usually results from the inclusion of control variables whose values themselves may reflect prior discrimination (Gunderson, 1989).

While many countries in Latin America have sizeable indigenous and ethnically and racially diverse populations, few include questions to identify the ethnolinguistic characteristics of individuals in their household or labor force surveys. Definitions of indigenous people differ from country to country due to the use of different survey instruments. Given available data, three different variables are used to identify minority group membership: language spoken, self-perception and geographic concentration (see Table 2). Language defines the ethnic minority population in Bolivia, Peru and Paraguay. In Bolivia and Paraguay, it is possible to distinguish between monolingual and bilingual (Spanish and minority language) individuals, while in Peru only monolingual indigenous or Spanish speakers can be isolated. The Guatemalan study uses the self-perception method of defining the indigenous population. The geographic location or concentration of the indigenous population is generally used when the indigenous population is concentrated in specific territories, and in combination with questions dealing with self-perception or language identity. This method is used in order to include Mexico, a country with a large number of indigenous people.

*Table 2: Defining Ethnic, Racial and Linguistic Group Membership in Latin America*

Country	Individual's ethnicity/race/ language determined by:	Source	Percent of Total Population	
Urban Bolivia	Survey question: <i>¿Qué idioma(s) habla habitualmente?</i>	<i>Encuesta Integrada de Hogares (EIH)</i> conducted by the <i>Instituto Nacional de Estadística</i> , 1989	Indigenous:	29
Rural Bolivia	Survey questions on origin	Head of Household Survey conducted by V. Rubin, L. Comitas and W.J. McEwen for the Research Institute for the Study of Man, 1966	Indigenous:	62
Guatemala	Survey question: <i>¿Es indígena?</i>	<i>Encuesta Nacional Socio- Demográfica (ENSD)</i> conducted by the <i>Instituto Nacional de Estadística</i> , 1989	Indigenous:	36
Peru	Survey questions: <i>¿Cuál es la lengua materna?</i> and <i>¿Qué idioma habla?</i>	Living Standards Measurement Study, conducted by <i>Instituto Cuarto</i> for the World Bank, 1991	Indigenous:	11
Mexico	Geographical concentration of indigenous people at the <i>municipio</i> level based on the 1990 Census. The percentage of indigenous language speakers in each <i>municipio</i> was matched with the <i>municipios</i> included in the 1989 survey.	<i>Encuesta Nacional de Ingreso - Gasto de los Hogares (ENIGH)</i> conducted by the <i>Instituto de Estadística Geografía e Informática</i> , 1989	Indigenous:	8
Paraguay	Survey questions on language	<i>Encuesta de Hogares (Mano de Obra)</i> , 1990	Guarani-Spanish Guarani only:	53 4
Brazil	Color: white, Black, yellow, <i>mulatto</i>	Brazilian Census, 1960; National Household Survey (PNAD), 1976, 1988	1976: Blacks: Mulattos: 1988: Blacks: Mulattos:	31 7 36

Several hypotheses regarding the role of ethnicity in society exist. The significant and positive relationship between education and earnings is well documented in the literature. The usual explanation put forward, consistent with the human capital approach, is that schooling contributes to individual productivity which, in turn, leads to higher individual earnings. The earnings advantage of the more educated relative to the less educated is subject to the laws of supply and demand; as the numbers of the more educated increase relative to the less educated, their earnings advantage declines and the minimum qualifications for given jobs rises in line with increased relative supplies (T.W. Schultz, 1961; Mincer, 1974; Becker, 1975).

Institutional hypotheses emphasize the centrality of the functioning of labor markets (Doeringer and Piore, 1972). In this tradition, labor market segmentation theories view the labor market as being divided between the primary (high productivity, high wage) and the secondary (low productivity, low wage) sectors. Individuals in the secondary labor market are locked into that sector and barriers exist to their moving into the high wage, high productivity, primary labor market (Carnoy, 1980). The hypothesis here is that minority group members receive lower earnings and have a higher incidence of poverty because they are locked into the secondary sector of the economy.

Theories of internal colonialism postulate that the conditions of colonialism can exist within a nation-state when one group dominates a previously independent nation within its borders (Welch, 1988). In such a case, a dual economy, with a dual wage and labor market, is in place. Also present are the conditions of "unfree" labor, a dual occupational structure and dual wage scales, with the more rewarding occupations reserved for the minority population. Indigenous and ethnic minority populations often play the role of a reserve labor force. Poverty, a lower standard of living, lower expectations and a lack of knowledge of labor laws are just some of the reasons why the indigenous or minority group labor force may agree to sell its labor cheaply. Also, in many cases, indigenous workers wish to return to their families and homes and may be willing to tolerate discrimination and low wages in order to facilitate their return (similar to "target" workers theory).

The "screening" hypothesis states that, in general, employers pay higher salaries to the more educated because they use schooling level as a proxy for other characteristics that "signal" which individuals could be more productive. Thus, it is not the content of their education that makes individuals more productive, but rather that years of schooling demonstrate to employers which potential employees are more productive since the more able will attain higher levels of schooling (Arrow, 1973). The hypothesis here is that indigenous people receive lower earnings because they are screened on the basis of their schooling, which reflects their ethnolinguistic characteristics.

Other explanations of outcomes are concerned with the productivity of schooling. That is, for the same level of schooling and the same level of ability, different outcomes can result due to the application of "skills" in the labor market. Individual skills may be developed both in and out of school. Group variations in rates of return to schooling arise from differences in the ability to convert the schooling process into earnings (Chiswick, 1988). This may be a

consequence of parental investments in the home-produced components of child quality, although one can think of many other reasons. It would appear that members of more successful ethnic groups had parents with higher levels of schooling, fewer siblings to compete with for parental time and other family resources, and had mothers who were less likely to work when young children were in the household (Chiswick, 1988).

A positive relationship between educational attainments across generations reflects the intergenerational transmission of human wealth. In the case of indigenous people, if their parents had low levels of schooling and other forms of human capital, then this will be reflected in their level of human capital attainment. Lower stocks of human capital will be converted into lower relative earnings and a higher incidence of poverty. A similar hypothesis would be that differences are due to class background rather than discrimination against minority groups. This hypothesis has been verified for the case of Bolivia (Kelley, 1988), and often has been put forward for the case of Brazil, but has not been verified (Webster and Dwyer, 1988; Silva, 1985). That is, the great differences between ethnic groups could be due to the natural working of economic forces, rather than discrimination. According to this hypothesis, an individual's socioeconomic background in terms of family income and father's and mother's education and occupation are more important factors in determining present socioeconomic conditions than is ethnicity.

Differential outcomes, of course, may be due to outright discrimination. Discrimination against ethnic groups may work to deleteriously affect an individual's access to schooling, the quality of schooling that individual receives and labor market performance. This leads to lower schooling levels, lower returns to schooling, lower earnings and ultimately higher levels of poverty. Becker's (1971) seminal work on discrimination attempts to explain segregation in the workplace. Becker postulates that earnings differentials between ethnic groups would be due to individual "tastes" for discrimination against other labor market participants. Competitive forces in the economy would lead to a gradual elimination of wage discrimination over time. Related to this, assimilation theory, or the industrialization hypothesis, is the classical sociological theory of ethnic relations. It suggests that divisions based upon race and ethnicity will whither away in the long run in modern societies. This outcome is supposed to reflect modern industrial organization, where social mobility is based upon achieved rather than ascribed status (Hirschman, 1983). Also known as acculturation theories, they predict that inequality based on "traditional" criteria are being replaced by rational or legal criteria, and that "particularistic" criteria are being replaced by "universalistic" criteria such as education and ability. The implication is that the significance of race and ethnicity will decline as society develops.

It is argued that indigenous people who are "traditional" will place less importance on the labor force and will use it only to achieve a specific, short term end, such as obtaining cash to finance a lengthy period out of the labor market. Such individuals have been labelled as "target" workers: they work only as long as necessary to obtain a fixed sum of wages (Sandefur and Scott, 1983). The reasons put forward for this behavior include a desire to work at one's own pace, and the importance of kinship and community in Amerindian society. Traditional Amerindians see themselves as members of communities first, and are driven more for the good

of the community *uan* for individual achievement. This characteristic is expected to have a negative effect on labor force attachment and, ultimately, wages. Level of education, however, is expected to lead to a decline in traditional activities, and this is confirmed for the Canadian north (Stabler, 1990). Many Aymara who now live in urban environments maintain ties with the rural communities to their mutual advantage (Hardman, 1981). Indigenous people who reside in the cities normally maintain their rural ties and landholdings (Saavedra, 1981). The Aymara value education highly, which meshes with their traditional values of individualism, hard work and communal and private advancement (Hardman, 1981). Open competition and forceful self-expression, however, are missing from Aymara culture (Saavedra, 1981).

The theory of "target" workers was developed from analyses of the work behavior of peasants and has been applied to the case of Amerindians. It is argued that peasant agricultural workers can either work more hours, more intensely, or both. They seek output adequate to meet their basic needs. Since this work involves drudgery, their effort is not pushed beyond the point when increases in output are outweighed by the irksomeness of the extra work. A rough equilibrium is struck between the degree of satisfaction of family needs and the degree of the drudgery of labor (Chayanov, 1966). Peasants may have a certain target level of income, after which they begin consuming leisure. Thus, efforts to increase income might result only in an increase in the amount of leisure consumed. Traditional community values have persisted among Amerindians. Prior to European contact, these included entrepreneurial activity, which was crushed by the Europeans. When this entrepreneurial spirit became active again, innovation was effected on behalf of tribal enterprises, rather than for individual economic advancement (Hagen, 1968). Among indigenous peoples in Latin America, kinship systems, *comuneros*, and the institution of *compadrazgo* are very important for economic security and well-being (IFAD, 1992; Collins, 1983).

Most theories, however, predict that discrimination will eventually decrease in society in the long run for the following reasons: it is inefficient from the perspective of profit maximizing employers; differences due to ethnicity will decline over time as ethnic groups become assimilated; and ethnic groups will achieve equality in terms of productive characteristics such as education, training and experience. Free markets and access to quality education should lead to less discrimination in society over time. But segmented labor markets, as a result of such factors as ethnic and linguistic differences, can restrain the equalizing forces of competition. Research based in modern industrial societies points to the eradication of discrimination over time. Little research effort has gone into examining these issues in less developed societies, where, theoretically, discrimination is most likely due to the nature of the market and the great linguistic and ethnic differences not dissipated by schooling. The fact that indigenous populations have remained distinct after centuries of assimilation policies, violence, rural-urban migration, and increasing levels of schooling reflects the insufficiency of most theories.

### **Individual Costs of Discrimination**

Summaries of studies of six Latin American countries for which the overall earnings differential between ethnic groups has been estimated are presented in Table 3.

Using a 1966 survey of about 1,000 male household heads in rural Bolivia, Kelley (1988) decomposes the differential between indigenous and nonindigenous individuals in terms of education, occupation and income. With background data on father's and own education and occupation, Kelley (1988) concludes that all (between 95 and 100 percent) of the overall differential is due to "class" components (family background, education and occupation), rather than ethnic differences. In other words, equalizing human capital and family backgrounds of individuals would result in virtual elimination of ethnic socioeconomic inequalities. Kelley (1988) suggests that the main reason for the change from ethnic to class inequality in Bolivia is due to the 1952 Revolution, the most important event at the time of the survey. The Revolution resulted in a considerable increase in the power and opportunities available to Bolivia's indigenous population.

A more recent analysis for urban Bolivia (1989) shows that the equalization of human capital and other productive characteristics would result in the near elimination of earnings differentials between indigenous and nonindigenous workers in Bolivia. The statistical decomposition of the ethnic earnings differential between indigenous and nonindigenous workers demonstrates that the portion of the overall earnings differential due to disparities in the productive characteristics of indigenous and nonindigenous working males is 72 percent in Bolivia. In other words, based on observed characteristics, the earnings differential between indigenous and nonindigenous working males would narrow by 72 percent if each group were endowed with the same productive characteristics. The remaining 28 percent difference in earnings is "unexplained," and reflects both measurement error and unaccounted factors such as disparities in ability, quality of education, labor force participation, culture, and labor market discrimination. Therefore, discrimination could account for only as much as 28 percent of the overall earnings differential between indigenous and nonindigenous workers in the urban Bolivian labor market.

*Table 3: Characteristics of Adult Males in Latin America  
by Ethnic Group and Country with Estimates of Discrimination*

Country and Ethnic Group	Minority/Majority Earnings Ratio	Age (years)	Schooling (years)	Rate of Return to Schooling	Upper Bound Discrimination (percent)	N
<i>Urban Bolivia (1989)</i>						
Indigenous		38.5	7.4	5.7		2394
Nonindig.	.61	36.0	10.1	8.6	28	4070
<i>Rural Bolivia (1966)</i>						
Indigenous			1.2			675
Nonindig.	.66*		4.5		12	421
<i>Guatemala (1989)</i>						
Indigenous		36.2	1.8	9.1		2459
Nonindig.	.42	34.5	4.9	10.5	52	6029
<i>Mexico (1989)</i>						
Indigenous		34.5	3.8	8.7		476
Nonindig.	.30	33.6	7.3	9.3	48	8343
<i>Peru (1991)</i>						
Indigenous		39.3	6.7	2.6		316
Nonindig.	.43	37.6	10.0	6.2	50	1863
<i>Paraguay (1990)</i>						
Guarani	.64	34.7	8.2	8.2	21	1084
Spanish		36.8	11.2	8.2		647
<i>Brazil (1988)</i>						
Black	.50	39.8	5.1	10.8	51	1212
Brown	.55	38.8	5.4	10.1	46	6857
White		39.9	7.9	13.3		1121
					5	

*Source:* Psacharopoulos and Patrinos, 1994; Kelley, 1988; Silva, 1992; Patrinos, Velez and Psacharopoulos, 1993.

*Note:* \* Refers to wealth.

Approximately one-half of the earnings differential can be attributed to differences in productivity-enhancing characteristics in Guatemala.

The portion of the differential that is due to the productive characteristics or endowments of individuals is equivalent to 52 percent of the differential in log of wages between workers in indigenous and nonindigenous areas of Mexico. In other words, if those in indigenous areas were endowed with the same amounts of productive characteristics as those in nonindigenous areas, the difference in earnings between them would narrow by 52 percent. However, the remaining 48 percent difference in earnings is "unexplained."

For Peru, the proportion of the overall nonindigenous-indigenous earnings differential that is due to the productive characteristics of individuals is equivalent to about 50 percent of the differential in log of earnings between indigenous and nonindigenous men. In other words, if indigenous workers were endowed with the same productive characteristics as nonindigenous workers, the earnings differential between them would narrow by 50 percent. The remaining difference in wages is "unexplained."

In Paraguay, decomposition of the overall earnings differential between monolingual Spanish speakers and Guarani speakers shows that much of the overall differential is explained by human capital differences. Thus, equality in educational attainment will go a long way towards equalizing labor market outcomes.

For Brazil, wage differences between white and non-white males remain after controlling for education and estimated experience (Webster and Dwyer, 1988). In fact, the income gap between the two groups widens with increased schooling. Silva (1985) estimates a significant cost to "being non-white" irrespective of being *mulatto* or black; non-whites are equally discriminated against in Brazil relative to whites (Table 4).

*Table 4: Discrimination in Brazil over Time*

	Upper Bound of Discrimination (percent)		
	<i>Mulatto</i>	Black	Nonwhite
1960	17.6	14.6	16.3
1976	32.9	26.3	31.2
1988	45.6	50.9	

*Source:* Silva, 1985; 1992.

The "upper bound" of discrimination presented in Tables 3 and 4 gives an indication of the "cost" of being a minority. In monetary terms, this is illustrated by the Bolivian case. The mean difference in nonindigenous-indigenous earnings is approximately 2,784 *bolivianos*

a year (Psacharopoulos and Patrinos, 1994). From the decomposition results presented in Table 3, it is known that 28 percent of this differential is due to discrimination ("upper bound"); 72 percent is, therefore, due to productivity characteristics differences. In monetary terms, the mean difference that is attributed to productive characteristics differences is 1,992 *bolivianos* a year. The "unexplained" component, therefore, accounts for 792 *bolivianos*, and is interpreted as reflecting the costs to indigenous people of discrimination.

## Discussion

Much of the earnings disadvantage of minority group workers is due to lower human capital endowments. While the monetary benefits of schooling are lower for the minority group populations, an increase in schooling levels would lead to a significant increase in earnings.

The results compare with those obtained from studies of the earnings differential between indigenous and nonindigenous workers in the United States. These studies suggest that much of the earnings differential would disappear if indigenous workers had the same characteristics as nonindigenous workers. The same results, however, would not occur in the case of Canada, where the "unexplained" component of the earnings differential between indigenous and nonindigenous workers is very high. Discrimination accounts for only as much as 10 percent of the overall differential between indigenous and nonindigenous workers in the United States (Sandefur and Scott, 1983), while in Canada it accounts for 59 percent (Patrinos and Sakellariou, 1992).

The Bolivian findings suggest that the socioeconomic condition of indigenous people can be improved because policy-influenced variables such as education and occupation are largely responsible for earnings differences. This provides considerable hope for the future. The question that remains, however, is how to improve the productive capabilities of the indigenous population. One obvious solution is to improve the educational level. The educational level of the Bolivian population has been increasing rapidly over the last few decades. The average schooling level of indigenous people increased continuously over time, with a sharp rise for cohorts born in 1959 and later. The increase is particularly strong for the post-1952 Revolution cohorts born during 1949-53 and 1954-58.

Given the fact that indigenous workers have fewer years of schooling vis-à-vis nonindigenous workers, it is necessary to make an effort to increase their human capital. This is justified by the fact that productivity-enhancing characteristics are positively related with earned income, so that an increase in human capital will result in an increase in earnings.

Access to better jobs could also be attained by improving the information network so that both employers and indigenous workers are better informed. In this way, employers would be better apprised about the qualifications of indigenous labor force participants, thus hopefully preventing discrimination, and indigenous workers would be better apprised about labor market opportunities (see Klitgaard, 1992).

In terms of the "upper bound" estimates of discrimination that one gets from the individual-level analysis, it can be concluded that there can be significant costs to discrimination at the individual level. However, another question is whether the majority group also suffers a "cost" when there is discrimination against a minority group.

When the majority group is very large compared to the minority group, then discrimination by the majority hardly lowers its income (Becker, 1993). But when the minority group is a sizable fraction, then discrimination by members of the majority injures them as well. An obvious example given by many authors is the case of South Africa. Discrimination against Blacks allowed whites to gain for only so long. Eventually, Apartheid became a cost to the economy. The reason for this is the resulting skill bottleneck. The manufacturing sector was dependent upon skilled workers, but as these jobs were reserved for people of European extraction and the education system made it impossible for the majority to compete for higher-level positions, then skill bottlenecks formed, acting as a brake on further expansion of the economy. Discrimination against Blacks ended up hurting whites, so the system of Apartheid fell apart (Lundahl, 1992; Becker, 1993).

In Guatemala, the indigenous population (economic minority) makes up a very large — if not the majority — of the total population of the country. Does discrimination against indigenous people hurt the (economic) majority nonindigenous population as well? It is estimated that in 1960, only 7 percent of secondary school-aged children in Guatemala actually attended secondary school. Had the Guatemalans invested in education to increase attendance to a relatively modest 50 percent in 1960, the country's growth rate per capita from 1960 to 1985 might have increased an amazing 1.3 percent per year (Barro, 1991). Investing in the human capital of the large minority population and decreasing the level of discrimination against it will go a long way towards improving the standard of living of Guatemala's indigenous and nonindigenous population. This is clearly a priority research area.

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