

THE IMPACT OF MIGRANT REMITTANCES ON ECONOMIC AND SOCIAL
WELFARE IN MUNICIPALITIES OF EL SALVADOR

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In order expand the body of knowledge on the impacts of international migration on developing nations, this dissertation examines the effects of transnational migration and migrant remittances on communities in El Salvador. The effects of migration on the migrant-sending country can be dramatic on both a macro and microeconomic level, which create serious challenges for governments, communities and families. As one of the world economies most heavily dependant on remittances from the United States and also a country whose most vital export has become its human capital in the form of migrants, this study of El Salvador can serve as a case study to be applied to illustrate the potential situations and opportunities in other nations. Data from the 2004 national census and from a 2005 UNDP study were used to construct several regression models to determine the incremental impact of migrant remittances on poverty, health, education level attained, workforce participation, life expectancy, crime and gender roles in households across El Salvador. The results revealed that the dollar amount of remittances has a statistically significant positive relationship with a number of quality of life variables, such as reduced unemployment in households, higher average grade level and higher life expectancy; however, this variable was also correlated with increased cases of malnourishment in children. A similar variable, the percent of people receiving remittances, which represents penetration of migrant remittances throughout

communities, had a statistically significant inverse relationship with several of the same quality of life variables, such as lower average grade level, lower levels of malnourishment and decreased life expectancy. The reasons for these differences are examined, including the possibility that while dollar amount of remittances may ease financial constraints and improve certain conditions for households, the psychological effects of widespread migration may exert a different and sometimes opposite effect. A review of relevant research determined that while globally there have been attempts at policy shifts towards channeling remittances into more productive, the majority of remittance income is spent on immediate consumption, which presents opportunities for intervention by both the public and private sector to encourage more sustainable use of remittances.

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Chapter I: Introduction

“Migration is an emerging issue that will have ‘a profound effect on our efforts to meet the challenges of development and globalization.’ It requires political leaders from both developing and developed countries to strengthen cooperation. The challenge is threefold: ‘to better protect the human rights of migrants; to fairly share the burdens and responsibilities of providing assistance for refugees; and to fully realize the positive potential of international migration — for migrants and for transit and receiving countries alike.’”

--Kofi Annan, 2006

For many developing nations around the world, migrant remittances have come to play an increasingly significant role in the development process. Some economists estimate (DeParle, 2008) that nearly one tenth of the world’s population are beneficiaries of the billions of dollars in migrant earnings known as remittances that are sent to nations around the globe. Remittances are even more important during tough global economic times since they can be counter-cyclical and are not as dependent on the growth prospects of receiving countries, such as other flows like foreign investment, which have profit as the ultimate motive. The role of migration and remittances in developing nations is not uniform among migrant-sending countries, which makes it a fascinating and expansive area of study. Many of the existing studies on remittances have been focused on the volume of remittance flows, the role of remittances as a source of foreign exchange, and the macroeconomic impact on nations. Other more recent studies concentrate on reducing transaction costs for sending remittances to the home countries, the policy issue of formalizing remittances flows and the role of remittances in the globalization process. Beyond financial impacts of remittances, the wider societal impacts of transnational migration, the development potential of remittances, the microeconomic, psychological and sociological effects at the household and community level and the ramifications of

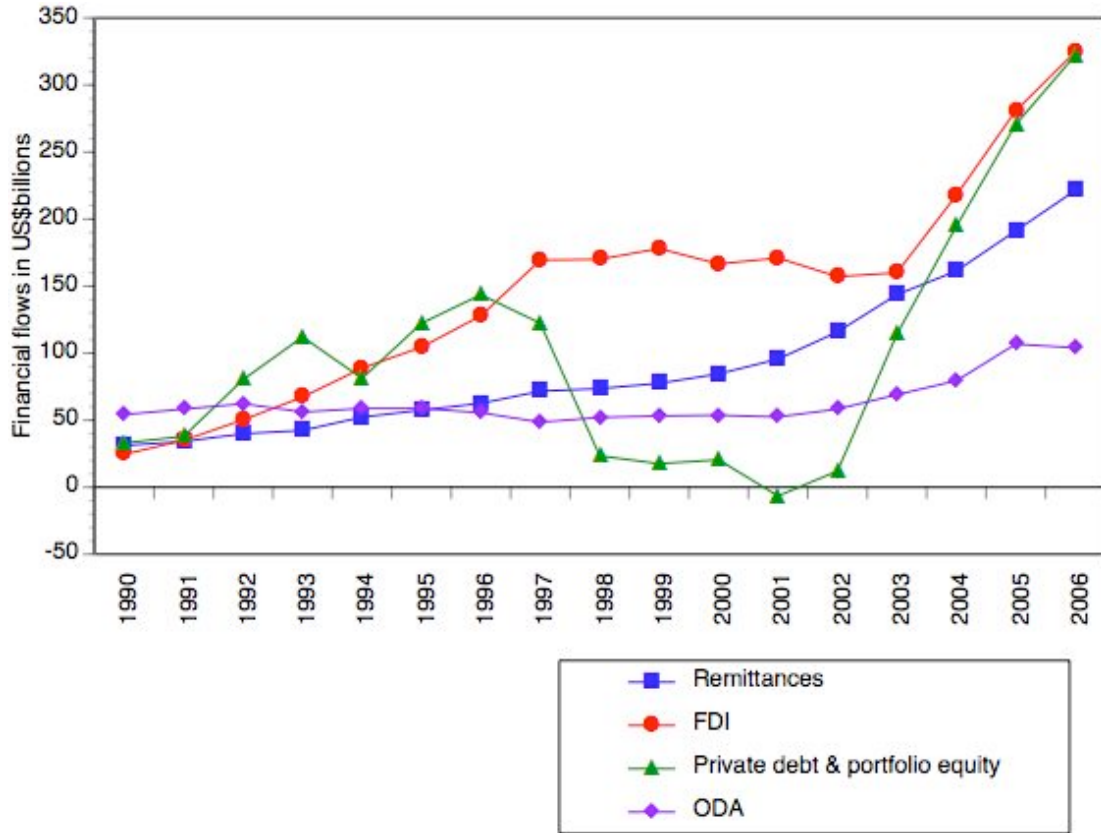
the increased dependence on remittances are necessary areas of study, which will be examined in this dissertation. As the inflow of remittances continues to have an increasingly dramatic impact on national productivity in developing nations, the importance of academic research in the field is unquestionable. The purpose of this dissertation is to look specifically at the impacts of migrant remittances in the country of El Salvador in Central America, where nearly one-fifth of the Gross Domestic Product is driven by these remittance earnings sent to the country by Salvadoran migrants living abroad, mainly in the United States.

The main contribution of this research is demonstrating that the dollar amount of remittances received by households and communities can have a very different relationship with health and well being indicators, than the percentage of people receiving remittances, a variable which measures how widespread the phenomenon of migration is in a given community. By analyzing a robust data set from the 2004 national census of El Salvador, the statistical findings of this dissertation bring forth some unexpected correlations between remittances and education, health and life expectancy. This difference between the two remittance variables was most pronounced in the school retention model, where average dollar amount of remittances was correlated with a statistically significant increased level of school retention, yet the percentage of people receiving remittances had an even more statistically significant correlation with lower levels of school retention. Possible explanations in this outcome and the results of the other models are discussed fully in the Results section. Future studies can be devised to further explore some of these seemingly contradictory or surprising findings by incorporating similar data sets from other years to see if results are similar, by creating

models with a dependent variable with a two or even five-year time lag from independent variables, and engaging in human subject research at the household level in El Salvador to more fully and accurately explain the statistical findings and delve deeper into the more human factors driving and being affected by international migration.

Most industrialized nations around the world, in addition to some developing nations, are experiencing an influx of migrants from other nations seeking improved economic opportunities, not only for themselves but for their families back home. The top migrant-receiving countries worldwide are the United States, followed by Russia, Germany, Ukraine, France and Saudi Arabia. The top remittance-receiving countries worldwide in 2007 were India, China, Mexico, and the Philippines (Ratha & Xu, 2008). Some of the underlying conditions that contribute to the trend of migration include the pull of changing demographic and labor market needs in higher income countries, the push of wage disparities, chronic unemployment and hardship in lower income countries, and the growth in size and influence of inter-country migrant networks that facilitate future migration flows. While remittances studies were not considered to be of great importance at the policy level only a decade ago, more and more governments and international institutions cannot deny the significance of remittances as an official balance of payments component, as their levels are catching up to Foreign Direct Investment (FDI) flows, and have superceded the level of Official Development Assistance (ODA) (Ratha, 2008). Figure 1 shows a fifteen-year trend of remittances and other financial flows to developing nations that illustrates the significant growth in recent years of the importance of remittance dollars among other capital flows.

Figure 1: Remittance and capital flows to developing nations (billions US\$)



Source: Global Economic Prospects 2006: Economic Implications of Remittances and Migration (World Bank), World Development Indicators 2007, and Global Development Finance 2007.

The definition of remittances presents some problems in this field of literature, and the quality of available data on remittances to different countries around the globe is also an issue. Many of the major studies that use country-specific remittance data use the figures published in the International Monetary Fund (IMF) Balance of Payments Yearbook. According to the IMF, the definition of remittances includes three financial components that collectively equal the total remittance figure calculated into a country's annual Balance of Payments. The first component, worker remittances, is the value of monetary transfers sent home by workers living abroad for over one year. The second is

compensation of employees, previously termed labor income by the IMF, which represents the gross earnings of foreigners living abroad for less than twelve months. The third component used in calculating total remittances received by a country is migrant transfers or the net worth of the individual migrants moving from one country to another, including assets such as stocks and investments. In most studies, the total remittances figure, or the sum of these three components, is the one used in making cross-country comparisons and making generalizations about the scope of global migration. However, since the Balance of Payments data does not take into account any factors in the receiving households or communities, most empirical studies examining microeconomic impacts of remittances, tend to use data generated by a representative sample of household surveys, such as a census. In addition, according to a World Bank study by Adams (2007) there is little uniformity in the process of recording the receipt of worker remittances among central banks in different remittance receiving countries around the world. The remittance data on El Salvador used in the statistical analyses in this dissertation was derived from household survey responses as part of the national census. The graphs and global comparisons of country rankings in remittances generated and received were based on remittance data from the IMF Balance of Payments Yearbook.

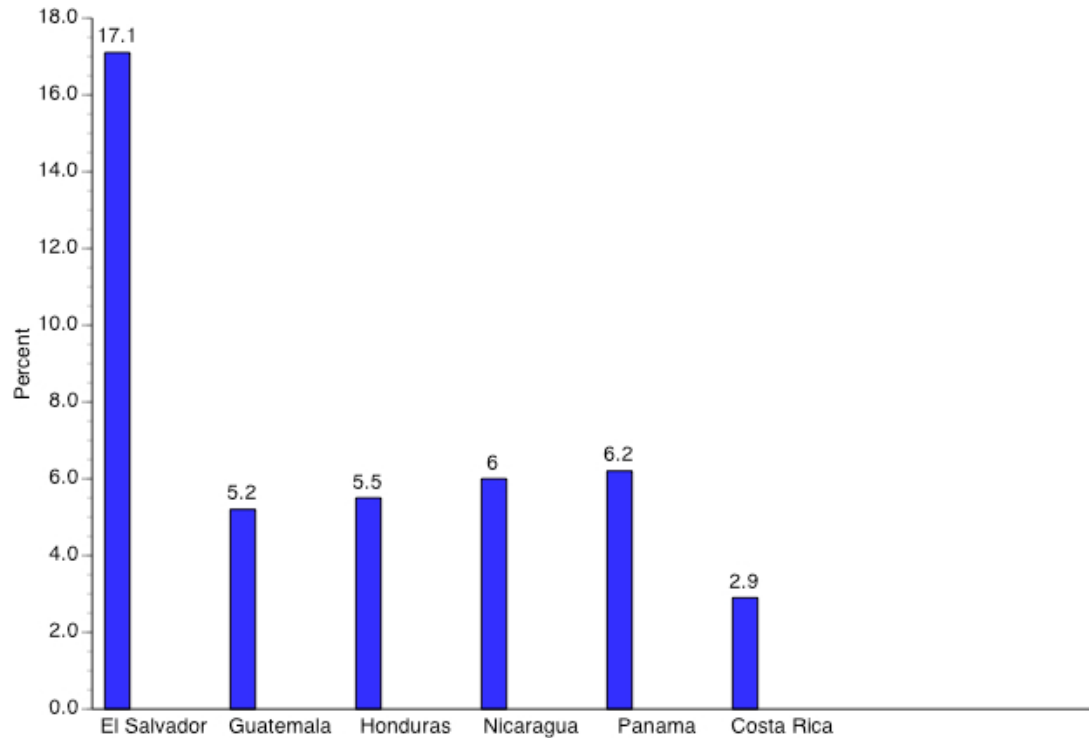
Official financial statistics and numerous remittance studies show that in the United States the working poor, often undocumented immigrants, are sending a disproportionate amount of their earnings as remittances worldwide, especially to Latin America. A survey conducted in the year 2000 concluded that nearly seven percent of the working-age population in the United States was born in Latin American or

Caribbean countries, and World Bank data from 2005 estimates that more than \$50 billion in migrant remittances was sent from the U.S. to Latin America and the Caribbean (Viveros & Jackson, 2006), and this number only takes into account remittances sent through formal channels. World Bank economist Dilip Ratha estimates that true flows may be up to 50 percent greater than recorded numbers (2008). While the motivation of the migrants sending their earnings to their home countries and families is beyond the scope of this study, which focuses primarily on impacts in the remittance-receiving country, it is noteworthy that the political, economic and legal climate and public attitudes in the U.S. and other destination countries for migrants towards immigration have the potential to greatly impact all of the migrant sending countries that have become so dependent on remittances.

While Mexico still remains the leader in the western hemisphere among recipients of remittances, some of the nations of Central America experience an even more dramatic impact from transnational migration, since they typically send a larger proportion of their national populations to the U.S. Figure 2 illustrates the percentage of migrants living in the U.S. for each Central American country. In addition, a number of researchers and organizations that study remittances and migration agree that Central America tends to be underrepresented in the literature on this topic, even though some countries in this region may be experiencing some of the most profound effects of the phenomenon of transnational migration. 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 (Andrade-Eekhoff, 2006), 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 sluggish. 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.

Figure 2: Central American population in the U.S. as a percentage of home country population



Source: 2001 round of US government's Census 2000 Supplementary Survey (as cited in Yang, 2003)

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. The heart of this dissertation will connect the themes present in the existing literature on remittances and migration, the results of a thorough statistical analysis using recent national census data and my own personal observations while living in El Salvador and visiting the country over the past eight years. Ideally the multiple regression analyses should have used time-

lagged independent variables to examine if increases in migrant remittances in one year have a statistically significant relationship with the independent variables such as school retention and malnourishment two or even five years later. However, the data was only available at the municipal level for 2004, so the shortcomings of using data from a single year will be examined in the Data and Analyses section.

A recent United Nations Development Program report (UNDP, 2005) is the most extensive study to date on the impact of migrant remittances in El Salvador. The report echoes the literature by describing some of the social and economic trends that result from the cycle of migration and remittances and contains a wealth of relevant data and statistics that will be useful for further study. In an analysis of the 2005 UNDP report for Migration Information Source, Katharine Andrade-Eekhoff (2006) observed that the nation of El Salvador of the 1970's preceding the first main waves of emigration no longer exists, yet the government continues to govern the rapidly evolving society in an anachronistic manner. She also argued that one of the most pressing issues involving Salvadoran transnational migration is to work towards policy initiatives to ensure that the benefits of remittance flows help to spur community development, allowing those who do not receive remittances to reap some of the benefits as well, and spurring wider economic growth and development.

International Migration and Human Development

The field of research on migrant remittances, resulting from the flow of human capital from one nation to another in pursuit of higher wages and labor opportunities, involves much more than the physical transactions of sending money home to family members. The socio-economic impacts of migration on the migrant-sending country are

very important, and they are different from the pure effect of remittances. The effects of both migration and remittance income must be examined to create an accurate view of transnational migration. Although the main portion of this study will isolate the remittance data for analytical purposes, simply because it is more accessible than raw data on migrants, it is also relevant and important to examine the societal issues leading to and resulting from growth in out-migration of national populations. The literature review and data and analysis sections will discuss the effects of migration on the society, communities and households of El Salvador and other migrant-sending countries around the world. Previous researchers have used the techniques of household surveys and statistical modeling using national census data to gather and analyze data for many of these studies.

As more nations are experiencing larger proportions of their populations living and working outside of the country of origin, the massive flows of people, knowledge and resources have a dramatic impact on communities and families, from changing gender roles as more women assume the leadership role in the family to broken families, brain drain of educated workers and professionals, and the more subtle emotional dependencies and loss of pride and cultural identity that may ensue. While living in El Salvador from 2000-2002 and during various visits over the next seven years, it became more and more apparent that many of the youth in rural El Salvador envision their only viable option for financial success and upward social mobility is to migrate to the United States. Young men, and a growing number of young women, are dropping out of school earlier and changing their aspirations, in order to save money for the very costly and treacherous journey north. There is an obvious pressure for those youngsters with the means to join

their extended families in the U.S. so they can contribute more meaningfully to their family's economic well-being. The irony is that with young mothers and fathers and older brothers and sisters, who have given up the opportunity to be role models to their siblings, the family's home may get bigger and they might be able to afford a car, but the impact on the separation of spouses, siblings and parents from their family members is more difficult to empirically measure. In addition, what most of these migration studies outside of ethnographies tend to lack, is the human element that is a vital part of the migration process for both migrants and family members. The statistical data can only capture information that is tangible and measurable, such as age, gender and education level of migrants. What it does not capture are intangible qualities that can be of utmost importance in households and communities, such as leadership ability, motivation, vision and generosity. For example when a young man perhaps uneducated, but who is viewed as a leader in the community, such as a soccer coach and town council member, leaves the country indefinitely as a migrant, this represents a loss that cannot be quantified in an empirical manner.

Residents and travelers alike in El Salvador can see firsthand the impact of migrant remittances throughout the country. The numerous billboards that continue to proliferate along the highways leading to El Salvador's Comalapa International Airport, serve as a reminder to everyone leaving the country of the different options for sending their "remesas familiares" or migrant remittances back home and show the variety of companies trying to capitalize and profit from the growing phenomenon of transnational migration, from lesser known companies like Urgente Express and Gigante Express to global giants like Western Union, which commands nearly twenty percent of the current

market share (Orozco, 2005). These companies are taking advantage of the growing remittance market in El Salvador and in other countries of the world. With enhanced technology, such as Western Union's online international money transfers using a credit card, the remittance transaction can be virtually instantaneous, which also increases the tendency for more formal remittance transfers thus increasing the accuracy of available remittance data. With the growth of competition in the remittance-transfer market, the transaction costs have declined significantly for migrants though Western Union charges approximately 15 percent for each transaction, and for El Salvador the possible losses to exchange rate in the transaction process are no longer applicable since the official currency of the nation has been the U.S. dollar since 2001 (Orozco, 2002b).

The UNDP (2005) report analyzing the human impact of migration in El Salvador, contains an important premise that while migrants living in the U.S. have helped improve incomes and reduce poverty among Salvadorans, there have been many social costs as well that are often overlooked or underestimated since these costs can be difficult to capture by objective data collection methods. Not only are gender roles changing, but generational roles have changed as a result of migration, with the elderly assuming greater child-rearing responsibilities and other taxing household chores. The study notes that while more women are assuming the leadership role in the family, they are not achieving a needed increase in social status and lag far behind Salvadoran men in education and income and more intangibly in their perceived societal role (UNDP, 2005).

Rising gang violence in El Salvador, partially attributed to the deportation of notorious "Mara Salvatrucha"(MS) and "18" gang members from the U.S. can be viewed as another negative impact of migration. According to an article for by the International

Relations Center (Logan, Bain & Kaires, 2006), many Salvadoran gang members who are deported from the United States or voluntarily returning to El Salvador were only small children when their parents migrated to the United States during the years of the Civil War. These individuals adopted the gang culture on the urban streets of the United States, and due to their involvement with drugs, weapons and violence, got caught up in the criminal justice system. Many deportees bring their gang training, violent methods and weapons back across the borders, and some communities around El Salvador now live in a constant state of fear of getting caught in the cross-fire between these two rival gangs. Many of the deported criminals, having been raised in the U.S., have no real ties or connections in El Salvador, other than their gang affiliation and culture. The spread of the gang culture and violence in El Salvador is closely linked to transnational migration and the deportation of violent criminals, from cities like Los Angeles, Dallas and New York. More than 6,200 Salvadorans were deported from the U.S. in 2004, with an additional 16,000 deported in the previous four years. Of these deportees over a five-year period, nearly 65 percent had committed a crime in the United States, but the severity is unspecified in the statistics (UNDP, 2005). There are no official statistics on the percentage of these deportees that are affiliated with gangs, partially as a result of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, which in many cases bars officials from disclosing the criminal records of the deportees, including if they are gang-affiliated. This makes it extremely difficult for El Salvador and other Central American countries to deal with the deportees who pose the greatest threat to their countries. National newspapers in the United States have reported on homicides being ordered in U.S. cities from inside prisons in El Salvador, and this cycle of gang

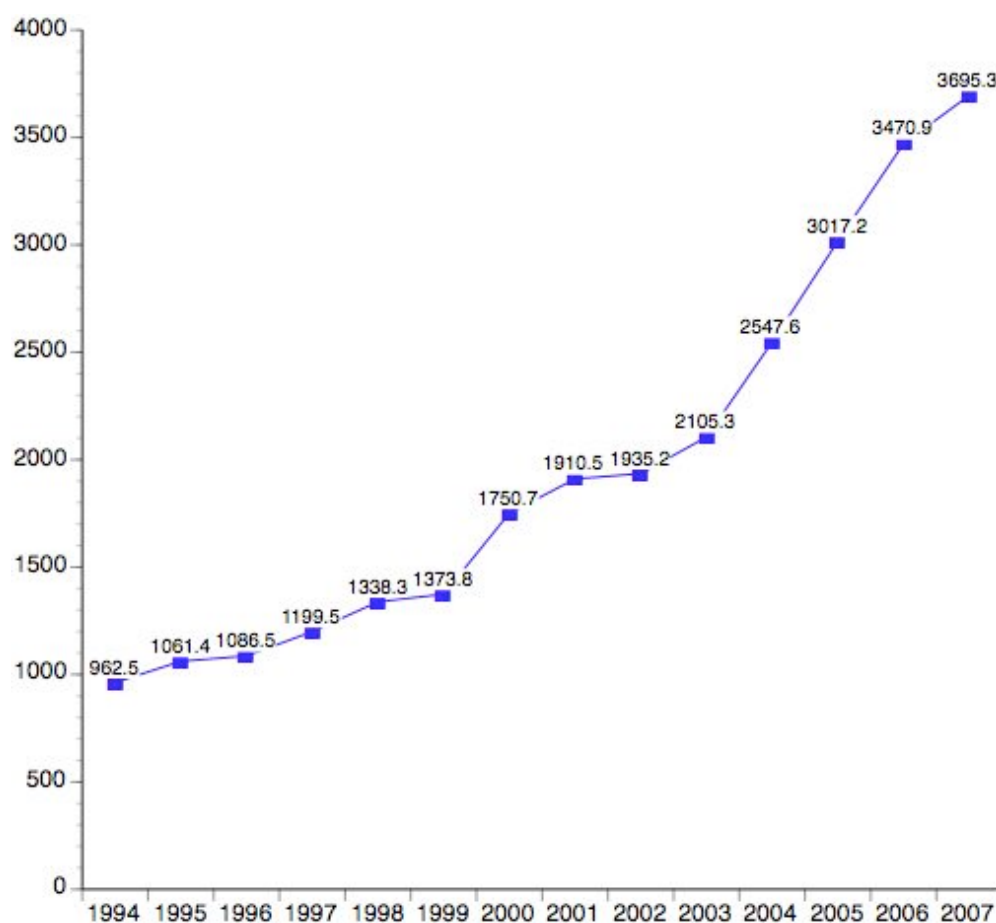
violence is transcending national borders affecting both migrant-sending and receiving countries. In the policy analysis section, several recommendations for dealing with the issue of gang violence, as they relate to migration and community development will be discussed.

El Salvador's Remittance Market

According to U.S. State Department figures, remittances from the United States to El Salvador reached an all-time high in 2004 of \$2.5 billion, thus becoming the major source of foreign income and helping the economy to overcome the growing trade deficit. To put this number into perspective, remittance income from that year was equal to 655 percent of foreign direct investment, 6,620 percent of Official Development Aid, 756 percent of tourism revenues and 133 percent of export income. In 2007, the official remittance flows reached nearly \$3.7 billion. While remittances for 2008 exceeded this by reaching nearly \$3.8 billion, this annual growth rate falls far below the growth in preceding years (Banco Central de Reserva, BCDR, n.d.). According to one source (Meyers, 1998), the greatest relative impact of remittances in economic terms is the highest in El Salvador out of the whole western hemisphere. They are the largest source of hard currency, and many scholars state that remittances helped keep many Salvadorans out of severe poverty during the years of the Civil War in the 1980's into the early 1990's. Since not all remittance dollars are channeled through legitimate money transfer channels, but through alternate routes such as visitors returning home, unregulated couriers and cash transfers which are more difficult to track, the true numbers are most likely much higher. Some studies on remittances focus solely on developing mathematical models to try to estimate the size of unrecorded or informal remittance

flows, which is very difficult to do. In the case of El Salvador, due to its proximity to its main migrant destination, the U.S. dollar currency as its national currency and the myriad options for formal transfers, there are likely to be fewer informal transfers compared to some other remittance receiving countries, such as in the Least Developed Countries (LDC's).

Figure 3: Trends in Remittances to El Salvador (in millions \$US)



Source: Bureau of Statistics and Census of El Salvador

Approximately twenty-five percent of Salvadoran households receive remittances from relatives in the U.S., making up a substantial portion of their household income. The average amount of remittances received and the proportion of households receiving remittances vary significantly by region. These funds rarely enter the official banking system, which makes them unlikely to spur long-term development. According to World Bank data gathered from household surveys, Salvadorans spend nearly eighty-five percent of their income on short-term consumption, significantly higher than in Honduras, where it is seventy-seven percent and Guatemala at sixty-eight percent (Agunias, 2006). Another study based on household surveys found that 91% of remittance income in El Salvador in 2002 was spent on consumption, followed by 3.8% on education and 2.5% on medical uses, with savings, housing, agricultural uses, business and “other” making up the remainder (Yang, 2003). There is also evidence that money earned in the U.S. helps drive up prices in El Salvador, which helps to counter the rise in incomes. A recent Washington Post article (Aizenman, 2006) asserted that with more dollars “chasing limited commodities” such as housing and land, prices are rising, and often those who are not receiving remittances are priced out. At the same time this rise in consumption spurred by remittances is not necessarily creating new jobs, and El Salvador continues to import both manufactured goods and unskilled or low-skilled workers from Nicaragua and Honduras to perform jobs like coffee harvesting and cow herding, which is driving down living wages. While official remittance inflows to El Salvador topped \$3.3 billion in 2006, official remittance outflows from El Salvador in 2006 totaled \$29 million (Ratha & Zu, 2007). These two phenomena, ironically resulting from transnational migration both into and out of the country, is contributing to the

difficulty of daily survival for average Salvadorans and making upward social mobility much more unattainable.

With over ninety percent of Salvadoran migrants living in the U.S., it clearly makes the United States the main generator of remittances to El Salvador (IADB, 2007). The U.S. labor market for Salvadorans is highly differentiated by gender. Salvadoran women continue to work in traditional gendered activities, namely cleaning services and child care, while Salvadoran men are employed in a wider variety of jobs, including construction, transportation, cooking, and gardening services. While these are low-skilled jobs, this does not mean that most Salvadoran migrants have low levels of education. A recent World Bank study found that nearly forty percent of all Salvadorans with a university degree live outside the country (Ratha, 2008). There is abundant anecdotal evidence in newspapers and magazines that oftentimes highly skilled and educated workers from a variety of developing nations end up migrating to the United States and taking low-skilled jobs where they earn more than they could as professionals in their home countries, in order to have the opportunity to buy land and build a homes for their families in their home towns. Studies show that Salvadoran migrants tend to send back a larger portion of their earnings to the home country than do other nationalities (Menjivar, DaVanzo, Greenwell & Valdez, 1998).

A recent study by the Economic Commission for Latin America and the Caribbean (ECLAC) (as cited in Aguinas, 2006) that used data from household surveys, has reported that of the four main remittance recipient countries in Central America, including El Salvador, Guatemala, Honduras and Nicaragua, El Salvador has experienced the most dramatic impact on reducing indigence and improving income distribution as a

result of migrant remittances. The study also found that the impact of remittances on poverty levels in receiving households is much more extreme and that 64 percent of Salvadoran households receiving remittances in 2001 were lifted out of extreme poverty. The table below illustrates the findings of the ECLAC study. The authors of the study emphasize that as in most remittances studies, the results in actuality are probably much more pronounced due to largely underreported remittance dollars received by households across Latin America through informal transfers, which means the number of persons potentially helped out of poverty may be much higher. An important issue regarding the official poverty statistics in El Salvador is the quantitative method of calculating the numbers, and the accuracy of the variables, such as the cost of the basic basket of goods, that are used to calculate poverty levels. This will be discussed further below in the data and methods section.

Table 1: Impact of remittances on indigence rates in Central American countries

COUNTRY	YEAR	INDIGENCE WITHOUT REMITTANCES (PERCENT)	INDIGENCE WITH REMITTANCES (PERCENT)	ABSOLUTE VARIATION
EL SALVADOR	2001	27.5	22.1	-5.4
GUATEMALA	2002	33	30.9	-2.1
HONDURAS	2002	55.9	54.5	-1.4
NICARAGUA	2001	44.5	42.5	-2

Source: Economic Commission for Latin America and the Caribbean (ECLAC)

History of Transnational Migration from El Salvador

Throughout most of El Salvador's history of migration preceding the 1970's, the movement of people out of the country had been confined to other Central American countries, most notably Honduras and Nicaragua. In the 1930's and 1940's more than 60,000 Salvadorans moved to Honduras, usually with family members to live and work, with the United Fruit Company employing a large number of these migrants (Winschuh, 1997 as cited in UNDP). Before what became known as the "Football War" broke out between El Salvador and Honduras in 1969, there were an estimated 300,000 undocumented Salvadorans living in Honduras, most of them as subsistence farmers that had been forced off their lands in El Salvador in part due to the growing cotton industry. There were tense relations between the two nations in the years leading up to the short-lived war, in part created by a large economic disparity with Honduras lagging behind and also the overflowing population of El Salvador infringing on Honduras's border. The result of the war included the expulsion of over 115,000 Salvadoran "squatters", which turned the tide of transnational migration from El Salvador northward, towards Mexico and mainly the United States.

Before the Football War, which ruptured the Central American Common market hurting the economies of both countries, and the large wave of out-migration due to the Salvadoran Civil War, there was a significant migratory flow of Salvadorans during World War II. This flow of migration beginning in 1940 was to two primary destinations—Panama, which was a vital transit hub for goods, food and arms for the United States and its allies, creating demand for unskilled laborers from neighboring countries (Winschuh, 1997 as cited in UNDP), and the United States where the demand

for unskilled workers in factories was high to replace the high quantities of workers who were now at war.

During the Civil War of El Salvador beginning in 1979, the emigration rate accelerated rapidly, and by 1981 the number of migrants to the United States had grown to 46 per 1,000 of the Salvadoran population, more than eleven times the level only six years before that. At that time there was heated debate at the highest levels of government in the United States as to the true causes for this wave of migration, with the government largely arguing that it was for economic gain while the academic community and human rights organizations supported the idea that they were mostly fleeing political violence, and this sector argued for refugee status for Salvadoran migrants. The Civil War, which resulted in the death of more than 70,000 Salvadorans, also took a severe toll on the nation's infrastructure, such as bridges, roads, hydro-electric dams and telecommunications. Many villages were economically set back virtually decades while the psychological and emotional toll of the war weighed down heavily on the population. In Cabañas, one of the departments most reliant upon migrant remittances, the armed conflict and mass emigration of the 1980's led to the collapse of the local agricultural cotton-export economy, setting the stage for future waves of migration out of the country.

During the 1990's in the years after the Civil War, which officially ended with the signing of the Peace Accords in 1992, the number of Salvadorans in the U.S. rose from between 70% and 80% (Yang, 2003). The number of transnational migrants and in turn the amount of remittance income received by households varies significantly across the country, with the highest level of remittances arriving in the eastern department of La Unión, with 47.5% of the population reporting to be receiving remittances and the least

amount in the central and western departments with only 14% of the population receiving remittances in Cuscatlán and Ahuachapán according to the 2004 household surveys.

Another contributing factor to Salvadoran migrants deciding to leave the country, rather than migrating internally, for example from rural to urban areas, is the tremendous growth in population density within El Salvador, from 68 persons per kilometer in 1930 to nearly 330 in 2005 (Rivera Funes, 2003), leading to increased competition for sparse jobs.

A migration timeline for the current Salvadoran population living in the United States updated until the year 2000, suggests that more than fifty percent of Salvadoran migrants arrived during the decade of the 1980's and more than thirty percent more recently transplanted during the 1990's. The offspring of migrants that were born in the United States and therefore U.S. citizens are considered by many researchers to be part of the transnational migrant community, and depending upon a variety of factors within the household this growing number of individuals may also contribute to remittance income for family members living in El Salvador, though typically this category of migrants tends to contribute less remittance income. According to researchers, (Rivera Funes, 2003). Salvadoran migrants in the U.S. tend to speak Spanish in their homes, a trend which has slightly decreased from 97.5% in 1980 to 94.6% in 2000, but as migrants continue to spread out to new regions and communities across the country and also stay in the United States for longer periods of time, this trend will probably decrease further. The state of California, which is home to the highest percentage of the population Salvadoran migrants in the U.S., also has experienced the most dramatic decrease in growth in terms of percent of the population. In 1980, 72.4 percent of Salvadoran

migrants in the country lived in California, with New York the second largest migrant community with 10.6 percent of the Salvadoran population with a large number of states having no Salvadoran population at all, at least as far as official statistics are concerned. During the following twenty years, Salvadoran migrants continued to spread out across the country to many different states, taking advantage of demand for labor and also using contacts of friends and family members to help new migrants find work and build a sense of community abroad. According to El Salvador's Ministry of Foreign Relations statistics, there are more than 400,000 Salvadorans living in the New York City/New Jersey region and more than 800,000 Salvadorans in the city of Los Angeles. These numbers include American-born Salvadorans as well, meaning not all of these individuals are themselves considered migrants. While the United States is not the only destination for Salvadoran migrants leaving the country, it is the most common destination and the most important economic generator of the migrant remittances that make up nearly one-fifth of the Gross Domestic Product of El Salvador. Nations such as Sweden, Canada, Australia and Spain are other destinations for Salvadoran migrants, with Sweden seeing a significant influx of middle-class professionals from El Salvador since 2001, when two severe earthquakes caused significant damage and losses in the small Central American nation, spurring on a new wave of migrants leaving the country.

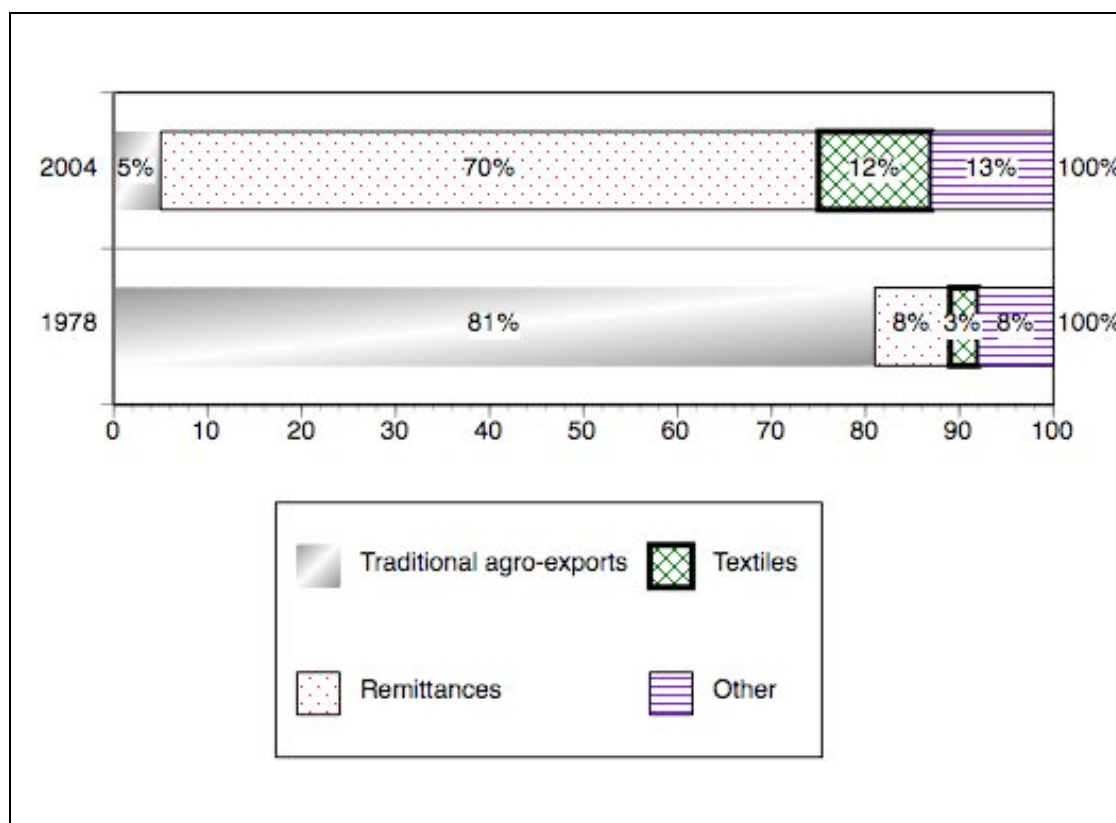
El Salvador's Employment Situation

From the time of the Peace Accords after El Salvador's civil war, the government has adopted macroeconomic policies modeled on "Washington Consensus" policies, including a trend towards deregulation, privatization and trade liberalization. The policy

shift has aroused passionate opposition by some political parties and citizens within El Salvador and by various non-governmental organizations in the country. El Salvador's unemployment rate over the past few years has been low by Latin American standards, at ten percent in 2003, but dropping to 6.5 % in 2004, a decrease of 35% and remaining steady thereafter. El Salvador's labor force was comprised of approximately 2.8 million people in 2004. In comparison, the unemployment rate in Honduras is above 25% and countries such as Brazil, Argentina and even Chile have higher unemployment rates than El Salvador. Interestingly Nicaragua has a very low official unemployment rate of 3.8%, but one of the highest rates of underemployment worldwide, in addition to one of the lowest levels of per capita income and highest income distribution (CIA World Factbook). A closer look at the employment picture in El Salvador, including struggling sectors and the population demographic that is unemployed, reveals some prevalent problems. Among these are growth in sub-employment and employment in the informal sector and a deterioration in the quality of jobs that are being created. Two sectors in which unemployment levels worsened included construction, due to a slowing down of earthquake reconstruction from the 2001 earthquakes and industrial manufacturing, which has been attributed to Chinese competition in the machinery sector in the United States market and also increased competition in the textile sector with other Central American and Caribbean countries. The Salvadoran industry that has been plagued to most by unemployment is the farming and agricultural sector, and while there has been some decrease in the unemployment levels in agriculture, it continues to be the sector with the highest levels of unemployment (FUNDE, 2005). Over the previous half a century the proportion of GDP comprised of the agricultural sector has decreased from 34

percent in 1960 to only nine percent in 2004. This decline compounded by a drop in real wages has lead to significant increase in underemployment in El Salvador (Gammage, 2007). The figure below, based on information from the UNDP report (2005) clearly illustrates the dramatic shift in sources of foreign income in El Salvador over the twenty-six year period from 1978 to 2004, with remittance income significantly displacing more traditional agricultural exports, such as coffee.

Figure 4: Changes in sources of foreign income in El Salvador, 1978 & 2004



Source: UNDP, 2005

Another characteristic of the current employment situation reveals that an increasing number of higher-level workers who are educated are finding themselves

among the ranks of the unemployed, which is not a good sign for the future. In 1994, the level of unemployed workers who had no formal schooling accounted for 22.1% of the unemployed, but the percentage declined to 15.1% in 2004. At the same time the percentage of the unemployed consisting of educated workers with at least thirteen years of schooling grew from 6% in 1994 to over 10% a decade later. This trend along with other economic indicators is a sign that those jobs that the economy is creating do not require formal education or training, which in turn can be a disincentive for young people to achieve higher levels of education if there are few or limited career opportunities.

Another phenomenon within the labor market is that the unemployment level for females is less than that for males, which has been attributed to the growth in lower level jobs that are accessible to female workers, such as in the commercial, hotel and restaurant sectors and the manufacturing sector, especially in textiles (Brown, 2002). There is also a growing number of workers who are not receiving their social security benefits over the past decade, pointing to the deeper problems inherent to laborers in El Salvador. Labor union participation has not grown in the last decade, and many workers report that they feel pressured by their employers not to unionize. While there are laws and protections for workers on the books, in reality, much of the laws and policies are not enforced. According to a study published by the El Salvador Labor Ministry and financed by USAID, treatment of workers in the maquila industry, an important sector of the economy, is very poor. Violations from lack of safety gear to forced overtime with no pay to a systematic effort to block unionization are abundant. The report also cited widespread corruption of labor inspectors, which affects industries outside of the clothing manufacturers or maquilas. All of these issues in the labor market of El Salvador and in

other developing nations, in addition to the pull factor of cheaper labor demand in receiving countries, help contribute to migration of populations to find work abroad, thus maintaining the cycle of migration and remittances.

Profile of Salvadoran migrants and remittance-receiving households

When exploring the impacts of migration and remittances on developing nations, it is important to understand the characteristics of the average people leaving the country to seek opportunities elsewhere, since the drain of skills, knowledge and human capital that results from migration varies in different countries, depending on the collective group of migrants. Over these decades of increased migration from El Salvador, the motivation for individuals leaving their country and families and friends to seek a new life in the United States and elsewhere has evolved, and the typical profile or average characteristics of individual migrants from has also changed over time. Currently Salvadoran migrants are much more likely to have a high school degree at 41.7 percent of the population compared with only 19.6 percent of the population in El Salvador. Some of this disparity is attributable to the fact that most migrants are concentrated in the working age groups between ages 20 and 49, and younger people tend to have higher levels of education than the older population. As a growing proportion of this age group leaves the country, the age demographics of the remaining population shifts accordingly. As the number of Salvadoran migrants living and forming new communities in the United States increases, the sense of community and the strength of support networks provide an incentive for continued migration, as family members and friends help others to make the transition to living and working in the U.S.

According to the U.S. census figures from 2000 (Yang, 2003), the majority of Salvadorans in the United States are between 20 and 29 years old. This group makes up 30 percent of the Salvadoran population in the U.S., while 28 percent of the Salvadoran-born population in the U.S. are in their 30's and another 19 percent in their 40's. In contrast, in the general population of El Salvador, these three age groups combined make up only 30 percent of the country's population. Using this comparison alone, it is clear that a significant portion of the working age population is living outside of El Salvador, which could have positive effects on employment as a result of decreasing local competition for jobs, but also negative impacts on labor supply, due to the decrease in numbers and diversity of the economically active population. In addition, the educational makeup of the Salvadoran-born population aged 25 and older living in the United States varies significantly from that of the population of the same age in El Salvador. In the U.S., Salvadorans are more educated, with nearly double the percentage of high school graduates, three times as many individuals with some college and nearly double the amount of individuals with bachelor's degrees. The higher educated subgroup with a B.A. or higher degree living in the United States garners much higher salaries than Salvadorans with less education, with over 25 percent making \$50,000 per year or more (Yang, 2003). Figures 5 and 6 on the following page illustrate this discrepancy in education levels for Salvadorans in the country and those in the U.S.

Figure 5: Education attained by individuals 25 and up: Salvadoran-born in U.S.

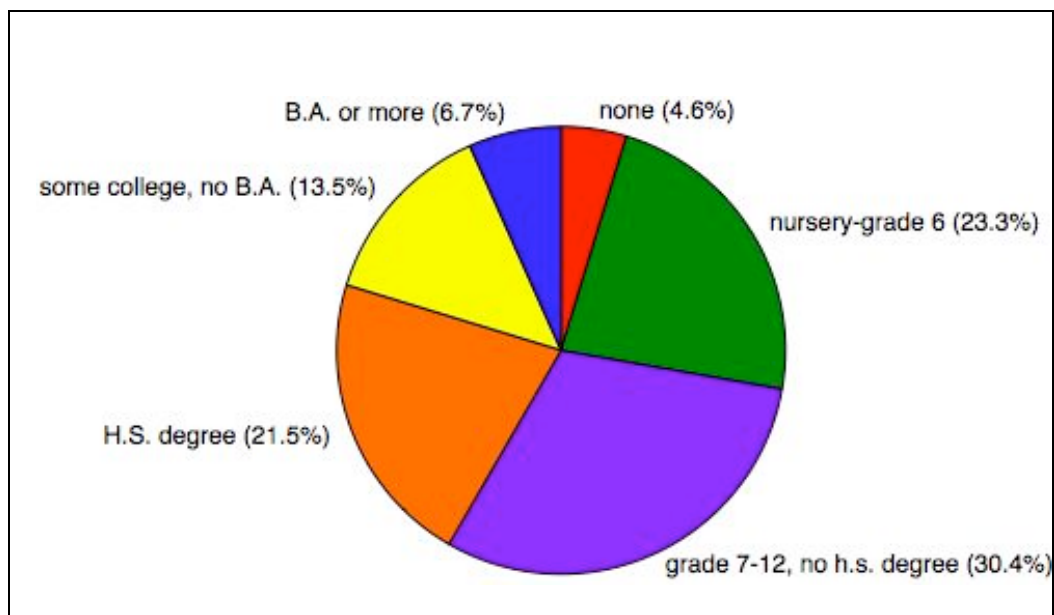
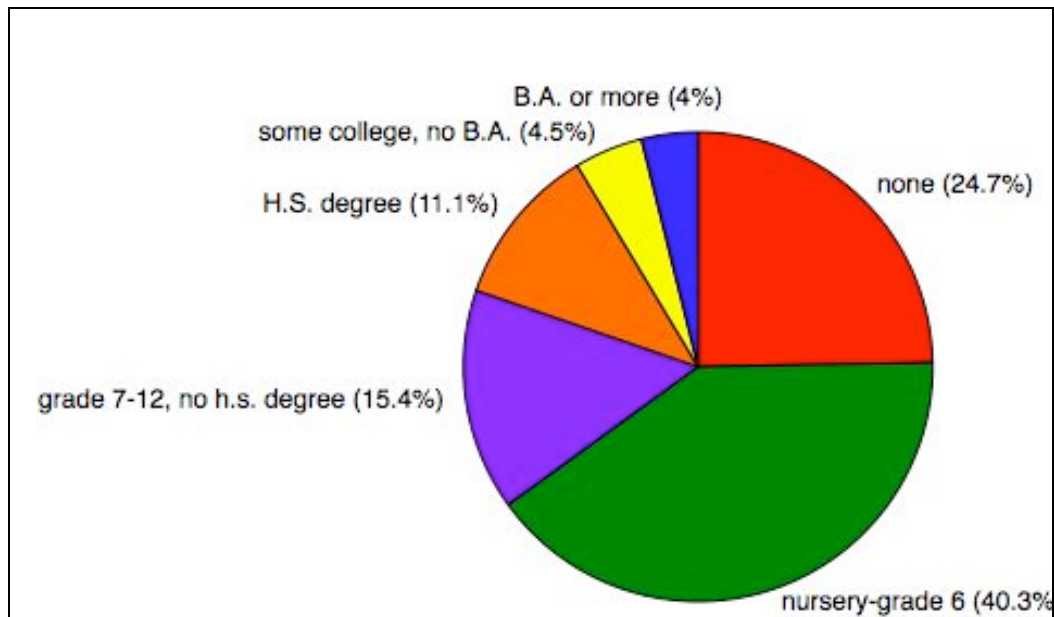


Figure 6: Education attained by individuals 25 and up: Salvadorans in El Salvador



Source: 2000 U.S. Census and 2001 EHPM El Salvador (as cited in Yang, 2003)

Human Trafficking

While research in the field of international migration tends to be focused on labor, remittances and the economic and sociological stimuli and ramifications of the phenomenon, there is also a human rights aspect that deserves exploration in a full examination of the topic of migration. According to the U.S. State Department and various organizations dealing with migration and human rights (Country Reports on Human Rights Practices, 2006), El Salvador is an important link in the cycle of human trafficking that occurs in the region. It is both a destination and a corridor for women and young girls being trafficked in from neighboring Nicaragua and Honduras and also South America. Females in El Salvador are also victims of human traffickers, forced into mainly the sex trade, but also to a lesser degree forced labor. International organizations such as the ILO, report that girls are sexually exploited in various urban locations around El Salvador, including San Salvador and San Miguel.

While the Salvadoran government has been slow to make real strides to fight this type of criminal activity and help the unfortunate victims, there have been incremental efforts to deal with this type of criminal activity, including the creation of the first shelter in the Central American region for victims of trafficking, which was a joint venture of the Salvadoran government with the International Organization for Migration, an increased effort to target and prosecute the criminals involved in human trafficking and to enforce legislation protecting the rights of victims (Gammage, 2007). In 2004, new anti-trafficking legislation was enacted, classifying trafficking as a felony. The Salvadoran government has partnered closely with the ILO's International Program to Eliminate the Worst Forms of Child Labor (IPEC) to deal with child labor issues and especially

exploited sex workers under eighteen years old. In addition, in recent years the government has also partnered with UNICEF to start a radio campaign educating families about the dangers of the human trade, inherent to the process of migration, particularly the dangers of trying to smuggle children and even infants outside of the country.

Human trafficking is a global problem with well over a million victims annually, according to ILO statistics, and individuals in the process of migrating always run the risk of being targeted and exploited by human traffickers. Some groups, such as children migrating alone or adult migrants who are very poor and inexperienced are more likely to fall prey to human traffickers. It is important to include this topic in the literature on migration and migrant remittances, since there is always a risk of human rights violations of migrating individuals, which is a cost of migration that cannot be weighed in terms of dollars and cents, and mention of the lives that are destroyed or damaged, the criminals who get away with exploiting them and the alarming growth of the global cycle of human trafficking, all seem to be conspicuously absent or understated in much of the literature on global migration.

Chapter II: Review of the Literature

There has been a significant increase in the interest paid to migrant remittances by both scholars and policy-makers over the past fifteen years, as more and more countries around the globe are experiencing the impact of migration both as migrant-receiving and migrant-sending countries. The research on global migration and the earnings, known as remittances, that migrants send back to their home countries is prolific, and there are myriad published studies on remittance flows, their effects on economies, and the benefits and downside of the growing dependence of many developing nations on remittances from the U.S. and other industrialized nations. There are two general schools of thought on the value of remittances as a national source of income, with the more favorable opinion held by economists and the more critical attitude by researchers in the fields of anthropology and sociology. While remittance literature in the field of economics tends to highlight impacts such as GDP growth, decreased poverty levels and improved credit in the developing nations receiving remittances, much of the research from the anthropological and sociological viewpoint tends to stress the hardship migration can cause to families and communities, the loss of cultural identity of the migrants themselves, and the dangers of the psychological dependence on migrant remittances, among other issues. While this dissertation does not seek to make a value judgment in terms of weighing the positives and negatives of migration and remittance dependency, it is applicable to summarize the literature on this issue to provide a broad framework for this research.

A relevant study to start with examines the consequences of migrant remittances in Mexican transnational communities that focuses on the positive aspect of “migra-

dollars” on receiving communities and the reinvestment strategies and effects they have on decision-making and other household issues. On the positive side, Conway and Cohen (1998) characterize remittance investment as having a set of progressive effects on the micro-scale household level partly as a result of evolving transnational network communities and the increasing use of remittances for diversified investments and development instead of immediate consumption, which differs from the conclusions of many researchers who find to be the primary source of remittance spending. Much of the economic research points out that the reliance on remittances in a sense helps decrease the volatility of economic downturns in the receiving country. There are also concrete examples on the positive effects of remittances on investment in receiving countries such as Mexico and to a lesser effect El Salvador, where remittances have financed the building of schools, clinics, and other infrastructure (Meyers, 1998). Other benefits include easing foreign exchange constraints, improving income distribution, and providing a potential, but often untapped, source of savings and investment.

Another remittance study specific to El Salvador (Hernandez & Coutin, 2006), looks at migrant remittances as a cost-free source of national income from the perspective of central banks and international financial institutions due to the nature of the inflow of this source of income earned in foreign countries, primarily the U.S. This study examines how the academic research, the public discourse and state accounting practices interact to produce and reveal the nature of the phenomenon of the flow of migrant remittances from the U.S. to El Salvador. In the process, the writers elaborate on the “cost-free” aspect of remittances in terms of the individuals receiving them, and find that there are potential negative implications on employment and entrepreneurship, self-

sufficiency and personal empowerment, which can be related to a cycle of dependency and inertia on the part of recipients in terms of labor force participation. Other opinions relating accounting practices and remittances on from the remittance sending country perspective, such as that of the United States, discuss whether remittance dollars should be counted in the foreign aid statistics and also efforts to tax remittance earnings to make up for lost revenues.

The importance of remittances has also been examined empirically in terms of its impact on poverty. A study using data from 74 low and middle-income developing countries found that international migration has a strong statistical impact on reducing poverty, specifically finding that on average, a ten percent increase in the share of international migrants in a country's population will lead to nearly a two percent decline in the share of people living in poverty (Adams and Page, 2005). Their methodology used data on poverty, remittances and migration from low and middle-income countries from each major region of the developing world. The authors noted that it is extremely difficult to get accurate data on international migrants, since many of the migrant-sending countries have different methodologies and capabilities in terms of collecting and recording data, and that they used data from the two major labor-receiving regions of the United States and Europe, that record countries of origin of residents in the national census surveys. They also point out the weaknesses in the international data on remittances, which in this case was derived from IMF statistics, since they only account for remittance dollars sent through official channels, which grossly underestimates actual flows. The econometric modeling using a poverty-growth model, found a significant impact that remittances and migration have on poverty worldwide. This and other similar

studies provide statistical evidence that international remittances can help to reduce poverty and they tend to minimize the negative effects of economic shocks or downturns in an economy.

On the other side of the argument, much of the remittance literature argues that to a great degree, remittances are used for immediate subsistence needs of households, including food, clothing and health care, and next on housing, buying land or cattle and consumer goods such as electronics and appliances. While this in itself is not a negative result, the literature generally asserts that only a small percentage of remittances is spent on savings and productive investments leading to any sustainable domestic-driven growth. Also as a result of the migration, families are often separated, children may be raised by a single parent or grandparent, and there are a number of other potentially negative sociological affects. Many researchers in the field find that the attention of central governments in remittance-receiving countries becomes too focused on relations with the U.S. or other migrant-receiving country and managing the flow of remittances, to the detriment of local social initiatives, grass roots economic development and national production and productivity. In many cases the inflow of funds creates dependence among recipients, decreasing the reliability of the local workforce (Martin, 2001). Other negative consequences include that remittances may be unpredictable, that they are often spent on imports rather than domestically produced products, and that they create envy or resentment and competitive spending among non-migrants.

While many studies focus on the decisions to remit or on how to spend remittances as an individual decision or household decision, some researchers view the process as more of a collective or a societal issue. Two scholars (Azam & Gubert, 2006)

who focus on migration from African countries described the phenomenon of migration as the strategic choice of communities and nations to “send its best offspring away with a view to diversify its risks and to build a social network.” From this perspective migration cannot be understood as an individual decision, but can instead be regarded as a collective decision made by the extended family or the village, aimed at supplementing the family's and the community's consumption in case of adverse shock. As in other scholarly research, the authors characterized remittances as a type of insurance system, but they warned that there is some “moral hazard” to the migration and remittance cycle, since non-migrants who are benefiting from remittances, may be inclined to exert less effort to take care of themselves, knowing that the migrants are likely to make up for income shortfalls. The authors, who focused primarily on Mali and Senegal in this study, concluded that rich families are more likely to send some migrants abroad with the goal of generating more remittances, while the same families' earnings within the community will decrease because of moral hazard.

Overall, looking at remittances and migration from the perspective of a cost-benefit analysis, the body of literature sends a mixed message. Empirical studies, more of which are needed, tend to vary from study to study and from country to country. There is some agreement that increased remittance income can help to increase the living standard of poor families who are beneficiaries, but there is very little evidence or research to determine if these benefits transcend the remittance-receiving households to have wider impacts on the community. This dissertation seeks to address this hole in the literature by trying to identify the relationship between per capita remittances and penetration of remittances within the community to the quality of life variables chosen

for the various models in order to gain a perspective of the impacts of remittances at a larger community-wide level.

Characteristics of Migrants

It is important to have a solid understanding of the characteristics of the majority of El Salvador's migrants and the families benefiting from their earnings, because this will have a significant impact on the wider effects that their remittances will have on the nation as a whole. A number of relevant studies seek to examine the characteristics of the migrants leaving El Salvador, including economic status, gender, age and level of education, and the varied impacts that different types of migrants leaving their homeland, have on the sending country. There are some inconsistencies among researchers on Salvadoran migration about who the majority of beneficiaries of migrant remittances are. A study by economist Dean Yang (2003) asserted that most Salvadoran migrants tend to come from more disadvantaged Salvadoran households, specifically those with less-educated heads and those in rural areas, which would lead to the conclusion that perhaps this type of migration and the remittances sent back by these migrants would disproportionately benefit poor and economically disadvantaged Salvadoran families. However, the significant financial cost of getting to the United States illegally may be insurmountable for individuals facing extreme poverty. Another study summarized a number of studies that provide evidence on both sides of the poverty argument, including a study from India by Lipton (as cited in Adams and Page, 2005) that found that remittances tend to increase rural inequalities in 40 villages in India and another study by Stahl that detailed the great expense associated with international migration, that would

be a barrier for the poorest households. They also found that the available research on remittances and poverty is not adequate, mainly due to small sample sizes, either in number of households or in number of villages, that make it difficult to apply findings to other regions and even to a population in the same country.

The subject of brain drain is usually among the negative impacts cited by researchers created by transnational migration. If the current unemployment trends continue, with the growing proportion of educated Salvadorans who are unemployed, brain drain is bound to remain a problem. Some researchers have used the idea of a “brain gain” rather than a “brain drain” if the majority of migrants leaving a country tend to be less well-educated typically from the lower economic classes, and if the remittances sent home have a positive impact on the education of the recipients, most often for children or other family members of the migrant. This type of investment in education can be a form of sustainable development of human capital, especially if coupled with improved employment opportunities for educated citizens in their country of origin, which has not been the case in El Salvador in recent years. Further evidence for productive investment of remittances, not only on education but also on housing and entrepreneurship, both of which can produce multiplier effects on the wider community, is provided in a working paper for the World Bank (as cited in Ratha, 2008), that used global data to create econometric models in order to observe general patterns in the effect of remittances on countries.

A study of Cuba, which clearly has many unique characteristics from El Salvador as a migrant-sending country, provides some insight into differing perspectives from Yang’s assertion that migration disproportionately benefits the poor. A study by Sarah

Blue (2007) of the Northern Illinois University Department of Geography examined the impact of migrant remittances and access to the U.S. dollar on the disparity between rich and poor, on a growing racial divide in Cuba and on the enlargement of those living in extreme poverty. In an effort to explain such impacts, which seem to diverge from many other remittance studies, which mostly affirm that migrant remittances tend to help curb poverty levels, Blue examines the racially disproportionate nature of Cuban out-migration. According to census data, while the white population in Cuba is commonly estimated to be around 35 percent (with 65 percent black and mulatto), 84 percent of the more than one million Cubans in the United States considered themselves 'white'. The family reunification efforts helped by U.S. immigration policy for Cubans allowed the racial gap to become more dramatic. This disparity clearly affects the ethnicity of Cubans receiving remittance income, with non-whites, including black and mulatto Cubans on the losing end. Since there is racial separation in Cuba in different neighborhoods and regions, this disparity is likely to affect wider community services, such as health and education in these neighborhoods. Often these individuals and families may lack the financial means necessary to make it to the U.S. and find work, which eliminates the possibility for future remittance income for family members, which can lead to some upward mobility.

Another study examining remittances and racial differences by Lu and Treiman (2007) found that in South Africa the recipients of remittances are much more likely to be blacks, and as such the effects of remittance income would be the opposite of the impact in Cuba. The authors used two separate nationally representative cross-sectional data sets from nearly 40,000 households to observe the effect of remittances on a number of

variables at the household level over a ten-year time period. They found that since the majority of migrants from South Africa come from rural black households that are among the poorest households, remittances have the potential to reduce poverty, increase educational attainment, reduce racial and gender inequality. The legacy of apartheid in South Africa makes it a unique case study, and the authors found that while it no longer exists, that many institutional inequalities remain in areas such as access to schooling, as a result of an economic divide between blacks and other racial groups in South Africa.

While El Salvador does not have the racial diversity of Cuba and South Africa, which would be a necessary precursor to the potential for a growing racial divide based on migrant remittance income, it does have dramatic disparities in economic wealth, allowing for the possibility for a growing economic divide in the country as a result of remittance income. Based on personal observations, in El Salvador the poorest families I met could not even consider migrating, since the cost getting to the U.S. illegally, is usually a minimum of \$5,000 (Davis, 2006) and without the resources or relatives to provide a loan, it is nearly impossible to be in a position to migrate. In the town of Llano Largo, located Cabañas, the poorest department of El Salvador, day laborers could earn as little as \$4 to \$5 a day for physically demanding agricultural or construction work, which helps to put into perspective the difficulty of saving \$5000 to pay for illegal passage to the United States, which in no way guarantees successful or safe arrival in the country. The cost, as well as the severe risks involved in the migration process are two large obstacles for many people considering the option. This observation is supported by a University of California Davis study (Taylor & Fletcher, 1999) that articulates two opposing economic viewpoints on remittances. On the negative side, the authors attribute

possible decreases in local productivity due to “Dutch disease” and the elimination of human capital from communities as able-bodied individuals choose to migrate. They also point out that due to the high cost and risk involved that members of the poorest economic classes may be excluded from migration, since they cannot afford it, and that this coupled with the decrease in local productivity especially in agriculture may have an even more dramatic impact on the rural poor. A more recent study (Acosta, Lartey & Mandelman, 2007) focusing specifically on Dutch disease, remittances and El Salvador concluded that remittances do indeed have a Dutch disease effect on El Salvador. While Dutch disease is typically associated with deindustrialization of a national economy spurred on by currency appreciation due to the discovery of a natural resource, several economists argue that the similar effects are created by remittances. Using a dynamic stochastic general equilibrium, this study found that the inflow of foreign currency in the form of remittances results in currency appreciation and a decrease in global competitiveness. This results from a decreased labor supply, increased consumption demand and thus price of nontradables, leading to an increase in the nontradable sector and a reallocation of labor and production away from tradables, thus decreasing exports.

The cost benefit analysis on remittances is a very common theme throughout the literature, but not as relevant for policy recommendations as the research that takes the discussion to the next step, really studying the individuals and the wider communities of those involved in the process. One of first comprehensive studies on the impact of remittance flows to El Salvador was published by a Jesuit priest and researcher for the Universidad Centroamericana (UCA), Segundo Montes (1987) and included a comprehensive survey of 1,287 households detailing information about familial

relationships, year of emigration, labor market status in the U.S., living arrangement and legal status in the U.S. and the amount of remittances sent back to El Salvador. The results of his studies and further analyses, and studies by other researchers provide a body of knowledge on the motivations behind leaving El Salvador for the U.S. in search of labor opportunities, and also motivation for sending a portion of their wages back to their home country. In his studies, Montes found that the length of time spent in the migrants' host country was one of the most important factors influencing the amount of earnings sent back to the home country and that the amount tended to be lower in the first year, due to difficulties adjusting and finding work and a place of residence, followed by a rapid increase in amount of remittances over the next few years to a gradual decrease after that period. Montes's research was very forward thinking as a leader for social justice and as a researcher, as his studies preceded the body of literature on migration and remittances though he dealt mostly with migrants who were refugees of the civil war.

According to Puri and Ritzema (1999), in addition to length of time in the host country, other factors that play an important role in determining the frequency, method and amount of remittances sent by migrants include marital status, exchange rates, economic activity in host and home countries, wage rates, level of education of migrants, whether migrants are accompanied by dependents, facilities for transferring funds and political risk. In addition, the economic situation in the host country is an important determining factor since migrant workers can only send earnings, if they are employed. With the current economic downturn in the U.S. economy specifically the housing market, many migrant workers concentrated in the construction industry are facing significant losses, which impacts their families and home country economies as well.

This is another sign that the cycle of migration and remittances has its limits, and should not be viewed as a sustainable source of family and national income, no matter how positive the impacts on households and communities may be, since there are no guarantees of growth and supply of this income.

Global relations

Other studies look at the characteristics of remittances in the context of globalization and economic integration. Most country analyses of the levels of a nation's economic integration especially on a global scale focus on trade and investment but often overlook labor, thus having negative implications for economic policy-making and development, since these studies often ignore labor as a significant indicator (Orozco, 2002a). The relationship between development and migration or movement of people, and the resulting effects of economic ties between diasporas and home country economies, households and the business sector, are becoming more relevant for development policy. According to Manuel Orozco's case study on innovations and policy options in Latin American rural finance (2003), the demand for financial services by remittance receiving households represents the intersection between the role of micro-finance institutions, such as credit unions, and rural sector development. He also addresses the new policy opportunities that remittances bring to rural areas where migration has taken place, since the connection of poor households to potential investments by family members abroad offer the opportunity for economic growth in areas often neglected by both the public and private sectors. Since a significant portion of remittance dollars are destined for rural areas of El Salvador, policies aimed at

increasing banking opportunities, which are fairly uncommon in rural El Salvador, are one way governments could promote savings and investment, a more sustainable use of remittances.

There are some, now slightly outdated studies examining the rationality of remittance expenditures in receiving countries. According to a study by the Economic Commission for Latin America and the Caribbean (ECLAC) that used data from 1991 national census (as cited in Meyers, 1998), in El Salvador families used about 68% of their income for short-term consumption, regardless if it was remittance income or not. But the amount of savings allocation, six percent in families receiving remittances, was significantly higher than in other families. Thus, the migrants should be expected to adjust their allocation of resources only if conditions are created to make productive investment more viable, and many researches in the field believe that centralized policies advocating such investment decisions are needed in addition to finding new ways to educate households about savings and investment options for remittance income. In a larger context, in several countries of Central America the growing dominance of remittance flows over historic exports like coffee in El Salvador and bananas in Honduras, is creating a macroeconomic shift from “agro-exporting economies” toward “transnationally-integrated households” that are mainly exporting labor to the United States (Agunias, 2006). As mentioned previously this could have negative impacts on local productivity most severely affecting households not benefiting from remittances, who are more dependent on local economic opportunities for survival.

Another viewpoint from which to examine the dynamics of migration and remittances is that of the political economy of development. A study by Wise and

Covarrubias (2007) that gives consideration to three interrelated dimensions of global migration, including regional economic integration, national development models and social agents, used Mexican experiences as reference points and determined that current public policy in migrant-sending countries falls far short of dealing with the reality of dependence on remittances and the socioeconomic effects of migration and remittances. They also note the contributions that migrants make not only to their home country economies but also in the host country economy, even if they are considered illegal immigrants. They attribute inadequate policies in migrant-sending countries, specifically in Mexico, that do little or nothing to address the growing asymmetries between host and home country economies, to the wider political agenda and rhetoric of institutions like World Bank and IMF that promote remittances for their development potential and tend to overlook the potential hardship on migrants themselves and their families and other negative ramification of migration.

Taking a look at remittances from a different angle, a team of researchers from the University of California Los Angeles and PRISMA, a Salvadoran non-governmental organization, conducted a study (Hecht, 2006), which focused on the relationship between development and the environment and addressed the connection between migration, remittances and the environment, topics that are not very common in the literature in this field. The research findings support the hypothesis that globalization in some contexts, can help to promote forest recovery, which is an exception to the largely accepted belief that globalization mainly has a degrading effect on the world's forests and other natural resources. The study specifically honed in on transnational migration and remittances, both a stimulus and result of economic globalization, as one of the drivers of

reforestation in parts of El Salvador. The author attributed the findings of the positive impact on reforestation in the country to a variety of factors, including the movement of people in general from rural to urban areas from the time of the Civil War, and the increasing migration of Salvadorans out of the country from rural areas, which have allowed some land to naturally convert back to forest from farmland. Remittance income also may help many families to meet their immediate food consumption needs without having to cultivate their own crops and corn, which would eliminate the need to clear trees and forestland to cultivate corn and also eliminate the environmentally damaging slash and burn agricultural technique common in rural El Salvador. In addition, remittance income allows a greater number of families to buy modern appliances such as stoves and also to pay for gas to cook, which would greatly reduce the need for firewood for cooking. The author criticized much of the environmental literature on El Salvador for underestimating the biodiversity that exists in the country and exaggerating the extent of deforestation and environmental degradation. Through satellite photo technology, scientists and environmentalists have evidence that much of El Salvador's forests are in the process of growing back and replenishing themselves.

Another area of research within the field of remittances and transnational migration involves the study of Hometown Associations (HTA's), which can be characterized as a "collective migrant" (Wise & Covarrubias, 2003). According to Manuel Orozco (2005), there are approximately 200 Salvadoran HTA's in the United States with the majority in California and a significant number in the Washington D.C. area and also the New York/New Jersey region. These associations of collective migrants are more powerful than individual remitters because they are well-organized,

have pooled resources, and they focus their efforts on projects that tend to benefit the wider community and not just individual families or households. Community-wide health and education projects are the most common types of projects supported by Salvadoran HTA's, but small infrastructure projects such as paving roads, building bridges or community centers are also supported by HTA's. While the reach of HTA remittances are more powerful than individual remittances, in that they affect the wider community, Orozco noted that most Salvadoran HTA's have a partnership with a specific beneficiary community in El Salvador usually the community of origin for the specific HTA's members, which leads to a disproportionate aid in different regions of the country depending on the number of migrants, which varies significantly by region. Another limiting factor to the potential impact of HTA's on local development is that only a very small percentage of Salvadoran migrants living in the United States, actually belong to one, since the majority of migrants tend to remit directly to family members or other close relatives or friends of their choice (Cortina & de la Garza, 2004). This may be that they do not trust that they will be used efficiently by the HTA or that their family members are more in need of immediate financial assistance.

Some common themes revealed in reviewing the literature on remittances and migration include recommendations for several areas for further study including engaging in more in-depth studies on senders and recipients of remittances, examining the broader sociological factors such as class relations, gender roles, political participation, demand for governmental services, the shape of national development policies, and the international relations between the two countries involved. In addition, although there is much anecdotal evidence cited in newspaper articles, small-scale studies and migration-

related websites, there are relatively few comprehensive empirical studies addressing the effects of remittances on receiving individuals' decisions regarding education, labor force participation and other important factors, which this study will seek to address.

In addition, a newer area of remittance research focuses on the importance of microfinance institutions in helping to formalize the flow of unrecorded or unofficial remittance flows. Without the formalization of the process, the likelihood for sustainable investment of remittance income is diminished. In a working paper for the International Labour Organization (ILO), a United Nations specialized agency headquartered in Geneva, Puri and Ritzema (1999) affirmed the central role that migrant remittances play in the work of the ILO on micro-finance, and recommend that due to the lack of suitable financial institutions that can capture and manage such payments safely and cost-efficiently, new micro-finance institutions should be created and encouraged by governments to fill this gap in the institutional landscape that is negatively impacting migrant-sending countries. In some parts of the world where remittances are more likely to flow through unofficial channels, such as in certain countries of Africa, this need for greater penetration of banking and credit institutions is even more urgent, if any legitimate attempt to promote sustainable use of remittances is undertaken.

A recent World Bank study (Cartrinescu, Leon-Ledesma, Piracha & Quillin, 2006) notes that a weakness of many migration and remittance studies is that a vital variable is missing from most empirical studies, which is the effectiveness of the economic policies and institutions in the remittance-receiving countries to promote savings and investment of remittance income in order to contribute to longer-term growth. This is one of few studies that examine the this issue empirically by using six

different governance research indicators to determine the statistical relationship between a country's institutional capacity, remittances, and medium and long-term financial and economic growth. Another weakness of many remittances studies may occur when remittances are used in statistical analyses as an explanatory variable, without controlling for endogeneity in the regressions. According to a study by Taylor and Mora (2006) many regression analyses in the field of remittance studies are weakened by econometric bias...Empirical studies that try to statistically isolate the effects of migration on households, communities or at a macroeconomic level often have to use remittance data by default, simply because of its availability through internationally published data by World Bank, IMF and other organizations. While there are obvious weaknesses of using only remittance data, especially since most available data only captures money sent through formal channels, remittance flows tend to be the best metric for researchers to study the migration experience (Catrinescu, Leon-Ledesma, Piracha & Quillin, 2006).

The main research findings that this dissertation will provide are insights into the effect of migrant remittances on local development and well being in households and in communities. The specific variables and data will be described more fully in the Data and Methodology section, but the remaining portion of the literature review will briefly summarize some of the existing studies on the impact of remittances on several of the dependent variables that were used in the statistical analyses of this dissertation to provide a comparative framework from which to analyze the statistical results specific to the municipalities of El Salvador.

Remittances and Employment

The literature on the effect of remittances on unemployment in the remittance-receiving country is divided on whether remittance income has a positive or a negative effect on unemployment on the receiving end. Most researchers point out that there are a variety of circumstances that determine the effect of this temporary form of income on labor force participation, and that it is far from a uniform pattern among households and countries. A study that focused on the remittance-receiving countries of Eastern Europe by research professors from the University of Kent (León-Ledesma & Piracha, 2001), concluded that there are two opposing effects that remittances may have on the migrant source country. The first is a type of welfare effect having a negative impact on employment spurring unemployment to rise, which is caused when remittance income becomes more profitable dollar for dollar than local wage income, especially after factoring in other variables like income tax. The opposing effect is when remittances have a positive impact on opportunities for investment in the migrant source countries, by increasing the capital stock available for local investment and entrepreneurial ventures as remittances reduce the receivers' credit constraints. The authors characterize this conflicting relationship as the search income effect versus the investment effect. The latter force may often be underestimated in the research, which tends to focus on the first round effects of remittance spending which does not take into account the possible multiplier effects of such income on a wider level including effect on labor-force participation outside of the remittance-receiving household, for example if local small business initiatives employ community members who are not directly receiving remittances and patronize other local businesses as part of the supply chain. In their study for the World Bank, Fajnzylber and Lopez (2007) described the "substitution

effect” that occurs as continued migration reduces the local labor supply, which drives up local wages, and induces increased labor force participation when these higher wages are available.

Another recent study (Drinkwater, Levine & Lotti, 2003) on remittances and employment tested the validity of the search income versus investment effect of remittances by creating various econometric models using data from a number of developing country economies. Using a search-matching model, the researchers found that remittances have a small but insignificant negative effect on unemployment, and that this can be balanced by a simultaneous positive effect on investment by reducing the credit constraints faced by businesses, which led them to conclude that the two opposing effects of remittances tend to cancel each other out somewhat. A related study (Kugler, 2006) concluded that the overall effect of remittances on employment depends upon several other factors, including the accessibility and quality of education and the degree of labor market frictions in the remittance-receiving country. The study that focused on data from Colombia also pointed out that an important contributing factor to a positive or negative effect of remittances is whether or not other the other family members choose to migrate, which has the potential to spur on a brain drain or a brain gain.

A study on labor force participation in the Philippines (Rodriguez & Tiongson, 2001) used a combination of survey response data to conclude that in households, having a migrant abroad reduces the probability of working for men and even more dramatically for women and that as the amount of remittances increase, this probability is reduced further. One weakness of the study was that it focused almost solely on contract migrant workers, who tend to be migrants in the short-term, whose patterns of sending income to

family may vary from other migrants with other types of labor arrangements. Another study examining the impact of remittances on the formation of new businesses in the Dominican Republic (Amuedo-Dorantes & Pozo, 2004) concluded that remittances do not promote the formation of new businesses in this country. Instead they found business ownership to be directly associated to the household members' previous business experience, U.S. work experience, and level of education. The study used data from the Latin-American Migration Project derived from a series of household surveys in six different communities of the Dominican Republic, and the authors attributed their statistical findings from probit modeling to the fact that remittances increase the reservation wage of family members in receiving households in the Dominican Republic, and that oftentimes they may be used to finance leisure or current consumption in place of business ownership.

A study by Brown and Leevs (2007) used a two-stage methodology to determine the combined impact of migration and remittances on the general allocation of household income and the combined effects on different types of economic activity in households and in communities. In order to address the problem of endogeneity, which is an issue in many empirical analyses of remittances, the researchers adopted two approaches. First they attempted to construct instruments that were correlated to the endogenous regressor, but uncorrelated to the outcome variable, such as using predicted values of independent variables in this case, number of migrants per household, rather than actual number of migrants per household. The other method to control for the endogeneity problem that occurs since remittances are likely to have a joint or collective effect with other streams of income on household decisions, was to use a two-stage methodology that controls for

selectivity in the first stage and then using a series of remittance and income equations in the second stage. The statistical analyses in this dissertation do not control for endogeneity, but a more focused study on any one of the models of this research should incorporate econometric techniques to control for these problems and enhance the value of the statistical results.

Another area of growing interest in remittances literature focuses specifically on unrecorded remittance flows and the informal economic impact on remittance-receiving countries including the informal labor market. In their working paper for the International Labour Organization, Puri and Ritzema (2004) argued that that informal remittance flows make up much more than “pure leakages” of the total flow, and that they in fact make up the largest portion of remittance income transfers to migrants’ countries of origin. This hypothesis, which has been echoed by a number of researchers in the field, has spurred mathematicians and economists to try to devise different equations to more accurately estimate the true level of remittance flows around the world. Informal flows are most common in countries with fewer options for formal transfers, where banks and institutions tend to charge higher transaction fees or impose worse exchange rates on money transfers. While there are reasons that migrants choose to use informal channels for transfers, El Salvador does not face the exchange rate problems with remittances from the United States, since the US dollar has been the official currency since 2001, and it also has fairly competitive rates for remittance transactions, compared to other developing nations, due to the large number of competitors in the remittance transaction market in El Salvador. The first regression model targeting the unemployment rate at the household level was created to assess which of the two

opposing effects that remittances tend to have on employment and workforce participation described in the literature are occurring in El Salvador.

Remittances and Poverty

Many studies specific to the effect migrant remittances on poverty tend to concur that remittance income can help to alleviate the severity of poverty in recipient 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 recent study (Esquivel & Huerta-Pineda, 2006) 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. 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. Even this impact is significant, as it may improve nutrition, hygiene and other important factors in the household that can improve the well-being of family members.

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 (Fajnzylber & Humberto-Lopez, 2007) 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 stated 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. The authors also emphasized how more country-specific empirical studies are necessary since patterns of migration and remittances vary substantially among different migrant-sending countries. Since many studies focus on the potential of migrant remittances to reduce the severity of poverty as opposed to the idea of reducing the overall number of people in poverty, the second regression model was built using the level of extreme poverty as the independent variable to assess whether remittances are a statistically significant predictor of the level of extreme poverty in the different municipalities of El Salvador.

Remittances and Education

In another branch of the literature looking at the relationship between remittances and educational attainment and school retention, the opinions held by researchers in different fields and focused on different countries are even more mixed. A study on El Salvador published in the *Journal of Development Economics* (Cox Edwards & Ureta, 2003) strongly supports the hypothesis that migrant remittances have a very important positive effect on school retention, particularly in rural areas which tend to have higher levels of poverty. Their study used a data set from the 1997 Salvadoran national census that covered more than 8,000 families with national representation. They created profiles of each family, including type of housing, age, income, schooling of other family members, number of international migrants in the household and level of remittance income, in order to test their hypothesis that parents make schooling decisions based on expected rate of return for this investment. The study separated rural and urban

households, noting the large disparity in access and quality of education between the two groups. The authors also described the unique characteristics of education in El Salvador, including the recent expansion of private schools led by parents and also the expansion of public primary schools in rural areas also supported by parents, which were facilitated by the allocation of funds by the Ministry of Education. Using a series of models, including the Cox proportional hazard model, they were able to statistically isolate the effect of remittance income versus other streams of income and its correlation to school retention, finding that remittances, especially in rural areas, significantly lowers the likelihood or “hazard” of children leaving school, and that in El Salvador remittances have an effect on schooling at least ten times larger than other kinds of income. From a development standpoint, this finding is promising, since the increased investments in education contribute to human capital formation in the remittance receiving country, which makes it much more likely that remittances may benefit developing countries' long-term growth prospects. Another study on Mexico by Lopez-Cordova supports the theory that increased amount of remittances as well a greater proportion of households receiving remittances is correlated to decreased child illiteracy and increased school attendance and retention (as cited in Capistrano and Sta. Maria, 2006).

On the other side of the argument McKenzie and Rapoport (2006) provide empirical evidence that in rural Mexico, migration has a negative statistical effect on school attendance, but with a different impact based on age and gender. Based on analyses of data from the 1997 National Survey of Demographic Dynamics (ENADID), the researcher concluded that migration did not have a significant impact on school retention for children between 12 and 15 years old, but that it had a significant negative

impact on 16 to 18 year olds, particularly males. This effect helped diminish the level of educational inequality for females, but at the expense of the attrition of male counterparts, not because of an increase in numbers of females going to school, which would be a more positive situation. While this study cited some negative impacts of migration and remittances on schooling, the majority of studies on this topic tend to support the idea that remittance income tends increase the household investment in education and contribute to greater school retention. None of the studies that were reviewed distinguished between incremental dollar amounts of remittances versus the level of penetration of remittances across households in a given community, and since the education regression model in this dissertation yielded opposite predictive effects for these two remittance variables, this is a topic that might be worth further exploration. While additional income in any form has the potential to be used for a variety of positive pursuits, it should also be noted that the potential psychological and sociological ramifications of a growing cycle of migration which can have profound effects on households and communities, is much harder to capture empirically. The second remittance variable, the percentage of households receiving remittances, can probably give more insight in the model results about these more intangible or unquantifiable effects, since it represents the penetration of remittances in a given community and reveals how widespread the phenomenon of migration and remittances is in each community, which could have more dramatic implications on perceived benefits and costs associated with the cycle of migration. For example, in the education model of this dissertation the statistical results of per capita remittance income in dollars had the opposite result in the model results from the percent of people receiving remittances.

This may be due to the perception in communities with a large percentage of remittance-receiving households that families with migrants abroad are better off financially leading to more migration and the feeling that education is not worth the time and investment if the ultimate goal is to migrate anyway. Such a perception that migrant remittances are the main mechanism for upward social mobility, which I believe is very common in El Salvador and probably in other countries dependent upon their migrants' earnings from abroad, can mitigate the positive potential of remittance dollars.

Other Variables

While there is a lack of research articles specifically about the effect of remittances on human health, crime and gender roles, which are some of the other variables that will be examined in this dissertation, there are studies in related areas that can help to shed some light on the connection between increased income, health, life expectancy, education and economic growth. For instance, a study published in the journal *World Development* (Bloom, Canning & Sevilla, 2004) that used cross-country growth regressions as a methodology, found that improvements in health have a significant positive impact on economic growth and development, and that there is a quantifiable relationship between percentage improvement in life expectancy of a population impacting increases in national GDP. This relationship implies that disparities in economic growth between countries can at least partially be explained by health and healthcare. Another article focusing on the effect of migration on families and communities left behind cited scholarly articles with seemingly contradictory findings, depending on the country being examined. One study (Lu, 2007) focusing on Indonesia

found that one important measure of health, infant mortality, tends to deteriorate in communities with intense out-migration, but he also concluded that this negative impact can be mitigated by remittances. He found that over time with steady growth in remittances, the rate of infant mortality in households and communities in Indonesia is reduced. Other studies on Mexico found evidence that households with migrants in the United States have improved health compared to households without migrants. Another earlier study on Mexico (Kanaiaupuni & Donato, 1999) supported Lu's findings on infant mortality in Indonesia and found that the effects of migration on infant mortality in Mexico vary over time, since migration is a cumulative process. The authors concluded that in times of intensive out-migration, levels of infant mortality will increase. They also find that over time this levels off, that remittances mitigate this increase and that as migration becomes institutionalized in communities, and as trends in social and economic processes involved in migration begin or continue to evolve, that migration eventually over time tends to have a positive effect on infant mortality, which may be extended to other health-related variables.

In another study Hildebrant and McKenzie (as cited in Capistrano, 2006) concluded that migration from Mexico helps lower infant mortality rates and increase average birth weights, thus having a positive impact on children's health. Based on statistical analyses the authors attributed the causes of these outcomes to increased remittance income and also to the sharing of health-related practices and knowledge from migrant family members to relatives in Mexico. Higher emphasis on pre-natal healthcare and nutrition in the United States that Mexican migrants are exposed to are likely contributors to the phenomenon. A working paper published for the Danish Institute for

International Studies (Sorensen, 2005) supports these findings, and specifically attributes some of the potential improvements in health, nutrition and education that are linked to remittance income to the gender of the head of the household. One of the author's purposes in writing the article was to add a gender perspective to the remittance research, and to provide a social context for the decision-making process involved in spending remittance income. The author did not focus on any specific migrant-sending country, but instead included issues relevant to many countries around the world. In addition to the financial dimension of remittances, the study also took into account "social remittances" that are more likely to be transmitted from female migrants to female-headed households, involve the sharing of ideas, practices and beliefs, helping to facilitate the flow of information to improve medical knowledge, an understanding of human rights from a different perspective and a general exposure to different cultural norms and practices, as seen through the eyes of the migrant.

One of few studies examining the connection between remittances and violence (Vargas-Silva, 2008) concluded that violence has a negative impact on the amount of money sent by migrants back to their home country, in this case Colombia. The theoretical framework for this study is built on one of the two main motivators behind the decision to remit, which are altruism and self-interest. Altruism, which is the most commonly accepted reason in the literature for sending remittances home, can be defined as the intent to enhance the well-being of household members and improve living conditions. The model used by Vargas-Silva in this study finds that in the case of remittances sent for self-interest, which can include for reasons of inheritance or acquiring land and other assets, any significant changes in the expected return of these

remittance earnings, in this case violence, will affect the amount of money sent. Using data from the 2003 Quality of Life Survey of Colombia, the study found that remittances decrease when one or more household members report to have been the victim of a crime. The author concludes that since the decrease seems contrary to altruistic motivations for remitting, the reduction in remittances is more likely motivated by self-interest, due to the migrant's realization that return on investment and future inheritance possibility may be diminished with increases in crime, especially within the household. The statistical analyses in this study used unique econometric techniques to control for endogeneity and reverse causality issues. In addition, the author used an interesting method to test the robustness of the crime models, which in the original analyses simply used a dummy variable of one and zero to indicate whether a household member had been the victim of any crime. To check for robustness, a substitute crime variable was used, which was a number between zero and six, with one digit added for each type of crime experienced by one or more members of the household, including robberies, assaults, extortion, kidnapping, forced eviction, and homicide. When run through a similar procedure, the models using the more specific crime variables, yielded consistent results with the original models. A similar approach could be used to build upon the crime model in this dissertation, which targeted only robberies for the regression.

While the literature in the field of migration and remittances is expanding at a rapid rate, there is a lack of empirical studies across countries using widespread sample data. There is also little general agreement in the literature about positive and negative impacts of the cycle of migration and remittances on both a microeconomic and macroeconomic perspective from the viewpoint of the remittance-receiving nation. The

contribution of this dissertation is to provide empirical findings from one migrant-sending country that is heavily dependant on migrant remittances sent by its citizens abroad, mainly from United States, to be added to the body of literature and provide evidence that migrant remittances do have a statistically important impact on economic and social welfare in households and communities, and that if channeled more effectively, they have the potential to more positively impact people who are not primary beneficiaries.

Chapter III: Data and Methodology

The principal hypothesis this dissertation seeks to address is that the portion of income that Salvadorans living outside of their country send home to family members and friends in the form of migrant remittances has an overall positive impact, while it may be short-term and unsustainable, on the recipient households of El Salvador. With nearly a quarter of the nation's population receiving remittances, the effect on households is likely to impact the wider community as well so this research also will examine the effect that migrant remittances have on different communities in El Salvador. The approach used to gain insight into this general hypothesis was to identify the relationship between migrant remittances received by individuals and households and the overall welfare of those households and the wider community, as measured by socio-economic indicators at the community level. The methodology this study utilized to determine the correlation between the amount of migrant remittances received and the dependent variables, which are different in each model, was multiple regression analysis. The dependent variables that are used in the models are unemployment rate, rate of extreme poverty, health--measured by cases of malnourishment in children under five, percent of female-headed households, life expectancy, crime, and average grade level. The statistical software package SPSS was used to run the regression models. Seven different dependent variables, believed to be impacted by migration and remittances, were chosen using data from the 2004 National Annual Multipurpose Household Survey, which contained a national sample of survey data from each of the 262 different municipalities of El Salvador. 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 variables 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 trial 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), n.d.) and serving as a control for any variance due to departmental or regional differences not related to any of the independent variables. Rather than use dummy variables for each of the 14 different departments, this regional classification was more useful, since it groups together departments or municipalities with similar characteristics and that are close geographically. The information on the five different regions is listed in the following chart.

Table 2: Breakdown of Five Regions of El Salvador for Dummy Variables

Region I (Occidental)	Santa Ana, Ahuachapán & Sonsonate
Region II (Central I)	La Libertad, Chalatenango, Cuscatlán & San Salvador (excluding the municipalities of San Salvador classified in Region V)
Region III (Central II)	San Vicente, La Paz & Cabañas
Region IV (Oriental)	Usulután, San Miguel, Morazán & La Unión
Region V (AMSS-Metropolitan Area of San Salvador)	13 urban municipalities of San Salvador, including San Salvador, Mejicanos, San Marcos, Ayutuxtepeque, Cuscatancingo, Delgado, Ilopango, Soyapango, Antiguo Cuscatlán, Nueva San

	Salvador, San Martín, Nejapa & Apopa
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Source: Methodology for EHPM, 2003 (El Salvador Bureau of Statistics)

The geographic variables are useful as control variables in the analyses, since there are significant differences in migration and penetration of remittances among different regions of the country (IDHES, 2005). In addition, there are also differences in other variables such as life expectancy and poverty that might have a root cause in a regional characteristic or historical event, such as damage from a natural disaster or recurring disasters, or a region particularly hard hit by the war, such as Morazán and Chalatenango. In the eastern region or region IV, more than 30 percent of households receive remittances, and in certain departments in the west, less than 15 percent of households receive remittances, demonstrating the regional disparities in migration and remittance income. The IDHES report also points out that even within municipalities, the majority of migrant remittances may be concentrated in one or a few small neighborhoods, creating inequalities within communities, that may affect all of the variables being examined in the statistical analysis. Since there are five regions (k), and the amount of dummy variables in this type of model needs to equal k-1, the Central I region, which falls into the middle of the spectrum on the remittance scale, was not included in the regressions.

The resulting statistical output for the models, using the regional dummy variables, including F-Statistic of each overall model, beta coefficient values and t-statistics of the independent variables derived from the regressions, is listed in tables the Results section, and the output was used to draw general conclusions about the probability that migrant remittances can be predictors of social, biological and economic

well-being in communities, as represented by the dependent variables. If the results were significantly different from the models run without the regional dummy variables, this is noted and explained also in the results section.

In addition to the data analyses and the detailed discussion of the results, this research explored the policy decisions that governments in remittance-receiving countries around the world have used to try to make the effects of remittances more beneficial to the wider community and the nation as a whole. The sources for this portion of research were data and reports, including databases, white papers, conference proceedings and newspaper reports, produced by governmental and non-governmental organizations, including the World Bank, Inter-American Development Bank (IADB), International Monetary Fund (IMF), Organization for International Migration and the Central Bank of El Salvador. The policy section addresses the extent to which Salvadoran families invest remittance income in productive channels to generate more long-term sustainable income at the household and community levels, and how the Salvadoran government along with other national and international institutions are providing incentives and undertaking policy reforms to promote more productive and sustainable use of remittances. Results from the data analyses are woven into the policy analysis section to support or offer evidence against certain stances taken on both sides of the migration argument at the policy level. Examples from other remittance-receiving nations are incorporated into the policy discussion and recommendations, in order to more fully evaluate what types of policy initiatives have been most effective and why. My hypothesis concerning this policy analysis is that any intervention by governments in an attempt to influence the way private citizens spend their money, will work better if that government provides

incentives for certain types of investments, rather than imposing penalties such as taxes on remittance income, which would probably drive more remittance transfers underground. Using examples from El Salvador and other countries to test this hypothesis, some recommendations are discussed in Chapter five, for more proactive intervention from leaders to try to alleviate the pervasive rural poverty in El Salvador and raise living standards by utilizing and channeling migrant remittances more effectively while simultaneously creating better employment opportunities in communities in El Salvador and strengthening the local economy so that citizens no longer look to migration as the only opportunity for making a living and improving one's status.

Other resources that were utilized in examining initiatives aimed at productive channeling of remittance income include El Salvador's Economic Ministry data, Survey results and data compiled by the International Organization for Migration, and working papers and research on remittances to El Salvador financed by different non-governmental organizations. Large global institutions such as World Bank and IMF and also regional institutions such as InterAmerican Development Bank-Multilateral Investment Fund (IDB-MIF) are other sources of data and information on the issues facing migrant-sending and receiving countries, which were used throughout the latter portion of this study. Specific to the policy analysis research question, various local government publications were examined, especially reports and working papers from Fondo de Inversión Social para el Desarrollo Local (FISDL), a Salvadoran government agency that works primarily on community development initiatives in education, health and technology. Other organizations, such as Inter-American Dialogue also have

published studies and data about Latin American government policy shifts to more effectively channel remittances in an attempt to decrease poverty.

Building upon the general hypothesis mentioned above that government initiatives focused on incentives as opposed to penalties are much more effective as tools for channeling remittances for more productive use, the types of positive measures that organizations and governments can utilize include enabling and facilitating growth of and access to microfinance institutions, educating the population about savings and investment, providing matching funds for community-wide development projects and reducing transaction costs and regulatory burdens. These are just some of the ways that governments around the globe are encouraging migrants to transfer remittance dollars through formal channels, which maximizes the productive potential of these financial flows, and to invest remittances in long-term prospects. These measures are more fully explored in the section on Policy Analysis.

Data and Variables

The principal data set that was used for the statistical analyses is from the 2004 Encuesta de Hogares Propósitos Múltiples (EHPM) census data gathered and published by El Salvador's Economic Ministry. This data set has been incorporated into the comprehensive United Nations Development Program (UNDP) study of El Salvador in 2005 as part of the Development Objectives for the Millennium (ODM). ODM is an agreement among all United Nations member nations to try to achieve eight different objectives by 2015, among them eradicating extreme poverty and hunger, achieving

universal primary education, promoting equal gender roles and taking on other tasks aimed at improving human health and welfare.

In the field of remittances studies, the technique of linear regression has been used by researchers as a tool to predict the amount of remittances sent by migrants, or the likelihood for migrants to send remittances. In this research, I chose to use a similar approach to examine a different relationship, the predicted correlation of migrant remittances received with various social welfare indicators at the community level.

The data set contains a variety of statistics for all 262 municipalities in El Salvador from the 14 different departments or regions of the country. The method of data collection for the 2004 national census (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 will be embedded in the section Summary and Results. Four different regression models were created for each of the seven dependent variable in order to assess the relationships among independent variables and to compare the models with and without certain target variables to more fully understand the interrelationships and correlations among the variables, and to be able to detect collinearity among the independent variables if present. Each model was run once without regional dummy variables and again with the regional dummy variables to account for any regional differences affecting the variance in the dependent variable.

While the data does not capture the number of transnational migrants who have left each community, remittance income can serve as a related variable, and it seems safe to hypothesize that the communities receiving larger amounts of remittance income have

the larger number of transnational migrants abroad, mainly in the United States where approximately 90 percent of El Salvador's migrants are located. But as much of the research on remittance senders shows, there are many factors determining if, when and how much migrants send to their home countries most often to immediate family, and one of the most significant determinants in quantity of remittances is the length of time the migrant has been living in the host country. If a community in El Salvador has a high number of migrants that left before or near the start of the Civil War in the early 1980's, these migrants are probably not sending as much as more recent migrants, perhaps because over time several of their closest family members have joined them in the United States or other migrant-receiving country. Other factors playing a role in the amount of remittances being sent by migrants to family members abroad include gender, with women tending to send back a larger proportion of their salaries than men (Sorensen, 2005), and also age. One migrant may be sending earnings back to a number of different family members in different households which would affect the average amount sent to each person due to financial constraints. There is not necessarily a one to one ratio of migrant to remittance-receiver, and this ratio can vary widely, depending on family connections, number of other relatives that have migrated and other personal factors.

Hypotheses and Models

My hypotheses, which are based on theory and research findings, have not yet been fully explored in the research on El Salvador. I believe that households and communities whose income is substantially enhanced by remittances have higher living standards, improved opportunities for employment, better health conditions and higher

levels of school attendance for children. The increase in income due to remittances may help provide families with basic necessities and subsistence, allowing more time for other types of investment, education, healthcare and preventative medicine and other opportunities for improved standard of living. While this general hypothesis about increased income improving living conditions may appear to be stating the obvious, there are several mitigating circumstances, not unique to El Salvador, that may have a negative impact on these variables as a result of remittances and the phenomenon of migration, such as the breakup of families, growing inequalities between households receiving remittances and those that do not and other issues.

Ideally, the regression models should include household level census data rather than averages, which would help isolate the individual situations within a household and specifically correlate the dollar amount of remittances per individual household to that households' other characteristics, such as health, poverty level and incidents of crime experienced by household members. In addition the examination of this household level data over a period of time such as three or five years would make it even more valuable, to help eliminate random occurrences and track changes in variables over time and the correlation to changes in remittance patterns over time. Time-series data could control for increases in remittances based on economic shocks in El Salvador such as natural disasters, which are very common in the region. Comparing this level of data between non-remittance receiving households and those receiving remittances could provide the most valuable statistical results. An effective way to capture this would be to utilize two separate sets of dummy variables, one for whether households have a family member who has migrated out of the country, and the second if the household is receiving

remittances. It would be important to consider both situations, since having a migrant family member abroad does not guarantee remittances and that receiving remittances does not necessarily mean a household member is the migrant sending their earnings, since it could be someone outside of the household. However, since at the time of undertaking this dissertation, I only had access to data at the municipal level and only for the year 2004, I opted to use this cross-sectional data set to create regression models that would examine correlations at the community level and also only represent a snapshot in time.

At the community level, I believe that overall levels of development will be higher in communities receiving remittances because there will more likely be more infrastructure present, such as telephones, financial institutions to support the remittance transactions, transport, internet access and perhaps better roads, due to more families with this type of income being able to afford cars. This might translate into better community organization and access to governmental and other funding for community development projects. Communities with partner Hometown Associations (HTA's) in the United States are at an advantage, and depending on the level of support the HTA has been able to provide, these communities will probably show a more dramatic impact collectively as a result of remittances. An example would be an HTA fund to build a bridge that allows children to walk to school in the rainy season, which would have a much wider impact on school retention than one household receiving money for books and uniforms for family members. The typical relationship of remittance-sender to receiver usually keeps the financial benefits within the family, whereas the relationship with the HTA is much more

likely to result in a project that would benefit the wider community, such as a school, health clinic or other small infrastructure project.

Another issue that affects the models in this research and in many other migration and remittance studies as suggested by a recent World Bank study (Catrinescu et al., 2006) is that oftentimes statistical models do not properly control for endogeneity, which can produce results that are not completely accurate. In the literature review, several econometric techniques, such as a two-stage methodology or utilization of estimated instruments in the regression to reduce selectivity bias, are described that have been used to control for endogeneity and increase the robustness of the statistical results. Other researchers (Taylor et al., 2003) have employed techniques to decrease problems of reverse causality in the regression results. Because this dissertation is examining a wide range of independent variables and testing a number of hypotheses, the methodology did not include specific controls for endogeneity, which would have required more complex econometric analysis. For future studies on this topic that are more focused on the relationship between remittances and a single target variable, it would be important to control for endogeneity and also employ techniques to try to establish causal relationships rather than simple statistical correlations to more accurately capture the effects of remittances on employment, school retention, health and other variables.

For the sake of organization, each hypothesis will be stated followed by an explanation of the reasoning behind the hypothesis and a brief description of the regression model built to test the hypothesis. The description of the models will include an explanation of the variables and data used for this study.

Hypothesis 1: As remittance income increases in communities of El Salvador, the unemployment will decrease.

There are opposing forces at work when it comes to remittance income and employment. Some potential positive impacts that remittance income can have is to provide the seed money for small business and entrepreneurial ventures in the receiving communities, which if successful can have multiplier effects in the community, infusing additional dollars into the local economy and providing employment opportunities for other residents. Remittance dollars spent patronizing local businesses can have a multiplier effect on the local economy as well. Some mitigating factors that can decrease the potential positive impact of remittances is that when remittances received by households and individuals exceed local wages, there is less incentive to perform low-paying jobs, such as fishing and agricultural tasks like coffee-picking, a phenomenon which partially explains the recent influx of Honduran and Nicaraguan migrants in parts of El Salvador to provide labor in these sectors (Sanchez, 2006). Also, as many of the studies described in the literature review point out, the vast majority of remittance income is spent on short-term consumption needs. After immediate consumption, many families spend this income on electronic devices and appliances, many of which are imported, which may help local store owners, but not producers or manufacturers, which are vitally important to the country's macroeconomic growth potential.

In order to test this hypothesis at a micro-level, a regression model was built using “unemployment level per household” as opposed to the local community-wide unemployment rate as the dependent variable. The general unemployment rate in El

Salvador is a number derived from census data and calculated as the percentage of the economically active population that is not currently working but actively seeking work. In El Salvador individuals aged ten and older are considered to be of working age, which the UNDP report attributes to the reality of the economic situation in El Salvador, where children at this young age are expected to be contributing to the household income. The unemployment rate in El Salvador is calculated the same way as it is in the United States, with the exception of the lower age threshold in El Salvador to be considered part of the working age population, since in the U.S. individuals are not considered to be of working age until sixteen years. Therefore the unemployment rate in each municipality is derived by calculating the number of individuals who are both of working age and in the economically active labor force. The number of individuals in this category that are currently unemployed at the time of the census, is divided by the total number of individuals in the economically active labor force in a given town, to produce the unemployment rate at the municipality level. I used the unemployment rate at the household level rather than community wide because the predictor variable this model seeks to explain is the average remittances per person, which is also on the micro level. The unemployment rate in El Salvador does not account for underemployment, which is a large problem not only in El Salvador but all over the region. The household unemployment rate was one of the variables in the data set, and did not need to be calculated. All of the variables and their explanations in the data and methodology are derived from the UNDP Human Development Report, whose authors upon request provided the data set from the 2004 national census, and unless specifically noted

otherwise the definitions of variables and explanation of data collection and census methodology was taken from this UNDP report.

The independent variable of monthly remittances per person was used to assess if the average amount of remittances per capita in a given municipality is a statistically significant predictor of unemployment in households. This variable, which was provided in the UNDP data set, was derived by dividing the total amount of remittances reported to be received per community by the number of individuals receiving remittances.

Remittances for the purposes of this data set is defined as the flow of income that is sent to individuals and families in El Salvador from residents outside of the country. The control variables in this model included literacy rate, the percent of female-headed households, and the percent of the population considered urban. A related variable, percent of the population receiving remittances, was also used as an independent variable. This variable does not differentiate among families receiving large or small amounts of remittances, and simply represents the percent of households in a given municipality that report that they receive remittances.

Literacy rate, in addition to educational level, has been cited as a predictor of unemployment rates in many studies, which is why it was used as one of the control variables. The statistical definition of adult literacy rate for the purposes of the Salvadoran national census is the percent of persons aged fifteen years and older who are able to read and write a short paragraph about his or her daily life. In the literature on unemployment, increased literacy rate is often correlated to lower rates of unemployment. The third control variable, the percent of the urban population or ratio of urban to rural population density is relevant because rural areas in many countries, and

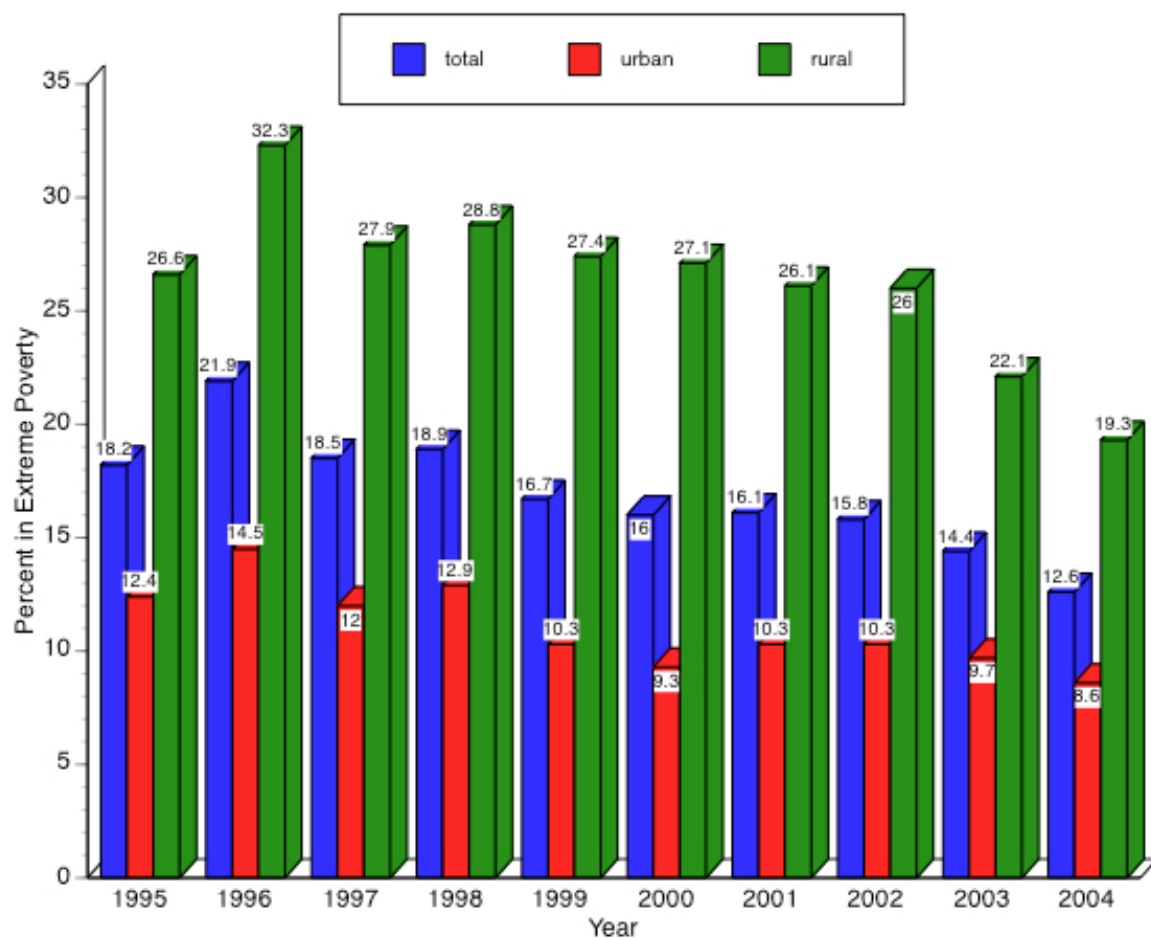
especially in El Salvador, often face greater economic and social barriers, such as chronic unemployment, so I wanted the potential impact of this variable to be factored into the regression model. I chose the percent of female-headed households per municipality to see if an increase in females as the heads of households would have any significant correlation with the unemployment level per household. This percentage was not provided in the data set, and I calculated it by dividing the total number of households with a female head, which was available at the municipality level, by the total number of households in the municipality. The determination of who is the head of households in El Salvador is based on the gender of the household member with the authority to make decisions that involve the larger family group and is recognized by other members of the family to be the head of the household. Other variables that were not available, but that might have been significant include higher education statistics of migrants, marital status of household head, and history of small business ownership in the household.

Hypothesis 2: 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 remittances 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 & Meade, 2001). 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.

Figure 7: Ten-year trend in extreme poverty levels in El Salvador



Source: Bureau of Census and Statistics of El Salvador

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. In order to determine if average grade level and literacy rate are collinear, at least two models were run isolating each variable to compare their statistical relationship together and each on its own. 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 on 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 unemployment rate was added as the last control variable to the model to test the relationship.

Hypothesis 3: In communities with higher levels of remittance income, health problems, specifically malnourishment in children, are lower.

The third regression model was designed to target a relevant dependent variable that would represent health and access to healthcare within communities, in an attempt to test my hypothesis that access to remittance income can lead to improved health and health practices in households and in turn in the wider community. The community-level

data available from the national household surveys contained data on cases of diarrhea, respiratory infections, and cases of malnourishment in children. Of these I chose the variable of percent of underweight children under five years of age, which is considered a vital indicator, not only of children's health, but also of a nation's development potential since a healthy population, starting at a young age, is vital for sustainable growth and economic prosperity. This is also one of the target variables among the World Bank's Millenium Development Goals, that is used to track governments progress in addressing public health issues. Data on child malnutrition is more readily available than adult levels, and is probably indicative of health practices among adults in the community as well, since high levels of childhood malnourishment probably stem from poor overall health practices in the household.

The explanatory variables used in this health model were average remittances per person, the percent of households receiving remittances, the percent of female-headed households, the percent urban population, the percent of the population with access to improved sanitation and the percent of the population in poverty, including both extreme poverty and relative poverty. The distinction between extreme and relative poverty is that the extreme poverty income threshold is set at the level of the basic food basket cost on a monthly basis, and the relative poverty income threshold is set at the level of the amplified market basket, which according the methodology used by the Economic Ministry, is twice the cost of the basic food basket. In 2004, the relative poverty income threshold for an urban family of 4.52 was \$260 per month and for a rural family \$192 per month. For the purposes of the current model, the total poverty rate would include the

percent of El Salvador's population earning less than \$3,120 per household annually in urban areas and \$1,152 per household annually in rural areas.

It is also important to note the difference between the two variables average monthly remittances per person and the percent of individuals per community receiving remittance income, since they may have different relationships with the dependent variables. By nature, the first variable, as an average, may be inflated or underestimated for certain households, and if small group of people in a community are receiving an inordinate percentage of the remittance income in a community, it would not be reflected in an average for the entire population that is receiving remittances. However, the other variable, percent of residents receiving remittances, does differentiate on the basis of how many households or individuals are actually receiving remittance income, and therefore it might affect the regression model differently. For example if only ten percent of the population in a community is receiving remittances, but the average remittance income per person is equivalent to that in another community where that income is shared among twenty percent of the population, the effects and spending patterns will be very different. The other explanatory variables were used in this model because poverty may be a strong predictor of nutrition and access to healthcare, and I hypothesized that the presence of a female as the household leader might be correlated with improved health practices.

Two very important control variables for this model include the percent of the population with access to potable water and the percent of the population with access to improved sanitation. Both variables were derived from the UNDP report. The definition for the variable access to water is the proportion of the population with "sustainable access to an improved source of water" (UNDP, 2005). The report defines such sources

of water to include running water within the house or outside the house but within the property lines. According to this definition, there is no assurance of water quality. The variable access to sanitation is the percentage of individuals with access to “improved sanitation,” which include a toilet indoors with plumbing connected to a sewage system or septic tank, or a private latrine. Both variables vary significantly in different towns across the country of El Salvador, and improving access to water and sanitation is part of the UNDP millenium goals worldwide.

Other reasons for the stated hypotheses that human health and access to healthcare will be better in communities receiving higher levels of remittances to supplement families’ income, stem from personal observation in El Salvador. While preventative healthcare measures including well visits to the local clinic and vaccinations may seem affordable to all since the government provides healthcare for free, there are still obstacles for many families including the cost of transportation in rural areas, and the cost involved in waiting sometimes for hours when there are children at home to feed or other work that needs to be done. Residents of more isolated communities are often dependent upon a local health promoter, a person who has received training in educational tactics and vaccination techniques, but that is usually not a medical professional, who makes house visits and records household health data. In addition many news articles in El Salvador and also in U.S. publications, such as the Wall Street Journal, point out that while the rich and upper classes can afford private doctors and medical facilities, the poor are relegated to using free government hospitals and clinics, which may do an adequate job of providing immunizations, prenatal care and educational material, but do not have the funds or the staffing to perform surgical procedures and

other more complex and risky procedures, which in the U.S. would be considered routine (Shafrin, 2006).

Hypothesis 4: Communities receiving higher amounts of remittance income will have a higher percentage of female-headed households, which has a variety of effects on communities.

One of the newer areas of interest in the realm of remittance studies and transnational migration has been their effect on gender roles in households and communities and the wider sociological and economic impacts of these changing roles. The dependent variable of female-headed households was chosen to see if remittance income, which is a function of migrants working outside the community, has an impact on the percentage of households that have female heads. Since increasing numbers of females are choosing to migrate, including young mothers, who leave their children behind, I believed this model was worth exploring. The independent variables built into this model included monthly remittances per person, per capita income, the percentage of persons receiving remittances and the unemployment rate at the municipality level.

While per capita income would be automatically affected by remittance income, since per capita income includes the average total amount of monetary flows received by the individuals, the review of the literature revealed that different types of income flows can affect the household decision-making and expenditure processes differently, which is why I thought it was relevant to include both variables. As in the other models, stepwise

regression was used to determine any underlying relationships between independent variables or instances of collinearity.

Hypothesis 5: An increase in remittance income in communities is correlated to higher average life expectancy.

This series of models examines life expectancy, which is one of the most common variables used in estimating overall quality of life of a region or nation, and is one of the elements used to calculate HDI (Human Development Index), an important worldwide metric for evaluating the standard of living in a country and also as a comparison for level of development. El Salvador is currently ranked number 101 on the HDI index of countries behind Mexico, China, Costa Rica, Brazil and Sri Lanka, but higher than Guatemala, Honduras and India. Life expectancies may vary across populations as a function of poverty, public health, nutrition, gender and race or ethnicity (UNDP, 2005). Environmental factors, such as pollution, and life style factors such as occupation, smoking and diet all contribute to life expectancy as well.

The explanatory variables used in this model included monthly remittances per person, and also per capita income, percent urban population and literacy rate as control variables. These control variables were selected for the model since they are all likely to contribute to the life expectancy level in communities based on research in the field. It is also worth noting here that in the UNDP report, it was determined that Salvadoran migrants living in the United States have a significantly higher HDI average than

Salvadorans living and working in El Salvador, many of whom are related to the migrants. This issue will be explored later in the policy analysis section.

Hypothesis 6: Increased migration from a community and dependence on remittances is correlated with a higher crime rate in the community.

The next model set was created to try to gain some insight into a hypothesis specific to how migration leads to the breakup of families, which has a variety of sociological effects, and to see if high levels of migrant remittances are correlated with an increase in crime. My initial hypothesis was that as there is an increase in out-migration in communities, which separates families, often leaving children without a parent or other role model present, family values might break down. I thought an increase in crime, which is tested by the independent variable in this model of number of annual robberies in 2003 per 100,000 residents, might be worsened as a ramification of the breakup of families, which would be reflected with an increase in crime as monthly remittances increase. As remittances increase, it is also apparent in various communities that a more severe social and economic disparity between the haves and have-nots begins to evolve, with those households benefiting from remittances owning homes in better condition, made of brick and concrete rather than adobe and sometimes two stories high, driving automobiles and having other luxuries that those without remittances could not begin to afford. This growing disparity may have an impact on crime in communities by spurring on more robberies as people see their neighbors and other community members reaping the benefits of their remittance income. A third aspect of the hypothesis which caused

me to believe that increased remittances might lead to increased crime involves the prevalence of gang violence and warfare in El Salvador, as an outgrowth of Salvadoran gang members being deported from the United States and bringing back their methods and doctrine to the disenfranchised and poor youth of El Salvador, which will be examined further in the following section.

In order to test this hypothesis, the dependent variable I chose was the robbery rate in each municipality, which is a normalized value. Rather than using the number of robberies, which would not be a good comparative variable, due to large differences in number of inhabitants and population density in different areas of the country, I used this robbery rate, which is a measure that uses the number of robberies in a community, and standardizes it by dividing it per 100,000 inhabitants, making it is a more uniform measure of comparison among the different municipalities. I also used robberies, rather than rape or homicide rates, which were also available for several reasons. According to a number of criminal justice studies focusing on Latin America, the rates of violence against women, including rape, are severely underreported, which would make this an inaccurate variable. In addition homicide rates can vary greatly from year to year, and the data set only included crime rates from one year. While robbery and petty crime rates remained fairly steady from 2003 to 2005, the homicide rate in El Salvador increased by 25 percent from 2004 to 2005 according to the U.S. Embassy's official crime figures. One major shortcoming of this model is that the crime statistics at the municipality level were only available for 2003, and the other independent variables used were from 2004. According to the 2004-2005 report by the Justice Studies Center of the Americas (CEJA, 2005), there was a two percent decrease overall in El Salvador for the number of thefts

and robberies. The same report also identified robbery as the most common crime occurring in El Salvador, which accounted for thirty percent of all reported crimes in the country in 2004, an average rate of 399 robberies and thefts per 100,000 inhabitants.

The independent variables used in this crime model include average remittances per person, percent of the population in poverty, the number of police officers per capita, which I calculated by dividing the number of police officers in the municipality by the total population, and the percent urban population. Poverty rate was used again in this model as a control variable since poverty is often cited as a contributor to crime. The number of police officers was included to see if there is a correlation between the police presence and robberies. Intuitively, rising crime in El Salvador, which has been the trend in the past eight years, demands a stronger police presence and better prevention. But according to the Justice center report (CEJA, 2005) referenced above, the number of officers in the PNC, or the National Civil Police force, declined by nine percent from 2002 to 2004, accompanied by a budget cut of three percent. The percent urban population was also included since crime rates tend to vary in urban and rural areas, since urban towns and cities tend to be more densely populated and thus have higher crime rates.

Hypothesis 7: Increased levels of migrant remittances in communities will increase school retention at the community level.

The final statistical analysis using the Household Survey data was done to try to capture the relationship between migrant remittances and the decision to stay in school or

encourage other members of the household to remain in school to higher grade levels. The dependent variable of average grade level used in this model represents the average grade level attained by individuals over age six in each municipality in El Salvador as recorded in the 2004 national census. The reason average grade level was used instead of literacy rate in this model to target the effect of remittances on education is that going to school in El Salvador, though required by law, involves more of a conscious decision on the part of the family if the family values education enough to spare the sons or daughters from helping with the workload. Research indicates that even in countries where education is legally free of charge to students, oftentimes the poorest children often do not attend school, due to other roadblocks, because they could not afford the school uniforms, notebooks, pencils, transportation and lunch money. Also, since school attendance involves more of a decision-making process at the household level which may help to provide some insight into the individual family's perception of the value of education in general, it is a more relevant variable for this model.

For instance, the decision to continue in elementary school for young people may be negatively impacted somewhat in households and communities particularly dependent on remittances due to the fact that many of the newest migrants are teenagers, who drop out of school at young ages to earn money to make the expensive and dangerous journey to the U.S. In El Salvador, as in other migrant-sending countries, there is a common perception that in order to make it in life, you have many more opportunities if you get to the United States or other industrialized nation, by whatever means possible, in order to work, than you would by staying in school. It is difficult to believe otherwise when the families with the most modern homes, cars, clothes, electronics and appliances are

generally receiving generous remittances from family members living and working in the United States.

The independent variables used in this model include average remittances per person, per capita monthly income, the percent of people receiving remittances, the percent of underweight children under five and the percent urban population. The remittance variables were incorporated in order to isolate any statistical relationship between remittances and school retention. All of the others were chosen as control variables, due to the probable impact all of these variables might have on school attendance and retention. While data measuring the quality of education in different schools and different communities was not available, this would have been a very interesting independent variable in the model, since a perception on the part of a community that the educational system is not working, which may be common especially in rural areas, may negatively impact school attendance and retention.

Results and Summary

Table 3: Unemployment Per Household, Municipality Level, 2004

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Average remittances per person	-0.072* (-1.92)	-0.087** (-2.37)	—	- 0.072* (-1.89)
Literacy rate	-0.082* (-1.66)	—	-0.088 (-1.50)	-0.079 (-1.36)
Percent population receiving remittances	-.067** (-2.10)	—	-0.073** (-2.21)	- 0.061* (-1.81)
Percent female-headed households	—	-0.095 (-1.33)	-0.043 (-0.54)	-0.041 (-0.52)
Percent urban population	—	—	-0.003 (-0.14)	0.005 (0.20)
Adjusted R2	.045	.036	.029	.039
F-Statistic	2.76	2.60	1.97	2.17

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

The unemployment regression model was run eight different times, to decrease the chance of collinearity and to determine if variables in different combinations have different correlations or overlapping effects on each other. The results from the four models with the regional dummy variables are listed in Table X. While overall the

unemployment models had very low Adjusted R^2 values, thus decreasing their robustness, there were some statistically significant relationships among the variables, that are worth closer examination. The most statistically significant version of this model had three two predictor variables, averages remittances per person, the percent of the population receiving remittances and literacy rate in each municipality. With an adjusted R^2 of 0.045, it is apparent that this model is lacking other important predictor variables, but the model is significant with an overall significance of 0.009. In addition, the t-statistic for average remittances per person is significant at the 10 percent level, with a value of negative 1.92. The coefficient for average remittances per person in relation to the dependent variable of unemployment per household indicates that as average remittances per person in a community increases by one-hundred dollars, the unemployment level in households decreases by 7.2 percent. The other contributing variable related to remittances that is significant at the 5 percent level is monthly remittances per person. As the percent of the population receiving remittances doubles, the unemployment rate per household in a given community would decrease by 6.7 percent. One explanation for these two outcomes could simply be correlated to the removal of the migrants from the labor pool, thus decreasing competition for jobs. Since data specific to household remittances and investment in small business ventures was not available at the time of this research, it is difficult to attribute the statistical findings specifically to new business growth, but based on related research in other developing nations as cited in the literature review and also personal observations during my time in El Salvador, I believe positive investment of remittances in small ventures is a contributor to the drop in unemployment. From opening new stores to purchasing

livestock for milk, cheese and meat production, not only do remittances have the potential to improve employment opportunities at the household level, but as households hire others in the community as employees, the multiplier effects of the remittance income can begin to take effect when channeled into successful small business ventures, which is one area where relevant policy interventions and resource support from the government can help to increase the chances for this type of investment.

In this model, literacy rate was also significant at the ten percent level in on one model and had a negative coefficient value. Based on the results of Model 1 listed in the above table, a conclusion can be drawn that as literacy rate increases by 100 percent, the average rate of unemployment per household would have a corresponding decrease of 8.2 percent. Interestingly in the other models, which include percent female-headed households and percent urban population, literacy rate is not a statistically significant predictor of unemployment level in households. Specific to the urban variable, I believe that literacy rate would be a more important predictor of employment since there are more high-skilled jobs requiring literacy in order to apply and also that there are more opportunities to learn to read based on better schools and better transportation to schools. In rural environments, a high literacy rate may not necessarily open up many doors for individuals due to the prevalence of low-skilled positions available, which would decrease the significance of literacy as a predictor of employment in rural areas.

While the other independent variables percent female-headed households and percent urban population were not shown to be statistically significant in any of the models, they both produced negative coefficients in each model, thus showing an inverse relationship with the independent variable unemployment per household. Therefore

increases in female-headed households and the percent of the population living in urban areas as opposed to rural, is correlated with a decrease in the average unemployment level per household in the 262 municipalities of El Salvador, though not at a statistically significant level. In the models run without the regional dummy variables, the results were very close, with slightly lower Adjusted R^2 values.

The results of this model help support my hypothesis that as remittance income increases, employment opportunities also increase, as reflected in the regression results using unemployment data at the household level. While the regressions do not imply a causal relationship, the correlation between higher amounts of average remittances and lower unemployment levels in households is noteworthy and would be an interesting area of further study, including a closer examination of the types of jobs and salaries that citizens have, the gender breakdown and wage differentials of individuals in these jobs and the potential for further and sustained growth.

The regression results of this model do not reveal any specific relationships among variables besides a positive correlation between remittance income and unemployment level in households. An area of further study that could provide more meaningful analysis on this topic should access other important data, including unemployment for men versus women, unemployment based on education level attained by individuals, allocation of employment across different industries including both formal and informal sector employment and other relevant variables.

Table 4: Percent population in extreme poverty, Municipality Level, 2004

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Average remittances per person	—	-0.225** (-3.41)	-0.353** (-5.84)	-0.324** (-5.40)
Literacy rate	-1.256** (-13.06)	—	-1.216** (-14.00)	-1.042** (-6.75)
Average grade level	—	-7.206** (-10.49)	—	-1.495 (-1.08)
Masculinity index	—	25.17** (2.84)	37.39** (4.66)	33.30** (4.18)
Unemployment rate	—	0.639** (4.01)	—	0.590** (4.16)
Percent urban population	0.074* (1.92)	—	0.138** (3.86)	0.150** (3.98)
Adjusted R2	.500	.522	.596	.621
F-Statistic	44.58	36.62	49.13	43.73

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

The various versions of the poverty model were also significant, and all six independent variables were shown to have a statistically significant relationship with the level of extreme poverty in communities. The model that was the most statistically significant was the fourth one, which resulted in an adjusted R^2 value of 0.621, with all of

the independent variables, besides average grade level shown to be significant. However, a review of the other models reveals the colinearity between the variables literacy rate and average grade level. When only one of the two is present, the t-statistic of the one that is present increases dramatically, but when both are present, the t-statistics for both variables decrease significantly. This colinearity is probably due to the partial causal relationship between average grade level and literacy rate. The standardized coefficients for these two variables shows that when both used in the same model, literacy rate has six times as strong a predictor effect than grade level on the level of extreme poverty. In each model, average remittances per person was statistically significant at the 5 percent level and also had a negative coefficient value, demonstrating an inverse relationship with extreme poverty. In the third model, which uses literacy rate, masculinity index and percent urban population as control variables, the coefficient value of -0.353 shows that as average remittances per person increase by \$10 per month, the level of extreme poverty decreases by 3.5 percent. By comparing the t-statistics in all of these extreme poverty models, it is apparent that literacy rate has the strongest predictor effect, most notably when the related variable 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. In addition, it may be more difficult to families in the most economically depressed situations to send their children to school to learn to read, and they may encourage small children to stay home to work instead. 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, masculinity index, unemployment rate and percent urban population are all statistically significant control variables with positive coefficients. This correlation between unemployment and poverty is intuitive since it is to be expected that as a greater percentage of the economically active labor force is employed, the greater the per capita income and the less risk of severe poverty. 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 with a larger population of males. 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 change accordingly, in many cases with females becoming the majority. This cyclic phenomenon, which would place households with male migrants living abroad and sending money home at an economic advantage, may also play a role in the correlation between masculinity index and level of extreme poverty. In communities with a low masculinity index, or a lower ratio of males, it is likely that there are more migrants, hence more migrant remittance income, which may have a positive impact on helping families to escape from extreme poverty. The resulting coefficient value for masculinity index in model 3, shows that as the ratio of males to

females increases by ten percent, the level of extreme poverty in the community would rise by 2.5 percent. Another way of stating this is that in communities of El Salvador, as the number of males in a community increases compared to females, the more people there are that live in extreme poverty.

The percent urban population is the sixth significant independent variable in this series of models and has a positive coefficient value, which was surprising since it is known that a higher percentage of rural Salvadorans live in extreme poverty. In rural El Salvador, 22 percent of individuals live in extreme poverty, and in urban areas, ten percent of people live in extreme poverty, which means that in 2004, there 628,000 people living in extreme poverty in rural areas, compared to 620,000 people living in extreme poverty in urban areas. In addition out of the total national population, 54 percent lives in urban areas and 46 percent in rural areas (2004 EHPM as cited in UNDP, 2005). One explanation for this could be that when the economic situation is very bad in rural El Salvador, it spurs on migration to urban areas in search of employment opportunities, which could lead to more competition for jobs, higher unemployment and more poverty shifted from rural to urban areas, with the numbers not properly reflected in the census data.

A relevant case study for poverty levels 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 that can be drawn from the UNDP case study comparison.

The adjusted R Square value of these of the models, which is above 0.50 for all of them and 0.621 for Model 4 shows that the independent variables, in addition the regional dummy 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 in 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 (Yang, 2003). 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, must be sound. 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 (Gutiérrez, 2007). While it is beyond the scope of this dissertation 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 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 (Skekely, Lustig, Cumpa & Mejia, 2000).

Table 5: Percent of Underweight Children Under Five Years, Municipality Level, 2004

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3¹</i>	<i>Model 4²</i>
Average remittances per person	0.061** (2.20)	0.064** (2.32)	—	0.058** (2.11)
Per capita monthly income	-0.029** (-3.12)	-.015 (-1.24)	-0.019** (-2.28)	—
Percent of people receiving remittances	-0.023 (-1.10)	—	-0.044** (-2.02)	-0.045* (-1.93)
Percent female-headed households	—	-0.081 (-1.50)	—	-0.046 (-.83)
Percent population poor (extreme and relative)	—	0.039 (1.49)	—	0.037* (1.79)
Percent population with access to improved sanitation	—	—	-0.091** (-3.79)	-0.079** (-3.09)
Percent urban population	-0.024* (-1.66)	-0.019 (-1.25)	—	-0.022 (-1.53)
Adjusted R ²	.325	.334	.356	.359
F-Statistic	16.71	15.57	19.00	14.32

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

¹ Includes variable access to potable water, which yielded positive statistically significant result; omitted here due to possible accuracy issues with variable.

² Same as above.

The different versions of the health model were also statistically significant and revealed several important relationships among the variables. A comparison of the t-statistics among the different models indicates that the most important predictor variables for cases of malnourishment in children under five are improved access to sanitation, access to potable water, per capita income and average monthly remittances. Two of these variables surprisingly had positive coefficients that were statistically significant at the five percent level in the regression results, including average remittances and access to potable water, meaning both increases in remittance income and better access to water are correlated with increases in cases of underweight children under five. Due to the lack of information on methodology of clearly defining the potable water variable, these statistical results were omitted from the table, but a possible explanation is below.

Both of these observations seem counterintuitive, but there are possible explanations for each. In regards to remittances, since both dependent and independent variables are from the same data set from 2004, there may be some validity issues due to simultaneity. This might be an indication that perhaps increased remittances may be in response to perceived greater need or suffering in the receiving household. Often remittances are increased by migrants in response to economic hardship, family tragedy or natural disasters, which might explain how sometimes an increase in remittance income could be correlated with poor conditions in the receiving households. This statement is in line with the altruistic motivation of remitting. A more robust model would use time-lagged data to compare the remittance income in one year to health variables in a later year. In regards to water, while access to water is of utmost importance, according to the UNDP (2005) statistical definitions for the EHPM data, the

only qualification for a household to be considered to have water access is for a household to have access to water from a larger system on the property or in the house. There are no explanations or tests of water quality, purification processes, cleanliness of the holding tank or other important issues affecting health and quality. In addition, the data does not capture how often there is actually water running, which varies by community. From personal experience, in rural Cabañas, one of the poorest departments of El Salvador, often families only have running water for one or two hours every three or four days, which would severely limit the use of water for cleaning, sanitation and even drinking.

The other control variable with a positive coefficient was the percent of the population in poverty, both relative and extreme poverty. This variable was only significant at the ten percent level in model four. Based on the statistical output, if the percentage of the population in poverty were to double, the percent of children with malnourishment problems under five years of age would increase by 3.7 percent. This outcome is intuitive because families in poverty are more likely to have a less varied diet, less likely to have access to improved sanitation and health and less likely to engage in preventative health practices involving doctor's visits. The more individuals have to focus on basic subsistence needs, the more difficult it becomes for them to achieve other improvements in quality of life, such as literacy, schooling and an overall healthy lifestyle. It is outside the realm of this study, but an additional statistical analysis might show that the number of people per household is a variable correlated to the percentage of poor in communities, and as the number of children increases per household, so might

the poverty rate, which would help explain the increase in malnourished and underweight children as scarce resources are stretched thin among members of large households.

The remaining independent variables used in the health model, including per capita income, percent of people receiving remittances, percent female-headed households, percent of the population with access to sanitation and the percent urban population, all had negative coefficient values. Looking at this other remittance variable first, as the percent of persons in a community receiving remittances increases, the incidence of underweight children will conversely decrease. Using the fourth model that includes the most independent variables, the resulting coefficient for percent of people receiving remittances, which is significant at the ten percent level, shows that if the percent of people receiving remittances in a community doubles, an increase of 100 percent, this increase corresponds to a 4.5 percent decrease in cases of malnourished children under five. A possible explanation for the relationship between these two variables with malnourishment is the idea that “social remittances,” which includes the ideas, knowledge and habits that migrants transmit to their families are likely to have a positive impact on health practices, improved nutrition and better prevention. This phenomenon is discussed in more detail in the policy analysis section below. While percent of female-headed households was not statistically significant in the models, the negative coefficient shows an inverse relationship to malnourishment, so in communities with a larger number of female-headed households, there are likely to be improved health practices in the household, as women are empowered to make spending decisions and other decisions that could impact the health of children in the household.

In addition and not surprisingly, both per capita income and access to improved sanitation correspond to lower levels of malnourishment in children under five. It is apparent that per capita income and percent poor are collinear, since when they are both present in the regression, the t-statistics drop and neither variable is statistically significant. This can be explained by the fact that poverty rate is a function of per capita income. The percent of people with access to improved sanitation was statistically significant at the five percent level, demonstrating the importance of sanitation at the community level to overall health in the community measured by cases of underweight children. The more garbage there is lying around houses and communities, the more breeding grounds for mosquitoes and other animals and bacteria which are vectors for diseases which can increase the risk of malnourishment and increase gastro-intestinal illnesses.

While most of these variables were found to be significant, it should be noted that the Adjusted R Square value is fairly low in all four models, indicating that most of the variance in the cases of underweight children under five is not explained by the chosen independent variables, even though they are statistically significant. Other relevant variables that were not available for this study would have been the presence of a health promoter in the town, number of doctors and nurses living in the community and the location and resources of the health facilities, including availability and the expense of transportation to the nearest health clinic.

Despite the results of the model, which indicate a positive correlation between water access and underweight children, it is known that lack of access to potable water is a significant contributor to gastro-intestinal illnesses in El Salvador, which can lead to

children being underweight. On a national level, while access to potable water and also access to a bathroom or latrine and a garbage collection service has vastly improved over the past ten years, there is far too large a percent of the population without these basic necessities, especially in rural areas. While both water and sanitation were included in the models, in my opinion the statistical definition of both variables are not as stringent as they should be. For example, in certain municipalities, the percentage of individuals with water service on their property may be high, but in rural and even some urban areas it is not uncommon for there to be running water for only a few hours every other or every third day. In addition, while individuals may have access garbage removal services, there needs to be more done to ensure proper disposal of community waste. While one doesn't see the severity of the problem driving along the new superhighways that have been constructed over the past six years, a drive along local roads reveals hillsides with smoke billowing up and a stench of garbage, a glimpse at the perpetually burning garbage dumps for a number of towns throughout the country. Even sadder, one can see children scavenging these hillsides for food or other items of any worth.

According to the UNDP (2005) report, while 91% of the urban population has access to potable water, only 47.5% of rural residents have potable water access, which does not even signify that families have running water twenty-four hours a day or that the water is of high quality and free of contaminants. In Llano Largo, which would be classified as a community with access to potable water, on average there was running water for about two to three hours every three days. Residents planned for this time period by using up all stored water on plants and cleaning, and then used large jugs called "cántaros" to fill up large water storage receptacles all around the house. Most residents

drank this “potable” water freely without purifying it, yet studies continually showed that there were both parasites and amoeba present in the water, a contributor to gastrointestinal illnesses in children, which could easily lead to higher numbers of underweight children due to these illnesses.

A breakdown of cases of underweight children across the regions of El Salvador shows the most dire problem exists in Ahuachapán, where nearly twenty percent of young children are considered underweight. This department has one of the lowest levels of remittances in the country. The departments with the highest percent of households receiving remittances, based on a map created for the UNDP study, tend to have fewer cases of malnourished children, including Morazán, Usulután and San Miguel.

Table 6: Percent Female-headed Households, Municipality Level, 2004³

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Average remittances per person	—	-0.019 (-0.60)	0.016 (0.50)	-0.007 (-0.21)
Per capita monthly income	—	—	0.038** (3.57)	0.008 (0.73)
Percent of people receiving remittances	0.055* (1.75)	—	0.096** (3.86)	0.101** (4.20)
Percent population in extreme poverty	-.086** (-3.14)	-0.123** (-5.33)	—	-0.117** (-4.23)
Access to phone in house	0.079** (2.27)	—	—	—
Unemployment	—	—	-0.029 (-0.38)	—
Adjusted R ²	0.287	0.224	.220	.271
F-Statistic	16.00	13.59	10.18	13.11

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

The gender models targeting the dependent variable female-headed households were all statistically significant, but the variable average remittances per person was not statistically significant in any of the models. The most important predictors of female-

³ Due to omitted variable bias in this regression, in future studies it is important to include number of male migrants vs. female migrants as a control variable.

headed households used in the regressions were percent of people receiving remittances and percent of the population in extreme poverty. Per capita income was also statistically significant, but only when not combined with percent extreme poverty since it is a collinear variable. An additional variable that was used in model 1 in order to get a sense if improved communications in the household, in this case access to either a cell phone or land line, is statistically related to the gender of the household, which was found to be the case. The last independent variable that was not statistically significant in any of the models was unemployment rate.

The positive Beta coefficient values for both percent of people receiving remittances and access to a phone in the house show that as the percent of people receiving remittances increases and the number of households with phone access increases, so does the percent of female-headed households per community. According to the fourth model, a ten percent increase in the amount of people receiving remittances, correlates with a one percent increase in female-headed households in municipalities. Similarly as Model 1 shows, as phone access in households doubles in a community, the rise correlates to a 7.9% increase in female-headed households. Both of these correlations are likely to be related to migration in that as the percentage of households receiving remittances grows, there is likely to be a higher number of males living outside the community, leading to more females taking over the leadership roles in households. Specific to the phone access, families and households with migrants abroad may be more likely to have a phone for the main purpose of communicating with the family member abroad, which would also help to explain the positive correlation with female-headed households.

The other important contributing variable in this model, percent of households in extreme poverty, had a negative coefficient value, indicating that as the percentage of people living in extreme poverty in community increases, the number of female-headed households also grows. According to Model 4, a ten percent decrease in the level of extreme poverty overall in community corresponds to a 1.2 percent increase in the percent of female-headed households. This relationship may also be related to migration and remittances in that female-headed households, are likely to have a male member working abroad, which could help the household to stay above the extreme poverty line.

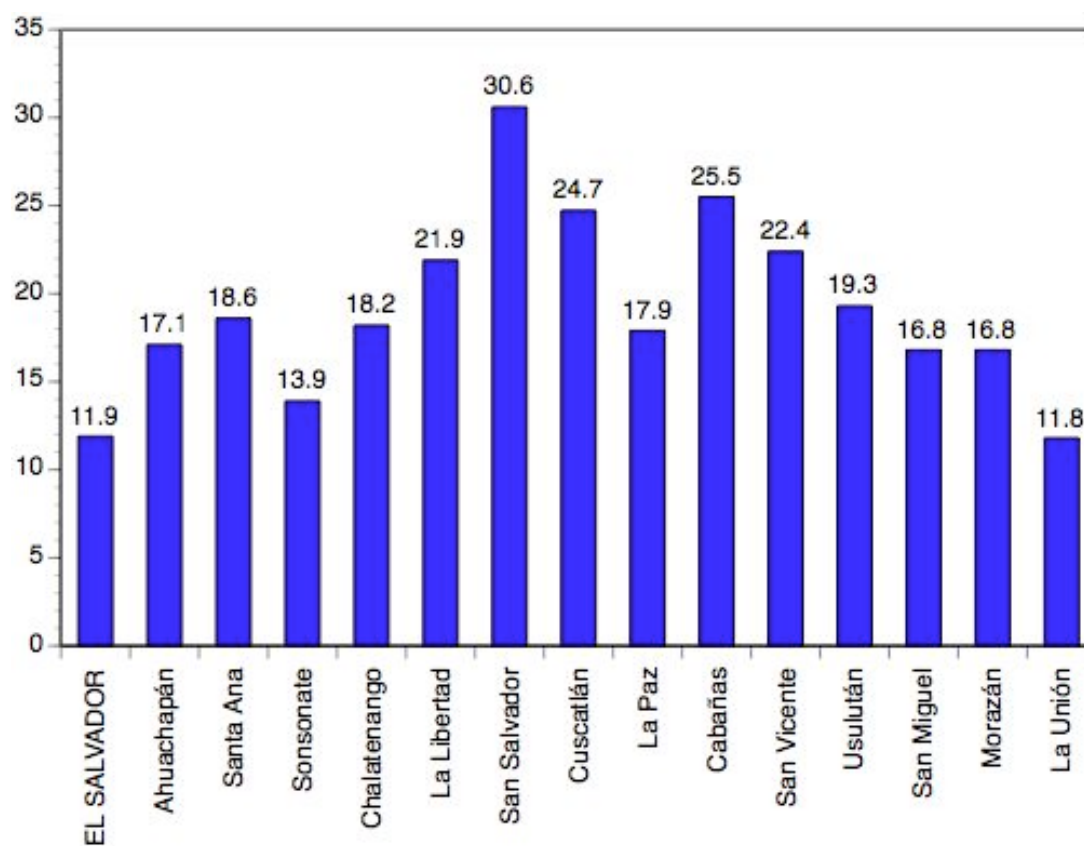
The lack of statistical significance for the independent variable monthly remittances per person in this multiple regression output, caused me to refine my hypothesis, that as the amount of monthly remittances increases, the amount of female-headed households would also increase, partially because an increased level of remittances might be a manifestation of an increase in out-migration, which often-times leaves females to the leadership roles in the households, while the males are abroad. Instead of citing the increase in the amount of average remittances as an indicator of migrants, it would be more accurate to state that an increase in the number of households and individuals receiving remittances is a better measure of number of migrants abroad, which would have an effect on female-headed households. As more women leave their homes and countries to seek employment and other opportunities abroad changing the gender proportion of male and female migrants, the relationship between migrant remittances and female-headed households will change.

This area of study specifically examining the role of women in the households and its relationship to migration is often referenced in the literature as a necessary area of

study. With long-term migration, many women and children are abandoned, either physically or financially or both, when the male migrant decides to stay and live in the United States and perhaps start a new family abroad. As more women decide to migrate the reverse may occur, and both situations can have a severely negative effect on the emotional and economic well-being of the family. A study on the effect of remittances on households in Ghana found that remittances received in female headed households have a stronger impact on the welfare of the household, than do remittance transfers to male-headed households, which raises several questions for further research (Quartey and Blankson, 2004). This assertion seems to correlate to the previous model on health, which resulted in the percent of female-headed households having the strongest statistical relationship to a decrease in cases of childhood malnourishment, at least among the selected independent variables in the model.

In terms of women attaining leadership roles outside of the household, which would be a necessary step in improving gender equality in the country, women still lag behind their male counterparts in professional positions in business and in leadership roles in communities. Since studies have shown that women are more likely to invest remittance income on education, health and housing (VanWey & Karin, 2004), it would be beneficial for households and communities if more women were empowered to make important household decisions concerning finances and resource allocation. The following graph shows the average percentage of women holding office in municipal councils is well below fifty percent in every department of the country. The first column labeled El Salvador shows the percent of women in the National Assembly.

Figure 8: Percentage of women holding office in municipal councils



Source: Mayoral data, 2003-2006, Supreme Electoral Tribunal y Legislative Assembly (as cited in IDHES, 2005)

Table 7: Average Life Expectancy, Municipality Level, 2004

	<i>Model 1</i>	<i>Model 2</i> ⁴	<i>Model 3</i> ⁵	<i>Model 4</i> ⁶
Average remittances per person	—	0.028** (2.52)	0.019** (2.62)	0.016* (2.086)
Percent of people receiving remittances	—	—	—	-0.016** (-2.59)
Per capita monthly income	0.009** (3.10)	0.026** (7.31)	—	0.010** (3.51)
Percent urban population	0.066** (15.17)	—	0.068** (15.81)	0.067** (15.84)
Literacy rate	0.025** (2.16)	—	0.036** (3.38)	0.009 (.743)
Adjusted R ²	.706	.385	.719	.728
F-Statistic	90.60	23.35	84.68	73.10

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

Another important socio-economic variable that is often used as an important metric for a nation's overall development is life expectancy. The various models targeting life expectancy as the dependent variable were all statistically significant, and

⁴ Includes variable access to potable water, which yielded positive statistically significant result; omitted here due to possible accuracy issues with variable.

⁵ Same as above.

⁶ Same as above.

three of the four also had high R^2 values. The Adjusted R^2 value of 0.728 for the fourth model shows that the five significant independent variables of percent urban population, access to water, percent of people receiving remittances, average monthly remittances per person and monthly per capita income account for over 72 percent of the variance in the dependent variable, life expectancy. The largest contributing predictor variable of this model was found to be the percent of the population living in an urban environment, which had high t-statistics in the regression output, and was significant at the one percent level. The positive beta value shows that the larger the proportion of the population living in an urban setting or environment, the longer the average life expectancy. In the fourth model, the resulting coefficient indicates that as the percent of the population that is urban increases by one-hundred percent, the average life expectancy in the municipality should increase by 6.7 years. There may be many reasons why this is the case, such as better access to healthcare and hospitals in urban environments, cheaper and more abundant nutritious foods, improved quality of drinking water, fewer dirt roads which create dust, leading to respiratory infections, better sanitation and a less taxing lifestyle in general. In addition, in rural El Salvador, which may be the case in other countries as well, the voice of the rural people especially the rural poor is less likely to be heard by the government, which may lead them to be exploited in terms of allowing land contamination, water contamination or other harmful conditions to occur without taking action.

Surprisingly, the variable access to water on is negatively correlated to life expectancy, which is a similar result to that in the health model, and I concluded that the variable in its current form and according to its current definition, may not be as valuable

as on that included quality of drinking water rather than the mere presence of water in the household. For example in the eastern part of El Salvador where the water table tends to be more saline due to the proximity of the ocean, the water has high mercury levels, which can be potentially hazardous to the populations who drink this water, which can lead to kidney failure at a fairly young age (attribute?). If there is no purification process, such as boiling or chlorination, access to water may not improve health, although healthy practices in the household such as boiling drinking water if the water quality, which can be influenced by educational campaigns, can help to increase the positive impact of water and enhance health and life expectancy situations in households. Also, as mentioned previously, the variable does not capture the frequency with which there is running water in the household, which is extremely sporadic in many communities of El Salvador, thus curbing the potential of this variable to improve health.

Per capita income and literacy rate are both positively correlated with higher life expectancies in most of the models. As in many of the models, these two variables are statistically significant and important variables, which are associated with improved quality of life, which is why they serve as good control variables. In Model 3, which did not include per capita income as an independent variable, the literacy rate was much more statistically significant with a t-statistic of 3.38. The lack of statistical significance for literacy rate in model 4 must be examined. When the model was run with all of the variables except for percent of people receiving remittances, literacy rate remained significant at the 10 percent level. However, when the model was run with percent of people receiving remittances, literacy rate was no longer significant, which may point to the theory that in communities which a larger percent of people receiving remittances,

literacy is not as important a driver as it is in communities where fewer people receive remittances.

The next contributing variable of monthly remittances per person, which was found to be significant in each of the models it was factored into, also has a positive impact on life expectancy. An increase of \$100 in monthly remittances per person corresponds to an increase of 1.6 years of life expectancy, which was shown in the fourth model. In this model's statistical output, the next most significant independent variable affecting life expectancy was per capita monthly income, which had positive coefficient values, which makes intuitive sense to conclude that as per capita income increases, life expectancy is also increased as a result due to better living conditions, nutrition, health and other related factors.

Perhaps the most surprising statistical result was the inverse relationship of percent of people receiving remittances in model 4 with life expectancy, statistically significant at the 5% level. According to the resulting Beta coefficient, it can be generalized that if the percent of people receiving remittances were to double, the average life expectancy would decrease by 1.6 years. This is seemingly contradictory to the results of the health model where the relationships of dollar amount of remittances and percent remittances had opposite relationships with the dependent variables. One speculation that might help to explain this is that as more households become dependent upon remittances, tendency to consume including eating and drinking would probably increase. With less need to work in agriculture or other labor-intensive jobs, due to remittances, individuals might over time tend to exercise less. As more people benefit from remittances, more families can afford to have a car, so walking might become a less

common mode of transportation. The combination of increased consumption with more limited activity, both of which could be encouraged by greater penetration of remittances, may help to explain the inverse relationship between these variables. Other ideas about why this relationship exists include the cycle of migration taking its toll on family members emotionally. The stress on families broken up by migration is significant, even though the extra remittance income may help alleviate financial burdens. Many children are raised by older grandparents, while their parents work abroad, which requires extra physical output from the elderly, which could possibly have side effects on their health and life expectancy. As migration spreads in communities, more people may be willing to take the risk to travel illegally to the United States or Canada, which can be a very stressful, dangerous journey. With the thousands of deportees each year and violence many migrants face along the journey, some aspects of the migration process may be having a negative effect on average life expectancy. A final thought on this discrepancy is that those who choose to migrate may be stronger and healthier than average, while those with disabilities or limitations may not be willing or able to take the risk. This selection of more able-bodied individuals to migrate abroad might leave behind a population with more health problems or issues that could affect life expectancy. These ideas would need to be researched further in order to test whether they are valid or not, and it would also be beneficial to see if similar trends exist in other years, in terms of the relationship of remittance income and penetration of remittances with life expectancy. It would also be interesting to examine similar variables in other remittance-receiving countries in Latin America and around the globe.

It is also important to note here that remittance income and general income, captured by per capita income, do not have identical impacts on families, and decisions regarding expenditures and savings vary greatly according to the type of income. While the dependence on migrant remittances is growing in El Salvador, as it is in many developing nations around the globe, families tend to view this type of income as temporary income, and other forms of income such as wages or profits earned by businesses as permanent or at least semi-permanent income. According to permanent income theory, people are more likely to save a larger portion of their temporary income than of permanent income, which could lead to an increase in remittance income per family or per person having a more dramatic effect on certain variables than an identical increase in per capita income. In addition, the cost of increases in per capita income not related to remittances is likely to be much higher in terms of human output, especially in rural areas where the agricultural economy is most common. Increased income due to hard work in the hot sun in the fields definitely affects a household and individual members differently than income received from abroad “cost-free” as remittances.

The effect of remittances on life expectancy illustrated by this model underscores the effect that migrant remittances may have on a variety of national and world rankings and relationships. In terms of Human Development Index (HDI) world rankings, many developing nations not only in Latin America but around the globe that are heavily dependent upon or at least affected by remittances may move up or down the rankings in accordance with rises or decreases in national remittance income. As a result, a nation’s overall climate for foreign investment may be adjusted, which is an illustration of the

multiplier effect that remittances can have especially from the viewpoint of international organizations.

Within El Salvador, the average life expectancy variance by department does not seem to be correlated with the percentage of migrants in each department. If one were to conclude based on the positive beta coefficient for monthly remittances in this model, that as remittances increase life expectancy should also increase, it would indicate that the departments of El Salvador with the highest levels of migration should have the highest life expectancy. This is however not the case, and the departments with the highest levels of migration tend to fall to the bottom of the list for life expectancy. However, a closer look at the characteristics of these departments, in terms of urban and rural percentages of the population reveals that the departments with a larger urban population tend to have a higher life expectancy while those with a larger rural population lower on the scale. The department of San Salvador, which also is home to the country's capital of the same name is on top of the list, with an average life expectancy of 72.4 years, and the department of Morazán, which is very rural and also an area particularly hard hit by the Civil War, at the bottom of the list with an average life expectancy of only 67.2 years, more than a five year differential. The life expectancy numbers are in line with the model's results because the independent variable of the percent urban population was found to be the most significant contributing variable, nearly five times as strong as remittances in terms of predicting life expectancy.

Table 8: Crime—Number of Robberies per 100,000 residents, Municipality Level, 2003

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Average remittances per person	-0.024 (-0.09)	—	-0.766** (-2.90)	-0.651** (-2.46)
Percent population receiving remittances	-0.584** (-2.75)	—	—	-0.664** (-3.21)
Percent population in poverty	—	-0.714** (-3.84)	-0.921** (-5.14)	-0.829** (-4.46)
Number of police per capita	—	3764.6** (2.77)	4786.2** (3.63)	4543.0** (3.40)
Percent female-headed households	—	0.461 (0.89)	—	0.939* (1.79)
Percent urban population	—	0.015 (0.11)	—	-.025 (-0.18)
Adjusted R ²	.074	.149	.178	.206
F-Statistic	4.33	6.53	8.79	7.51

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

The crime model has fewer observations entered into the regressions because in the available data set from the census, there was no data for robberies reported for ten different municipalities. The statistical software SPSS automatically eliminated the missing data points from the regression dropping down the total number of observations to 252, versus 262 for all of the other models, which were not missing any data points.

Each of the crime models had statistically significant independent variables, three of which had an inverse relationship with the dependent variable number of robberies, including average remittances per person, percent of the population receiving remittances and the percent of the population in poverty. As the results of Model 4 show, if the percent of the population in poverty increases by ten percent, the number of robberies per 100,000 would conversely decrease by 8.3. This result is somewhat surprising, since poverty is often perceived to be a contributor to crime. According to research linking crime and poverty, the unemployment rate has a more significant correlation to crime rates, specifically robberies (Borjon, 2008) but in this case, the results from the regression including unemployment as an independent variable, do not confirm the theory that increased unemployment leads to higher crime rates, since the resulting coefficient is negative.

Two other significant variables in this model were monthly remittances per person and the percent of the population receiving remittances, with t-statistics significant at the five percent level with negative coefficients in all cases. If the overall crime model is considered to be valid, which is questionable and is discussed below, these negative beta values help to refute my hypotheses about transnational migration, measured in this case by remittances, causing an increase in crime. From the model results, it is known that monthly remittances per capita and the percent of the population receiving remittances have an inverse relationship with robberies, indicating as average remittances increase and the percent of the population receiving remittances increases, the number of robberies actually decreases. This appears to be in conflict with the beta value for percent poor of the population having an inverse relationship with number of robberies,

since in that case an increase in poverty is statistically correlated with a decrease in crime, while in this case an increase in remittances, which has an effect on alleviating poverty, causes a decrease in robberies. The validity of this model and the data set will be examined further to determine if any conclusions can be drawn from the output.

The next significant variable is the number of police per municipality divided by the total population of each municipality, which was computed using the two separate data points. The resulting police per capita was a better variable to use, since it is normalized for the population size and density. The positive beta coefficient values show that increases in the number of police officers per capita are correlated with higher robbery rates. This does not imply a causal relationship, and it may be that the reason there is an increased number of police officers is due to a higher crime rate over time. In addition, several of the smaller municipalities in the data set had no police officers, especially in departments such as Chalatenango, which is mostly rural. This could mean that in the event of a robbery, it is too much trouble to report it to the police outside of the immediate village, and also that people might fear retaliation for reporting the crime.

Crime statistics, in general whether in industrialized or developing nations, are not always reliable. In the case of El Salvador, it is likely that the percentage of robberies that go unreported is quite high. According to an internet-based criminology index maintained by San Diego State University, crimes, including rape, assault and robberies are significantly underreported in El Salvador. The reasons for lack of reporting incidences of rape have deeper roots in the society, including lack of support for victims of these types of crimes, but for the purpose of analyzing the model at hand, the data collection for robberies will be questioned. From personal experience in a rural area of

El Salvador, villager took a more vigilante approach to lesser crimes such as robberies, and almost always avoiding involving the police in an investigation. This may be due partly to a distrust or lack of confidence in the police, but it is probably more seriously a result of people's fear of retaliation. In a 2002 national survey of the Salvadoran population, nearly 75 percent of citizens responded that public insecurity is one of the main concerns in the country. As the gang problem continues to grow, with the two largest Salvadoran gangs, MS-13 and 18 becoming more powerful across national borders and into the northern hemisphere, villages all across El Salvador are experiencing a growing uneasiness with gang members, both real ones and imitators. While small town criminals and thieves may not have any real ties with the larger gangs, when they where the gang attire and sport the tattoos, citizens of El Salvador cannot differentiate, which creates a culture of fear, and I believe this is a big contributing factor to the under-reporting of crimes, leading to inaccurate crime statistics. When someone is robbed by a person they believe is affiliated with a notorious gang like MS-13, it is much easier to cut their losses and hope it does not happen again, then to become involved with reprisals.

For the purpose of trying to use this model to make policy assumptions, the results of the statistical output seem to be counter-intuitive. However, a more detailed statistical analysis, including changes in crime and changes in remittances over time, and also a deeper understanding of the process of collection of crime-related statistics and estimates of unreported crimes that are not included in the data, are necessary in order to use the technique of multiple regression for the purposes of isolating the impact of migrant remittances on levels of criminal activity.

Table 9: School Retention—Average grade level attained, Municipality Level, 2004

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Average remittances per person	—	0.008* (1.72)	0.010** (2.17)	0.003 (0.86)
Per capita monthly income	—	0.021** (14.10)	—	0.016** (11.55)
Percent urban population	0.029** (12.02)	—	0.028** (11.31)	0.020** (9.71)
Percent people receiving remittances	—	-0.021** (-5.83)	—	-0.017** (-5.64)
Percent underweight children under five	-0.033** (-3.00)	—	-0.035** (-3.19)	-0.020** (-2.23)
Masculinity index	-1.977** (-2.91)	—	-1.827** (-2.90)	—
Adjusted R ²	.610	.659	.615	.757
F-Statistic	59.28	72.95	53.21	91.39

Notes: All models include 4 regional dummy variables with Region II (Central I) removed. T-statistic appears in parentheses.

**Significant at 5% level

* Significant at 10% level

Of all the models created for the purpose of this research, one of the average grade level models resulted in the highest Adjusted R Square value of 0.757, which shows that the significant independent variables, which in this case were per capita income, percent urban population, percent of people receiving remittances, percent of

children under five that are underweight, masculinity index and average remittances per person, together explain about seventy-five percent of the variance in the dependent variable average grade level.

The most significant independent variable in this school retention analysis was found to be per capita monthly income, which resulted in significant t-statistics at the one percent level in each of the models. Incorporating the coefficient output from Model 4, an increase in per capita monthly income of one-hundred dollars per person, would correspond to an increase in the average grade level by 1.6 levels. The relationship between average monthly remittances and per capita monthly income is important to the analysis, in that while remittance income contributes to per capita income dollars, as the literature points out, this type of income which can be classified as temporary income, can have a very different impact in terms of spending decisions as opposed to other types of permanent income such as wages. Two of the models resulted in a statistically significant coefficient for average remittances per person, with the most significant being Model 3, when per capita income is not included as a control variable. According to this model's results, an increase in average remittances per person of one-hundred dollars per month, would correspond to an increase in 1 grade level attained by the average person.

These results do not necessarily demonstrate that remittance income and per capita income have a nearly identical relationship with school retention, which the model output for the independent variable percentage of people receiving remittances brings to light. The negative coefficient values, which are significant at the five percent level for this independent variable show an inverse relationship, indicating a negative correlation between the percent of people and households receiving remittances and school retention.

Using Model 4, the output suggests that as the percent of people in a community receiving remittances doubles or increases by 100 percent, there is a corresponding decrease of 1.7 grade levels in the average grade level attained by residents. The negative value is interesting and supportive of my hypothesis that an increase in migration and remittance income in households and families may be a disincentive for young people to stay in school. In my limited experience living in Llano Largo between 2000 and 2002 and subsequent visits back to the community over the next six years, it was very clear that each year, more young people were leaving the community for the United States. Even in families that place a high value on education, many young people were choosing to drop out of school to work and save up money to get to the U.S. illegally, without much opposition from their parents or other family members because of the potential to enhance their household income outweighing their doubts. In addition, in much of rural El Salvador the quality of education and curriculum is below average, a further disincentive to stay in school.

Another reason for the negative impact that the cycle of migration and increased remittance income may have on school retention includes the situation that as parents or older siblings leave for the United States, younger siblings are left to take over household and agricultural duties, which does not allow them to continue in school to higher grade levels. The difference in the positive and negative beta values for per capita income and percentage of people receiving remittances is also revealing because it differentiates that the increased income is not having the causal effect on the decrease in average grade level, but that there are other inherent characteristics of the cycle of remittances and migration that is having an impact. The fact that average remittances per person was not

found to be significant might be explained by inferring that it is not necessarily the dollar amount of remittances that affects school attendance, but the state of being a recipient of remittances versus a non-recipient that has more of an impact. Also, as mentioned before in differentiating the two remittance-based variables, the larger the percentage of persons receiving remittances may affect a community more profoundly and be a more accurate indicator of the level of migration from a community, whereas the average remittances per person may be skewed, if a small group of families or households are the ones receiving the majority of remittance dollars. In addition, the greater the percentage of migrants in a community, the more likely that they have built solid networks in their destination country, which facilitates the movement of new migrants, who are likely to be other family members and community members.

These results tend to diverge from the theories put forth by some researchers in literature on remittances, such as the study by Cox Edwards and Ureta (2003), which found a significant positive correlation between remittance income and increased school retention. While the key independent variable was found to have a statistically significant positive predictive effect in two of the models, it was not statistically significant when the model controlled for per capita income and the percent urban population. Then results also diverge from the results of study (Yang, 2003) on the breakdown of remittance expenditures in Salvadoran households that used household self-reports and found that only 3.8% of remittance income is reported to be spent on education. Another related study determined this percentage to be higher based on 2004 census data, stating that 6.6 percent of remittance income in El Salvador is spent on education (Gammage, 2007). In the Yang study, the author was careful to state that this

percentage is most likely understated because individuals may be miscalculating the allocation of remittance income and simply thinking of total expenditures, which would be due to human error in the survey. Yang attributed the potential positive impact of remittances on school retention to the fact that remittances allow families to make certain types of investments, such as education, that may not have previously been possible. For example, children may be able to stay in school to higher grade levels because the extra income from remittances makes up for the income they could be earning by working. If children are not in school, a common reason is that they are needed to bring in household earnings and for this reason, they cannot afford to be in school. According to El Salvador's Ministry of Education figures published in a U.S. State Department report, more than fifteen percent of the population in El Salvador between five and seventeen years old work, with children in rural areas being much more likely to miss school or drop out of school completely in order to work on a full-time basis.

The other significant independent variables in the average grade level models are the percent of children underweight under five years of age, the percent urban population and masculinity index. The negative values for the coefficients, significant at the five percent level, for underweight children shows that in communities with high rates of malnourishment, average grade levels go down. This makes intuitive sense because an increased level of children in poor health is a sign of higher poverty levels and other problems that may be an impediment to school attendance. According to model 3, if the percent of underweight children under five doubles or increases by 100 percent, the average grade level in the community would conversely decrease by 3.5. In rural areas of El Salvador, where poverty and children's health problems are more severe than in urban

regions, the informal costs of tuition, including required school uniforms, matriculation fees, school books and supplies and “voluntary” contributions to school events, may cost families up to \$275 per year per child, or nearly four times the minimum monthly wage for an agricultural worker (Human Rights Watch, 2005).

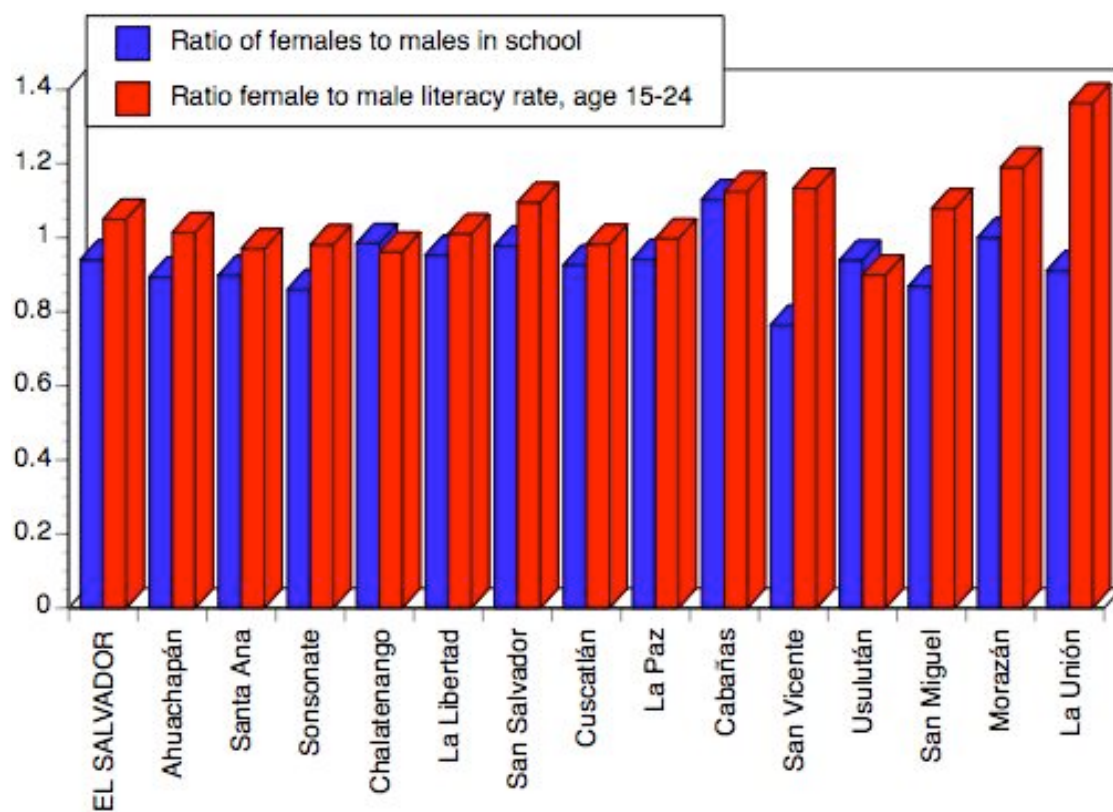
Percent urban population was the second most significant control variable, with very high positive t-statistics. According to model 4, as the population of a municipality becomes increasingly urban and expands by 100 percent, the average grade level attained by students would increase by 2 grade levels. This is another example of the gap in important quality of life variables between rural and urban populations in El Salvador and in many developing nations around the world. This issue is addressed more in the policy discussion. The final significant variable in the education models was masculinity index, which was significant at the five percent level in two of the models with a negative coefficient value, showing that in communities with higher proportions of males in the population, the average grade level is lower. According to the results from model 3, if the percentage of males were to double, the average grade level community-wide would decrease 1.8 grade levels.

It would have been useful to add another independent variable that was not available to this model, which is the average distance of travel to the local school. From my experiences in El Salvador, it is clear that the more isolated a village is, that the distance and the cost of getting to school increases, which surely has a negative impact on school attendance and retention. A recent Human Rights Watch study based on a 2000-2001 World Bank survey of both formal and informal costs of education in a number of

developing nations, found that cost of transportation can be a prohibitive factor in school attendance for children.

In follow-up to this education model, in a future study on El Salvador, I would like to look at school retention broken down by gender as two distinct independent variables. A small number of studies have provided some empirical evidence that increased remittance income may help to decrease the gender gap in educating children in developing countries. One study on Pakistan, which is included in a new book *International Migration, Economic Development and Policy* (Ozden & Schiff, 2007) found a great improvement in the percent of female children in school in migrant households, at more than sixty percent, with less than twenty percent of females in non-migrant households in school. An examination of the literature did not reveal any similar recent studies on El Salvador that break down the data by gender to examine the effect of remittances specifically on females and school retention. The following chart clearly shows the disparity between the genders in school matriculation and literacy, with the inequalities more dramatic in certain departments of the country.

Figure 9: Gender ratio of children in school and literacy



Source: IDHES, 2005

Note: The ratio of females in school includes primary, secondary and high school

Chapter IV: Policy Analysis

While the statistical observations do not prove that remittances are the stimulus of better social and economic conditions, they provide evidence of the correlation between increased amount and penetration of migrant remittances in communities to improved employment and basic living standards in terms of level of extreme poverty. The model results support the hypotheses that migrant remittances may help decrease the percentage of the population facing extreme poverty conditions and improve conditions for local employment. The results of the crime model provide limited evidence against my hypothesis that migration and remittances may cause increases in crime and gang-related activity, but a more useful crime model would have used a variety of dependent variables, such as homicide, assault and rape from the same year and also time-lagged one or two years later from the remittance variables. An unexpected and somewhat contradictory finding in the overall statistical analyses was that in several model results, the average amount of remittances per person and the percent of people receiving remittances had an opposite relationship with the dependent variable. This was the result in the case of malnourishment in children under five, life expectancy, school retention and female-headed households. Further studies investigating these results could replicate the methodology of this dissertation using data from El Salvador for other years and also time-lagged data to determine if this is a pattern and further examine why this inconsistency exists. In the summaries in the previous section, I drew some conclusions about this discrepancy, in regards to each specific model. The models reveal that while remittances dollars have the potential to enhance educational opportunities for recipients, the cycle of widespread migration and penetration of remittance dependence among

households in a given community also seems to be negatively correlated with school retention. The statistical models and analysis used in this dissertation showed that the dollar amount migrant remittances did not have a statistically significant correlation to the number of female-headed households, but resulted in a negative Beta coefficient and t-statistic. On the other hand, the variable percent of people receiving remittance had a statistically significant positive correlation with percent of female-headed households. The unemployment and poverty models and results of this research support other scholarly research themes that remittances have a positive impact on the social and economic well-being of families and communities. However in all of the other models the relationship is more ambiguous, depending on which independent variable is considered more important, the dollar amount of average remittance per person for those families receiving remittances or the percent of people in the community that receive remittances. In the case of El Salvador, the data and models used in this dissertation provide evidence that there are a number of social and economic indicators that remittances seem to have a positive correlation with, and that many of the other independent variables used in the regression models, which themselves have the potential to be affected by remittances, such as literacy rate, are key to improving the well-being of the population.

In addition to using these models to draw inferences regarding policies on migration and remittances, the statistical output also provides other useful data for adapting current government policies in fields like education, law enforcement and public health. Beginning with education, since the models showed that the percent of people receiving remittances in communities has a statistically negative impact on school

retention, but an increase in per capita income has a strong positive impact on school retention, there seems to be a contradiction. Clearly as remittances go up, income goes up, but as this regression reveals, the difference in the type of income is important in the way it affects receiving families' decision-making processes. As mentioned in the previous Data and Analysis section, remittance income itself is not the negative stimulus for school attendance, but the psychological and emotional impact of migration and potential perception that migration has higher value than a high school diploma or even the completion of primary school, that plays the larger role. Policy intervention at this level can be utilized in a variety of ways. First requiring stronger enforcement of mandatory school attendance until ninth grade should be a priority at the national and local levels, with a focus on rural areas, where both school retention and attendance are dramatically lower than in urban areas. At the same time government enforcement of child labor laws must be improved because El Salvador has been rated poorly on its child labor enforcement, specifically due to the high number of children under fourteen years old who are obliged to work. The improvements in the enforcement of school attendance and prevention of child labor can help to raise the average grade levels in communities and also allow children the opportunity to be educated, even if their families would prefer them to be contributing to household income. There is no easy process to move towards this situation, but in rural communities a grass-roots approach would be a good start. If parent committees exerted pressure on families who do not send their young children to school and helped to provide incentives and help for the neediest families, such as recycling school uniforms and shoes, and collecting supplies for those who cannot afford them as a positive incentive, it might have a small impact. Federal agencies currently

provide a minimal level of assistance in grass-roots educational initiatives such as paying one or two community members to conduct literacy classes. A similar approach could be used with school retention, but I believe the only sustainable method of pressuring families to send their children to school must be community-driven and initiated through incentives and information. With additional support and resources from local governments to finance more widespread efforts at educating families about the importance of education and at the same time improving the quality and access of education, especially in rural areas, the necessary change in attitudes about education may begin to occur.

In order to improve quality of education, which is more a more severe problem in rural areas, it is vital that governments at the local, regional and state levels make education more of a priority and provide more incentives for qualified teachers to work schools in poor regions and villages and provide the necessary resources, including books, appropriate classrooms, lighting and fans for a positive learning environment. Since literacy together with average grade level attained have a very strong significant correlation with lower levels of poverty and higher average life expectancy, and these variables in turn have important statistical relationships with malnourishment in children and crime, it is clear that literacy and education are a high priority social issue in El Salvador and in other nations around the globe. According to a recent study on urban and rural disparities in education in Latin America (Lopez, 2007), El Salvador is in an intermediate position in terms of average primary and secondary school enrollment, and has a seven percent differential in primary education enrollment with levels in rural areas lagging behind urban enrollment levels, which is well ahead of Brazil at 20 percent, and

also Honduras, Peru and Nicaragua with between 9 and 11 percent differentials, all with rural enrollment lagging. At the secondary level, El Salvador had the widest gap of any of the nine countries in the study with a 37.3 percent lag in rural enrollment versus urban enrollment, with Brazil following close behind at 35 percent. While the trend of rising school enrollment in El Salvador is positive, it is not enough to provide incentives or impose penalties on families based on their children's school attendance, and more needs to be done to ensure equity in the quality of education. The significant gap between rural and urban enrollment at the secondary level also needs to be addressed, and may be partially attributable to a lack available secondary schools serving rural communities. Many cannot afford to pay the transportation costs to get to and from the nearest high school, which on unpaved roads by bus can take up to two hours or more each way in certain areas of the country.

The improvements in health related to increased remittance income as evidenced by the statistical decrease in underweight children under five in communities with a higher percentage of households receiving remittances, should be examined more closely in order to make relevant policy assumptions. The most basic assumption that can be drawn is that the increased income from remittances helps families to pay for healthcare when necessary and spend money on preventative medicine including doctor visits. However this notion does not fit with the statistical output specific to the average monthly remittances variable, which was correlated to increased cases of malnourishment in children under five, making it advisable to run data from other years and time-lagged data through similar models. Other ramifications of having family members in more industrialized nations that may positively affect health practices in the home communities

include knowledge-sharing and “social remittances.” The idea of social remittances is a concept that is gaining more acceptance in this field of research, and includes the skills, ideas, attitudes, technologies and practices (Sorensen, 2006) that can help to improve overall socio-economic development, including health practices. Specific to health and health education, one study attributed improved child health and a lower infant mortality rate, to the health education that female migrants receive while living abroad, which was found to be true in Mexico, Guatemala and Morocco, and that these health benefits being passed along to family members living in the countries of origin are more likely to result when females are the migrants as opposed to males (Hildebrandt & McKenzie, 2005). A recent common theme receiving attention in the literature involves the liberalization of gender roles and empowerment of female migrants in the destination country, which can be transferred in the form of social remittances to households and family members back home. Opinions and practices concerning family planning, religion and politics are some of the few areas where individuals are likely to experience a very different perspective when moving from El Salvador to the United States or from Morocco to Spain.

According to national statistics on El Salvador (UNDP, 2005), the masculinity index, that is the percentage of the national population that is male, has been decreasing since 1995, from 96% to 92% in 2004, which is a phenomenon due partly to the migration of larger proportion of males out of the country pursuing economic advancement abroad. The decreasing proportion of males in the population is a metric the government should be aware of, since there are a variety of discrepancies between economic activity for males and females in El Salvador and also between male and female-headed households. By understanding the changing gender patterns and roles of

the population, policies may be considered and enacted to anticipate future issues and problems. The average monthly salary at the national level has increased from \$169 in 1995 to \$234 in 2004, an increase of 38%, but a decrease since 2000. The average monthly salary is much higher for men at \$255 than it is for women at \$207, but the growth in average salary for women at the national level has outpaced that for men with a dollar increase of 54% since 1995, while that of males only increased 31%, helping to slightly shrink the gender disparity in earnings. However, greater equality in earnings is still urgently needed, especially as more women assume leadership roles in households.

While outside the scope of female-headed households, it is worth noting that women in El Salvador are still severely underrepresented in municipal government and town councils and in the upper ranks of administration within organizations. At the national level only 20% of town council members are female, and that percentage is as low as 11% in La Unión, which happens to be the region with the largest percentage of the population receiving remittances. The national percentage of women in executive or administrative positions is 33.4%, but with a wide differential among regions from 6.9% in Cuscatlán to 53.9% in Sonsonate. A recent political gain for women is the first female elected as the Mayor of San Salvador, Violeta Menjívar.

The percentage of persons in El Salvador living in poverty has decreased significantly since 1995, after an initial spike from 1996 to 1997. Nationally the changes over the last ten years of percentage of female-headed households living in poverty have not differed dramatically from male-headed households but female-headed households have advanced more than two percentage more than their counterparts, and have experienced a drop from 46.9% in 1995 to 33.3% in 2004, while male-headed households

in poverty decreased from 46.1% in 1995 to 35.1% in 2004. The more obvious disparity occurs between households differentiated by gender in urban areas versus in rural areas, as is the case with average monthly salary, with rural Salvadorans earning far less than their urban counterparts. In rural areas male-headed households are more likely to be living in poverty at 45% while 39% of female-headed households in rural areas fall into this category. In urban areas, only 28% of male-headed households are classified at the poverty level, with 31% of female headed households in this category in urban areas. The difference in rural areas is probably due to transnational and intra-regional migration. If males leaving the country or town of origin is a determining factor for females assuming the leadership role in the household, which is not captured in the statistical model which only had remittances as a metric, and if households receiving remittances are less likely to be in poverty than those that do not, which this study and others provide evidence of, then female-headed households may be better off than male-headed households in rural areas. However, this would not explain female-headed households, where the husband/father has died or left for other reasons, and in such a case, it is difficult to hypothesize how females who earn on average less than three dollars a day can keep their household out of poverty. Table 10 on the next page illustrates improvements in extreme and relative poverty levels over time in El Salvador.

Table 10: Ten-Year Trend in Percent of Households in Poverty

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
% households ext. poverty	18.2	21.9	18.5	18.9	16.7	16.0	16.1	15.8	14.4	12.6
Urban	12.4	14.5	12.0	12.9	10.3	9.3	10.3	10.3	9.7	8.6
Rural	26.5	32.3	27.9	28.8	27.4	27.1	26.1	26.0	22.1	19.3
% households rel. poverty	29.3	29.8	29.5	25.7	24.6	22.8	22.7	21.0	21.7	22.0
Urban	27.6	27.9	26.7	23.1	22.5	20.6	21.0	19.2	20.3	20.7
Rural	31.7	32.5	33.7	29.9	28.0	26.6	25.5	24.2	24.1	24.4

One program that was recently implemented by the Salvadoran government in an attempt to help alleviate the level of extreme poverty and at the same time encourage positive outcomes in qualifying households around the country is called Solidarity Net. In 2005 the government made its first payments out of a \$13 million fund to poor households in one of the nation's poorest departments—Morazán, and plans to distribute the rest of the funds until 2009, providing cash to the neediest communities around the country. The Solidarity Net payments are conditionally distributed to families on a bi-monthly basis, and recipients must follow certain conditions, including sending their children to school and working to improve their health by completing regular preventative medical visits and attending informational sessions about nutrition. Critics of the program have argued that while Solidarity Net helps promote important positive outcomes, that the underlying economic model of El Salvador is still flawed, and that even with improved education and health, if individuals do not have economic

opportunities, they often choose to seek those opportunities elsewhere, which results in a brain drain, diminished labor pool and a continued cycle of migration (Proceso, 2005).

There is a lack of widespread research focused specifically on migration and gender, but the scholarly work on the topic reveals significant differences between the genders on the remittance-sending end and also in the receiving households when it comes to spending decisions. According to one study, remittances received by female heads of household have much more potential to benefit school retention for children and children's health, and they cite that the reason for this is because women are more inclined to invest in their children than men, and, in more traditional societies, they tend to lack control over financial decision-making, assets and property, so they are less likely to consider spending remittance income in these areas. According to several researchers, men tend to spend remittance income on consumer items, such as cars and television sets, and for investments, such as property and livestock (Ramirez, Dominguez & Morais, 2005).

While this gender model did not effectively capture factors outside of per capita income and percent of remittance-receiving households that significantly predict the percentage of females assuming the leadership role in households, it is an important area of study, and as the other models show female-headed households can be an important predictive variable for other important socio-economic characteristics such as improved health practices. As the number of female-headed households in El Salvador continues to grow, partially as a result of migration, it is vital that women gain greater equality with men on all levels. Remittances can help to play a greater role in poverty reduction and development if the discrimination that women face in the workforce, banking and in real

estate begins to diminish, and if they are given more power to make decisions in their own households and in the wider community, including within hometown organizations and also town councils.

The Salvadoran government has taken extreme measures recently to deal with the severe problem of crime, in many cases related to gang violence and gang activity. The heightened effort on fighting gang activity has been dubbed “Mano dura,” loosely translated as “Tight fist,” which has received widespread criticism from international human rights organizations, has eliminated rules of due process by allowing police and new special gang units to imprison suspects with no real evidence (Thompson, 2004). As gang members continue to be deported from the United States and recruit new members preying upon the poor and disenfranchised youth, the spread of gang activities grows also, transcending national borders and becoming a more serious problem that is related to international migration.

The weaknesses of these statistical analyses should be addressed before moving on to wider implications. A first weakness of the data is the issue the true dollar amount of migrant remittances, not only in El Salvador but all over the developing world, is predicted to be from twenty-five to seventy-five percent higher than the officially reported amounts, which include dollars sent through official channels in addition to the dollar amount of remittances that are self-reported by recipients in household surveys. Various reasons why households might prefer to underreport remittances may be fear of being penalized somehow for this increased income from abroad and other psychological factors, such as not wanting other family members or friends to find out how much they are receiving or wanting to qualify for free services that the increased income might not

allow for. According to several organizations that have used census data from El Salvador in studies or have conducted household surveys, individuals have expressed fear of being targeted and robbed if it is known that they are receiving remittance dollars, which may be another reason for underreporting. If in fact households are underreporting or not reporting remittance income at all when they are in fact receiving them, the statistical analyses could be skewed. Because there is no established or accepted formula to compensate for this inaccuracy in the data, for the purposes of this dissertation, the expected discrepancy in the actual dollar value of remittances received by households was disregarded. Since the EHPM census surveys are the main generator of data in the country, they can be improved to capture more relevant information from households regarding migration and remittances. Besides addressing specific dollar amounts of remittance income or number of migrants living abroad, the survey could address some underlying questions leading to emigration, including asking young people what their aspirations are and also about their own plans for migration. While such open-ended questions are more difficult to code and analyze, they may be more helpful in providing insight in the long-run about the cycle of migration and what citizens are looking for from their local and national leaders that would help to break the cycle of migration.

In terms of making a simplistic value judgment on the impact of remittances on the well-being of the citizens of El Salvador based on these limited data analyses, the conclusion would be that remittance income seems to be strongly linked statistically to improved overall living conditions, with the exception malnourishment in children under five. Since such a significant percentage of households in many parts of El Salvador are recipients of remittances, these statistical results, which are based on community level

data, may be strongly linked to improvements mainly in the remittance-receiving households, leaving the rest of Salvadoran households who are not beneficiaries in the same situation or possibly worse. If data had been available at the household level, the regression models could have isolated the different effects on remittance-receiving households and those that don't have remittance income, which may have resulted in different results.

Since this differential is not discernable with the available data, it will be assumed that while economic and social indicators are positively impacted by increases in the amount of migrant remittances received, that it is not equally distributed among all households and individuals. This is where government policy and measures become of utmost importance in creating any long-term and sustainable initiatives for the productive use of remittances both in and beyond the households receiving them. One model that would be useful to promote such a goal is a "State-led development strategy" (Wise & Covarrubias, 2007) that acknowledges the benefits of migration and remittances but that moves beyond to create strategies with the long-term goal of alleviating the pressure on migrants and curbing migration flows. This type of strategy would have to incorporate an educational component, and perhaps more importantly a focus on scientific and technological innovation coupled with public and private investment in strategic areas to create sustainable economic development in migrant-sending countries. This model is quite different from a "remittance-based development model" which many migrant-sending countries, such as El Salvador, Mexico, the Philippines and Morocco, which place remittances dollars at the center of development policy, putting too much pressure on migrants and their earnings to create a superficial socioeconomic stability without a

targeted strategy to capitalize on them for local development or offer alternative economic choices for residents to help decrease the inequalities between migrant sending and receiving countries, which is necessary to break the cycle of migration (Wise & Covarrubias, 2007).

A growing concern of experts in the field and citizens of El Salvador is the inflation associated with dollarization of the economy and also the increased flow of dollars due to migrant remittances. In certain sectors such as real estate, it is becoming more and more difficult to purchase land and build homes, since migrants earning U.S. wages have been buying up land and driving up prices around the country. While this phenomenon is benefiting some sectors, such as banking and construction, it is helping to create a wider equality gap between rich and poor, and disproportionately hurts the poorest families who are not beneficiaries of remittances. If successful Salvadoran emigrants earning a U.S. salary buy property and land in their home communities, it tends to drive up prices, making ownership that much more difficult for poor residents who do not have access to such funds. Also as a result of the major shift in the economy away from agriculture, which can be partially attributed to the fast pace of growth in remittances and migration and also new free trade agreements which make it more difficult for Salvadoran farmers to compete with international market prices and production, the country is more susceptible to falling into economic downturns and more dependent on imported foods staples, such as corn, rice and fruits and vegetables.

Channeling Remittances for Sustainable Development

One of the main challenges for the Salvadoran government concerning the relationship between remittances and growth and development is to recognize the existing effects of remittances on both a micro and macro level and to create a comprehensive framework for long-term growth that acknowledges the importance of remittances but does not overemphasize them nor assume they are sustainable or a replacement for internal economic drivers. In addition, it is not enough to acknowledge that remittance dollars can help increase school retention, especially if those individuals attaining high levels of education continue to have few opportunities for careers and investment in their communities and home country. A continuous “brain drain” of educated people would negate or at least mitigate the benefits of increased school retention. In other words, it is important to increase the value of current remittance flows by expanding their reach beyond recipient households, while breaking the cycle of migration by creating opportunities at home, so that people with high aspirations can feel there are alternatives to going to the United States or other country in order to prosper.

The decision to adopt the U.S. dollar in 2001 as the national currency of El Salvador, was at least in part in an effort to facilitate the flow of remittances in the form of U.S. dollars to El Salvador, eliminating the loss of money by recipients in currency exchange costs. However, many studies have shown that dollarization has had many negative impacts from producing immediate and significant price increases, not accompanied by wage increases, to leading to a loss of a national symbol in the form of the national currency. In addition the Salvadoran government has relinquished its monetary policymaking to the United States, which has resulted in loss of exchange rate

flexibility and the ability to control its own currency. A 2005 IMF study outlines several challenges for policymakers in El Salvador to address several undesired macroeconomic effects of remittances, including inflation and increased consumer prices, increased interest rates, increased imports and a decrease in economic activity, money supply and international reserves (Cáceres & Saca 22). Due to the loss of monetary policy autonomy which accompanied dollarization, the Salvadoran government is limited in many ways to address some of these problems. However, it can and must implement programs to spur entrepreneurial activity and small business development, especially in rural areas, which can begin to counteract some of these problems, especially the decrease of economic activity.

Other governmental tactics and policies initiated over the past few years to encourage the flow of remittances include the creation of a Directorate in 2000 within the Ministry of Foreign Affairs to address the needs of the Salvadoran community living abroad, the decision to maintain no restrictions on the transfer of remittances, allowing Salvadorans entering the country to bring up to \$1,500 in merchandise duty-free and in general maintain a non-restrictive environment for remittance transfers. Nations dependent upon remittances that keep restrictive measures to a minimum are more likely to encourage formal remittance flows, which is a necessary first step in any approach to channel remittances toward more long-term and collective development uses. Tactics such as mandating remittances, which is the case in South Korea where the government sets as a condition for issuing worker's permits, that emigrants remit at least 80% of their earnings through the Korean banking system, can be very invasive. The literature on remittances frowns upon such hard-handed measures since remittances are a form of

personal income that should not be subject to such high levels of government interference. It is important and a challenge for governments to recognize the line between policy attempts at channeling productive uses of remittances and unfairly placing a burden on migrant workers by taking their income.

Another large problem serving as a barrier to productive use of remittances is the low levels of banking in El Salvador. The Inter-American Development Bank (IADB) has been very active in promoting bank accounts for all citizens, especially those receiving remittances. In order to remedy this situation, the IADB along with different government agencies has encouraged the proliferation of credit unions, which are becoming more ubiquitous throughout Central America. The organization also helped to create the International Remittance Network in 1999, which has achieved the goals of facilitating remittance flows and lowering transaction costs by generating competition and also raising awareness among senders and receivers of remittances about the various options available. Efforts such as these along with improved monetary policy and exchange rate stability have helped reduce the size of the informal remittance sector in Latin America, whereas in certain remittance-receiving regions, most severely in sub-Saharan Africa, financial instability has caused nearly 75 percent of remittances to be sent by migrants through informal channels.

The statistical findings regarding education and school retention have important policy implications for El Salvador. While the data available for these analyses did not allow for a time series analysis to determine the more long-term relationship between remittances and education and also the impact of education on employment and the continued cycle of migration, it provided some evidence that increased remittance income

has a positive impact on school retention in recipient households and communities. However this result must be measured against the negative correlation of the other remittance variable percent of households receiving remittances, which has an statistically significant inverse relationship with school retention. If students are able to stay in school to higher grade levels, this could be a positive effect of migrant remittances with the potential to contribute to human capital formation, which could in turn lead to long-term growth. However, if higher levels of education are not accompanied by improved local employment opportunities and incentives to remain in communities to work and invest, instead of staying in school these young people may decide to migrate to the United States, where even the lowest-paying jobs for unskilled workers are likely to pay more than much higher level jobs in El Salvador. Students and their families must feel confident that the investment in education, especially college education has tangible value, and in order for sustainable internal growth at the national level to occur, these educated people must feel that there is a reason to stay and work in El Salvador. In other words, the sustainable development that remittance-receiving nations seek to achieve needs to increasingly consist of “remittance-independent development” or the building of local enterprises and employment opportunities that are not dependent upon the continued receipt of remittances. In addition, while dollar amount of remittances was statistically correlated to higher grade levels attained by individuals, the models provided evidence that the proliferation of migrant remittances throughout communities measured by the variable percent of people receiving remittances, has a negative correlation with school retention. Some of the possible reasons for this are discussed in the previous section, and this phenomenon should be studied further. If the statistical trend holds true

for other time periods, it is another indication that migration leads to more migration, and the psychological and sociological ramifications of this can lead to families favoring investments in migration rather than education if the financial benefits seem much greater.

Stimulating Formal Remittances Transfers and Investment

As discussed earlier, as the percentage of remittances transferred through the formal sector increases, the accuracy of the data that governments and relevant institutions use to make decisions relative to remittance policy, increases accordingly. Accurate data is also necessary to fully analyze and understand the impact of international remittances on poverty, investment and development needs. There is a need for more specific research focused on the structure of the remittance market, the nature of the competition between firms in the market and profitability of different strategies. The nature of the different players in the remittance market, from money transfer companies to banks to credit unions, needs to be studied and compared, especially since some firms are still operating in a discriminatory manner charging high fees for relatively small amounts of money to be transferred.

The government can provide incentives for banks to allow new customers to open free savings accounts for remittance transfers, which can help formalize the transfer process and also increase the probability that remittances be used for savings and investment purposes. For Salvadoran banks like Banco Agricola, which controls about ten percent of the remittance transfer market, lagging behind Western Union, they stand to gain profit by winning greater market share, and will help to bring in the unbanked

poor into the banking system. This bank has also partnered with the Pan-American Development Foundation to invest a portion of its profits from remittance transfers to community development projects in different parts of the country, which is good for public relations and an example of how to channel money related to remittances for wider benefit. Some expected benefits for individuals opening accounts include potential interest earned on remittance dollars, the ability to establish credit which can be used to take out small business or home loans, and to take advantage of other benefits offered by banks. At the macroeconomic level, as more people open accounts and remittances are formalized and also recorded more accurately, the nation's overall creditworthiness can increase, also increasing the country's risk rating to help spur investment and development and making it easier for the government to borrow from international financial markets (Ratha, 2007). In addition to linking banking to remittance transfers, something must be done to address the large fees for sending formal migrant remittances, which can be up to \$25 for a transfer of \$200. For migrants earning minimum wage in the host country, this fee is very high and can be a significant inhibitor in sending earnings through formal channels. In some parts of the world, including southern Africa, India and the Philippines, cell phone banking is growing in popularity. According to a radio interview of experts on migration including Dilip Ratha, cell phone banking which includes the use of text messaging to pay bills, offers a very convenient and low cost tool for individuals without convenient banking access to join the ranks of banking. Due to national security and anti-money laundering and anti-terrorism laws worldwide, cell phone remittances transfers are not yet possible, but may be in the future, if the technology can evolve to address these legal concerns.

In El Salvador, remittance dollars are not currently taxed by the government, which is an effective policy in terms of encouraging formal remittance transfers. There has been some consideration given to the idea of taxing Salvadoran nationals living abroad, in a similar manner to the U.S. taxing its citizens living abroad, but the complexity of this since the majority of migrants are living abroad illegally and being paid under the table, would make such a tax policy very complicated and perhaps not worth the effort. The alternative of taxing remittance dollars would likely have the effect of driving more remittance dollars to informal channels thus reducing their development potential.

Another way to promote formal remittance transfers is to promote legal migration that leads to re-integration into the Salvadoran society, which would require cooperation with the United States embassy and immigration agencies, but has the potential to lead to positive results. While the majority of migrants to the United States are illegal, which prevents them from traveling freely back and forth, there are opportunities for increased legal means of migration, such as facilitating the process of receiving student visas for particular academic areas, such as information systems and public administration, to allow more qualified young people in El Salvador the opportunity to study abroad, but the visas can have provisions that require the students to return for a period of time to El Salvador to apply those skills to improve their home towns or other needy areas of the country. Just as doctors and nurses in El Salvador are required to spend what is called an “año social”, usually in a rural area, working in clinics and visiting households to provide health education, vaccinations and other medical treatment, the Salvadoran government could try to work with the U.S. government to create new opportunities for students and

partner with other institutions or non-profit organizations to help finance the most qualified students and make a concerted effort to provide attractive opportunities for them upon their return that can mutually benefit both the individual and the wider community. El Salvador hosts hundreds of U.S. Peace Corps volunteers each year, who work in a variety of fields, such as agro-forestry, municipal development and water and sanitation projects, in conjunction with partner organizations at the local level, including other international organizations. An enhanced student exchange program or post undergraduate program, like the one mentioned above, would allow Salvadoran students a similar opportunity to learn important skills, including language and technical skills in the capital city or abroad, to bring back to their own communities, which could have long-term impacts.

Engaging the Global Diaspora

Many researchers support a radical redesign of state institutions to more effectively deal with the reality of international migration and the flow of remittances between countries. One example of the Salvadoran government addressing this need was the creation of the General Directorate of Attention for the Community Abroad, which was undertaken to create a platform for establishing strong links with Salvadoran migrants and migrant communities around the globe and especially in the United States. The directorate documented the location of migrants throughout the United States and the location of the migrant sending communities in addition to the amount of earnings sent to family members as migrant remittances. Using the information gathered, the group identified different activities to improve relations with the migrant community, including enhancing communications and creating a new website with information about consular

services, visa services and eligibility and different contact information for a variety of organizations that can assist in migration-related issues. The Salvadoran government has also successfully lobbied the U.S. government to offer Temporary Protection Status (TPS) to Salvadorans living in the U.S. without legal status (Gammage, 2007).

One way that Salvadoran migrants have taken an important first step in pooling resources to support community-wide development initiatives in El Salvador is through HTA's, which have been very successful in funding the construction of schools, health clinics and other infrastructure projects benefiting the wider community. The Salvadoran government, emulating an earlier initiative by the Mexican government, launched a matching fund program to support the activities of HTA's, providing incentives for migrants to pool their earnings to be sent home, and also promoting civic organizations in El Salvador to organize themselves to be eligible for the HTA and government matching funds. The Salvadoran government has taken a lead by establishing a one-to-one matching program titled "Unidos por la Solidaridad" (United for Solidarity) and made it a priority program for the Social Investment and Local Development Fund (FISDL), which is much more than other governments have offered for such HTA-partner initiatives. The government of El Salvador has also made it a point to use its overseas embassies to reach out to Salvadoran migrants abroad to encourage investments in these HTA development projects. According to several scholars on El Salvador, one of the most important priorities in maximizing the benefit of remittances is for the Salvadoran government to more aggressively cultivate the relationship with its migrants, by expanding their legal rights in their home country, such as extended the Salvadoran presidential vote, and work harder to lobby the U.S. government to expand the legal work status for these migrants.

As these Salvadorans achieve a more stable and secure life abroad, the climate for remittances and stronger partnerships with HTA's and other grass-roots development opportunities will be greatly enhanced.

The issue of Salvadoran emigration to the United States and the growing dependence of the national economy on migrant remittances has become a vital political issue in national, departmental and even local elections in El Salvador. During the presidential elections of 2009, the remittance issue was a huge topic of debate with the reigning ARENA party and even politicians in U.S. warning the Salvadoran people that by electing the left wing party they would be jeopardizing their future remittance income from the United States. With the leftist party, FMLN (Farabundo Martí National Liberation Front), winning the election in March, President-elect Mauricio Funes has assured citizens he is dedicated to maintaining good relations with the U.S., including encouraging remittance flows and maintaining close ties to migrants in the U.S. (Schmidt, 2009). Previous to this election, the political party that was in power for many years, ARENA, had used the threat of losing remittances from the United States in its electoral campaigns to try to convince voters that if the left wing FMLN won government office positions especially the presidency, that it would hurt relations with the U.S. and jeopardize the flow of remittances dollars, which many households have come to depend on (Rubin, 2004). During the 2004 presidential elections in El Salvador, several prominent Bush Administration officials in the U.S. denounced the FMLN publicly, an act that was criticized by several Congressional democrats in the U.S. as an attempt to interfere in El Salvador's elections and violate its national sovereignty. The victories of ARENA during recent years was probably due in part to the desire of many voters to

maintain the best political relations possible with the U.S. because of their own household dependence on remittances sent by their family members living there. The victory of Funes does not imply that the issue of remittances is less important to the Salvadoran electorate, but perhaps the President-elect's pledge to be moderate and maintain close ties with the U.S. helped assure his victory.

An outgrowth of the adoption of structural adjustment policies over time in El Salvador, is a decrease in opportunities in the agricultural sector, once the most important economic activity in rural El Salvador. As rural farmers are faced with global market competition driving down crop prices and increasing prices of chemicals and fertilizers needed to sustain harvests and increasing price of land, many farmers cannot afford to be producing their crops. From 1980 to 2000 there has been a decrease in the number of agricultural workers in rural El Salvador of 12,000 and over the same time period an increase in non-agricultural workers of 254,000. While HTA's have helped to fund a variety of infrastructure and small development projects, relatively small amounts have been directed towards investments in the agricultural sector. Small projects such as a cheese cooperative in Llano Largo, Cabañas funded by FISDL, has allowed women to organize a small business buying milk from local sellers, making cheese and selling it both locally and in the nearby urban center. This small effort has empowered a number of families and provided the women training in managing funds and improving efficiencies involved in the buying and selling process. This is an area that government agencies in partnership with HTA's can help to spur sustainable economic activity in rural communities and provide needed infrastructure.

The private sector is also playing an important role in linking migrant communities to home countries and providing avenues for migrants to spend and patronize businesses in their home countries through facilitated by technologies such as the internet. A number of companies based in various countries around the world targeting migrants in the United States and other industrialized nations are finding innovative ways to reach this target market. One online company, Filipinasgifts has created an interesting business model targeting Filipino migrants working in the United States to buy a variety of gifts from flowers to bakery items and even pizza to send to their families at home. The innovation is that the sellers of the products are small businesses in the Philippines, so customers get the convenience of making a quick online transaction, and small businesses in the Philippines are benefiting from the patronage of customers in the United States.

While these types of business enterprises do not equate with building schools or hospitals in needy communities, they are examples of how migrants abroad can help spur local economies by choosing to spend their dollars back in their home country rather than sending gifts purchased in the United States. The long-term effect of such ventures, which can proliferate rapidly with the use of technology and the internet, would have community-wide effects from an economic standpoint, and as research shows, including the statistical analyses in this dissertation, per capita income is a vital determinant in the overall well-being of households and communities. From a search of available companies that ship gifts and other products to El Salvador, it appears that this type of service is not available.

Another innovative venture that does not specifically try to link migrants with their home countries but that aims to support and encourage small-scale entrepreneurial ventures in developing nations is a non-profit organization called Kiva. The organization aims to engage everyday citizens as potential financiers of small businesses, by connecting entrepreneurs with limited resources to individuals willing to make a loan at no interest to help them to get the entrepreneurial venture started. The business people are expected to pay back the loan in full, and lenders can reinvest the money towards other worthy ventures. The internet provides the platform for connecting the borrowers and lenders. A similar business model could be used to connect HTA's or individuals outside of the Salvadoran migrant community in the United States with potential entrepreneurs in El Salvador. In partnership with existing microfinance organizations in El Salvador, or with the help of the government or non-governmental organizations, entrepreneurial activity could become more wide-scale, especially if individuals benefited from the same no or low-interest terms. The company eBay has just launched a new subsidiary called Microplace, which serves a similar purpose in providing loans to entrepreneurs in developing nations, but with a different business model.

Other creative and entrepreneurial efforts have fallen short of their potential for a number of reasons. One example was a program launched by the Ministry of the Economy in 2000 that was aimed at cultivating migrants as potential investors, and created a 'trading cluster' in an attempt to link Salvadoran businesses and entrepreneurs with migrant partners. While it showed some early successes, it was not successful in the long-term mainly due to the poor investment climate in many regions of the country (Gammage, 2007). Another growing area of investment involving migration and

remittances is in the mortgage and banking sector. Whereas banks were unlikely to offer loans and mortgages to migrants living outside of El Salvador, there has been a shift in their lending practices, according to a number of recent newspaper and magazine articles. A recent article in the Washington Post states that until recently only one percent of the nearly three billion dollars sent home each year by Salvadoran migrants has been spent on housing and that only two percent of mortgages in El Salvador are held by Salvadoran nationals living outside of the nation's borders (Davis, 2006). Economists and politicians alike, including President Antonio Saca, believe that empowering migrants in the United States, including those migrants who are living and working illegally, to invest in the Salvadoran housing market, can help spur long-term growth nationwide by creating a boom in real estate and construction and create a large number of employment opportunities (Aizenman, 2006). However, due to the widespread poverty in El Salvador, while an increase in land purchases by Salvadoran nationals living abroad would benefit the market and the economy, it would hurt the poor and middle classes, who might be forced out of a more lucrative and booming real estate market.

Another program, which Salvadoran cities and villages can take advantage of to boost intercultural exchange and even local development, is the global sister cities program. Through this program, which was founded in the 1950's in the United States, towns in different parts of the world partner with a town in the United States to exchange ideas, experiences and to serve as a platform for intercultural exchange. In many towns across El Salvador, sister cities have benefited greatly from their relationship with their partner city in the United States, towns which do not necessarily have Salvadoran migrants living there. While the sister cities program is outside of the realm of

remittances, when participants are willing and able to sponsor small projects in a partner city, it serves in a capacity similar to a hometown association, and it is also an avenue for intercultural exchange.

In addition to the banking sector, other local industry sectors in El Salvador that can capitalize on migrants as consumers include telecommunications, travel and tourism, microfinance and agriculture. The telecom industry has had to make a comeback in El Salvador, since much of the country's landline and fiberoptic infrastructure was destroyed during the Civil War and a major earthquake in the 1980's. The proliferation of cell phones in El Salvador over the past eight years has become apparent to any observer, and scenes like an old man on an oxcart in the middle of the countryside talking on his cell phone, or a small child on the roof of her adobe house trying to get better cell phone reception are not uncommon. In the year 2000, when I first moved to the village of Llano Largo, there was only one cell phone in the entire town of 350 people, owned by a young man with several brothers in the United States. Over the next two years, local cell phone ownership grew exponentially and by 2002, there were two payphones in town and nearly one-third of households owned a cell phone, mainly to receive calls from family members in the United States. This growth in Llano Largo coincided with a \$110 million investment at the national level in new fiberoptic lines, the expansion of cellular networks and a focus on rural penetration at the national level which has led to El Salvador having the largest cell phone market in Central America with over 1.8 million cell phones in the country in 2004. One way the major phone companies are capitalizing on the migrant community is by setting up the billing structure that makes it virtually free for individuals to have an active cell phone and receive calls, and selling pre-paid phone

cards that callers can use to make calls. Incidentally many of them use migrant remittances to buy the phone cards and communicate with their relatives abroad. In addition to telecommunications, transportation has been another industry that has grown exponentially in recent years, partially due to the growing dependence on migration and migrant remittances. As more goods, services and humans cross national borders, large investments in the national airport service, construction of new transnational highways and a new port in the eastern part of the island financed in part by the Japanese government are being undertaken, increasing the ease of El Salvador's transition to participate in the global economy.

The travel and tourism industry in El Salvador has begun focusing more on migrants as customers. According to the Latin American Business Chronicle, tourism revenues increased by nearly 50 percent in 2006, an increase higher than any other country in Latin America. In the country's "National Tourism Plan" Salvadorans living abroad are a specific target market, acknowledging their importance in the tourism industry. While migrants are important to the tourism industry in all of the countries of Central America, in El Salvador, they make up 40 percent of the tourists who visit the country (Mala & Ugrina, 2006), showing how important a role the country's own emigrants play in this industry. However, one of El Salvador's significant disadvantages in tourism is the comparatively high price of flights compared to similar flights to neighboring countries of Guatemala, Honduras, Nicaragua and Costa Rica. A simple price search on a travel website shows that flights on all airlines to El Salvador cost at least \$200 more than its neighbors, which is a certain obstacle to the tourism industry, which also hurts migrants who want to visit family and invest back in their home country,

since migrants make up such a large percent of the tourist industry in El Salvador. Spirit Airlines, a low cost U.S. carrier that provides low cost flights to many Central American countries, postponed a plan launch of cheap flights to San Salvador, due to the high and unstable price of fuel. Through agencies like PROESA (Promoting Investment in El Salvador) the Salvadoran government is also targeting migrants for investment opportunities in agriculture, call centers and auto-parts manufacturing (Williams, 2005). There is potential for growth in migrant investment since only about ten percent of Salvadorans living abroad are investing in any kind of business opportunities in their homeland.

Other promising policies include encouraging overseas Salvadorans to retire in El Salvador, and facilitating overseas Salvadorans' access to financial services via the consular network. Various banks in migrant-sending countries offer special interest rates to residents living outside of the country, trying to attract them to maintain bank accounts in their home countries, which is a way for the private sector to cultivate the relationship with the migrant diaspora, which would help to secure direct financial ties. Increasing global connections by reaching out to Salvadoran migrants and also strengthening and promoting new connections like sister cities, partner organizations, such as non-profits and churches and building other relationships is another way to participate in globalization on another level involving shared ideas, processes, cultures and best practices where both sides stand to gain from the relationship. It is also important to be sensitive to the possible tension in the migrant—non-migrant relations, as a policy paper for the International Peace Research Institute (Carling, 2005) points out. Social relations may become strained as migrants send more remittances, and families and communities

become more dependent upon them, especially when community leaders and educated members of the labor force are earning far less than their uneducated countrymen and women.

In the current environment in El Salvador, any new entrepreneurial opportunity is likely to spread particularly rapidly given the wide availability of financing via remittances. The government, through its various agencies would benefit from encouraging and providing incentives for new types of local investments, especially those that will improve local economies and provide employment opportunities for citizens. In the agricultural sector, the fertile lands are being underused for potential profitable products. While corn is the primary food for survival in El Salvador, it has not typically been profitable crop for farmers and communities, even when corn prices rise in the global marketplace due to the high cost of grains, fertilizer and transportation. It is difficult for Salvadoran farmers with limited resources and technology to compete with corn-growers abroad, which has been intensified due to the Central American Free Trade Agreement (CAFTA). Other agricultural products that could spread rapidly, be viable for export and add to reforestation efforts include avocados, oranges, and marañones, which is the fruit where cashew nuts come from. In some countries, such as India and Israel, the government offers “diaspora bonds” to emigrants living abroad to help raise cash for national projects (Ratha, 2008).

As a final point in the policy environment on remittances, there are scholars and politicians who believe that the government should play a minimal role when it comes to the decisions individuals and families make regarding the spending decisions they make with their remittance income. This mentality relies on the potential multiplier effects of

this extra income infused into communities to have any development potential for the wider community. However, the majority of experts are careful to articulate that these multiplier effects are minimal, and that the central government in partnership with a variety of organizations including at the grass-roots level can work to channel remittances to maximize their development potential and their sustainability. As the government and country debates the role it should play in influencing the spending of remittance income, it also has to deal with its own phenomenon of immigration from neighboring countries and other problems of migration including human and drug trafficking. While these two problems are not considered to be the most severe in El Salvador, all nations of Central America must be cognizant of the growing problem, and with the Salvadoran gangs growing in power and influence, including their involvement in the drug trafficking supply and distribution chain, the government and local law enforcement agencies must pay close attention to this issue.

A problem not necessarily related to migration and remittances that became apparent in the statistical analyses is the disparity between rural and urban populations in a number of human development variables, such as in the field of education. While this phenomenon is not unique to El Salvador, it poses a challenge to the government to address the inequality. According to studies such as “The Effect of Primary-School Quality on Academic Achievement. Across Twenty-nine High-and Low-Income Countries” by Heyneman and Loxley (1983), in developing nations students are much more affected by the quality of education and teaching methods in the schools than in industrialized nations, where studies tend to agree that family influences play the stronger role in student achievement. Given that education quality may be even more important in

a developing country like El Salvador where literacy rates are low and parents are often unable to reinforce academic learning in the household, and given that in rural areas the quality of education is much worse, something needs to be done to improve the situation. One avenue would be providing real incentives for good teachers to take positions in rural schools, meaning offering more competitive salaries and coming up with other creative ways to attract talented and dedicated teachers to rural parts of the country.

Chapter V: Conclusions

As the amount of money sent across national borders by workers continues to increase each year surpassing Official Development Aid and national exports and catching up to levels of Foreign Direct Investment, the role of migrant remittances in the world economy seems to be growing at an exponential rate. Remittances have been described as the “third pillar of development” by the United Nations (Alfieri & Havinga, 2006) and are becoming an important topic at international meetings, such as the G8 Summit. The phenomenon of migration and the sending of remittances can be extremely controversial in both sending and receiving countries. Countries such as South Africa right now are experiencing extreme violence against migrant workers from Zimbabwe, Nigeria and other neighboring countries, whom locals feel are driving down wages and driving them out of jobs (Bearak, 2008). Italy has been on the news for serious problems with bias crimes against migrants workers from Africa. From 2006 to 2007, the number of bills enacted by state legislatures across the United States that target illegal immigrants tripled (Cave, 2008), but have slowed down since the economic downturn. Within the spring months of 2008, the United States government has stepped up raids at manufacturing facilities and production plants, deporting workers in the hundreds and fining owners for employing illegal immigrants. The impacts of the 2008 economic downturn in the U.S. economy is having a profound effect on countries dependent on migrant remittances from the U.S., with fewer people sending money back to their home countries, according to a February 2008 survey by the Inter-American Development Bank

focusing on Latin-American migrants. In spite of this, remittances to El Salvador are expected to reach \$4 billion in 2008, the highest level ever (Banco Central de El Salvador), yet remittances to Mexico from the United States are down by as much as 12 percent. The implications of anti-immigration sentiment in many countries and the widespread economic crisis have the potential to really hurt the economies that are dependent on the labor of their emigrant workers and the remittances that are sent back to residents.

The contribution that this research adds to the literature is to add some empirical findings to assess the importance of remittance dollars in households and communities of a country that has become heavily dependent on this stream of income. The results of the data analyses include a number of key findings regarding the relationship between remittances and a variety of social and economic development indicators in El Salvador, which can be areas of future research more focused on one or two of the variables used in the models. From a short-term perspective, families and communities are experiencing statistical improvements in poverty, unemployment and crime as the amount of migrant remittances per capita increases and also as the proportion of households receiving remittances grows in the different municipalities of El Salvador. In some cases, increases in dollar amount of remittances per capita has the opposite relationship on the target variables being examined from an increase in the proportion of households receiving remittances. For example, in the health model looking at malnourishment in children, an increase in dollar amount of remittances per capita is correlated to higher numbers of underweight children under five. Conversely in the same model, an increase in the percent of people receiving remittances is statistically correlated to a decrease in the

number of underweight children under five. Based on related research, I concluded that this might be partly due to the social remittances that include practices, knowledge and ideas that are transferred through the migration and remittance process that can lead to awareness and exposure to new perspectives such as improved health practices and safety. The negative result of dollar amount of remittances from 2004 may be isolated to that year, which makes further study using data from other years and time-lagged data important to confirm or refute the findings of these data analysis.

This theory cannot be extended to the life expectancy model where dollar amount of remittances was correlated to higher life expectancy but the percentage of people receiving remittances was correlated to decreased life expectancy at a statistically significant level. Similarly in the school retention model, an increase in dollar amount of remittances per person is statistically correlated to higher grade levels attained on average in communities, while an increase in the percentage of people receiving remittances in communities is statistically correlated to lower average grade levels achieved and hence decreases in school retention. The discrepancies between the two remittance variables could be the topic of further study in the field of remittances, and it would be interesting to see if there are similar discrepancies using data from other years, using time-lagged data in the regression models, and using data from other countries.

These issues illustrate how complex the cycle of remittances can be, which makes it a necessary area of more intensive empirical research. While this dissertation does not come close to capturing the nuances and differences in the migration and remittance experience at the household level, it provides valuable useful observations of trends at the community level, which can be used to work on related studies that could eventually spur

changes at the policy level in El Salvador, as the remittance receiving country, and also in the United States, as the major remittance generator for Salvadorans working abroad. These seeming contradictions provide an opportunity for government and non-governmental agencies to intervene to promote the investment of remittances into education and health, while at the same time working to improve local economies. The result of using data from only from one year for these analyses is that the findings represent only a snapshot in time, and the phenomenon of migration itself along with the constantly improving technologies for money transfers, communication and travel is constantly evolving. However, the greater the understanding is of the impacts that remittances are having, from the perspective of the individual, the family, the community and at the national level, the more quickly and efficiently policies can be put in place to increase the benefits of remittances at all levels.

Recommendations

In simple terms, while the ultimate challenge for a country dependent on remittances is to foster economic improvements at the national and local level that eventually diminish the need for migrants to seek opportunities abroad, this is not going to occur quickly, especially as the number of migrants continues to increase and there are few tangible long-term economic improvements benefiting families in El Salvador, and in other developing nations around the world. A profound change will not even begin to occur at all until governments and nations gain a deeper understanding of the cycle of migration and remittances and undertake real intervention in the form of innovative policy measures and reforms to foster long-term growth that can help to break the cycle

of migration and the dependence on migrant remittances. A relevant example of a potential scenario that could play out if a nation heavily dependent upon migrant remittances experienced a complete cessation of remittance income in a short period of time, was the subject of a study focusing on transnational migration in the south of Africa. The researchers (Adams, 2006) developed an econometric model that examined the impact on the country of Lesotho if migrant remittances from South Africa s ceased to arrive in the small country that is geographically engulfed by the much larger nation of South Africa. The statistical findings illustrate the danger of a strong national dependence on remittances from an outside nation. The authors found that average per capita household consumption would fall by 32 percent, that the poverty headcount index would increase by 26 percent, and that the poverty gap index, which considers the extremity of poverty, would increase by 52 percent.

While it is unlikely for any remittance-receiving country to experience a sudden or complete cessation of remittance income flows, and the case of Lesotho which is one of the Least Developed Countries (LDC's) in Africa is extreme, the lesson learned is that governments must be sensitive to the uncertainty of future remittance flows and have a plan in place to deal with a potential steep drop in this income stream, such as the one Mexico is currently experiencing due to the 2008 economic downturn. For El Salvador, that uncertainty can have many causes, including increasing hostility towards immigration, especially towards illegal immigrants, in the United States, increasing regulations on hiring illegal immigrants and tougher border control enforcement. Salvadoran and other Central American migrants face perhaps even more danger and potential roadblocks in Mexico, which deported over 60,000 Salvadorans in 2004 and

2005. While a sudden severe decline is very unlikely to occur, if there was a mass deportation of even a relatively small percentage of the illegal migrants from El Salvador living in the U.S., the results on the Salvadoran economy could be disastrous. A scenario even more likely would be the combination of a political turn cracking down on employers of illegal immigrants and the current economic downturns in the housing and construction industries, which employ many Salvadoran workers, which might result in many Salvadorans in the United States losing their jobs or not being able to find work, which could have a severe impact on the family and friends of these individuals that have become dependent on their income. During the months of January and February of 2009, remittances to El Salvador were down by more than \$20 million each month compared to remittance flows in the same months of 2008, providing evidence that growth in remittance flows is not guaranteed and subject to many outside influences (Banco Central de Reserva de El Salvador, n.d.). Flows to other nations such as Mexico are down even more severely. While this idea is outside the focus of this dissertation, it is necessary to emphasize the importance of long-term planning by governments and families in remittance-receiving countries, to have a plan to fall back on if the remittance were to decrease significantly or cease altogether.

One of the most important policy priorities related to migration and remittances is to more fully engage the migrant community. Some of the tactics that can be used are those that expand the legal rights of Salvadorans overseas, such as by extending the Salvadoran presidential vote to overseas Salvadorans, placing a much higher priority on lobbying the US government to maintain and expand legal work status for Salvadorans in the US, and increasing the incentives for migrants to send money home collectively

through HTA's. The government should increase the incentives for collective remittances and for formal transactions, such as by providing matching funds for HTA financed projects and finding other creative incentives to promote collective remittances. Such efforts can catalyze flows of small-enterprise finance from overseas Salvadorans to many of the most disadvantaged Salvadoran households, that may not even be able to afford the expense of migrating.

There is much room for improvement in this area since currently only one percent of all remittances in Central America come from HTAs, and while organizations such as the International Fund for Agricultural Development, estimate that HTA contributions could rise to between three and five percent in 10 years, this won't become a reality without the proper governmental and institutional support. There should be an effort as well to coordinate the work and funds of the various Salvadoran HTA's across the United States, which might enhance overall management by sharing of best practices and also improve the overall institutional capacity HTA's. Since HTA financing tends to be biased towards communities where individual members are from, there should be an effort to encourage new HTA's abroad to form that target underrepresented regions and communities and a facilitated mechanism for these areas to request funding.

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