Undocumented Immigrants: Changes in Remittance Trends with Legalized Immigration Status

An Empirical Analysis of Amnesty Effects

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Abstract

This thesis sets out to examine the nature of remittance transfers by previously undocumented immigrants and how the amounts sent changed when these individuals’ immigration status was legalized. It empirically investigates how the amount of remittances sent by migrants improves or declines as their demographical, migrational, and financial characteristics change between the time when individuals applied for legalization in 1989 and in 1992, when Legal Permanent Resident status is acquired. The Legalized Population Survey is used with Tobit and First Differencing models to assess possible correlations and to find to what degree each factor’s effect has statistically. The results of the study suggest that the amount of remittances sent decline largely as an individual’s link to the United States is strengthened through legalization, as seen through higher personal and total family incomes indicating upward job mobility as well as having fewer family members residing outside of the country.
# Table of Contents

## Introduction ............................................................................................................. 1

### Background ........................................................................................................ 3
- Remittance Overview ........................................................................................... 3
- Undocumented Immigrants and Legalization ....................................................... 6
- Other Factors Influencing Remittances ............................................................... 10
- Limitations to Previous Scholarship ................................................................... 13

## Data ....................................................................................................................... 15

## Descriptive Analysis ............................................................................................ 19
- Sample Characteristics of Amnesty Applicants .................................................. 19
- Initial Glimpse at Changes in Remittance Behavior ............................................. 22

## Multivariate Analysis ........................................................................................... 25
- Empirical Models ................................................................................................ 25
- Cross-Sectional Hypotheses and Findings ........................................................... 32
- Remittance Change Hypotheses and Findings ...................................................... 40
- Data Limitations ................................................................................................ 44

## Conclusions .......................................................................................................... 46

## References ............................................................................................................ 48

## Appendices
- Appendix A: Descriptive Chart on Changes in Sample Characteristics
- Appendix B: Full Model Results of Tobit Regression, 1989
- Appendix C: Full Model Results of Tobit Regression, 1992
- Appendix D: Additional Remittance Information Charts
Introduction

The demand for remittances, or monies sent by migrant’s abroad to their countries of origin, has steadily increased over the past two decades as the growth in both the frequency and intensity of economic and financial crises in developing countries has amplified the need for such social safety nets as remittances. Although their effects are complex and remain a function of not only the characteristics of migrants and the households they leave behind as well as their motivations, and the overall economic environment, one aspect is clear, undocumented immigrants within the United States are sending some of the largest amounts of remittances around the world, despite the fact that their precarious immigration status might cause several obstacles both financially and socially.

This report empirically examines remittance trends of illegal immigrants within the United States who successfully legalized their immigration status under the provisions of the Immigration Reform and Control Act of 1986 (IRCA), enacted by Congress and signed into law in August of that year. The report focuses on the extent to which the amount of remittances sent by previously undocumented immigrants changed between the time they applied and qualified for the “amnesty” provision of IRCA and the time they received their legal status, taking into consideration changes in social and demographic characteristics. To address these issues, the Legalized Population Survey is used – a longitudinal dataset based on the interviews of undocumented immigrants shortly after they applied for legalization through the IRCA in 1989, and then again in 1992, when legal permanent resident status was achieved.

This paper is organized into eight main sections. The first four parts set the context of the information to be presented. The first section discusses the background of remittances sent by immigrants in the United States, providing a general and informative review of the nature of this
activity, including trends and how the role of remittances has changed in the recent history of the United States. The next section then reviews past public policies relating to undocumented immigrants and current sociological and economic theory on how legalization has influenced the development of remittances. The third section discusses several other factors which have been found to influence the amounts sent across countries and the fourth goes over certain methodological limitations that have hindered analysis in the past.

The last four sections concentrate on the research I have done. After a brief description of the data, the remaining sections discuss the application of the context through descriptive and multivariate analyses including the methodology, the hypotheses and finally, the results with a brief note on this paper’s limitations. Lastly, this paper concludes the findings by reviewing the implications drawn from the analyses, providing key insights into the arena of remittances and how the effects of legalization intersect with it.
Background

Remittance Overview

Remittances, the portion of international migrant workers’ earnings sent back to countries of origin, is one aspect of globalization that has historically been overlooked. This is rapidly changing as the increase in migration to developed countries has caused a dramatic acceleration of these large financial flows. While economically, the movement of labor across borders has constituted an international labor market, the transfer of remittances from immigrant workers to families at home has added a fundamentally human connection with the process of delivering desperately needed resources across both continents and oceans to more than one hundred million families worldwide. Although for several generations now, remittances have been a means of financial support to family members remaining in less-developed countries, only within the last decade has the social and economic impact of remittances garnered the attention of international organizations, national governments, universities, foundations and financial institutions all over.

A strong indicator of how large remittances have become is through comparison with other types of international resource flows within the last decade. Figure One does this by looking at monetary funds to all developing countries from 1991 to 2000. The most visible trends are that “other private flows” fell during the financial crises that occurred in several countries around 1997 and that total international financial transfers dropped in 1998 and 1999 (Gammeltoft 2002). Considering the amounts that travel through unofficial channels, in 2000, total remittances are likely to be more than $100 billion. Even after allowing for flows that occur between developing countries and therefore should not be included in net income, remittances still often exceed aid flows, which totaled $40.3 billion in 1999. In fact, according to official
estimates, total remittances to developing countries from 1991-1999 were $450 billion dollars while total aid, during this same period, was only $386 billion.

Figure One. Level and Composition of International Resource Flows to Developing Countries, 1991-2000

The growth of remittances is nowhere more apparent than in Latin America and the Caribbean, where remittances are a critical component of foreign currency. Although the size of the average remittance transfer is miniscule in the world of international finance (see Figure Two), the cumulative sums are high enough to warrant attention. In Figure Three, the amount of remittances from Mexico to Central America between the years 1980-2000, more than doubled at an increasingly rapid rate. While in 2004, remittances to Latin America from the U.S. total over $30 billion, if present trends continue, transfers from the United States to Mexico and Central America, in this decade, will likely total to more than $180 billion (IADB 2004).
Figure Two. 2004 Remittances to Latin America from the US broken down by state

![Map of Remittances to Latin America from the US—2004](image)

Multilateral Investment Fund, 2004

Figure Three. Trends in Mexican and Central American Remittances, 1980-2003.

![Graph of Mexican and Central American Remittances in Billions of Current Dollars, 1980-2003](image)

Orozco 2003

Not long ago, remittances were delivered through a cottage industry in which cash was often hand carried across borders. Arrangements like *hawala* developed, one of several Informal
Funds Transfer Systems that are still used in several countries all over the world (Wilson 2002). And now in the 1990s, as the amounts have more than doubled and tripled, the remittance industry has evolved into a market dominated by wire transfer services such as Western Union and Money Gram, and is becoming increasingly formalized through the use of credit unions and banks offering electronic services.

The legal status of migrant workers is a key influential factor of both current and future remittance trends. In the analyses that follow, I hope to empirically investigate the difference in remittances with respect to legalization. The sizes of remittances are largest – in both absolute dollars and percentages of earnings – for unauthorized migrants in comparison to authorized ones. However, in several ways, it is more difficult for illegal migrant workers to send money back to relatives at home. The undocumented are more likely to have recently arrived in the United States than documented immigrants and are commonly employed in lower-paying seasonal industries such as agriculture (Jordan and Sullivan 2002). Therefore, policies that are open paths to legal status for migrants may be likely to have a positive developmental impact on remittances.

**Undocumented Immigrants and Legalization**

Several factors help explain the presence of a large number of undocumented immigrants in the United States. Economic conditions in both sending and receiving countries provide a strong incentive for immigration as wages in the United States are much higher than for similar occupations in Mexico and Central America. Especially during periods of low unemployment in these countries, the growing Mexican labor force, which far outstrips the growth of jobs in their own country, has continually fed the demand for cheap labor in the United States.
The elimination of the *Bracero* program by the Immigration and Nationality Act of 1965 has caused the legal opportunities available for temporary employment by Mexican nationals in the United States to be dramatically reduced although the U.S. demand for Mexican labor has far from been eliminated. The *Bracero* program allowed 4.6 million Mexican laborers to enter and work temporarily in the United States from 1942 to 1964 (Brown, et al. 1999). Recruited from Mexico, these immigrants were provided with employment, transportation, housing and board, and then returned to Mexico when their work period ended. The program provided a supply of cheap labor and encouraged the maintenance of labor-intensive agriculture in the United States. Since then, the amount of unauthorized immigrants from Mexico migrating to the United States has increased steadily with only a recent decline in the last few years. Figure Four shows that more than half of all Mexican migrants arriving in the United States in the last two decades have been undocumented.

*Figure Four. Mexican Migration by Legal Status*

Lowell, 2004
Civil wars and political instability in Central America have also encouraged many people to flee from their homelands. Conflicts in both El Salvador and Guatemala, not to mention Nicaragua, stimulated tens of thousands of migrants to go to the United States, including many that arrived as undocumented immigrants (Simcox 1988).

Expanding social networks between Mexican and Central America nationals as well as growing incomes of Mexican workers have facilitated both legal and illegal immigration as well. Specifically, rising incomes enable more foreign nationals to afford the financial costs of relocation. Social ties of immigrants to relatives and friends in their home countries through letters and remittances sent provide several opportunities for new immigrants’ rapid integration into immigrant communities by reducing the emotional and financial costs associated with migration (Massey 1990).

All of these factors facilitate legal and undocumented immigration of all types, including both illegal entry without inspection and legal entry and subsequent overstaying of one’s visa. Once migration is initiated, through programs like Bracero, social networks make the process self-perpetuating (Massey 1990).

As would be expected, despite the large abundance and continual flow of these individuals, unauthorized residents earn less for comparable work than those who work legally and are less able to seek recourse when their rights are violated, including labor rights. As options for illegal residents remain limited, unauthorized migrants tend to stay in packs and do not integrate themselves as independently within American society. This causes them to be not only less aware of but less likely to take advantage of the growth in money transfer services that have developed in response to recent competition in financial services. While several banks and credit unions have recently begun to offer services that are not only easier, safer and more
efficient, several require authorization and identification cards that unauthorized immigrants either do not have or are wary to possess. Although this has been improving as a large number of banking institutions have begun to accept alternative forms of personal identification, such as the *matricula consular* (Orozco 2003), an identification card issued by Mexican Consulates that does not require legal status, the majority of undocumented immigrants continue to rely solely on private wire-transfer companies like Western Union or Money Gram, or smaller foreign-friendly niche stores, located in local supermarkets and retail shops, both of which charge several extra fees in comparison to both banks and governmental institutions.

Figure Five. Methods used by U.S. Latinos to send remittances.

Even if immigrants do end up using some of these bank services, they also have to take into consideration how consumer friendly or easy it is for their relatives in their home country to access these banks. For instance, while several of the large banks offering remittance services have branches and ATMs nearly everywhere within the United States, the number is considerably smaller in most of these developing countries. If an immigrant’s family lives in a small rural village and a branch is several miles away, it may be much more difficult for a family member to pick up the money. In these cases, finding an informal courier or small local shop
might be much simpler to use than these large institutions more generally targeted for the masses.

The lack of legal status combined with harsh border enforcement also make migrants less likely to return home periodically for family visits, which may lessen his or her ties with family left behind and discourage the flow of remittances. It may also tend to convert temporary or circular migrants to permanency, since they are unwilling to run the risks and bear the expense of repeated border crossing (Newland 2003).

Other Factors Influencing Remittances

Outside the issue of legalization, several studies have sought to measure who among international migrants sends remittances at all and what causes them to do so. In general, they have found that several interrelated sets of characteristics are significant in a person’s decision to remit and the amount the person chooses to send – demographics, immigration status and acculturation, labor force participation and family circumstances (DeSipio 2000). However, for the most part, several of the surveys do not include all of these potential measures which I will attempt to do in my analyses. In this section, I present a brief review of previous scholarship which helps to explain the independent variables chosen in this paper.

In 1995, a study by Funkhouser examined Salvadoran and Nicaraguan international migrants with the hypotheses that income, length of stay abroad, and family residential patterns would shape a person’s likelihood of remitting. Migrants with higher incomes and longer residence were believed to be more likely to remit while immigrants with more family members in the United States would be less likely. Funkhouser found that for both Salvadorans and Nicaraguans, the employed were more likely to remit than the unemployed and that Salvadorans
were more likely to when they left a person of their immediate family member in their home
country. Among Nicaraguans, the more educated were less likely to remit than the less educated
and older migrants more likely than younger ones. A decline in remittance behavior was also
correlated with longer periods of United States residence and experience.

Salvadorans were also proved more likely to remit than another large immigrant
population within the United States, Filipinos (Menjívar, et al. 1998). Although this study
focused only on the Los Angeles county, it observed Salvadoran and Filipino immigrants in high
concentrations. While Salvadoran immigrants typically had lower average incomes than their
Filipino counterparts, for both migrants, individuals with higher incomes were more likely to
remit – a 10 percent increase in income led to a 4 percent increase in the amount that was sent
home.

Several other immigration and acculturation factors also helped to shape the likelihood of
remitting. Learning English was positively related to remitting and naturalization was negatively
related. As with the previous studies, migrants with close relatives in the country of origin were
more likely to remit but unlike the Funkhouser study, older immigrants were less likely to.

The remaining studies available that seek to measure the likelihood of Latin American
migrants living in the United States sending money home examined primarily Mexican-
-Americans, usually using data from the Mexican Migration Project. In a study designed to
estimate the total amount remitted by Mexicans, Lozano Ascencio (1993) summarized the
findings from several small studies. While his results largely reinforced the conclusions
described above, one finding contradicted that of Nicaraguans – that increased education was a
positive predictor in remittance behavior.
Paulson and Singer (1998) also used the Mexican Migration Project data but indicated through their research that characteristics of the immigration experience must also be taken into account to understand remittance behaviors. These authors looked primarily at how long Mexican migrants with different characteristics stay in the United States and how that affects or allows one to make predictions of the permanent income model for savings, a category which sums both savings and remittances. They found that a higher probability of return to Mexico was associated with a significantly lower savings rate although the interaction between the probability of returning and migrant income made savings rates higher, suggesting that for lower income migrants, satisfying basic consumption needs takes precedence over taking advantage of temporarily high wages in the U.S. through savings. They also added another measure of attachment to the sending country – home ownership in Mexico. Although they do not test these factors empirically, the authors do make a strong case on their likely impact.

Massey and Basem (1992) also indicated that immigration experience had an effect by analyzing the impact of migrant remittances and savings behavior on four immigrant-sending communities in Western Mexico. Their findings showed that human capital and trip characteristics had no impact on remittances while family characteristics and ties to community members had positive effects. On the other hand, land ownership in the sending country had a negative affect on the amounts of remittances sent.

Finally, a study by Louis DeSipio (2000) attempted to take all of these factors and apply them to three different datasets (the Mexican Migration Project data, Emerging Latino Study and Latino Portrayals on Television Study) all with somewhat partial information in order to report a comprehensive full report. His findings were largely similar but provided a more rigorous examination as the same analyses was performed on each dataset. However, even he admitted
that surveys of previous analysis have told a consistent story, that remitting is shaped by factors that occur both before and after migration. So to truly understand this changing dynamic, it is necessary to track remittances in migrant households over time so as to control for demographic, familial and acculturative forces shaping the migrant’s life (DeSipio 2000). The use of the Legalized Population Survey dataset in this paper provides us with this exact opportunity.

**Limitations to Previous Scholarship**

There are several reasons for the absence of firm conclusions about the relationships between legalization and remittances, one of which includes the fact that there exist no comprehensive data on individual or household remittance behaviors, whether among immigrants from Latin America or from other parts of the world. Instead, in order to study the question of whom among immigrants remit or how much they send, it is necessary to rely on social science surveys that were designed to address other questions, but also include a question or questions on remittance behavior. Because of these limitations, no analyses focused primarily on the relationship between legalization and the amount of money an immigrant chooses to send and findings are often presented incidentally to a different, though related, finding. In the analysis that will follow, I use these existing findings as a foundation for more rigorous investigation of the question at hand.

As noted earlier, there is also a virtual absence of longitudinal data to study adaptation processes of legalized cohorts in general. This is due to the difficulty in getting undocumented individuals to participate in government-run surveys in the first place for fear of deportation and even illegal arrest if private information became public. Most immigration surveys tended to not include questions that distinguished between an immigrants’ legal and illegal status and those
that did assumed that illegal respondents residing in the U.S. would either not answer truthfully if asked such questions by government survey interviewers, would refuse to answer such questions, or would terminate the interview.

While research about the labor market experience of illegal migrants advanced during the 1980s, it did so on less of an empirical foundation than research on legal immigrants and was based on incidental samples of detained populations or industry-specific case studies (Tienda and Singer 1995). As part of the legalization program, an administrative file of amnesty applicants known as the Legalized Alien Processing System, or LAPS, was created and made available to researchers on a highly restricted basis. Later, the Immigration and Naturalization Service (INS) commissioned a nationally representative survey of undocumented migrants granted amnesty under the Immigration Reform and Control Act of 1989. This data set is the primary source of these analyses. While talks of another amnesty program have been heavily discussed with President Bush and several foreign leaders such as Mexican President Vicente Fox, this survey documented the impact of the last major legalization in the United States and thus provides a unique opportunity to address several issues regarding illegal residents, including remittance figures.
Empirical analyses in this study are based on the Legalized Population Survey (LPS), a two-wave, longitudinal dataset of undocumented immigrants granted amnesty under Section 245A of the Immigration Reform and Control Act of 1986 (IRCA). The IRCA enabled about 1.6 million aliens, illegally resident since the end of 1981, to become lawful permanent residents. This nationally representative survey of undocumented immigrant applicants was mandated by Congress to assess the characteristics of amnesty applicants shortly before and after legalization.

The first wave of the survey (LPS1) was sponsored by the Immigration and Naturalization Service (INS) in 1989. In 1992, the Department of Labor co-sponsored a second wave (LPS2) with the Departments of Agriculture and Commerce. Both surveys were designed and conducted by Westat, Inc., a private research firm of Rockville, MD and involved primarily face-to-face interviews with individuals, in the language of their choice.

The IRCA consisted of two phases as well. During Phase I, 1.8 million applicants qualified for temporary legal residence. Those who did were then given 18 months to prepare their Phase II applications with stipulations including satisfaction of English language and American civics requirements, either through the passing of appropriate examinations or participation in special classes. About 1.6 million temporary resident aliens successfully completed Phase II and were then given lawful permanent residence.

The first wave of the legalized population survey took place between February and June of 1989, shortly after respondents had received temporary legal residence. It focused on their

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1 The IRCA established two separate programs through which illegally resident aliens could obtain lawful permanent resident status. The general amnesty program was described in section 245A, and was the larger of the two programs. Section 210, the Special Agricultural Worker (SAW) amnesty program, granted an additional 1.3 million farm workers legal permanent residence. But we are only concerned with individuals who qualified under the general amnesty program as those in the SAW program were not included in the sampling of the Legalized Population Survey.
characteristics and experiences prior to, and at the time of Phase I. With a response rate of 83 percent, a total of 6,193 respondents participated in LPS1.

The second wave took place three years later, between April and September of 1992, after most applicants had completed Phase II of their application. With a response rate of 82 percent, 4,012 of the initial 6,193 respondents of LPS1 were re-interviewed, all of which by that time had become lawful permanent residents. This survey focused on the effects of legalization on their lives during the three year span in between the two phases.

600 individuals were disqualified from LPS1, of whom 30 were known to have died and 570 had not been granted legal permanent residence or had left the U.S. permanently. Resource limitations by Westat made it necessary for them to exclude another 691 randomly selected respondents of the remaining individuals. However, statisticians then examined the gender, nationality and age distributions of the retained and excluded samples to ensure that differences were not statistically significant. I further narrowed the LPS data to 3,967 individuals from the original 4,012, by limiting my empirical analyses to only those individuals that were age 18 and over at the time of the 1989 survey and had answered remittance-related questions in both LPS1 and LPS2. This sample represents a population of 1,191,574 weighted legalized adults.

Respondents for the LPS surveys were selected utilizing a two-stage stratified cluster design. This first involved selection of INS legalization offices (LOs). A sample of 40 offices was selected from a total of 107 LOs, using the Legalization Application Processing System, an administrative data base used to process all applications for amnesty. The 20 largest LOs accounted for over 65 percent of the total legalization population and the remaining 20 were selected by systematic sampling. Criteria for inclusion were defined by each site’s geographic and ethnic representation, as well as total number of applicants.
Sub-samples of applicants were then selected systematically from each of the 40 Legalization Offices\(^2\). Respondent selection criteria for each LO included LO size, country of citizenship, sex and year of birth within each gender. Probabilities were then drawn proportionate to their measure of size\(^3\), yielding a self-weighting sample within two nationality groups: Mexican and non-Mexican. Mexican immigrants comprised over 70 percent of the legalized population, hence non-Mexican immigrants were over sampled to obtain sizes adequate for subgroup comparisons. This study stratifies the LPS sample into three broad origin groups: Mexico, other Latin American and Caribbean countries, and all other countries to permit systematic comparisons among these broad groups representing distinct immigrant flows. Population estimates based on pooled data are weighted to approximate their respective sampling universes.

In addition to the LPS data, the study also includes a comparative survey from the March 1990 Current Population Survey (CPS). The CPS is a large national, in-person and telephone, cross-sectional survey conducted by the U.S. Bureau of the Census to obtain information on employment, unemployment and demographic status of the non-institutionalized, U.S. civilian population. The March CPS contains extensive information on household relationships, sources of income, ethnicity, citizenship, immigration status, and nativity of each participating member. However, while these surveys provide substantial information about the resident population of the United States, they lack one key variable, the amount of remittances sent. Thus it is used

\(^2\) This occurred twice, first before the survey entered the field and again in April 1989, after additional applicants had been processed.

\(^3\) Each case was assigned a measure of size which was a conditional probability of selection that was directly proportional to the sampling fraction for their nationality and inversely proportional to the selection probability of their LO.
merely as a benchmark to describe similarities and differences in several demographics
characteristics but is not used with the multivariate analyses\textsuperscript{4}.

\textsuperscript{4} Other variables not available in the CPS include information on levels of English proficiency, number of family
living outside of the U.S. and percentage of life spent in the U.S.
**Descriptive Analysis**

*Sample Characteristics of Amnesty Applicants*

Table one presents basic demographic and socioeconomic characteristics of the sample of legalized immigrants according to region of origin in 1989, as well as the total U.S. population around the same time. Seven out of ten (69 percent) of the undocumented immigrants who applied for amnesty under the IRCA, came to the United States from Mexico, and another two in ten (21 percent) from other parts of Latin America. These origins reflect the proximity of Mexico to the U.S., the long border shared by the two countries, and the economic conditions on both sides of the border that encourage Mexican nationals to immigrate. 13 percent of the general adult population came from Mexico or other parts of Latin America within the same year. This is a large number considering that the Current Population Survey includes individuals born in the United States.

The image of undocumented immigrants as young, unmarried men is only partially reflected in the data, more so by Mexican immigrants than those from different regions, including other parts of Latin America. Recently legalized immigrants fell largely in the 30-44 year category (50 percent) while the general adult population spread out almost evenly between all categories. Undocumented Mexican immigrants, however, had almost as many respondents in the 18-29 year cohort as the 30-44 year one with a median age of 31, two years younger than the median for their counterparts from the rest of Latin America, and more than five years younger than the median age of those from other regions. A little over half (56 percent) of all legalized immigrants surveyed were male with more than two-thirds (64 percent) of those surveyed, married. While about the same amount (47 percent) of the total U.S. population was male, only a
Table One. Selected Characteristics of Amnesty Applicants by Origin, 1989 (%).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mexican</th>
<th>Other Latin Americans</th>
<th>All Other</th>
<th>Total (weighted)</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic Characteristics:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>40.4</td>
<td>27.2</td>
<td>15.2</td>
<td>35.4</td>
<td>24.9</td>
</tr>
<tr>
<td>30-44</td>
<td>46.3</td>
<td>55.0</td>
<td>61.3</td>
<td>50.0</td>
<td>32.6</td>
</tr>
<tr>
<td>45-64</td>
<td>11.8</td>
<td>16.5</td>
<td>20.6</td>
<td>13.3</td>
<td>26.0</td>
</tr>
<tr>
<td>65+</td>
<td>1.2</td>
<td>1.3</td>
<td>2.9</td>
<td>1.3</td>
<td>16.6</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>54.5</td>
<td>51.1</td>
<td>58.4</td>
<td>55.9</td>
<td>46.8</td>
</tr>
<tr>
<td>Female</td>
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<td>48.9</td>
<td>41.6</td>
<td>44.1</td>
<td>53.2</td>
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<td>Marital Status</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Not Married</td>
<td>28.4</td>
<td>30.5</td>
<td>33.2</td>
<td>29.6</td>
<td>59.8</td>
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<tr>
<td>Married w/ Spouse Present</td>
<td>62.2</td>
<td>57.8</td>
<td>48.5</td>
<td>59.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Married w/ Spouse Absent</td>
<td>4.5</td>
<td>3.2</td>
<td>6.9</td>
<td>4.5</td>
<td>18.1</td>
</tr>
<tr>
<td>Divorced/Separated/Widowed</td>
<td>4.9</td>
<td>8.5</td>
<td>11.4</td>
<td>6.1</td>
<td>21.4</td>
</tr>
<tr>
<td>Ability to Speak English on the Telephone</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52.9</td>
<td>67.3</td>
<td>96.4</td>
<td>60.4</td>
<td>n.a.</td>
</tr>
<tr>
<td>No</td>
<td>47.1</td>
<td>32.7</td>
<td>3.6</td>
<td>39.6</td>
<td>n.a.</td>
</tr>
<tr>
<td>Years of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 6yrs</td>
<td>32.3</td>
<td>18.0</td>
<td>2.4</td>
<td>26.1</td>
<td>6.3</td>
</tr>
<tr>
<td>6-11yrs</td>
<td>51.8</td>
<td>45.0</td>
<td>18.0</td>
<td>47.0</td>
<td>16.9</td>
</tr>
<tr>
<td>12yrs</td>
<td>11.4</td>
<td>22.8</td>
<td>27.8</td>
<td>15.5</td>
<td>38.6</td>
</tr>
<tr>
<td>College+</td>
<td>4.5</td>
<td>14.3</td>
<td>51.8</td>
<td>11.4</td>
<td>38.2</td>
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<tr>
<td><strong>Immigration Characteristics:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country of Origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mexico</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>68.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Other Latin Americas</td>
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<td>n.a.</td>
<td>n.a.</td>
<td>21.4</td>
<td>5.1</td>
</tr>
<tr>
<td>All Other</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>9.7</td>
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</tr>
<tr>
<td>No. of Family Inside the U.S.a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-4</td>
<td>68.3</td>
<td>80.1</td>
<td>92.6</td>
<td>73.4</td>
<td>84.2</td>
</tr>
<tr>
<td>5-9</td>
<td>28.3</td>
<td>18.8</td>
<td>6.0</td>
<td>23.8</td>
<td>15.4</td>
</tr>
<tr>
<td>10+</td>
<td>3.4</td>
<td>1.1</td>
<td>1.4</td>
<td>2.8</td>
<td>0.4</td>
</tr>
<tr>
<td>No. of Family Outside the U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-9</td>
<td>57.9</td>
<td>63.3</td>
<td>61.8</td>
<td>59.2</td>
<td>n.a.</td>
</tr>
<tr>
<td>10-19</td>
<td>32.6</td>
<td>29.4</td>
<td>27.8</td>
<td>31.6</td>
<td>n.a.</td>
</tr>
<tr>
<td>20+</td>
<td>9.6</td>
<td>7.4</td>
<td>10.4</td>
<td>9.1</td>
<td>n.a.</td>
</tr>
<tr>
<td>State of Residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>65.1</td>
<td>50.5</td>
<td>34.7</td>
<td>58.6</td>
<td>8.8</td>
</tr>
<tr>
<td>Florida</td>
<td>0.1</td>
<td>5.2</td>
<td>4.7</td>
<td>1.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.3</td>
<td>2.8</td>
<td>6.4</td>
<td>7.6</td>
<td>4.1</td>
</tr>
<tr>
<td>New York</td>
<td>1.3</td>
<td>19.1</td>
<td>22.8</td>
<td>7.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Texas</td>
<td>15.4</td>
<td>9.6</td>
<td>6.0</td>
<td>13.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Other</td>
<td>8.8</td>
<td>12.8</td>
<td>25.4</td>
<td>11.3</td>
<td>69.1</td>
</tr>
<tr>
<td>Percent Life Spent in U.S. x 100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-20%</td>
<td>20.3</td>
<td>19.0</td>
<td>21.4</td>
<td>19.9</td>
<td>n.a.</td>
</tr>
<tr>
<td>21-50%</td>
<td>51.8</td>
<td>79.2</td>
<td>76.2</td>
<td>74.2</td>
<td>n.a.</td>
</tr>
<tr>
<td>51-80%</td>
<td>11.4</td>
<td>1.8</td>
<td>2.4</td>
<td>5.3</td>
<td>n.a.</td>
</tr>
<tr>
<td>81-100%</td>
<td>4.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>Financial Characteristics:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Incomeb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No income</td>
<td>13.1</td>
<td>11.4</td>
<td>9.8</td>
<td>12.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Less than $8,999</td>
<td>35.3</td>
<td>33.8</td>
<td>29.7</td>
<td>34.3</td>
<td>26.1</td>
</tr>
<tr>
<td>$9,000-$14,999</td>
<td>30.3</td>
<td>31.0</td>
<td>29.4</td>
<td>30.5</td>
<td>13.6</td>
</tr>
<tr>
<td>$15,000-$24,999</td>
<td>16.1</td>
<td>18.9</td>
<td>21.6</td>
<td>17.4</td>
<td>19.9</td>
</tr>
<tr>
<td>$25,000 or more</td>
<td>2.0</td>
<td>2.3</td>
<td>5.5</td>
<td>2.4</td>
<td>26.1</td>
</tr>
<tr>
<td>No response</td>
<td>3.3</td>
<td>2.5</td>
<td>4.0</td>
<td>3.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Total Incomeb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $8,999</td>
<td>14.7</td>
<td>15.3</td>
<td>10.7</td>
<td>14.4</td>
<td>13.6</td>
</tr>
<tr>
<td>$9,000-$14,999</td>
<td>22.5</td>
<td>25.2</td>
<td>17.4</td>
<td>22.7</td>
<td>9.1</td>
</tr>
<tr>
<td>$15,000-$24,999</td>
<td>37.6</td>
<td>35.7</td>
<td>34.4</td>
<td>36.8</td>
<td>17.2</td>
</tr>
<tr>
<td>$25,000 or more</td>
<td>14.2</td>
<td>13.8</td>
<td>30.2</td>
<td>15.7</td>
<td>60.1</td>
</tr>
<tr>
<td>No response</td>
<td>11.1</td>
<td>9.9</td>
<td>7.3</td>
<td>10.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Receives Financial Assistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6.5</td>
<td>3.4</td>
<td>0.7</td>
<td>5.2</td>
<td>1.3</td>
</tr>
<tr>
<td>No</td>
<td>93.5</td>
<td>96.6</td>
<td>99.3</td>
<td>94.8</td>
<td>98.7</td>
</tr>
<tr>
<td>[Number of respondents]</td>
<td>[1,781]</td>
<td>[1,337]</td>
<td>[579]</td>
<td>[3,697]</td>
<td>[114,137]</td>
</tr>
</tbody>
</table>


a U.S. population only includes family members within the same household

b Questions were asked of amnesty applicants regarding 1987

c Weighted figures are representative of 1,191,574 individuals
fifth (19 percent) were married. And out of three separate regions, those from Mexico, had the largest percentage of married immigrants at 67 percent compared to those in Latin America and elsewhere (59 percent and 54 percent, respectively).

More than half (60 percent) of recently legalized immigrants felt comfortable conversing in English on the telephone, an indicator of fluency, and as expected the percentage grew as the years progressed. Mexican immigrants reported the least ability to speak fluently (53 percent compared to 67 percent and 96 percent). For immigrants, being proficient in English is associated with greater socioeconomic status, including higher earnings.

Descriptive statistics lend support to claims that undocumented immigrants are less educated than the general population, as a large proportion of amnesty applicants had very little formal schooling. One in four (26 percent) had only obtained roughly six years of education compared with only 6.3 percent of the general adult population. Nearly half (47 percent) had only finished some of high school, having not received a diploma or GED equivalent while 11 percent attended college compared to 38 percent of the total U.S. population. With regards to specific regions, immigrants from Mexico had the least percentage of respondents who received more than a high school education (5 percent compared to 14 percent and 52 percent).

Although the majority of amnesty applicants were from Mexico, these respondents had the least number of family living inside the U.S. with them (68 percent compared to 80 and 93 percent) and the most number of individuals with over ten members of their family residing outside of the country (42 percent compared to 36 and 38 percent from Latin America and other regions, respectively).

States with the largest immigrant populations in the U.S. include California, Florida, Illinois, New York and Texas, not to mention the fact that combined, 31 percent of the U.S. population resides in these states (Camarota and McArdle 2003). California held more than half
(59 percent) of the amnesty applicants, with Mexican immigrants once again in the lead. This is unsurprising because of the proximity of the two locations.

The majority of all undocumented immigrants spent 21-50% percent of their lives in the United States and 5 percent of Mexican immigrants spent the majority of their lives in the U.S. (81-100%). This is a large amount based on the fact that neither immigrants from other parts of Latin America nor any other regions had any one of their individuals spend this large a part of their lives in the U.S.

The amnesty population was much poorer financially than the general population. Out of those actually making an income, 64 percent made less than $25,000 among undocumented immigrants compared to only 39 percent of the total U.S. population. Similarly, a large 73 percent of amnesty applicants made less than $25,000 amongst all family members compared to only 40 percent of the general adult population.

While the majority of both recently legalized immigrants and general U.S. population did not receive some form of financial assistance, Mexican immigrants did have the largest percentage that did (7 percent compared to 3 and 1 percent from the rest of Latin America and other regions, respectively). A major reason for the small percentages among the amnesty applicants despite considerably low earnings is that financial assistance is almost always a government-funded program and undocumented immigrants may be hesitant to apply for fear of investigations on their legal status.

Initial Glimpse at Changes in Remittance Behavior

Table Two and Figure Six present preliminary observations of the changes in remittance behavior by legalized migrants between roughly around the first phase of the amnesty process in 1989 and the second phase in 1992. Overall, the percentage of people remitting in 1992
decreased compared to 1989. Only 54 percent of those surveyed sent money to friends and relatives in home countries compared to 63 percent in 1989. For those that indicated that they did send remittances home, a greater proportion sent a smaller amount in 1992. 66 percent sent 500 dollars or more in 1992 while an overwhelming 80 percent sent as much in 1989.

Including those who indicated that they did not send money home, the average amount sent decreased from $1,089 in 1989 to $897 in 1992 (in nominal dollars). Among the three cohorts, in 1989, Mexican immigrants sent the largest average amount with 1,164 dollars (compared to 1,086 dollars and 865 dollars to other parts of Latin America and other regions, respectively). However, in 1992, immigrants from Latin America outside of Mexico, sent the largest (822 dollars in real dollars compared to 692 dollars and 744 dollars in Mexico and other regions, respectively). In fact, the majority of immigrants in other regions didn’t send any amount of money, with their median at zero dollars for both years.

Table Two. Remittances of Recently Legalized Immigrants, Ages 18 and Over by Regional Origin.

<table>
<thead>
<tr>
<th>All Cohorts</th>
<th>1989</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nominal $</td>
<td>Logged $</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Med</td>
</tr>
<tr>
<td>Mexican</td>
<td>1,164</td>
<td>500</td>
</tr>
<tr>
<td>N=1,781</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other LatAm</td>
<td>1,086</td>
<td>500</td>
</tr>
<tr>
<td>N=1,337</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Regions</td>
<td>865</td>
<td>0</td>
</tr>
<tr>
<td>N=579</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1,089</td>
<td>400</td>
</tr>
<tr>
<td>N=3,697</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure Six. Charts of Remittance Behavior, 1989 and 1992.

<table>
<thead>
<tr>
<th>Percentage Remitting in 1989</th>
<th>Percentage Remitting in 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>People not remitting 36.8%</td>
<td>People not remitting 45.9%</td>
</tr>
<tr>
<td>People remitting 63.2%</td>
<td>People remitting 54.1%</td>
</tr>
<tr>
<td>Total: 3,697</td>
<td>Total: 3,697</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of remitters sending specified amount, 1989</th>
<th>No. of remitters sending specified amount, 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $100</td>
<td>$100-$499</td>
</tr>
<tr>
<td>52</td>
<td>445</td>
</tr>
<tr>
<td>Total: 2,338*</td>
<td></td>
</tr>
</tbody>
</table>

| Less than $100 | $100-$499 | $500-$999 | $1,000-$4,999 | $5,000-$9,999 | $10,000+ |
| 36 | 442 | 409 | 133 | 32 |
| Total: 2,001* |

* Includes only those who answered “yes” to sending remittances.


Multivariate Analysis

Empirical Models

The fundamental question to be answered by this empirical study is how the decline in the amount of remittances sent in the United States between 1989 and 1992 is related to the changes brought on before and after legal permanent resident status was achieved by the immigrants surveyed. Cross-sectional Tobit models are used to first identify the main variables that affect remittances and to what degree they do. These analyses also provide the ability to generally describe how the variables’ effects on the amount of remittances sent change between the two time periods. Then first differencing with the longitudinal data is used to examine the issue more quantitatively. The following section will outline the methodology and rationale behind the creation of each model.

As a nontrivial fraction of the population has chosen not to send remittances at all, the limited dependent variable in the stochastic analyses has a number of its values clustered at zero, while the rest is roughly continuously distributed over positive values. This introduces a nonlinearity which would cause a standard linear regression to be biased and include several problems such as the possibility of obtaining negative fitted values (leading to negative predictions for $y$ which is nonsensical in this case), the misleading assumption that an explanatory variable appearing in level form has a constant partial effect, the heteroskedastic variance of $y$ with respect to the $x$’s and the fact that since the distribution of the dependent variable piles up at zero, $y$ clearly cannot have a conditional normal distribution (Figure Seven).

To respond to these difficulties, the Tobit model is used which allows the inclusion of all observations, both those at the limit and those above it, to estimate an unbiased regression line.

---

5 A logarithmic (base 10) transformation was taken to ensure that the remaining positive values were roughly continuously distributed. See Figure Seven.
This type of analysis is preferred, in general, over alternative techniques that estimate a line only with the observations above the limit (McDonald 1980).

While the Tobit model is used to estimate the overall effect of the independent variables of all of the observations, it is also possible to decompose the effect into two categories: the changes in the dependent variable caused by cases above the limit (i.e. zero) and the changes caused by cases at the limit value. To do this, McDonald and Moffitt’s decomposition is used,
where the change in the expected value of $y$ (the amount of remittances sent) for all observations is disaggregated into:

$$
\frac{\partial E_y}{\partial X_k} = F(z) \left( \frac{\partial E_y^*}{\partial X_k} \right) + E_y^* \left( \frac{\partial F(z)}{\partial X_k} \right)
$$

(1.1)

Here $E_y$ is the expected value of $y$ (the amount of remittances sent) for all observations. $F(z)$ is the cumulative normal distribution function for the proportion of cases above the limit. $E_y^*$ is the expected value of $y$ for cases above the limit (those individuals that indicated that they did send remittances). $\left( \frac{\partial E_y^*}{\partial X_k} \right)$ is the change in the expected value of $y$ for cases above the limit and $\left( \frac{\partial F(z)}{\partial X_k} \right)$ is the change in the cumulative probability of being above the limit associated with an independent variable.

Thus, equation (1.1) states that the total change in the amount of remittances sent consists of: (1) the change in the amount of remittances, weighted by the probability that they will send remittances; and (2) the change in the probability of sending remittances, weighted by the expected value of remittances sent by individuals if they do choose to send them. This study will estimate this decomposition to derive more information than what ordinary Tobit coefficients commonly provide.

The stochastic model equation takes on the form:

$$
Y_i = \begin{cases} X_i \beta + \mu_i, & \text{if } X_i \beta + \mu_i > 0 \\ 0, & \text{if } X_i \beta + \mu_i \leq 0 \end{cases} \quad (1.2)
$$

$t = 1, 2, \ldots, n$

Similar to the variables in the descriptive analysis, the indicators included in $X$ include such demographic, immigration and financial characteristics as an individual’s age, gender,

---

6 Individual subscripts are removed in all equations
Table Three. Description of Variables Used in the Cross-Sectional Tobit Analyses

<table>
<thead>
<tr>
<th>Dependent variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Remittances Sent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Characteristics</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Marital Status</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>English Proficiency</td>
</tr>
<tr>
<td>Education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immigration Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country of Origin</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Family Inside</td>
</tr>
<tr>
<td>Family Outside</td>
</tr>
<tr>
<td>Immigrant State</td>
</tr>
<tr>
<td>Percent of Life Spent in U.S.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Income</td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Family Income</td>
</tr>
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<td></td>
</tr>
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</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Financial Assistance</td>
</tr>
</tbody>
</table>
marital status, English proficiency, education level, country of origin, state of residence, U.S. experience as a percentage of age and whether the recipient receives financial assistance or not. The variables are described in more detail in Table Three.

Huber-White sandwich estimators are used to create robust standard errors which effectively deal with a collection of minor problems of not meeting the classical regression assumptions, namely that some observations exhibit large residuals, leverage or influence and have heteroskedasticity.

In the second part of the analysis, first differencing is used to quantify the change in the amount of remittances sent between the two time periods. While reasonable interpretations of the differences can be made simply by looking at the changes in the variables between the stochastic models, first differencing between the two time points gives a more effective interpretation because it allows for constant individual fixed effects that might otherwise bias the equations to be subtracted out. Such factors, represented by the variable $\alpha$ in (1.3) include all factors that affect remittance amounts that do not change over time, like gender, country of origin, education and age, which remain relatively constant, or change in a completely predictable way.

$$ y_i = X_i \beta + \alpha + \mu_i $$

(1.3)

First differencing yields the equation for estimating remittance change, and takes on the following form:

$$ y_2 - y_1 = (x_2 - x_1) \beta + (\mu_2 - \mu_1) $$

(1.4)

Because the distribution of $y$ and the predicted residuals is found to be reasonably normal, the Tobit model is not necessary and a linear regression with robust standard errors is
used in its place\textsuperscript{7}. This model will help explain more precisely to what extent the amount of remittances sent by the undocumented population changed and what factors were associated between the time legalization was applied for and the time permanent legal status was actually achieved.

\footnote{\textsuperscript{7} As several of the dummy variables needed to be modified in the First Differenced Model to more accurately assess how they changed between 1989 and 1992, Table Four describes each one in detail.}
### Table Four. Description of Variables Used in the Remittance Change Analysis

**Dependent variables:**

<table>
<thead>
<tr>
<th>Remittance Change</th>
<th>Log (base 10) of change in amount sent between 1989 and 1992</th>
</tr>
</thead>
</table>

**Independent variables:**

<table>
<thead>
<tr>
<th>Change in Demographic Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status</td>
</tr>
<tr>
<td>Respondent’s spouse was inside the U.S. but is currently outside</td>
</tr>
<tr>
<td>Respondent’s spouse was outside the U.S. but is currently inside</td>
</tr>
<tr>
<td>Respondent’s marital status did not change</td>
</tr>
<tr>
<td>Spouse Residence</td>
</tr>
<tr>
<td>Respondent was married but became separated/widowed/divorced</td>
</tr>
<tr>
<td>Respondent was not married but is currently married</td>
</tr>
<tr>
<td>Respondent’s marital status did not change</td>
</tr>
<tr>
<td>English Proficiency</td>
</tr>
<tr>
<td>Education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in Immigration Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Inside</td>
</tr>
<tr>
<td>Family Outside</td>
</tr>
<tr>
<td>Immigrant State</td>
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<tr>
<td>Respondent lived in a heavily immigrant populated state but now does not</td>
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<tr>
<td>Respondent did not live in a heavily immigrant populated state but now does</td>
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<tr>
<td>Respondent’s state of residence did not change</td>
</tr>
<tr>
<td>Percent of Life Spent in U.S.</td>
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<thead>
<tr>
<th>Change in Financial Characteristics</th>
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<tbody>
<tr>
<td>Personal Income</td>
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<tr>
<td>Respondent’s personal income decreased to a lower category</td>
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<tr>
<td>Respondent’s personal income increased to a higher category</td>
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<tr>
<td>Respondent’s personal income did not change categories</td>
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<tr>
<td>Family Income</td>
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<tr>
<td>Respondent’s total income decreased to a lower category</td>
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<tr>
<td>Respondent’s total income increased to a higher category</td>
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<tr>
<td>Respondent’s total income did not change categories</td>
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<tr>
<td>Financial Assistance</td>
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<tr>
<td>Respondent did receive financial assistance but now does not</td>
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<tr>
<td>Respondent did not receive financial assistance but now does</td>
</tr>
<tr>
<td>Respondent’s financial assistance situation did not change</td>
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8 This is not completely predictable as some immigrants may have left in between the two time periods.
Cross-Sectional Hypotheses and Findings

Just as in previous research, I hypothesize that immigrants with stronger ties to their home country (shorter-term immigrants and those who have spent little of their lives in the United States) would be more likely to send remittances and more likely to send the largest amount. Conversely, I would expect those with greater ties to the United States and higher levels of formal skills to be less likely to remit or at least less likely to send a large amount if they did. Hence, migrants with the ability to speak English proficiently, have higher levels of education, have immediate family members in the United States (including marital spouses which are tested separately), and have spent a higher share of their lives in this country would be less likely to remit, and less likely to send a very large amount if they did choose to send money home. This also helps to explain why after legalization, within the immigrants surveyed, the number of people sending remittances to their home countries decreased by 9 percent, because legalization, itself, helps to instill a greater connection to the present country that the immigrants are residing in.

Holding these factors constant, I would expect that migrants with higher incomes would be more likely to remit and more likely to send larger amounts because they have more assets at their disposal. Similarly, those who are currently receiving financial assistance from the government would be less likely to remit. However, the size of their remittances if they did choose to send money might not be as small as one might think because those in poverty in the United States might be the ones that have the largest of families in their home countries that are also in poverty and in most need of any remittance amount.

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9 Within the Legalized Population Survey, all of the participants made the same decision or choice to formalize their connections to the United States by applying for amnesty, which may indicate that their specific ties to their countries of origin may be less strong from the outset than those who chose not to apply or undocumented immigrants in general.
Also, I hypothesize that, all else equal, older immigrants in the United States would be less likely to remit and would send smaller amounts than younger immigrants as older immigrants are likely to think more of their own needs while younger immigrants might have greater expectations to support other family members (DeSipio 2000). Because of the mere fact that more migrants in general reside in the states chosen to be “immigrant states” (California, Florida, Illinois, New York and Texas) and since the largest majority of immigrants are male and from Mexico and Latin America, it is more likely that migrants with these characteristics would remit and possibly send the largest amounts.

Regarding the two different time periods, I hypothesize that each variable will have the same positive or negative effect respectably, but that the magnitude would decrease as a result of the years passing and the adoption of a legalized status. Again, while I believe legalization will allow immigrants to be able to send money more conveniently, the increase in the immigrant’s tie to the United States will cause the other factor’s to be less effective.

The results of the models are described in Table Five and indicate that evidences of my hypotheses are displayed. In 1989, nearly all of the variables are statistically significant and the reported Wald Chi-square statistic for the Tobit models indicate that taken together all the independent variables explain a significant proportion of variation in the dependent variable. The \( R^2 \)-squared is nearly 20 percent indicating that the model predicts this much of the variation. While this may not seem like a lot, remember Tobit estimates, unlike linear ones, are not chosen to maximize an \( R^2 \)-squared but to maximize the log-likelihood function.

In 1992, a few more of the same variables proved not to be significant predictors of the likelihood of remitting, however, again the Wald Chi-square statistic shows that taken together the estimates explain a large proportion of the variation. The \( R^2 \)-squared improves significantly to
31 percent, most likely because the amount of remittances sent in 1989 proves to be a rather strong additional indicator of whether remittances are sent in 1992.
| Independent Variable                                      | Tobit Estimate x Adj. Factora (Robust S.E.) | McDonald-Moffitt Decomposition | Robust t (P>|t|) |
|-----------------------------------------------------------|---------------------------------------------|--------------------------------|----------------|
| **Demographic Characteristics:**                          |                                             |                                |                |
| Age                                                       | -0.016 (0.005)                              | -0.012 (0.007)                 | -7.056 (0.000) |
| Gender (Female)                                            | 0.212 (0.076)                              | 0.154 (0.086)                  | 5.602 (0.000)  |
| Marital Status (Not Married)                              |                                            |                                |                |
| Married w/ Spouse in U.S.                                 | -0.147 (0.086)                             | -0.107 (0.060)                 | -3.459 (0.001) |
| Married w/ Spouse Not in U.S.                             | 0.400 (0.157)                              | 0.291 (0.162)                  | 5.131 (0.000)  |
| Divorced/Separated/Widowed                                | -0.262 (0.176)                             | -0.191 (0.106)                 | -3.001 (0.003) |
| Ability to Speak English on the Telephone (No)            | -0.091 (0.081)                             | -0.066 (0.037)                 | -2.264 (0.024) |
| Years of Education                                        | -0.019 (0.013)                             | -0.014 (0.008)                 | -3.049 (0.002) |
| **Immigration Characteristics:**                          |                                             |                                |                |
| Country of Origin (Mexico)                                |                                            |                                |                |
| Latin America                                             | 0.195 (0.079)                              | 0.142 (0.079)                  | 4.935 (0.000)  |
| Other Country                                             | -0.519 (0.151)                             | -0.378 (0.210)                 | -6.903 (0.000) |
| No. of Family Inside the U.S.                             | 0.000 (0.004)                              | 0.000 (0.000)                  | 0.067 (0.947)  |
| No. of Family Outside the U.S.                            | 0.013 (0.005)                              | 0.010 (0.005)                  | 5.605 (0.000)  |
| Resides in State with Large Immigration Population        | 0.137 (0.111)                              | 0.100 (0.055)                  | 2.487 (0.013)  |
| Percent Life Spent in U.S. x 100                           | -0.019 (0.004)                             | -0.014 (0.008)                 | -10.145 (0.000) |
| **Financial Characteristics:**                            |                                             |                                |                |
| Personal Income (No income)                               |                                            |                                |                |
| Less than $8,999                                          | 0.625 (0.138)                              | 0.455 (0.253)                  | 9.137 (0.000)  |
| $9,000-$14,999                                            | 0.650 (0.140)                              | 0.473 (0.263)                  | 9.368 (0.000)  |
| $15,000-$24,999                                           | 0.561 (0.153)                              | 0.408 (0.227)                  | 7.401 (0.000)  |
| $25,000 or more                                           | 0.439 (0.267)                              | 0.320 (0.178)                  | 3.314 (0.001)  |
| No response                                               | 0.289 (0.259)                              | 0.210 (0.117)                  | 2.242 (0.025)  |
| Total Family Income (Less than $8,999)                    | 0.103 (0.124)                              | 0.074 (0.042)                  | 1.674 (0.094)  |
| $9,000-$14,999                                            | 0.240 (0.116)                              | 0.175 (0.097)                  | 4.175 (0.000)  |
| $15,000-$24,999                                           | 0.367 (0.134)                              | 0.267 (0.148)                  | 5.515 (0.000)  |
| $25,000 or more                                           | 0.099 (0.151)                              | 0.006 (0.004)                  | 0.116 (0.908)  |
| No response                                               | -0.411 (0.196)                             | -0.300 (0.166)                 | -4.219 (0.000) |
| Receives Financial Assistance (No)                        |                                             |                                |                |
| Constant                                                  | 1.101 (0.314)                              | 0.802 (0.445)                  | 7.056 (0.000)  |

-2 log likelihood: 769.2274
Total cases (uncensored): 3,697 (2,338)
Wald chi-square (P>|chi-square|): 789.04 (0.000)
R-squared: 19.41%

a Adjustment Factor: F(z) = 0.496 in 1989 and F(z) = 0.311 in 1992
### Table Six. Tobit Regression of Predictors of Remittance Behavior, 1992

| Independent Variable | Tobit Estimate × Adj. Factor | McDonald-Moffitt Decomposition | Robust t (P>|t|) |
|----------------------|-----------------------------|--------------------------------|-----------------|
|                      | (Robust S.E.)               | ∂Ey*/∂xi | ∂F(z)/∂xi |                      |
| Log (Remittances Sent in 1989 + 1) | 0.209 | 0.181 | 0.114 | 23.232 |
|                      | (0.029) | | | (0.000) |
| **Demographic Characteristics:** | | | | |
| Age                  | -0.005 | -0.005 | -0.003 | -3.325 |
|                      | (0.005) | | | (0.001) |
| Gender (Female)      | -0.006 | -0.005 | -0.003 | -0.203 |
|                      | (0.089) | | | (0.839) |
| Marital Status (Not Married) | -0.003 | -0.003 | -0.002 | -0.095 |
| Married w/ Spouse in U.S. | (0.107) | (0.092) | (0.000) |
| Married w/ Spouse Not in U.S. | 0.232 | 0.201 | 0.127 | 3.541 |
|                      | (0.211) | | | (0.000) |
| Divorced/Separated/Widowed | -0.018 | -0.015 | -0.010 | -0.341 |
|                      | (0.166) | | | (0.733) |
| Ability to Speak English on the Telephone (No) | -0.027 | -0.024 | -0.015 | -0.906 |
|                      | (0.098) | | | (0.365) |
| Years of Education   | -0.009 | -0.008 | -0.005 | -2.696 |
|                      | (0.011) | | | (0.007) |
| **Immigration Characteristics:** | | | | |
| Country of Origin (Mexico) | | | | |
| Latin America        | 0.167 | 0.145 | 0.091 | 6.021 |
|                      | (0.089) | (0.000) | |
| Other Country        | -0.045 | -0.039 | -0.024 | -0.986 |
|                      | (0.146) | (0.324) | |
| No. of Family Inside the U.S. | -0.003 | -0.003 | -0.002 | -0.751 |
|                      | (0.013) | (0.453) | |
| No. of Family Outside the U.S. | 0.038 | 0.033 | 0.021 | 10.462 |
|                      | (0.012) | (0.000) | |
| Resides in State with Large Immigration Population | -0.037 | -0.032 | -0.020 | -1.046 |
|                      | (0.114) | (0.295) | |
| Percent Life Spent in U.S. x 100 | -0.003 | -0.003 | -0.002 | -2.469 |
|                      | (0.004) | (0.014) | |
| **Financial Characteristics:** | | | | |
| Personal Income (No income) | | | | |
| Less than $8,999      | 0.267 | 0.231 | 0.146 | 5.744 |
|                      | (0.149) | (0.000) | |
| $9,000-$14,999        | 0.350 | 0.303 | 0.191 | 7.095 |
|                      | (0.158) | (0.000) | |
| $15,000-$24,999       | 0.317 | 0.275 | 0.173 | 5.997 |
|                      | (0.170) | (0.000) | |
| $25,000 or more       | 0.301 | 0.261 | 0.164 | 4.287 |
|                      | (0.226) | (0.000) | |
| No response           | 0.027 | 0.023 | 0.015 | 0.280 |
|                      | (0.310) | (0.780) | |
| Total Family Income (Less than $8,999) | | | | |
| $9,000-$14,999        | 0.162 | 0.140 | 0.088 | 3.172 |
|                      | (0.164) | (0.002) | |
| $15,000-$24,999       | 0.296 | 0.256 | 0.161 | 6.071 |
|                      | (0.157) | (0.000) | |
| $25,000 or more       | 0.392 | 0.340 | 0.214 | 7.203 |
|                      | (0.175) | (0.000) | |
| No response           | 0.080 | 0.069 | 0.044 | 1.261 |
|                      | (0.204) | (0.207) | |
| Receives Financial Assistance (No) | -0.144 | -0.125 | -0.079 | -4.141 |
|                      | (0.112) | (0.000) | |
| Constant              | -0.398 | -0.345 | -0.217 | -3.124 |
|                      | (0.410) | (0.002) | |

-2 log likelihood: 1,331.2634
Total cases (uncensored): 3,697 (2,001)
Wald chi-square (P>|chi-square|): 1,630.12 (0.000)
R-squared: 31.05%
For all but one variable, just as hypothesized, the factors that indicated a strong link to the United States resulted in a decline in the amount of remittances sent and a lower probability that the individual remits at all. These include the ability to speak English proficiently, as in 1989, holding all other factors fixed, an immigrant that could, sent 9.1 percent less in remittances than one that could not. Regarding only the sample of immigrants that indicated that they chose to remit, 6.6 percent less was sent and for all migrants, the probability of remitting decreased by 3.7 percent if the individual could speak English competently. In 1992, this variable was not statistically significant but the sign of this factor remained consistent with the previous analysis.

A link to the United States was also hypothesized to include higher levels of education and this coincided with the findings of the multivariate analyses. This variable was statistically significant in both 1989 and 1992 and had a negative effect on remittances in both years as well. In 1989, holding all other factors constant and surveying all 3,697 individuals, an additional year of education resulted in a 1.9 percent decrease in the amount of remittances sent. Of only those individuals that indicated that they chose to remit, the decline was only a little less, 1.4 percent. And the probability that a person would remit at all decreased by 0.8 percent with each additional year of education. These effects were similar in 1992 but on a smaller scale with a 0.9 percent in the amount of remittances sent by all immigrants, a 0.8 percent by those choosing to remit and a 0.5 percent decline in the probability of remitting at all.

The larger the percentage of U.S. experience as a part of age, the less the amount of remittances was as well. In 1989, an individual with one percentage point more U.S. experience caused the amount to decline by 1.9 percent overall and in 1992, by 0.3 percent. The effects had the same negative effect with slightly different magnitudes and the variable was statistically significant.
The one variable that was inconsistent with the United States link hypotheses was the immigrant having immediate family members in the United States. Rather than a negative effect on the amount of remittances sent, this factor actually had a positive effect in 1989, although it did have a negative effect in 1992. This is not a large stray from the hypotheses however, as this variable was statistically insignificant in both years and in 1989, where it was a positive effect, the value is less than .02 percent. Also, when looking at the number of family members living outside of the country, consistent with this hypotheses, it would be reasonable to expect that the more family members away, the more likely remittances would be sent and the larger the amount, which is found to be true in the analyses. In both years, each additional family member still residing in the country of origin resulted in a 1.3 percent increase in the amount of remittances in 1989 and a 3.8 percent increase in 1992. As the number of family members increased the probability of remitting at all increased by 0.5 percent in 1989 and 2.1 percent in 1992.

Similarly, with respect to marital status, those whose spouses were living outside of the United States at the time showed a huge increase in the amount of remittances in both years compared to those individuals not married. In 1989, the presence of a spouse residing in the country of origin resulted in a 40 percent increase in the amount of remittances sent compared to the amounts sent by those not married, while those divorced, separated or widowed sent significantly less than those not married as well. An immigrant was 16.2 percent more likely to send remittances at all if their spouse was away than those not married and a person divorced, separated or widowed, 10.6 percent less likely. Only looking at those immigrants that indicated that they did remit, individuals with spouses away sent 29.1 percent more than those not married and individuals divorced, separated or widowed sent 19.1 percent less. Similar figures were
found in 1992, after legalization, although the variable was not statistically significant in this year.

With respect to the hypotheses on financial characteristics, the results of the analyses partially confirmed these ideas. In 1989, the larger the amount of personal income, the smaller the amount of remittances sent, contrary to what I had believed. However, when looking at total family income, the opposite was true. In 1992, both the larger that personal income and total family income became, the more remittances were sent.

Similarly, those receiving financial assistance, as predicted in both years, sent less and were less likely to remit. However, while the variable was statistically significant in both years, in 1989, the effect was much larger. Receiving financial assistance caused a 41.1 percent decline in the amount of remittances sent while in 1992 it resulted in only a 14.4 percent decline.

Finally, the effects of the other characteristics: age, gender, country of origin and state of residence on the amount of remittances sent also almost completely confirm the hypotheses stated above. In both years, holding all other variables fixed, every additional year added decreased the total amount of remittances sent. In 1989 the decrease was 1.6 percent and in 1992 it was slightly less at 0.5 percent. The probability of remitting at all decreased by 0.7 percent in 1989, while in 1992 it decreased by 0.3 percent. When only looking at the individuals who indicated that they did remit, the decline was 1.2 percent in 1989 and 0.5 percent in 1992.

Gender played a large role in the amount of remittances sent as well. In 1989 the value sent was 21.2 percent if the individual was male rather than a female and the probability of remitting at all was 8.6 percent more. A similar situation was found with the dummy variable indicating whether an individual resided in a heavily immigrant populated state. In 1989, this increased the amount of remittances sent by 13.7 percent while in 1992 the variable was both insignificant and negative.
Country of origin, on the other hand, played a surprising role in the amount of remittances sent. Although I had expected that those in Mexico would be the ones to send the most amount to families in their home countries, the analyses shows that in both years being from Latin America made you not only more likely to send remittances, but more likely to send a greater amount. In 1989, this statistically significant variable, caused a 7.9 percent increase in the probability of remitting and in 1992, a 9.1 percent increase. The amount sent by those who indicated that they did remit increased by 14.2 percent in 1989 if the individual was from Latin America compared to Mexico and by 14.5 percent in 1992. On the other hand, if the immigrant was from any other country than Mexico or Latin America, the amount of remittances sent decreased largely in 1989 by 51.9 percent when looking at all immigrants, regardless of whether they indicated they remitted or not.

Remittance Change Hypotheses and Findings

My hypotheses for the change in the amount of remittances correspond very closely to the hypotheses from the previous section. I would expect those who were able to increase their ties to the United States through not only the mere fact of gaining legal permanent resident status but through stronger English-speaking skills, higher levels of education, more family living within the United States and less family living outside the country would choose to remit less than before receiving legalization.

Again, holding these factors constant, I would expect migrants with higher personal incomes and higher total family incomes to send larger amounts than they previously did and the opposite to be true as well. Those receiving financial assistance from the government may send less, although as noted before, the effect is ambiguous as these may also be linked to families who need remittances the most.
Table Seven displays the results from the model and confirms several of my hypotheses. The reported Wald Chi-square statistic is found to be strongly significant indicating once more that taken together all of the independent variables included helped to explain a large proportion of the variation. As several of the variables are statistically significant themselves, hopefully we have found strong indicators despite the fact that the $R^2$-squared is rather low.

Looking at how an individual’s marital status affected how the amount of remittances changed, it was not surprising to find that those who were formerly married in 1989 but no longer married in 1992 were found to send 61.7 percent less than those who experienced no change in their marital status at all. As “no longer married” includes an individual who is separated, divorced or widowed, this change in status usually indicates that there is one less family member living in the household or sharing in the financial wealth of family. If the individual’s spouse was living in a separate country that may be receiving this money, once the tie to the household has been severed, the amount of remittance sent would be expected to decline. The opposite follows with the fact that those who were not married at the time of the first survey and became married at the time of the second survey were found to remit 65.6 percent more than those whose marital status did not change at all.

Similarly, for those individuals who remained married, having their spouse no longer live within the U.S. but instead outside of the country, made the change in an individual’s amount of remittances sent to increase largely by 71.0 percent, holding all other factors constant. If the opposite was true, such a factor caused a decrease of 71.6 percent in the size of a person’s remittance.

Despite my theories on an individual gaining an ability to speak English on the telephone, additional years of education or having more family living inside of the United States, such variables were actually found to positively affect the amount of remittances sent between the two
Table Seven. Linear Regression of Predictors of Remittance Change, First Differencing

| Independent Variable                                      | Beta (Robust S.E.) | Robust $z$ (P>|$z$|) |
|----------------------------------------------------------|--------------------|------------------|
| **Demographic Characteristics:**                         |                    |                  |
| Marital Status (No Change)                               |                    |                  |
| Formerly Married                                         | -0.617 (0.270)     | -2.284 (0.022)  |
| Currently Married                                        | 0.656 (0.205)      | 3.200 (0.001)   |
| Spouse Residence (No Change)                             |                    |                  |
| Formerly Spouse Inside the U.S.                          | 0.710 (0.248)      | 2.862 (0.004)   |
| Currently Spouse Inside the U.S.                          | -0.716 (0.193)     | -3.705 (0.000)  |
| Increased Ability to Speak English on the Telephone (No)  | 0.005 (0.076)      | 0.063 (0.950)   |
| Years of Education                                       | 0.004 (0.015)      | 0.240 (0.810)   |
| **Immigration Characteristics:**                         |                    |                  |
| No. of Family Inside the U.S.                            | 0.002 (0.002)      | 1.150 (0.250)   |
| No. of Family Outside the U.S.                           | 0.007 (0.004)      | 1.706 (0.088)   |
| State of Residence (No Change)                           |                    |                  |
| Formerly Lived in Immigrant State                        | 0.535 (0.252)      | 2.119 (0.034)   |
| Currently Lives in Immigrant State                       | 0.383 (0.237)      | 1.617 (0.106)   |
| Percent Life Spent in U.S. x 100                         | -0.072 (0.019)     | -3.775 (0.000)  |
| **Financial Characteristics:**                           |                    |                  |
| Personal Income (No Change)                              |                    |                  |
| Decreased to lower category                              | 0.147 (0.068)      | 2.154 (0.031)   |
| Increased to higher category                             | 0.176 (0.058)      | 3.054 (0.002)   |
| Total Family Income (No Change)                          |                    |                  |
| Decreased to lower category                              | -0.328 (0.073)     | -4.494 (0.000)  |
| Increased to higher category                             | 0.349 (0.056)      | 6.199 (0.000)   |
| Receives Financial Assistance (No Change)                |                    |                  |
| Formerly Received Financial Assistance                   | -0.256 (0.075)     | -3.431 (0.001)  |
| Currently Receives Financial Assistance                  | 0.034 (0.171)      | 0.202 (0.840)   |
| Constant                                                 | 0.006 (0.120)      | 0.048 (0.962)   |
| **Total cases**                                          | 3,697              |                  |
| **Wald chi-square (P>|chi-square|)**                   | 10.48 (0.000)      |                  |
| **R-squared**                                            | 4.5%               |                  |

*Individuals who responded “No response” were treated as “No Change”*
time periods. However, as these factors were largely statistically insignificant (with $P>|z|$ at the 95 percent level, 81 percent level and 25 percent level, respectively) and had very small values themselves (0.5 percent, 0.4 percent and 0.2 percent, respectively), the discrepancy is not very large.

Corresponding strongly with the hypothesis that having the percentage of a person’s life spent in the U.S. with respect to one’s age increase, decreasing the link an individual has with its home country was found to be quantitatively accurate in the analysis. This strongly statistically significant variable resulted in a 7.2 percent decline in the amount of remittances sent between 1989 and 1992.

While the effects of the changes in total family income were supportive of what was previously conjectured, the change in an individual’s personal income had a surprising effect. Rather than negatively affecting the difference between the remittances sent, regardless of whether an immigrant’s personal income decreased or increased to a lower or higher category, both caused substantial increases when compared with those who experienced no change in their personal income category at all. Falling to a lower category caused a 14.7 percent increase while increasing to a higher category resulted in a 17.6 percent increase. This may be because those whose personal incomes decreased still had their total family incomes increase as the results of this variable corresponded more closely to than what I had hypothesized. Here, those with less total family income caused a 32.8 percent decline in the difference between the amount of remittances sent in the two separate years and those whose total family incomes increased had a 34.9 percent increase. Both of these dummy variables were strongly statistically significant.

Finally, receiving financial assistance through the government had a surprising result compared to the changes seen in the cross-sectional analyses. While it had seemed as though receiving financial assistance was a deterrent to the amount being sent, when an immigrant was
found to no longer receive it in 1992, a 25.6 percent decline in the amount of remittances sent between the two years resulted. Perhaps those who no longer needed the government’s help, either no longer had families in desperate need of money in their home countries as well or had exhausted benefits and had fewer resources available to send. As the variable describing those who currently received financial assistance when they hadn’t before were found to be largely statistically insignificant it is not surprising that this factor’s value was relatively small.

Data Limitations

The data collected by the Legalized Population Survey is one of a few sources of information about changes experienced by the undocumented immigrants during this period and therefore is a valuable source of evidence regarding changes in the amount of remittances sent related to the legalization of their immigration status. Nonetheless, there are several limitations inherent to the data.

Since not all individuals who were eligible for the legalization program may have applied during this time and immigration patterns themselves tend to vary over time due to economic and political changes in the home countries and the United States as well as by U.S. immigration policies and social networks established, the findings in this paper can only be generalized to the population that applied for and received legalized status, not to other undocumented immigrants living in the United States in 1989 or years after.

Secondly, the questionnaires utilized during the surveys were not absolutely identical. The first survey was not replicated in its entirety for the second survey and additional questions were added, limiting the comparisons for some remittance-related items. And because some immigrants may have been hesitant to describe their remittance behavior at all for worries about
whether such behavior was completely and legally acceptable, some answers may not reflect an immigrant’s true status.
Conclusions

This empirical analysis helped to assess the integration prospects of recently legalized immigrants with respect to remittances, or monies sent to an individual’s home country outside of the United States. The results show that several demographical, migrational and financial characteristics had strong influences on not only the probability that an individual would remit but the amount that would be sent. Several of the changes of these characteristics between the times when those surveyed applied for amnesty in 1989 and received Legal Permanent Resident status in 1992, also helped shape the way that the amount of remittances declined within this same period. Several specific findings stand out in this study.

First, just as hypothesized, many of the variables that indicated a strong link to the United States caused the probability that an individual would remit to decrease and that the amount sent was less than if the immigrant felt more of a tie to his own country in both years. Such variables included migrants with the ability to speak English proficiently, have higher levels of education, and have spent a higher percentage of their lives in the United States. Similarly, with respect to financial situations, generally immigrants with more money sent the most and were most likely to send remittances at all. The effects of the remaining variables, such as age, gender, country of origin and state of residence had mixed results. While state of residence was found to be statistically insignificant, the individual most likely to send remittances were younger males from Latin America.

Second, the changes in these variables had interesting effects. How a person’s marital situation changed between the two years greatly affected whether the amounts sent increased or decreased, with those no longer married sending considerably less. Similarly, the greater the portion of an immigrant’s life was spent in the United States resulted in less remittances sent, continuing my hypotheses on links to home countries affecting amounts sent. A person’s income
as well as financial situation, with respect to government assistance, also caused an individual to send more depending on whether he had gained larger economic status and no longer received aid.

As more rigorous examination of who among migrants remits and what factors are associated with the amounts sent, as is evident from the analysis presented in this report, this strategy too has its weaknesses. Chief among these is the absence of a control group for comparison. As noted before, because of the lack of surveys which document remittance behavior at all, much less the exact amounts of remittances sent between countries by specific individuals, it is hard to distinguish which variables were necessarily the result of the change in the immigration status or merely a change that happens naturally through the progression of time.

Similarly, a longitudinal survey with a larger lapse between the years would also be a beneficial improvement to this study. Because the surveys were done so close together, within only a span of three years, a large majority of the changes only occurred to a few of the population with a large portion having no change at all in several variables (see Appendix A). Rather than seeing the change in between the time of application and the time Legal Permanent Resident status was achieved, it would be interesting to see how remittances is further affected five to ten years after legalization was gained.
References


Appendix A
### Descriptive Chart on Changes in Sample Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mexican</th>
<th>Other Latin Americans</th>
<th>All Other</th>
<th>Total (weighted)</th>
</tr>
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<tbody>
<tr>
<td><strong>Demographic Characteristics:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Marital Status</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Formerly Married</td>
<td>4.2</td>
<td>7.3</td>
<td>4.8</td>
<td>4.8</td>
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<tr>
<td>Currently Married</td>
<td>14.0</td>
<td>15.8</td>
<td>16.8</td>
<td>14.8</td>
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<tr>
<td>No Change</td>
<td>81.8</td>
<td>77.0</td>
<td>78.4</td>
<td>80.4</td>
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<tr>
<td>Spouse Residence</td>
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<tr>
<td>Formerly Spouse Inside the U.S.</td>
<td>4.8</td>
<td>8.2</td>
<td>5.5</td>
<td>5.5</td>
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<tr>
<td>Currently Spouse Inside the U.S.</td>
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<td>16.9</td>
<td>20.4</td>
<td>16.8</td>
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<tr>
<td>No Change</td>
<td>79.2</td>
<td>74.9</td>
<td>74.1</td>
<td>77.6</td>
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<td>Ability to Speak English on the Telephone</td>
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<tr>
<td>Increased</td>
<td>15.4</td>
<td>12.9</td>
<td>2.1</td>
<td>13.7</td>
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<tr>
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<td>84.6</td>
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<td>35.6</td>
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<tr>
<td>No Change</td>
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<td>64.4</td>
<td>60.8</td>
<td>66.7</td>
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<td>No. of Family Inside the U.S.</td>
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<tr>
<td>Increased</td>
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<td>Decreased</td>
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<td>No Change</td>
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<td>18.2</td>
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<tr>
<td>No. of Family Outside the U.S.</td>
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<tr>
<td>Increased</td>
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<td>11.9</td>
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<tr>
<td>Decreased</td>
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<td>No Change</td>
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<td>11.6</td>
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<td>Currently Lives in Immigrant State</td>
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<td>No Change</td>
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<td>Percent Life Spent in U.S. x 100</td>
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<tr>
<td>Increased Less Than 5%</td>
<td>29.2</td>
<td>26.5</td>
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<td>28.5</td>
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<tr>
<td>Increased by More Than 5%</td>
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<td>73.5</td>
<td>66.4</td>
<td>71.5</td>
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<td><strong>Financial Characteristics:</strong></td>
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<td>Personal Income</td>
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<tr>
<td>Decreased to lower category</td>
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<td>25.4</td>
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<tr>
<td>Increased to higher category</td>
<td>38.5</td>
<td>34.3</td>
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<tr>
<td>No Change</td>
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<tr>
<td>Total Family Income</td>
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<tr>
<td>Decreased to lower category</td>
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<td>18.1</td>
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<td>No Change</td>
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<td>41.7</td>
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<td>Receives Financial Assistance</td>
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</tr>
<tr>
<td>Formerly Received Financial Assistance</td>
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<td>0.5</td>
<td>2.8</td>
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<tr>
<td>No Change</td>
<td>78.1</td>
<td>84.7</td>
<td>94.8</td>
<td>81.2</td>
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<td>[Number of respondents]</td>
<td>[1,781]</td>
<td>[1,337]</td>
<td>[579]</td>
<td>[3,697]</td>
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</table>

Source: Legalized Population Survey 1989, 1992 (CPS is not included because different individuals are interviewed each year)

a U.S. population only includes family members within the same household

b Questions were asked of amnesty applicants regarding 1987

c Weighted figures are representative of 1,191,574 individuals
Appendix B
## Full Model Results of Tobit Regression, 1989

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>$\bar{x}^*$</th>
<th>$\beta$</th>
<th>$F(z)\beta^*$</th>
<th>McDonald-Moffitt Decomposition</th>
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<td></td>
<td></td>
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<td>$\partial Ey^{*}/\partial x_i$</td>
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<td><strong>Demographic Characteristics:</strong></td>
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<td></td>
</tr>
<tr>
<td>Age</td>
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<td>-0.016</td>
<td>-0.012</td>
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<td>Gender (Female)</td>
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<td>0.212</td>
<td>0.154</td>
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<td>Marital Status (Not Married)</td>
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<tr>
<td>Married w/ Spouse in U.S.</td>
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<td>-0.147</td>
<td>-0.107</td>
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<td>Married w/ Spouse Not in U.S.</td>
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<td>0.806</td>
<td>0.400</td>
<td>0.291</td>
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<td>Divorced/Separated/Widowed</td>
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<td>-0.529</td>
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<td>-0.191</td>
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<td>Years of Education</td>
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<td>-0.014</td>
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<td><strong>Immigration Characteristics:</strong></td>
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<tr>
<td>Country of Origin (Mexico)</td>
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<tr>
<td>Latin America</td>
<td>0.00</td>
<td>0.392</td>
<td>0.195</td>
<td>0.142</td>
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<td>Other Country</td>
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<td>-0.378</td>
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<td>No. of Family Inside the U.S.</td>
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<td>No. of Family Outside the U.S.</td>
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<td>0.027</td>
<td>0.013</td>
<td>0.010</td>
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<tr>
<td>Resides in State with Large Immigration Population</td>
<td>1.00</td>
<td>-0.038</td>
<td>0.137</td>
<td>0.100</td>
</tr>
<tr>
<td>Percent Life Spent in U.S. x 100</td>
<td>29.62</td>
<td>1.259</td>
<td>-0.019</td>
<td>-0.014</td>
</tr>
<tr>
<td><strong>Financial Characteristics:</strong></td>
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<td></td>
</tr>
<tr>
<td>Total Family Income (Lessthan $8,999)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $8,999</td>
<td>0.00</td>
<td>1.259</td>
<td>0.625</td>
<td>0.455</td>
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<tr>
<td>$9,000-$14,999</td>
<td>0.00</td>
<td>1.309</td>
<td>0.650</td>
<td>0.473</td>
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<tr>
<td>$15,000-$24,999</td>
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<td>1.129</td>
<td>0.561</td>
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<td>$25,000 or more</td>
<td>0.00</td>
<td>0.885</td>
<td>0.439</td>
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<tr>
<td>No response</td>
<td>0.00</td>
<td>0.581</td>
<td>0.289</td>
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<tr>
<td>Total Family Income (Less than $8,999)</td>
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<td></td>
<td></td>
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<td>$9,000-$14,999</td>
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<td>0.207</td>
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<td>$15,000-$24,999</td>
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<td>0.484</td>
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<td>0.740</td>
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<td>No response</td>
<td>0.00</td>
<td>0.017</td>
<td>0.009</td>
<td>0.006</td>
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<tr>
<td>Receives Financial Assistance (No)</td>
<td>0.00</td>
<td>-0.829</td>
<td>-0.411</td>
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<tr>
<td>Constant</td>
<td>2.218</td>
<td>1.101</td>
<td>0.802</td>
<td>0.445</td>
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</table>

**Standard Error(σ)**
-2 log likelihood 769.2274
Total cases 3,697
(uncensored) (2,338)
Wald chi-square 789.04
(P>|chi-square|) (0.000)
R-squared 19.41%

* Mean if continuous variable, median if dummy variable  ** $F(z) = 0.496$

The following equations are used:

1) $z = \frac{\bar{x}\beta}{\sigma}$

2) $\frac{\partial Ey^{*}}{\partial x_i} = \beta_i + \frac{\partial f(z)}{\partial x_i} \left( \frac{\sigma f(z)}{F(z)^2} \right) = \beta_i \left[ 1 - \frac{zf(z)}{F(z)} - \frac{f(z)^2}{F(z)^2} \right]$

3) $\frac{\partial F(z)}{\partial x_i} = f(z) \frac{\beta_i}{\sigma}$
Appendix C
## Full Model Results of Tobit Regression, 1992

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>$\bar{x}^*$</th>
<th>$\beta$</th>
<th>$F(z)\beta^{**}$</th>
<th>McDonald-Moffitt Decomposition</th>
<th>$\frac{\partial E_y^*}{\partial x_i}$</th>
<th>$\frac{\partial F(z)}{\partial x_i}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log (Remittances Sent in 1989 + 1)</td>
<td>1.89</td>
<td>0.672</td>
<td>0.209</td>
<td>0.181</td>
<td>0.114</td>
<td></td>
</tr>
</tbody>
</table>

### Demographic Characteristics:

| Age                                                  | 38.16        | -0.017  | -0.005            | -0.005                          | -0.003                            |
| Gender (Female)                                       | 1.00         | -0.018  | -0.006            | -0.005                          | -0.003                            |
| Marital Status (Not Married)                         |              |         |                   |                                 |                                   |
| Married w/ Spouse in U.S.                            | 1.00         | -0.010  | -0.003            | -0.003                          | -0.002                            |
| Married w/ Spouse Not in U.S.                        | 0.00         | 0.747   | 0.232             | 0.201                           | 0.127                             |
| Divorced/Separated/Widowed                           | 0.00         | -0.057  | -0.018            | -0.015                          | -0.010                            |
| Ability to Speak English on the Telephone (No)       | 1.00         | -0.088  | -0.027            | -0.024                          | -0.015                            |
| Years of Education                                    | 8.92         | -0.030  | -0.009            | -0.008                          | -0.005                            |

### Immigration Characteristics:

| Country of Origin (Mexico)                          |              |         |                   |                                 |                                   |
| Latin America                                       |              | 0.637   | 0.767             | 0.145                           | 0.091                             |
| Other Country                                        |              | -0.434  | -0.445            | -0.034                          | -0.026                            |
| No. of Family Inside the U.S.                        | 3.67         | -0.009  | -0.003            | -0.003                          | -0.002                            |
| No. of Family Outside the U.S.                       | 4.45         | 0.122   | 0.038             | 0.033                           | 0.021                             |
| Resides in State with Large Immigration Population   | 1.00         | -0.120  | -0.037            | -0.032                          | -0.020                            |
| Percent Life Spent in U.S. x 100                     | 35.40        | -0.011  | -0.003            | -0.003                          | -0.002                            |

### Financial Characteristics:

| Personal Income (No income)                         |              |         |                   |                                 |                                   |
| Less than $8,999                                     |              | 0.685   | 0.267             | 0.231                           | 0.146                             |
| $9,000-$14,999                                       | 0.00         | 1.124   | 0.350             | 0.303                           | 0.191                             |
| $15,000-$24,999                                      | 0.00         | 1.020   | 0.317             | 0.275                           | 0.173                             |
| $25,000 or more                                      | 0.00         | 0.967   | 0.301             | 0.261                           | 0.164                             |
| No response                                          | 0.00         | 0.887   | 0.257             | 0.223                           | 0.151                             |
| Total Family Income (Less than $8,999)               |              |         |                   |                                 |                                   |
| $9,000-$14,999                                       |              | 0.520   | 0.162             | 0.140                           | 0.088                             |
| $15,000-$24,999                                      | 0.00         | 0.951   | 0.296             | 0.256                           | 0.161                             |
| $25,000 or more                                      | 0.00         | 1.262   | 0.392             | 0.340                           | 0.214                             |
| No response                                          | 0.00         | 0.257   | 0.080             | 0.069                           | 0.044                             |
| Receives Financial Assistance (No)                   | 0.00         | -0.463  | -0.144            | -0.125                          | -0.079                            |
| Constant                                             | -1.280       | -0.398  | -0.345            | -0.217                          |                                   |

| Standard Error($\sigma$)                            | 2.080        |         |                   |                                 |                                   |
| -2 log likelihood                                    | 1,331.2634   |         |                   |                                 |                                   |
| Total cases (uncensored)                             | 3,697        |         |                   |                                 |                                   |
| Wald chi-square (P>|chi-square|)                  | 1,630.12     |         |                   |                                 |                                   |
| R-squared                                            | 31.05%       |         |                   |                                 |                                   |

* Mean if continuous variable, median if dummy variable  
** $F(z) = 0.311$

The following equations are used:

1) $z = \frac{\bar{x}\beta}{\sigma}$

2) $\frac{\partial E_y^*}{\partial x_i} = \beta_i + \frac{\partial f(z)}{\partial x_i} - \left(\frac{\sigma f(z)}{F(z)^2}\right)\left(\frac{\partial F(z)}{\partial x_i}\right) = \beta_i \left[1 - \frac{zf(z)}{F(z)} - \frac{zf(z)^2}{F(z)^2}\right]$

3) $\frac{\partial F(z)}{\partial x_i} = f(z) \frac{\beta_i}{\sigma}$
Appendix D
Additional Remittance Information Charts

Methods used to send money, 1989

Methods used to send money, 1992