

Remittances and Poverty: A Complex Relationship, Evidence from El Salvador

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Abstract

This article examines the correlation between migrant remittances received by communities in El Salvador and the level of extreme poverty. Data from the 2004 national household survey (EHPM) in El Salvador was used to create regression models to determine the incremental impact of remittances on poverty levels across the 262 municipalities of El Salvador. The results revealed that dollar amount of remittances had a statistically significant inverse relationship with level of extreme poverty in municipalities. The regression analyses showed that an average increase of \$100 of reported remittance earnings per month per person is correlated with a decrease in the level of extreme poverty of 24% in a given community. This article explains this relationship, along with the effect of other related quality of life and economic indicator variables and examines the complex nature of migration, migrant remittances and impacts in remittance-receiving communities in El Salvador.

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1 Introduction

One of the pressing issues of our time is human migration, and the impact of the more than 200 million global migrants on both developing and industrialized countries is complex. The majority of migrants choose to leave their home country in search of better economic opportunities and often see the act of emigrating from the country of origin as the best option for earning a decent living and supporting families back home. According to International Organization of Migration (IOM) data, migrants around the world send nearly \$500 billion dollars in remittances to loved ones in other countries each year, with the vast majority being sent to developing countries. These remittance dollars far outstrip other sources of foreign capital like Official Development Aid and Foreign Direct

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Investment and often exceed a receiving country's revenues from exports or tourism, making it a vital source of capital, upon which many countries have become dependent. This dependency is a source of concern for many, because of the lack of sustainability of these flows from a macro perspective, and because of the substitution effects which may prevent people from entering the workforce or engaging in an economic endeavor, in favor of receiving remittances flows from outside the country. While any additional income is helpful to many families who are experiencing poverty around the globe, the dependencies that may form and the more complex household level and community-wide impacts of the cycle of migration and remittances may mitigate the positive effects.

This article seeks to provide additional empirical evidence that an increase in household income in the form of migrant remittances is correlated with a reduction in extreme poverty, but that the author also notes that long-term effects and other outcomes are more nuanced. This article and the model have been adapted from the author's doctoral dissertation.

El Salvador is among the countries most dependent upon migrant remittances, with a significant percentage of GDP being driven by remittance income and a large percentage of its population living outside of the country's borders, mainly in the United States. In 2012, remittances coming into the country were worth U.S. \$3.91 billion, an annual growth of 7.2% compared to the year 2011, accounting for 16.4% of GDP [Central Reserve Bank of El Salvador]. By some estimates, such as the Central Bank of El Salvador's figures, the small nation of El Salvador on the Pacific coast of Central America with a population just under seven million, has nearly three million citizens living outside of its borders, with the majority of these emigrants in the United States. This figure includes second-generation Salvadorans living outside of El Salvador [Banco Central de Reserva de El Salvador (BCR) n.d.] Other more conservative estimates suggest that this number is more likely around 1.5 million [2], which is still a large percentage of the working age population. While it is the smallest country geographically in Central America, El Salvador has the second largest population in the region after Guatemala and the third largest economy, though growth in recent years has been stagnant. With 18.2 percent of its GDP in 2006 made up of migrant remittances (Ratha, 2008), this source of income has surpassed its largest export, coffee, thus making El Salvador's laborers its most vibrant export, and remittance figures equaled over six-hundred percent of foreign direct investment in 2004 (Andrade-Eekhoff, 2006). As a result of this extreme economic dependency, the large proportion of Salvadoran citizens who have migrated to the U.S., and the close relationship between Salvadoran migrants with their families back home, El Salvador provides a robust and interesting study in the realm of remittance research, yet there is a lack of in-depth empirical studies on this country. With El Salvador's recent signing of the Central American Free Trade Agreement, dismantling further the remaining trade barriers with the U.S., and also the adoption of the U.S. dollar as its official currency in 2001, El Salvador has various characteristics making it unique in the field of remittance studies.

2 Background: Remittances and Poverty

Many studies specific to migrant remittances' effect on poverty tend to concur that remittance income can help to alleviate the severity of poverty in households in developing nations. The literature varies widely on the analysis of how sustainable these

gains are and how they can be mitigated by the dependency created by the cycle of migration and remittances. A 2006 study on this topic that classified poverty into food-based poverty, capabilities-based poverty and assets-based poverty and compared families receiving remittances to households not receiving remittances in Mexico, found that this type of income helped to reduce food-based and capabilities poverty, but not assets-based poverty [4]. These findings support the theory that much of remittance income is spent on consumption and more short-term needs than on long-term investment or accumulation of assets. Another important recurring theme in the research on this topic that was clearly portrayed in a recently published World Bank study on Latin America and the Caribbean is that while remittances will have some positive effect, as would any increase in income, the overall impact on poverty and growth in the region is in most cases quite modest. The report also specifically states that the degree to which countries truly benefit from remittances is heavily dependent on whether governments have implemented better policies to create a more favorable investment climate, greater institutional capacity and a better educated population [5].

Some earlier studies [7][3] point out that since migration is such an expensive undertaking and often dependent on social networks to help in the migration and adjustment process, these barriers prevent the poorest individuals from migrating. As a result, migration may serve to broadly increase inequality in communities and countries, even if the remittance income does alleviate poverty in receiving households. A more recent study [1] found an overall decline in the number of poor households and the number of individuals living on less than a dollar a day, as the percentage of a country's population participate in international migration and send money back home to their families.

3 Data and Methodology

The principal hypothesis this study seeks to address is whether migrant remittances have an overall positive impact on reducing the level of extreme poverty in communities of El Salvador and explore the relationships with other quality of life variables. The analysis in this article is based on Household Surveys, conducted by the Census Bureau of El Salvador in 2004. Multiple Regression analysis was used to assess relationships between the independent variables, including life expectancy, literacy rate, level of urbanization, and the dependent variable, representing remittances. In order to minimize the influence of other related factors on the dependent variable of each model, other relevant predictors were used as control variables in each model, in order to compare the relationship among certain factors and determine if certain variables alone or in combination have a significant correlation to the amount of migrant remittances received by individuals and households. In addition, each model was run through the regression twice, the second time using a fixed effects model with dummy variables for four of the five different regions of El Salvador, replicating the regional breakdown used in the EHPM analyses by the Salvadoran Bureau of Statistics [Dirección General de Estadística y Censos (DGEC)] and serving as a control for any variance due to departmental or regional differences not related to any of the independent variables.

The primary data set used for this study is from the 2004 Encuesta de Hogares Propósitos Múltiples (EHPM) data gathered and published by El Salvador's Economic Ministry. While it is not the most current data set, it contains data broken down to the municipality level, and it also contains two relevant variables, not always included in a census, the

average remittances per person in a household and also the percentage of people receiving remittances. The data set contains a variety of statistics for all 262 municipalities in El Salvador from the 14 different departments (similar to states or provinces) of the country. The method of data collection for the survey (EHPM) conducted by the Bureau of Statistics and Census of El Salvador was household surveys of 1400 households nationally, with representation of both urban and rural households. A table listing the regression results for each model appears in the Analysis section.

Hypothesis: An increase in migrant remittances in a community will be correlated with a decrease in the severity of poverty in the community.

The poverty model was built to test a widely accepted belief among researchers in the social sciences about the economic impact of migrant remittance on the alleviation of extreme poverty. Many researchers that support the economic benefits of remittances often correlate remittance income with a reduction in the severity of the conditions of poverty that individuals endure in many developing nations. Since the research does not extend this hypothesis to conclude that remittances are correlated with an overall reduction in the number of poor people in remittance-receiving countries, I chose to examine the data for the percent of the population in extreme poverty, rather than relative poverty or the overall poverty rate, which combines the two categories. In this regression model, the dependent variable was the percent of individuals considered to be in extreme poverty in each community. Extreme poverty refers to the percentage of households, or in this case the percent of individuals in a community whose income is less than the cost of the basic food basket, which varies depending on the adjusted cost of living for urban and rural areas. For an urban family averaging 4.52 members in 2004, the cost of the basic food basket in was an average of \$129 per month and for a rural family of the same size about \$97 per month. This statistic and the makeup of the basic food basket is calculated by the Ministry of the Economy of El Salvador, which publishes much of its data and reports on it website: <http://www.digestyc.gob.sv/>. An analysis of this definition reveals how severe extreme poverty is for individuals in El Salvador, considering the basic food basket does not include the cost of housing and other basic necessities such as clothing, which are at least equal to the cost of the basic food basket (Rosen 5). Using the UNDP's statistical definition of the extreme poverty rate and its basis on the cost of the basic food basket, the annual income for the extreme poverty income threshold in El Salvador for a family of more than four would be only about \$1,500 annually or almost one dollar per day per person. This perspective further illustrates the severity of extreme poverty, according to the statistical definition.

The predictor variable average monthly remittances per person, was used to determine if a statistical relationship exists between remittances and the level of extreme poverty in the different municipalities of El Salvador. As control variables that are likely to be correlated with poverty level, the other independent variables built into the model were literacy rate, average grade level, masculinity index and unemployment rate. Average grade level data was also derived from the national census data, and the numbers in this data set represent the average grade level attained in school by the population above six years old in each municipality, and not the average numbers of years spent in school. Masculinity index is a measure of the ratio of males to females in the local population, which I thought might be related to poverty level in several ways. A higher ratio of males might mean more labor and higher productivity, or it could alternately lead to more competition and lower wages. A low ratio of males, which might be a result of high levels of male migration to other parts of the country or out of the country, could lead to

higher remittances levels to families in the community, which could in turn have a positive impact poverty levels. Greater employment opportunities and activity in communities should intuitively be related to better living conditions for residents and lower levels of poverty, so the variable of variable of unemployment rate was added as the last control variable to the model to test the relationship.

4 Results and Analysis

The poverty model generated significant results, and all five explanatory variables were shown to have a statistically significant relationship with the level of extreme poverty in communities. The version that was most statistically significant resulted in an adjusted R2 value of .572, with all of the independent variables, besides average grade level shown to be significant. However, a review of related models that were tested reveals the collinearity between the variables literacy rate and average grade level. When only one of the two is present, the t-statistic increases dramatically, but when both are present, the t-statistics for both variables decrease significantly. This collinearity is probably due to the partial causal relationship between average grade level and literacy rate. In each test model, average remittances per person had a negative coefficient value, demonstrating an inverse relationship with extreme poverty. In the second version of the poverty model, which uses average grade level, masculinity index and unemployment rate as control variables, the coefficient value of -.249 shows that as average remittances per person increase by \$100 per month, the level of extreme poverty decreases by 24 percent.

By comparing the t-statistics in the model, it is apparent that literacy rate has the strongest predictor effect, most significantly when average grade level is not used as a control in the same model. The negative beta coefficient for literacy rate may imply that education and the ability to read helps reduce a person's likelihood of living or remaining in extreme poverty. There is a great disparity in literacy rate across the different regions of El Salvador, with average adult literacy rate ranging from 92.4 percent in the department of San Salvador to 61.6 percent at the lowest in the department of Morazán, which also happens to have the lowest life expectancy. The adult literacy rate is based on 2004 national census data and includes all persons aged fifteen and up. The fact that literacy rate is such an important predictor to severe poverty should be an impetus for the government of El Salvador to make literacy one of its championed causes.

In these models, both masculinity index and unemployment rate are statistically significant control variables with positive coefficients. This correlation between unemployment and poverty is intuitive, but for masculinity index it is more open for interpretation. As the ratio of males to females increases, so does the level of extreme poverty, which could have many underlying causes, such as increased competition for jobs. As a result, more individuals may decide to leave the community as migrants to seek economic opportunities elsewhere. As these migrants leave their home communities to work and send remittances home, the gender percentages within communities are changing, in many cases with females becoming the majority.

A relevant case study that was included in the 2005 UNDP report on El Salvador compared two communities in El Salvador, one of which receives almost no migrant remittances, and the other that is heavily dependent on migrant remittances. Based on 2004 census data, the differences between Santa Catarina Masahuat in Sonsonate, where only 0.6 percent of households receive remittances and Concepción de Oriente in La

Unión, where 63 percent of households receive remittances are dramatic, and confirms the statistical results of this model. While poverty rate is less 40 percent, masculinity index is low at 76 percent and the percentage of female-headed households is high at 41.5 percent in the town dependent on migrant remittances, on the other side of the country in Santa Clara which does not receive any significant remittance income, the poverty rate is extremely high at 74.5 percent, the masculinity index is also high at 1.02 and the percentage of female-headed households is low at 15.7 percent. The results of this poverty model and the correlations derived from the models support the generalizations implied from the UNDP case study comparison.

The adjusted R Square value of these of the models, which is around of .50 shows that the independent variables in this model account for more than fifty percent of the variance in the level of extreme poverty in the different municipalities of El Salvador. The correlation between increased amounts of migrant remittances with a decrease of the percent of people living in extreme poverty is consistent with much of the remittance literature and research. Any increased income would help to increase an individual's chances of economic gain including rising out of extreme poverty, but in terms of economic inputs, migrant remittances can be the most efficient at least from the perspective of the receiving household. Other small gains in per capita income per household may derive from one or two children staying home from school, to work and contribute to family income, an immediate social cost, which in the long-term could detract from the benefits of increased income. However, while this model reveals a simplified statistical relationship between the variables, it does not divulge any insight about expenditures and sustainability. The ideal use of remittances would be for reinvestment in a small business or agricultural cooperative that spurs more long-term growth, but currently this type of sustainable remittance investment is a rarity, accounting for less than two percent of remittance expenditures [9]. A more in-depth discussion of the interpretation of role of remittances according to this poverty model and policy implications will be discussed in the following section.

As in all statistical analyses, these models are only useful if the EHPM data collected by the government is accurate. This means that the methodology for calculating values for different variables, especially when examining levels of poverty, which can have important policy implications and influence world opinion.

In the case of El Salvador, there are experts, including UNDP economist Carlos Acevedo, who dispute the quantitative parameters used to calculate poverty rates in the country. Specifically he has criticized the values assigned to the basic food basket, which is the comparative figure to determine where the poverty line falls. According to official statistics on poverty in El Salvador, the cost of consumer products as reflected by the basic basket of goods would have had to decline over the past ten years, which is not the reality. In addition, the basic consumer basket does not include many vital expenses such as electricity, education and phone service, which are goods and services that should be part of the basic market basket. Other experts refute this criticism, and defend the methodology used in El Salvador for determining poverty gaps, including the executive director of the Intersectorial Association for Economic Development and Social Progress, an agency that has worked to help alleviate poverty in the country [6]. While it is beyond the scope of this article to make value judgments about the collection of economic data and reporting in El Salvador, this is an important issue in the social sciences in general because if uniform methods are not applied across borders for calculating such figures and determining important social indicators such as poverty level, unemployment rate and

other variables, any research and statistical analyses relying on these numbers will be compromised. In Latin America alone, several countries have different thresholds for establishing the poverty line, which affects the poverty rates in each country. For example Argentina has the highest threshold poverty line and Dominican Republic has the lowest, which may seemingly inflate Argentina's poverty rate and decrease the rate in the Dominican Republic, which may distort not only the interpretation of comparative poverty rates but also other variables which are derived using poverty rates. In addition, subtle differences in the administering of household surveys among different countries can have a significant impact on national poverty rates, which affect comparative country rankings [8].

5 Figures and Tables

Table 1: Percent population in extreme poverty, Municipality Level, 2004

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>
Constant	74.68 (11.05)	39.34 (4.32)	70.49 (7.69)	61.16 (6.51)
Average remittances per person		-0.249** (-3.88)	-.361** (-5.96)	-.332** (-5.33)
Literacy rate	-.415** (-3.02)		-.923** (-14.79)	-.787** (-5.76)
Average Grade Level	-4.79** (-4.25)	-6.870** (-12.02)		-.852 (-.725)
Masculinity Index		22.547** (2.73)	40.12** (5.14)	36.94** (4.52)
Unemployment Rate	.634** (3.92)	0.642** (4.09)		.546** (3.67)
Adjusted R2	.491	.519	.552	.572
F-Statistic	.000	.000	.000	.000

**Significant at 5% level

* Significant at 10% level

(t-statistic in parentheses)

5 Conclusion

While there are certain limitations of this study such as the use of data all from a single year, rather than time-lagged data, which is not readily available with the embedded remittance variables, it adds additional evidence that remittance income has the potential

to help alleviate severe poverty in developing countries. A deeper analysis points out that many other important health and quality of life variables may increase along with remittance income, indicating the development potential of the proliferation of migrant remittances in countries around the globe.

Another limitation of this study is that it lacks personal input via in-depth interviews of the people who are actually migrating, sending remittances or receiving remittance income. This firsthand information and primary data would be useful for future studies on the topic and provide more insight into some of the statistical findings of this study. This research area on migration and remittances is urgently needed so that governments, households and individuals in both sending and receiving countries can benefit the most but not become dependent on these income flows to the detriment of more productive development and economic endeavors and support.

There are many opportunities for cross-country comparisons in the field of international migration and remittances, which can be useful at both the micro and macro levels to help households and governments leverage the significant financial stream of remittances to help promote wider and more sustainable development in communities. It is also important that at the same time, any immediate benefits of remittances such as the reduction in the level of extreme poverty that this study demonstrates, do not lead to inaction or complacency by families and leaders, which forms an unhealthy dependency on remittance income. Instead, further studies on how remittances are used and efforts to stimulate sustainable investment and increase broader economic opportunities in communities and countries, should be implemented.

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