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Economic Well-Being in
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ETHNICITY, LANGUAGE, AND ECONOMIC WELL-BEING IN RURAL GUATEMALA*

ABSTRACT

We examine ethnic differences in objective and perceived economic well-being in rural Guatemala. The evidence shows that long-standing ethnic differentials in objective indicators of household economic well-being actually widened between 1988 and 1995, a period characterized by rapid economic growth rates. We examine the effects of a major determinant of household economic well-being in rural Guatemala, educational attainment, in accounting for ethnic and language differentials in household consumption. Our results show that returns to education appears to be substantially lower for Indigenous households, especially Indigenous households where the head of household does not speak Spanish. Ethnic differentials in perceived economic well-being do not strictly parallel differences in objective indicators of well-being. Indigenous women with any education are more likely to report relative economic deprivation than are non-Indigenous women, or ladinas, controlling for objective measures of household wealth.

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Ethnicity, Language, and Economic Well-Being in Rural Guatemala

Many Latin American countries are in the midst of a shift from an agro-export economy to an economy based on manufacturing, services, and non-traditional agricultural exports. This shift, along with impressive economic growth rates from about 1960 to 1980, has increased interest in the effects these changes have had on income distributions and poverty (Cardoso and Helwege 1992; Hakim 1995). The effects of this market transition on long-standing ethnic differences in economic well-being has received less attention. Have market transitions reduced or exacerbated ethnic differentials in economic well-being in Latin America? Although there is substantial evidence linking ethnicity and poverty in Latin America (Psacharopoulos and Patrinos 1993), this relationship has rarely been considered within the context of larger economic changes. Reductions or increases in ethnic inequality are likely to affect the pace and distribution of the demographic transition for the indigenous population. For example, greater poverty among the indigenous population of Mexico and Central America may contribute to their higher fertility and mortality rates (Terborgh et al. 1995; Robles 1996).

A related, but also rarely addressed, issue is whether there are significant ethnic differences in *perceptions* of relative deprivation. Do ethnic differences in perceived economic well-being parallel differences in objective social and economic indicators? Understanding ethnic differences in perceptions of economic well-being may be as important as examining ethnic differences in objective indicators of economic status in the politically and ethnically charged environment which characterizes many poorer countries.

In this paper, we examine ethnic differences in objective and perceived economic well-being in rural Guatemala. First, we examine change in ethnic differentials in economic status

among rural Guatemalans between 1988 and 1995. Contemporary Guatemala is a particularly interesting context in which to investigate ethnic differentials in economic well-being. While many Latin American countries began to open up to global markets in the 1960s and 1970s, Guatemala initiated this transition only recently. The growth in Guatemala's economy in the late 1980s and early 1990s was impressive compared to other Latin American and developing countries during this period, averaging a 4% per annum increase in GDP (USAID 1995). Guatemala also has a large Indigenous population (roughly half of the total population) and a long history of extreme stratification by ethnicity and social class (Kluck 1983).

Next, we examine the causes of ethnic differentials in economic well-being. The literature suggests that discrimination and differences in human capital both contribute to discrepancies in earnings (Patrinos 1993). This work has primarily focused on the wage earnings alone and on men's earnings. However, wages account for only part of household income in many Latin American countries, particularly in rural areas where a substantial portion of the population lives. Subsistence agriculture, self-employment, payments in kind, and other sources are important sources of household income. The focus on wages also necessarily limits earlier studies to urban households in which wage earnings are a major source of income. Women often make substantial contributions to household income, particularly in poorer households, but these contributions are excluded from research on male wage rates. The highly unequal distribution of land in Guatemala, another important factor likely to affect income differentials by ethnicity, especially in rural areas, is often overlooked in analyses focusing exclusively on wage differentials. Finally, the extent of a community's integration into larger national and international markets can influence ethnic and language differences in economic well-being. Communities with traditional non-wage economies are based on stable social relations and can

be highly discriminatory against persons of different ethnic and language backgrounds (Massey, 1988). Communities that are integrated with national and international markets, in contrast, operate under a more efficient market. The small landowner is motivated by wealth accumulation and is more likely to value human capital and productivity rather than social relations (Massey, 1988). In this context, small landowners are less likely to engage in wage discrimination according to the ethnicity and language of workers.

Our analysis significantly extends other studies in six ways. First, we examine ethnic differences and their determinants on household consumption, a more complete and reliable measure of economic well-being. Second, we focus on rural Guatemalan households where the majority of the Guatemalan population lives. Third, we examine the contributions of both men's and women's characteristics to household economic well-being. Fourth, we examine the role of land distribution in ethnic differentials in household economic well-being. Fifth, we control for the extent of community integration into larger national and international markets. Finally, we examine ethnic differences in *perceptions* of relative economic well-being. As we argue above, both actual and perceived ethnic differentials in economic status are likely to be important to the political future of Guatemala. Perceived economic well-being may also affect demographic decisions, such as desired family size, investments in children, and migration decisions.

Background

Guatemala is Central America's most populated country, with approximately 10.5 million persons in 1995 (CELADE 1997). Despite being the region's second most densely populated, Guatemala is one of the least urbanized Central American countries: in 1986, 31% of

the Guatemalan population resided in urban areas, compared to an average of 42% for Central America and 68% for Latin America (MSPAS 1989).

The Guatemala population is roughly evenly divided between the indigenous (descendants of Mayan and other pre-conquest groups) and ladinos, defined loosely as all non-indigenous Guatemalans. In spite of the use of two distinct terms, the ethnic division is in fact a continuum created by a long history of ethnic mixture. Although primarily poor and rural, the indigenous population is heterogeneous, including more than 22 different language groups. Since the nineteenth century, ethnicity has not been defined primarily on the basis of physical traits since most Guatemalans share these traits, but instead based on cultural identification. Ladinos speak Spanish, identify with the dominant national culture, dress in Western garb, and see themselves as socially and culturally distinct from (and, traditionally, superior to) the indigenous population. Since independence in 1821, the Guatemalan state has pursued an explicitly assimilationist policy toward the indigenous population, discouraging indigenous language use and traditional dress and encouraging adoption of ladino cultural traits (Smith 1990 and 1995; Adams 1994; Richards and Richards 1996). Between 1978 and 1984, Guatemala experienced an extraordinary wave of violence as Guatemalan military government forces attempted to exterminate a guerrilla movement in the countryside. Tens of thousands of indigenous people in rural communities were killed. Many more were left homeless or fled in fear for their lives, creating a major refugee movement both internally and to Mexico and the United States. Despite this policy and substantial discrimination and repression, Indigenous communities have been fairly successful in maintaining a separate and distinct identity (Pebley, Robles, and Goldman 1999). A large part of this success may be attributable to the Mayan identity movement that started in the 1970's in response to the violence and disruption in indigenous communities. This

movement has led to increased public identification as Mayan, increased ethnic pride, and the development of Mayan cultural and educational institutions.

According to 1994 census estimates, about 80% of Indigenous Guatemalans resided in rural areas, compared with about half of the Ladino population (Diaz 1997). Rural Guatemalans, regardless of ethnicity, are almost always poor, although the rural Indigenous fare worse than rural Ladinos, across a broad range of economic indicators (Steele 1993). Thus, this analysis explores ethnic differences among poor Guatemalans. Rural Ladinos, who reside predominantly in the coastal lowlands, the highlands, and in eastern Guatemala, generally work on *fincas* (large-scale plantations) or farm their own plots of land. The rural Indigenous population is concentrated in the western highlands and works on *minifundios* (small subsistence plots) which they may or may not own (Kluck 1983). Significant numbers of rural Indigenous men and women also work on *fincas* either as seasonal migrants or as residents.

In Guatemala, as in other Latin American countries with substantial Indigenous populations, there are well-documented large and pervasive ethnic differences in earnings and standard of living favouring the non-Indigenous (Psacharopoulos and Patrinos 1993; Steele 1993). Moreover, language may influence earnings potential in at least two ways that further disadvantage non-Spanish speaking Indigenous population relative to the Spanish-speaking Indigenous population (McManus, Gould, and Welch 1983). First, because of the dominance of Spanish in the Guatemalan economy, ability to speak Spanish is a marketable skill valued by potential employers, customers, and business ties. Inability to speak Spanish may limit productivity in settings where Spanish is the dominant language of communication. Second, inability to speak Spanish is an immediate indication to potential employers that an applicant is Indigenous. This is especially important in a society where ethnicity is not strongly related to

readily apparent physical traits. To the extent that employers harbour prejudices against Indigenous labour, these labourers will suffer. Guatemalans less proficient in Spanish will be disadvantaged in formal and informal labour markets and self-employment. Because of the potential double jeopardy associated with being both Indigenous and a non-Spanish speaker, we investigate the effects of both ethnicity and language on economic well-being.

Data and Measures

The analysis is based on data from three sample surveys conducted in Guatemala. For the first part of the analysis, which is focused on changes over time in household economic status, we used data from two national surveys conducted in 1987 and 1995 as part of the Demographic and Health Surveys. These surveys collect comparable information at two points in time for a national population, but they do not collect detailed data on household consumption or perceived economic status. Therefore, for the main part of the analysis, we rely on data from a third survey – the Encuesta Guatemalteca de Salud Familiar (EGSF) conducted in 1995. Each of these data sources is described below.

ENSMI

We describe change over time in economic well-being using data from the 1987 and 1995 National Surveys of Maternal and Child Health (ENSMI-87 and ENSMI-95). ENSMI-87 was carried out by the Ministry of Public Health and Social Assistance (MSPAS) and the Nutritional Institute of Central America and Panama (INCAP) in conjunction with the Demographic Health Surveys (DHS) project (MSPAS and INCAP 1989). It was based on a nationally representative sample of 5,160 women aged 15 to 44, interviewed between September

and December 1987. The questionnaire included a set of questions on women's educational attainment and work history, spouses' education attainment and employment status (if woman had ever been married), and household assets and characteristics (e.g., electricity, presence of flush toilet or latrine). All women of eligible age in a household were interviewed for a total sample of 3,241 women residing in rural areas (defined by standard government designations), representing 2,656 households.

ENSMI-95 was carried out by the National Institute of Statistics (INE), MSPAS, Agency for International Development (AID), and UNICEF, in conjunction with the DHS project (INE and MSPAS 1996). It was based on a nationally representative sample of 12,403 women aged 15 to 49, interviewed between June and December 1995. We restricted the analysis to 7,776 women (5,969 households) of known ethnicity aged 15 to 44, residing in rural areas.

Measures of Ethnicity/Language and Economic Well-Being

Ethnicity in the two ENSMI surveys is based on interviewer observation. Interviewers noted whether the respondent was Indigenous or Ladino (or other). We excluded the few women in ENSM-1995 who were classified "other". As an indicator of family and household wealth in the ENSMI surveys, we use four measures of housing quality (piped water, electricity, flush or septic toilet, and non-earth floor) and four household assets (radio, television, refrigerator, and bicycle).

The EGSE

We test hypotheses about causes of ethnic differences in economic well-being and investigate ethnic/language differences in perceived relative economic well-being using data

from the Encuesta Guatemalteca de Salud Familiar (EGSF).¹ This survey was conducted by Princeton University, RAND, and the Instituto de Nutrición de Centro América y Panamá (INCAP) in 1995. EGSF was based on a sample of women ages 18 to 35 living in rural areas of four departments of Guatemala. This restriction to four departments was made because use of a national sample would have required interviewing in more than 21 Indigenous languages. The four departments were selected on the basis of social, economic, and environmental diversity, and ethnic composition: one is primarily Ladino (Jalapa), two are predominately Indigenous (Chimaltenango and Totonicapán), and one has a mixed population (Suchitepequez). The survey was based on a sample of households in rural communities. A total of 60 communities were selected, 15 in each department. A total of 4,792 households were interviewed with 2,872 women ages 18 to 35 interviewed therein between May and October 1995. The individual interview collected information on language and other family background information, family income, economic status, and health information. In contrast to the two ENSMI surveys, in which interviewers were asked to classify respondents ethnicity, the EGSF collected respondents' reports on their own ethnicity (response categories are Indigenous, Ladino, a little of each, other, don't make a distinction).²

The EGSF analysis sample used here is limited to: (1) respondents who are married or in a consensual union, and (2) respondents living in households in which they or their husband/partner are heads of household. Couples who do not head their own household are excluded to reduce heterogeneity by household type. We expect that respondent's and her

¹ Public use EGSF files and documentation are available from <http://www.rand.org/organization/drd/labor/FLS>.

² The use of respondent-reported ethnicity in the EGSF versus interviewers' classification in the two ENSMI surveys means that the ethnic categories in the two data sources are not directly comparable. In particular, we would expect that the ENSMI surveys will misclassify Indigenous women who speak Spanish well as Ladinas if these

partner's characteristics have a greater effect on household consumption and perceived economic well-being of household when she or her partner is the head of household. To be included in the sample, both spouses had to be of the same ethnicity since there were too few instances of couples where one spouse is Ladino and the other Indigenous to construct a separate category for these couples. The final sample consists of 1,454 couples, although because of missing data on the two dependent variables (household consumption and self-reported relative economic status) the sample sizes in the analyses vary slightly.

Measures of Objective and Subjective Economic Well-Being

Because of our interest in ethnic differences in the welfare of the entire rural population, we use a different strategy than previous studies. Specifically, we examine the effects of education and other covariates on a measure of household consumption during the month preceding the survey. Deaton (1990, 1992) has shown that consumption is a good proxy for permanent income in poor populations in developing countries. Thus our analysis of ethnic differentials in economic well-being is based on a measure of longer term economic status of the household as a whole (i.e., a proxy for permanent income) rather than current individual wage rates which are the subject of most studies in this area.

The consumption index used here is constructed from answers to a detailed household consumption history (see Peterson, Goldman and Pebley 1997, for details). The index measures per capita consumption.³⁴ Although the consumption index adjusts for household size and age of

women or others in their households are not wearing traditional clothing at the time of the household or otherwise showing outwards signs of their Indigenous identity.

³ Our measure of household consumption relies solely on women's report; it includes items consumed on a regular basis by the entire household (such as food). It likely underestimates the consumption of items by their partners, such as alcohol.

household members, we also include a control variable for number of persons living in the household. Economies of scale mean that larger households will generally have lower levels of per capita consumption.

In the final part of the analysis we also examine the determinants of perceived economic status. Our measure of perceived status is based on respondents' reports about whether they are poorer, the same as, or better off than the typical household in their community.

Measurement of Independent Variables

Predictors of objective and subjective economic well-being include ethnicity and language based on responses to two sets of questions. First, respondents were asked to identify themselves as Ladino or Indigenous (we exclude the very few respondents who replied "a little of both" or neither from the analysis). Second, respondents were asked about what language they spoke at home and whether they could speak any other languages. Similar questions were asked about respondents' husbands. From these questions, we determined whether or not each respondent and her husband/partner were able to speak Spanish.

We employ three categories of education: none, primary (1-6 years), and secondary (7 or more years). Woman's and husband's age at time of interview are also included. We hypothesize that age of woman and her husband are positively associated with earnings since age is a proxy of life cycle stage, work experience, and the length of time which the household has had to accumulate assets. We also control for land ownership. For rural agricultural households, land availability is often the major constraint on production and income. Land is expressed in units of

⁴ We considered using an equivalence scale to adjust for variation in consumption of household members according to age, but the current state of knowledge about equivalence scales is such that simply adjusting for household size is considered perhaps the most defensible approach (Deaton, 1997).

manzanas.⁵ The average amount of land owned is very small. In our sample, most landowners have less than 1.5 manzanas, far below the minimum amount recommended by most agrarian laws. In neighbouring Honduras, for example, the agrarian law calls for a minimum of the equivalent of 7.14 manzanas per family of potentially irrigable land (Valverde et al. 1977).

We include several community characteristics in the consumption model. Distance between a community and Guatemala City serves as a proxy for access to urban labour markets.⁶ We include another measure of the accessibility of the community, coded 1 if the community's main road is open all year round and has had regular bus service for at least five years, and 0 otherwise. The community price of major staples is included as a control for the cost of living in a community, which can influence household per capita consumption. To measure opportunities for commercial employment in the community, we constructed a variable that measures the most important way that families earn their living (coded 1 if the most important means for earning a living was commercial farming, producing products for sale, factory work, or plantation work; coded 0 for more traditional means such as subsistence agricultural or running small shops). This measure is intended to distinguish between communities involved in larger national markets with greater entrepreneurial opportunities and those that rely on more traditional (non-wage) markets. Finally, we include controls for the department to adjust for the sampling design of the EGSEF and also capture the variation across departments that is not measured by other variables in the model.

⁵ One manzana equals 0.7 hectares.

⁶ The authors are grateful to Michael Haines, Roger Avery, and Michael Strong for permission to use data distance between community and Guatemala City.

Results

Changes in Socioeconomic Status in Rural Guatemala

Have ethnic differentials in socioeconomic status in rural Guatemala grown or shrank during the rapid economic growth which characterized the late 1980s and early 1990s?

(Table 1 about here)

Table 1 displays the socioeconomic characteristics in 1987. The first column shows the percentage of the total sample with given levels of socioeconomic status across a set of indicators, the next three columns show the percentage for Ladinos, for Spanish-speaking Indigenous, and for non-Spanish speaking Indigenous respondents. Two observations arise from these figures. First, the overall socioeconomic well-being of the rural population in 1987 is quite low. Almost half of all rural women and 43.9% of their husbands have no formal education and less than five percent of women and about five percent of husbands received any secondary education. A third of households have piped water, 28% have electricity, and less than 10% have a flush or septic toilet. Second, as we anticipated, there is a clear gradient across almost all indicators of economic well-being whereby Ladinos generally have the highest level of well-being, followed by Spanish-speaking Indigenous households, and last are the Indigenous, non-Spanish speaking households. A striking 85% and 70% of rural non-Spanish speaking women and men have no formal education.

(Table 2 about here)

Table 2 displays the percentage distributions for the same socioeconomic indicators among rural Guatemalans in 1995. The level of economic well-being between 1987 and 1995 improved substantially for each of the three ethnic/language groups. The proportion of all women and husbands with no formal education declined from 49% and 44% in 1987 to 37% and

31%, respectively. In other words, an eight-year period brought about an approximately ten percentage points decline in the proportion of women aged 25-44 (and their husbands) with no formal education. Housing quality and consumer durable ownership increased for everyone. However, the impoverished living standards of rural Guatemalans, particularly non-Spanish speaking Indigenous Guatemalans, is striking even in 1995. Less than 20% of households who were non-Spanish speaking Indigenous had electricity and less than one percent had a flush or septic toilet.

(Table 3 about here)

Table 3 summarizes the change in the strength of the relationship between ethnic/language group and socioeconomic characteristics based on a comparison of distributions in Tables 1 and 2. The first column presents measures of the strength of the relationship in 1987 between ethnicity/language categories (in this case Ladina versus Spanish-speaking Indigenous) and each of the socioeconomic indicators. The second column contrasts Ladinas with non-Spanish speaking women. Kendall's τ_b is the measure of association for all the comparisons that involve ordinal scales (Agresti 1990). A positive value indicates that Ladinos are advantaged on a given indicator relative to Indigenous. The third column presents the t-value associated with the change in τ_b between 1987 and 1995. Since husband's occupation is nominal, we use Cramer's V to measure the strength of its association with ethnicity/language (Blalock 1979). A test of significance of change is not available with Cramer's V.

In 1987 and 1995, there were significant differences in the distribution of almost all socioeconomic characteristics. With the exception of the women currently working in 1995, when a higher proportion of Spanish-speaking Indigenous women reported working for pay compared with Ladinos, all significant differences favour Ladinas or their husbands (as indicated

by positive τ_b values). In all comparisons, τ_b values are larger in the comparison between Ladinas and Indigenous, no Spanish than with Ladinas and Indigenous, speaks Spanish, indicating that Indigenous, no Spanish women fare worse relative to Ladinas than do Indigenous, speaks Spanish women.

The *t-values* convey a mixed, but generally, pessimistic picture of how socioeconomic inequalities changed between 1987 and 1995. On the positive side, there was a significant narrowing of differences between Ladinas and Indigenous women who do not speak Spanish in the proportion who report currently working for pay (as indicated by *t-value* = -3.18). Moreover, there was a small, marginally significant decline in differences of husband's educational attainment between Ladinas and Indigenous women who do not speak Spanish. Despite these modest signs of improvement in the socioeconomic status of the Indigenous relative to Ladinos, standards of living of both Indigenous groups deteriorated relative to Ladinos. Conversely, the situation for Ladino households has improved at a faster rate than for the Indigenous. Overall, while the economic situation improved in rural Guatemala, the gains for rural Ladina households were greater than for Indigenous households. This trend of generally widening ethnic inequalities is consistent with research indicating that economic growth, particularly in Latin America, does not alleviate social inequalities, at least in the short run. Indeed, existing social inequalities can widen under conditions of economic transition and growth (see Cardoso and Helwege 1992 for a discussion of the well-known example of Brazil).

Explaining Ethnic Differences in Economic Well-Being in Rural Guatemala

What factors explain ethnic differentials in economic well-being in the mid-1990s? In this section, we use the more detailed EGSF data to examine the determinants of household

consumption in rural Guatemala. Table 4 shows the means and distributions for the predictor and outcome variables used in this analysis. Approximately 36% of this married sample is Ladino, 52% is Indigenous, Spanish-speaking, and 12.5% is non-Spanish speaking Indigenous. The Spanish-speaking Indigenous category includes couples where *both* spouses speak Spanish; the non-Spanish speaking category includes couples where one (generally the wife) or neither spouse speaks Spanish.

(Table 4 about here)

We test two hypotheses about the reason for ethnic differences in economic well-being. The first is that they are due to differential educational attainment, i.e., the economic status of the Indigenous and Ladino populations would be roughly equal if they had equal levels of education. The results in Tables 1 and 2 suggest that there are in fact substantial differences in educational attainment by ethnicity, adjusting for community characteristics. These differences are most likely due to substantially poorer access to education on the part of the Indigenous population and the extra language barrier Indigenous children face because of the general lack of education available in Indigenous languages, at least until recent years (Richards and Richards 1996). It is also possible that Indigenous families place less value on educational attainment than Ladinos because the gains from education are lower for Indigenous men and women than for Ladinos, since they face discrimination in labor, land, and other markets.

If economic status differences are due entirely to differences in human capital, statistical adjustment for human capital differences would reduce the effects associated with ethnicity and language to zero. The literature indicates that differences in human capital endowments explain about 50% of ethnic differences in returns to education of earnings (wage rates) among Guatemalan men and women who work in the formal economy (Psacharopoulos and Patrinos

1993). These findings are based only on those persons who reported working for wages and receiving wage income: 13 percent of the Indigenous and 31 percent of the non-Indigenous populations (Steele 1993). Substituting household per capita consumption for earnings permits us to test this hypothesis using a measure more representative of the rural population's economic status since household consumption is not limited to those who receive income from paid employment.

A second hypothesis is that Indigenous households in rural areas are poorer because they have less access to land. Land remains a key factor of agricultural production in rural Guatemala for both subsistence and commercial farming. The development of export agriculture – first coffee, then cotton and cattle -- since the 1870s has led to land dispossession and extreme inequality in the distribution of land, with most agricultural land owned by very few landowners (Handy 1990; Williams 1986; Brockett 1990). As a result, most Guatemalan farmers, regardless of ethnicity, farm very small land parcels.⁷ However, Indigenous farmers have even smaller farms, as a result of a long history of discrimination and loss of access to land. For example, in the EGSF, Ladino and Indigenous respondents are equally likely to own land. However, among those who own land, 62% of Ladinos and 93% of Indigenous respondents own 1.5 manzanas or less (1.05 hectares or less).

An alternative to these two hypotheses is that Indigenous, particularly non-Spanish speakers, are discriminated against by a broad range of formal and informal markets. In this paper, formal market refers to formal employment that involves working in exchange for wages; informal market refers to work in exchange for in-kind payments or running a small family

⁷ For example, our calculations from the 1979 Agricultural Census indicate that 40% of farms were less than 1 manzana (0.7 hectares) and 89% were less than 10 manzanas (7 hectares).

business. Employer-based discrimination can reduce wages or access to employment. Self-employed Indigenous may face customer-based discrimination where the potential customer base discriminates against procuring services or goods from Indigenous persons. Another potential form of discrimination is access to credit markets and insurance, which can be crucial for providing economic stability to small scale farmers and merchants. Data from the EGSF do not allow us to investigate the role of discrimination directly. However, we can determine whether the effects of educational attainment and land ownership differ by ethnic group, as an indirect indication of potential discrimination. In the absence of discrimination (and any other differences) by ethnicity, Indigenous and Ladino families with the same level of education and land ownership would be expected to have the same level of income.

(Table 5 about here)

We test these hypotheses in Table 5 using standard linear regression models. The observations in the EGSF were intentionally more highly clustered than is usual in a sample survey. To correct for bias in the estimated standard errors resulting from this clustering, we estimated robust regression models (StataCorp 1997: 128). The dependent variable, monthly per capita household consumption index, ranges from 1.7 to 186.1 quetzales per household member per month. This range highlights the observation that both Indigenous and Ladinos in this sample are very poor (the exchange rate as of July 1995 was approximately Q5.75 to US\$1.00).

Model 1 shows differences in consumption by ethnicity and language, the ages of head of household and his/her spouse⁸, household size (i.e., the number of residents in the household), educational attainment of the respondent and her husband, land ownership, community characteristics, and department. Indigenous households, regardless of Spanish language ability,

report significantly lower per capita consumption than Ladino households, even when the other variables are held constant. Per capita consumption is Q6.53 (Spanish speakers) and Q5.91 (no Spanish) lower for Indigenous households than for Ladinos.⁹ These are large differences since the average monthly per capital consumption index for both ethnic groups combined is Q24. The results also show that Indigenous respondents are at an equal disadvantage whether or not they speak Spanish – suggesting that Spanish speaking ability does not significantly improve Indigenous households’ welfare. This is true even when educational attainment is not held constant (results not shown).

The coefficients for the respondent’s education, for her husband’s education, and for land ownership are all significant. As expected, educational attainment and land ownership significantly increase a family’s consumption levels. Wife’s age and husband’s age are each positively related to household consumption, a life-cycle income effect observed almost universally among adults before old age. The number of people living in the household is significantly and negatively related to consumption, indicating that there are economies of scale in these households – larger households consume less per capita.

The only community characteristic that is statistically significantly related to household consumption is community isolation. The effect of living in a community without regular transportation is associated with 6.71 fewer quetzales, holding everything else constant.

Table 5 shows the results of models including interactions between ethnicity/language and educational attainment (model 2) and landownership (model 3). The interactions test

⁸ The literature in the U.S. suggests that beyond age 45, wages for blue collar workers actually decline. To test whether such non-linearities may be biasing these results, we reestimated this model excluding women whose spouse is aged 45 or over. We find that our results are not biased.

⁹ The use of consumption as a linear outcome may allow outliers to unduly influence the results. We verified the robustness of our results by reestimating these models using logged consumption (and found no substantive differences).

whether there are differential returns to education and landownership by ethnicity. Because of small cell sizes, the education variable used in the construction of these interaction terms is dichotomized as “none vs. any” formal schooling. The results from model 2 show that the interactions with educational attainment are negative and, in the case of two coefficients, significant. This means that Indigenous households have lower levels of consumption, *even when* they have the same levels of educational attainment. In the case of the wife’s educational attainment, non-Spanish speakers had significantly lower consumption indices compared with Ladino women with the same educational attainment. Wives who are Spanish speakers also have lower consumption, but the coefficient is not statistically significant. For husbands, only the coefficient for non-Spanish speakers is statistically significant, although both are in the same direction. When the interaction terms are included in model 2, the coefficients for ethnicity/language are no longer significant because most of the effects of ethnicity are captured by the interactions with education.

The interaction terms in model 3 show that Indigenous households also have lower consumption than Ladinos, even when they own the same amount of land. Although some of the coefficients are large, none are statistically significant, in part because relatively few households own more than 1.5 manzanas of land. Nonetheless, these results suggest that there are substantial differences in returns to owning land by ethnicity, but require confirmation from other studies.

Explaining Ethnic Differences in Perceived Economic Well-Being in Rural Guatemala

Next we turn to *perceptions* of economic status. In Table 6 we examine ethnic differences in perceived poverty, using binomial logit models. The coefficients from these models have been converted into relative odds to make interpretation easier. Note that unlike the OLS coefficients

shown in Table 5, the OR's (OR) in this table are all calculated relative to 1.0. Values above one reflect an increase in relative odds, while values below one reflect a decrease in the relative odds. The outcome variable is the probability that the wife reports the household as being 'worse off' economically relative to other households in the community.

(Table 6 about here)

The first column presents the OR's associated with ethnicity/language group. Indigenous women, particularly those in non-Spanish speaking households, are more likely to perceive themselves as being worse off than Ladinos, consistent with results in Table 5. In contrast to our consumption models, we find a language effect within Indigenous categories on perceived economic well-being.

Model 2 includes controls for our measure of well-being represented by per capita consumption, community median per capita consumption, and household size, to adjust for actual household economic well-being, and average community economic status. The OR for Spanish-speaking and non-Spanish speaking Indigenous couples declines substantially (and becomes non-significant among Indigenous couples where both spouses speak Spanish) adjusting for household and median community income. In Model 3, adjusting for wife's and husband's education further reduces the coefficients associated with ethnicity/language in predicted perceived deprivation.

Model 4 includes the interaction between education and ethnicity/language to evaluate whether there are ethnic/language differences in the effects of education on perceptions. The only significant interaction effects are those shown in Model 4, between ethnicity/language groups and education of the woman and her husband. Indigenous women with any education, particularly in a non-Spanish speaking household, are more likely to report themselves as worse

off than others in their community. Education *increases* the perceived deprivation of Indigenous women relative to Ladinos.

The clustered nature of the EGSF may bias the estimates and standard errors associated with the logit models in Table 6. We reestimated Model 4 to adjust for clustering using multilevel random-effects models (SERC, 1985-1993). These results (not shown) indicate that the effects of clustering were minimal and that the results in Table 6 are unbiased by clustering.

Clearly, education affects *perceived* well-being. There are a number of possible explanations for this association. First, education may increase women's awareness of discrimination in labour and other types of markets, while at the same time increasing per capita consumption. In other words, education may increase awareness of the how the 'other-half' lives if these better educated women are more frequently leaving their communities or visiting higher income households. While the situation for rural Guatemalans has been improving over time for everyone, standard of living, particularly as represented by indicators of housing quality and consumer durables, has been improving faster for Ladinos than for the Indigenous. Among the Indigenous, the situation has been improving at a faster rate for Spanish-speakers. This fact may explain the greater perceived relative deprivation of non-Spanish speaking Indigenous couples if the woman has any education. More educated women may be all the more aware of their household's relative decline in objective measures of well-being compared with Ladino households. Second, education may increase aspirations, particularly if more educated people "buy into" the concept of human capital and employment and wages. Raised aspirations, without a corresponding rise in objective economic status may increase a sense of deprivation.¹⁰

¹⁰ We thank an anonymous reviewer for noting this possible explanation.

Discussion

Reduction of inequities needs to be a focus of the Guatemalan government and citizenry as it moves towards democratization. Unless real and perceived socio-economic inequities can be reduced, crime largely driven by poverty, which is already a serious problem in Guatemala, may further jeopardise the already at-risk peace accords and fledgling Guatemalan democracy (Jonas 1998). Results from the two ENSMI surveys presented in this paper show that economic growth and change between 1987 and 1995 have benefited all three ethnic/language groups in rural Guatemala. However, it is also clear that, with the exception of women's working status, and, possibly, men's educational attainment, the standard of living gap between the Indigenous and Ladino population in Guatemala has widened since the 1980s.

Although our findings are not necessarily generalizable to other Latin American countries, this phenomenon is consistent with findings in Guatemala and elsewhere that economic growth does not necessarily reduce long-standing social and ethnic inequities, certainly not without specific government policies and/or programs being implemented to alleviate such inequities. Our results are particularly interesting in that they illustrate how ethnic (and by extension social) inequalities can widen during a period of economic growth among a rural, poor population.

The analysis of the EGSF survey data indicates that there are major differences in per capita household consumption in rural areas between Ladinos and the Indigenous population. Surprisingly (given that Spanish language fluency is the strongest signal that someone is Indigenous) Spanish language fluency was not predictive of differences in per capita household consumption. It appears that discrimination against the Indigenous, if real, is based on characteristics other than language. It may be that in these communities, employers know all the

families and who is Indigenous or not Indigenous. Our results show that ethnic differentials in educational attainment and land ownership cannot account for all of the ethnic differentials in household consumption. Indigenous households have significantly lower consumption levels than Ladino households with the same educational attainment. Our results also suggest that returns to landownership are poorer for Indigenous households. Our results and those of many other studies demonstrate that human capital (and particularly educational attainment) and ownership of land are key determinants of household economic status in rural areas of many Latin American countries. Since differences in these two variables cannot account for differences in household consumption in the EGSF communities, other factors clearly play a major role. While we have no direct evidence from our study, a major factor is likely to be discrimination against Indigenous families and individuals in many areas of economic activity. Evidence from other studies suggests that high levels of discrimination against Indigenous households in employment, credit, and other markets is likely to play an important role (Steele 1993; Smith 1990; Warren 1989).

Our results also show that ethnic differences in perceived deprivation generally parallel differences in objective economic status, although there is one important difference. Specifically, Indigenous women with some education are more likely to perceive their households as being relatively worse off than other households in the community, holding constant household consumption, relative to all Ladino women and to Indigenous women with no education. Education may be increasing the awareness of the relative deprivation among Indigenous women. Although we are not able to definitively evaluate why education increases sense of relative deprivation among Indigenous women, we believe this finding has important implications for governments as they attempt to improve the well-being of their population as a

whole, particularly if they fail to address long-standing ethnic and social inequalities. As the have-nots achieve higher levels of education, they may be more aware of their relative status or develop greater aspirations, and perhaps be more willing to express and act on their dissatisfaction with their relative status. We encourage future research on economic inequalities address inequities in both objective and subjective relative deprivation, since both may have important societal implications.

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Table 1. Descriptive statistics for socioeconomic indicators in rural Guatemala by ethnicity/language, 1987 ENSMI

	Percentage			
	Total	Ladino	Indigenous	
			Spanish	No Spanish
Woman's education				
No education	48.9	32.9	53.9	84.5
Primary	47.0	60.2	45.0	15.5
Secondary	4.1	6.9	1.2	0
Woman currently working for pay	13.4	15.0	17.7	5.3
Husband's education ^{a,b}				
No education	43.9	32.7	43.8	69.5
Primary	51.0	59.3	53.4	29.9
Secondary	5.2	8.0	2.9	0.6
Husband's occupation ^{a,c}				
No or unskilled occupation	4.3	4.5	6.8	1.8
Professional, sales, clerk	7.9	8.8	7.7	6.0
Agriculture, self-employed	41.3	37.5	30.4	58.8
Agriculture, employed by other	29.0	29.9	33.0	23.7
Skilled, service	17.6	20.4	22.1	9.8
Housing quality				
Piped water	33.9	40.2	33.3	19.6
Electricity	27.5	37.5	25.1	6.1
Flush or septic toilet	8.7	13.4	5.4	0.6
Non-earth floor	28.4	40.4	22.0	6.4
Consumer durables				
Radio	58.9	62.2	58.5	51.5
Television	14.7	23.3	8.2	0.6
Refrigerator	5.1	9.0	0.7	0.0
Bicycle	13.6	18.6	11.9	3.2
Number of women	3,241	1,825	694	722
Number of households	2,656	1,459	574	623

Source: Encuesta Nacional de Salud Materno Infantil, 1987 (ENSMI-87).

^aExcludes 947 women not currently married or in a union.

^bExcludes 215 husbands with "unknown" years of education.

^cExcludes 1 husband with "unknown" occupation.

Table 2. Descriptive statistics for socioeconomic indicators in rural Guatemala

	Percentage			
	Total	Ladino	Indigenous	
			Spanish	No Spanish
Woman's education				
No education	36.9	23.7	41.1	77.3
Primary	52.2	59.4	54.2	22.7
Secondary	10.9	17.0	4.7	0
Woman currently working for pay	24.4	24.3	28.5	17.0
Husband's education ^{a,b}				
No education	30.7	23.4	31.7	54.0
Primary	60.0	62.9	63.0	45.6
Secondary	9.2	13.8	5.3	0.5
Husband's occupation ^{a,c}				
No or unskilled occupation	5.4	6.1	5.1	3.8
Professional, sales, clerk	8.5	9.1	8.6	6.0
Agriculture, self-employed	51.9	44.9	53.3	71.9
Agriculture, employed by other	13.2	15.5	10.7	9.8
Skilled, service	21.1	24.4	22.3	8.5
Housing quality				
Piped water ^d	58.0	65.8	53.1	37.8
Electricity	41.4	50.1	36.8	17.5
Flush or septic toilet	15.7	23.6	7.6	0.8
Non-earth floor ^e	33.7	47.4	21.6	4.9
Consumer durables				
Radio ^f	73.9	77.9	72.3	61.8
Television ^f	32.1	44.9	21.5	3.9
Refrigerator ^g	12.0	18.9	4.5	0.0
Bicycle ^h	24.5	29.5	22.6	9.2
Number of women ⁱ	7,776	4,395	2,176	1,205
Number of households	5,969	3,402	1,642	925

Source: ENSMI-95. All figures are weighted.

^aExcludes 2,562 women not currently married or in a union.

^bExcludes 124 husbands with "unknown" years of education.

^cExcludes 13 husbands with "unknown" occupation.

^dExcludes 1 household with missing information.

^eExcludes 12 households with missing information.

^fExcludes 4 households with missing information.

^gExcludes 8 households with missing information.

^hExcludes 3 households with missing information.

ⁱExcludes 32 women with unknown ethnicity.

Table 3. Summary of the strength of association (Kendall's τ_b) between Indigenous/language groups and socioeconomic characteristics (in 1987 and 1995 ENSMI samples) and of the statistical significance of the change in this association (*t-value*). Statistics are derived from Tables 1 and 2 (see text for description).

	Kendall's τ_b					
	Indigenous, speaks Spanish			Indigenous, no Spanish		
	1987	1995	<i>t-value</i>	1987	1995	<i>t-value</i>
Woman's education	0.202*	0.210*	0.36	0.454*	0.434*	-1.11
Woman currently working for pay	-0.034	-0.045*	-0.45	0.134*	0.073*	-3.18*
Husband's education	0.116*	0.126*	0.36	0.341*	0.293*	-1.90
Husband's occupation ^a	0.081	0.090	--	0.209	0.237	--
Housing quality						
Piped water	0.064*	0.122*	2.22*	0.200*	0.234*	1.36
Electricity	0.118*	0.125*	0.28	0.320*	0.270*	2.52*
Flush or septic toilet	0.114*	0.193*	3.74*	0.198*	0.240*	3.44*
Non-earth floor	0.174*	0.248*	3.10*	0.339*	0.359*	1.11
Consumer durables						
Radio	0.034	0.062*	1.07	0.099*	0.152*	1.95
Television	0.173*	0.227*	2.43*	0.279*	0.350*	5.28*
Refrigerator	0.150*	0.193*	2.89*	0.169*	0.218*	5.19*
Bicycle	0.082*	0.073*	-0.37	0.204*	0.192*	-0.67

Sources: ENSMI 1987 and 1995.

* $p < .05$.

^aCramer's V statistic.

Table 4. Means and percentages of variables used in multivariate analysis of couples (married or in consensual union), 1995 EGSF

Characteristics of respondent/household	Mean or %	Characteristics of community	Mean or %
Ethnicity/ability to speak Spanish(%)		Cost of Living (in quetzales/unit)	
Ladino	35.8	Price of salt	0.38
Indigenous-both spouses speak Spanish	51.8	Price of sugar	1.40
Indigenous-one (or both) spouse does not speak Spanish	12.5	Price of corn	0.45
		Price of beans	1.78
		Price of rice	1.85
Woman's age,y	27.6		
Husband's age,y	31.4	<u>Municipio and community characteristics</u>	
Missing husband's age(%)	1.4	Distance to Guatemala City (km.)	79.9
		Commercial opportunities(%)	63.3
<u>Social and economic characteristics</u>		Community isolation(%)	15.0
Woman no education(%)	42.4		
Woman primary education(%)	52.8	<u>Community economic well-being</u>	
Woman secondary + education(%)	4.8	Median consumption index (quetzales)	21.3
Husband no education(%)	27.1	Sample size	60
Husband primary education(%)	59.6		
Husband secondary + education(%)	7.8		
Missing(%)	5.5		
Household size	5.7		
Land ownership(%)			
Owns no land	21.8		
≤1.5 manzanas	53.2		
>1.5 manzanas	11.1		
Missing land ownership	13.8		
Consumption index (quetzales/person/month)	24.1		
Missing(%)	0.8		
Perceived relative poverty(%)			
Same or better	63.2		
Much poorer	35.2		
Missing	1.6		
Sample size ^a	1,454		

^aExcludes 719 unmarried and 37 women with unknown marital status, 115 couples with different or missing ethnicity, 10 couples who are 'a little of both' (Indigenous and Ladino), 499 women in which neither the woman nor spouse are head of household, and 38 couples with unknown household headship.

Table 5. Estimated coefficients for regression models of per capita household consumption, based on sample of married household heads

	Model 1	Model 2	Model 3
<u>Individual & household characteristics</u>			
Wife's age	0.28*	0.27*	-0.30*
Husband's age	0.23*	0.22*	0.15*
Missing husband's age	1.87	1.53	0.41
(Ladino)	†		
Indigenous, Spanish	-6.53*	-1.79	-5.20*
Indigenous, no Spanish	-5.91*	-1.73	-1.90
(Woman no education)	†	†	†
Woman primary education	2.01*	3.67*	2.97*
Woman secondary + education	16.54*	17.77*	19.34*
(Husband no education)	†	†	†
Husband primary education	2.69*	4.94*	3.32*
Husband secondary + education	6.65*	8.98*	8.91*
Missing husband's education	0.25	0.09	1.18
(Households owns no land)	†	†	†
≤1.5 manzanas	0.87	1.00	2.10
>1.5 manzanas	5.73*	5.73*	6.91*
Missing land ownership	0.54	0.37	-0.17
Household size	-2.98*	-2.96*	-2.96*
<u>Interaction terms</u>			
<i>Woman, any education if</i>			
(Ladino)			
Indigenous, Spanish		-2.16	
Indigenous, no Spanish		-5.11*	
<i>Husband, any education if</i>			
(Ladino)		†	
Indigenous, Spanish		-3.94*	
Indigenous, no Spanish		-2.70	
<i>>1.5 manzanas</i>			
(Ladino)			
Indigenous, Spanish			-2.78
Indigenous, no Spanish			-3.92
<i>≤1.5 manzanas</i>			
(Ladino)			
Indigenous, Spanish			-5.05
Indigenous, no Spanish			-12.46
<u>Community characteristics</u>			
Distance to Guatemala city (km.)	-0.04	-0.03	-0.07
Price of salt (quetzales)	-11.17	-11.80	-9.50
Price of sugar (quetzales)	8.10	9.35	3.88
Price of corn (quetzales)	7.67	7.99	7.26
Price of beans (quetzales)	-1.10	-1.24	-1.64
Price of rice (quetzales)	-1.06	-0.99	-1.71
Commercial opportunities	1.84	1.56	1.72
Community isolation	-5.06*	-4.83*	-4.37*

(Table 5 Continued)

(Table 5 Continued)

<u>Department</u>			
(Chimaltenango)			
Totonicapan	6.35	5.24	8.46*
Suchitepequez	6.27	5.31	8.81*
Jalapa	0.50	0.49	1.19
Intercept	18.70	14.31	26.61
Sample size ^a	1,443	1,443	1,443
R ²	.272	0.277	0.200

Source: Encuesta Guatemalteca de Salud Familiar (EGSF), 1995.

Notes: Omitted variables are indicated in parentheses. Huber's corrections to standard errors are used to account for possible heteroskedasticity due to clustering across communities.

* $p < .05$ based on one-way t-test of significance.

[†] $p < .05$ based on chi-square test for the set of dummy variables which comprise this covariate.

^aExcludes 11 cases with missing information on dependent variable.

Table 6. Estimated OR's for binomial logit models of the probability of self-reports of being economically "worse off" relative to other households in the community, based on sample of married household heads

	Model 1	Model 2	Model 3	Model 4
<u>Individual & household characteristics</u>				
(Ladino)	†			
Indigenous, Spanish	1.72*	1.36	1.01	1.20
Indigenous, no Spanish	2.51*	1.91*	1.22	0.83
<u>Household consumption index</u>				
Per capita household consumption		†	†	†
Missing per capita household consump.		0.98*	0.98*	0.98*
Community median consumption		1.67	1.39	1.46
		1.00	1.01	1.01
Household size		1.02	1.00	0.99
(Woman no education)			†	†
Woman primary education			0.76*	0.57*
Woman secondary + education			0.32*	0.24*
(Husband no education)			†	†
Husband primary education			0.95	1.27
Husband secondary + education			0.32*	0.43*
Missing husband's education			0.71	0.63*
<i>Woman, any education if</i>				
(Ladino)				†
Indigenous, Spanish				1.39
Indigenous, no Spanish				3.12*
<i>Husband, any education if</i>				
(Ladino)				
Indigenous, Spanish				0.54*
Indigenous, no Spanish				0.92
<u>Department</u>				
(Chimaltenango)	†	†	†	†
Totonicapan	0.39*	0.39*	0.35*	0.38*
Suchitepequez	0.85	0.89	0.70*	0.69*
Jalapa	1.42	1.22	0.74	0.71
Sample size ^a	1,431	1,431	1,431	1,431
Pseudo R ²	.017	.035	.053	.060

Source: EGSF, 1995.

Notes: Omitted variables are indicated in parentheses.

* $p < .05$ based on one-way t-test of significance.

† $p < .05$ based on an F or chi-square test for the set of variables in this group or set of dummy variables which comprise this covariate.

^aExcludes 23 cases with missing information on dependent variable.