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Remittance Activity among Brazilians in the US and Canada

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Abstract

This comparative study uses data collected in 1990 and 1991 to examine the remittance behavior of Brazilians who had recently arrived in Canada and the United States. These data permit an examination of remittance activity among immigrants relatively soon after their arrival in a pair of host destinations. Prior to contrasting the remittance activity of these newly arrived immigrants, we first document the high degree of similarity between the two groups at their time of arrival; a point that becomes important when contrasting their divergent outcomes. Next, this study contributes to the research literature on micro-level remittance patterns and behaviors by focusing on three policy relevant dependant variables. More specifically, multivariate analyses are undertaken to examine those individual-level factors that best determine: (1) who remits, (2) how much they remit, and (3) when funds are remitted for productive purposes. Because the data analyzed were collected with the same instrument, results are then contrasted for the two destinations.

One major finding to emerge from this cross-national study was that even immigrants who are extremely similar on all socio-economic measures at time of arrival may soon manifest divergent outcomes due to their distinctive country of destination experiences. Consequently, although some common predictors were found in both locales, there were far fewer than expected. For example, family obligation variables were usually significant in the predicted directions for the United States data, while this was almost never the case for the Canadian data. Furthermore, some variables often assumed to predict remittance behavior were insignificant in both locations. This study concludes by considering possible explanations for these results, as well as discussing the need for additional theoretical work and data collection in the area of immigrant remittance activity.

INTRODUCTION

The total amount of remittances emigrants send to their nation of origin frequently surpasses all other sources of foreign exchange, including revenues from exports and foreign aid. Recent trends in remittance growth have continued over the past decade such that in 2007 emigrants remitted in excess of US\$ 251 billion to developing nations (Ratha, et al., 2008). Furthermore, because these figures do not include informal transfers the actual remittance total is likely much higher (Freund and Spatafora, 2005).

These foreign exchange transfers are usually studied at the macro-level. Such studies tend to focus on government policies designed to monitor and direct these flows (Abella, 1992; Chandavarkar, 1980; Gammeltoft, 2002; Karafolas, 1998), their volume (Elbadawi and de Rezende Rocha, 1992; Lianos, 1997; Massey and Parrado, 1994; Russell, 1992, 1986; Stahl

and Arnold, 1986; Swamy, 1981), or their costs and benefits to origin area development (Appleyard, 1989; Arnold, 1992; Athukorala, 1993; Conway and Cohen, 1998; Koc and Onan, 2004; Taylor, 1999; Wood and McCoy, 1985). Still other studies focus on stratification effects in place of origin (Fawcett and Arnold, 1987; Lundahl, 1985; Reichart, 1982), while others examine whether remittances are primarily used for consumption or productive activities (Amuedo-Dorantes and Pozo, 2006; Itzigsohn, 1995; Keely and Tran, 1989; Sofranko and Idris, 1999). Thus at the macro-level a wealth of knowledge, too large to summarize here, has already been amassed regarding the transfer of resources.

In 1995, Funkhouser wrote that relatively little was known about remittance patterns at the individual level. Since then, a number of important micro-level studies focusing on senders have been published (e.g., Cai, 2003; Durand, et al., 1996; Menjívar, et al., 1998; MIP-IAD, 2001; Orozco, 2006; Orozco, et al., 2005; Sana 2005; Sofranko and Idris, 1999). In general, these case studies attempt to determine why some emigrants remit and others do not. Still, the number of such studies is relatively small and the results somewhat mixed. Because of the inconsistency of these baseline studies, their lack of explanatory power, and their focus on several very specific origin nations, a number of unresolved questions remain.

This article makes various contributions to the study of micro-level remittance behavior by focusing on individual-level determinants of remittance behavior as we examine those factors that determine who remits, how much they remit, and for what purposes. To explore these questions, we analyze remittance activity to a nation where this phenomenon has not often been studied, Brazil. Furthermore, this investigation is cross-national because the data examined were collected with the same survey instrument in both Canadian and US locales. Such quantitative comparisons of remittance activity among the same group to different destination countries are few in number. The authors are aware of only two studies of this type (see Orozco, et al., 2005 and 2006). Such comparative studies provide the opportunity to evaluate the robustness of predictors. They may also indicate the need for methodological and/ or theoretical revisions as they highlight the importance of distinct social contexts on remittance behavior. Finally, as will be documented in additional detail below, the data analyzed were collected in 1990 and 1991, at a relatively early stage in the movement of Brazilians to North America. As such these results provide important baseline information for the type of remittance behavior that may occur among newly arrived immigrants in general, and more specifically, for future examinations of Brazilian remittance activity.

The next section discusses the growth of Brazilian immigration to North America and related increases in the flow of remittances to Brazil. We then present our conceptual framework and research hypotheses. This is followed by sections that discuss the data and methods used, study results, and concluding remarks.

BRAZILIAN IMMIGRATION TO THE UNITED STATES AND CANADA

Government statistics reveal that Brazilians continue to travel to the United States and Canada in record numbers. Prior to the mid-1980s this movement was but a fraction of what it is in 2008. The main reason for this tremendous increase, which began in the mid-1980s, was the worsening Brazilian economy (Goza, 1994; Margolis, 1994). Although the economic situation in Brazil has somewhat stabilized, the social networks now in place facilitate the movement and integration of additional newcomers. Since 1987, the number of Brazilian nationals entering the United States with non-immigrant visas has averaged approximately 600,000 per year (see Table 1). During this time Brazil has also often ranked among the top 10 nations in terms of the number of non-immigrant visitors it annually sends to the United States. While most of these visa holders spend only a short time in the United States, some overstay their visas and work during their US sojourn (Goza, 1994; Margolis,

1998; Sales, 2003). One important consequence of their US employment is that they send remittances to Brazil.

Table 1 reveals that the Canadian increase in Brazilian visitors parallels that of the United States. Although the absolute numbers are smaller, averaging only 40,000 per year, Brazilians now account for more visitors from South America than any other nation (Statistics Canada, 2005).¹ Until 1987, Brazilians did not need a visa to visit Canada. This requirement began in part because of the large numbers of Brazilian “tourists” who arrived at the Toronto airport that summer (Goza, 1999). Even with the added visa requirement, this movement has continued to increase and likely will do so for the foreseeable future as those legally in the country may serve as sponsors for their relatives. Furthermore, as in the US case, many of those who visit Canada opt to overstay their visas and seek employment, which for many eventually results in the sending of remittances to Brazil.

The total amount of remittances sent by emigrants is extremely difficult to accurately measure, yet, as witnessed above, is exceedingly important. The main reason for these computational difficulties is that many funds are sent via informal means, including: checks, cash, money orders, and returning emigrants. Other remittances are sent in-kind, rather than as funds, something which further complicates the measurement process. The World Bank and the International Monetary Fund (IMF) attempt to monitor official transfers, but even these are at best rough measures. As such, some estimate that transfers via informal channels and the black market could add 50 per cent or more to the official figures (e.g., Freund and Spatafora, 2005; Gammeltoft, 2002; Stalker, 1994). Nonetheless, the IMF annually publishes a report that indicates the amount remitted to each nation by workers overseas. In 2006, the last year for which data are available, the amount remitted to Brazil via official channels amounted to nearly US\$ 3 billion (IMF, 2007). Although this represents just a fraction of 1 per cent of this nation’s sizeable GDP, Table 1 documents how remittances have rapidly increased in recent years.² Unfortunately, the IMF numbers do not permit one to determine the source country of these funds. This is especially problematic in the case of Brazil as there are many *dekassaguis* (i.e., Brazilians of Japanese origin) who work and remit from Japan, as well as Brazilian expatriates similarly engaged in Portugal, Italy, and various other European nations. Thus although approximately US\$ 3 billion were officially remitted to Brazil in 2006, it is virtually impossible to determine the origin of these funds. While the origins of these funds may be uncertain, their recent growth and the strong correlation between this increase and the number of Brazilian visitors to North America (see Table 1) make this a very important topic that merits additional examination.

To enhance our understanding of this remittance flow, this study begins by first attempting to predict who sends remittances and the amount they remit. The analytical results to these questions are presented below in Tables 4 and 5, respectively. Our third and final research question examines the uses of the funds remitted. At a general level, remittances are directed towards either productive or consumption ends, with most research suggesting that remittances are channeled towards meeting basic consumption needs. Nonetheless, a heady debate about the merits of spending remittances on consumption activities has raged for some time. Some authors argue that remittances spent on consumption do little in the long-term to improve the economic condition of those receiving such funds (Reichart, 1981; Wiest, 1984). Meanwhile, others have observed that so-called “wasteful expenditures” on food, education and medical care (i.e., consumption activities) could have long-term positive

¹Although Brazil is the largest and most populous country in South America, the number of Columbian visitors surpassed that of Brazil until the early 1990s.

²Note, however, that in countries with smaller economies (e.g., Jordan) this remittance total would represent more than 25 per cent of the nation’s GDP.

effects (Appleyard, 1989; Taylor, 1999). While we tend to agree with the latter statement, almost all researchers agree that productive investments, especially those with significant multiplier effects, have positive consequences for the receiving economy. Without entering into the substance of this debate, the goal of our third model, presented in Table 6, is to determine which measures best predict the likelihood of remitting for productive purposes.

THEORETICAL CONSIDERATIONS

Various authors have noted that there are no theories that adequately explain why people remit (Lianos, 1997; Lucas and Stark, 1985). In an attempt to learn more about why and how much people remit, as well as for what purposes, we will incorporate concepts from prior studies that examined micro- or individual-level predictors. We also incorporate other measures that are theoretically significant and unique to our data. These variables and their relevance are discussed below.

Although this study does not explicitly analyze macro-level contextual variables, we indirectly monitor them as we examine the effects of Canadian and US residence among newcomers who possess extremely similar socio-economic backgrounds. For example, not only do all immigrants come from the same country of origin, but most also come from the same Brazilian state, Minas Gerais (a point we elaborate below). Regardless of country of residence, most also arrived in the same year, 1987, and as detailed below, educational levels, racial composition, and number of children in Brazil and North America are also very similar for both samples (see Table 3 below for additional parallels). These pronounced similarities provide a type of control for factors related to the destination countries (Tilly, 1994), one that suggests observed differences in remittance behavior are at least partially attributable to the structural effects of one's country of residence. Reitz (1998, 2003) and Bloemraad (2006) have convincingly argued that the development of any theory related to the immigrant experience can greatly benefit from a comparative perspective. Bloemraad (2006: 7) further argues, "Most research on traditional immigrant-receiving countries considers one host country at a time and assumes that results in one country are equally applicable in another". This cross-national study of comparable newcomers may reveal important similarities in remittance behavior that are constant across borders, as well as identifying predictors that may be shaped by the institutional context of host societies.

Consistent with the research of Menjívar, et al. (1998), our first predictive model examines a series of individual-level demographic variables hypothesized to affect remittance behavior. Among the demographic variables contained in this subset are the measures *age* and *age squared*. Because we believe the effect of age on remittance behavior to be nonlinear and related to one's life-cycle stage, we include the term age squared. The changing needs and requirements of migrants over the life-cycle are well documented (Warnes, 1992). Accordingly, we predict that younger migrants will be more likely to remit than older migrants since we believe the young maintain stronger ties to their family and community. For this reason, we expect Table 4 results (those monitoring remittance activity) to be positive for age and negative for age squared. More specifically, we expect this table to document an initial increase in remittance activity followed by a nonlinear decline as immigrants age. We also predict that younger individuals will be more likely to remit for consumption purposes, while older immigrants will be more likely to remit for productive goals. As such, in Table 6, where remittance usage is examined, we expect to see a negative coefficient for age and a positive one for age squared. Such results would provide evidence of a non-linear, quadratic relationship between age and remittance behavior.

Education is the next demographic variable included in this subset. Itzigsohn (1995) found mixed results when examining the effect of education on remittance behavior in four

Caribbean nations. Lianos (1997) reviewed numerous studies of remittance behavior and also found very mixed results for education. These studies lead us to hypothesize that education will be an insignificant predictor of remittance behavior. The reason for this belief is the lack of skill transferability among upper and middle-class newcomers, especially given the tenuous legal situation of many. Because of these difficulties, it is not uncommon to see highly educated, former professionals driving taxis, cleaning homes or washing dishes (Margolis, 1994). On the other hand, construction workers, craftsmen or operators with little formal education might easily find employment in their Brazilian professions and be relatively well paid in North America.

The demographic variables race and gender are included in these models to see whether whites are more likely to remit than non-whites and to see if men are more likely to transfer funds than women. We hypothesize that because of the latent racism and sexism existent in North America that both whites and men will be more likely to remit than the comparison groups. Non-whites on average earn less than whites and therefore will have less financial capacity to remit. We also expect that race will be a less significant predictor in Canada than the United States because Canada lacks the US history of racial polarization (Reitz, 2003).

The effects of gender on remittance behavior have been mixed. For instance, contrary to popular beliefs, Semyonov and Gorodzeisky (2005) found that Filipino men were more likely to remit than Filipino women. Similarly, Orozco (2006) and Orozco, et al. (2005) found Haitian and Ghanaian men more likely to remit than their female counterparts. Others have found that the motives for sending remittances can vary across genders, as women sometimes serve as a type of insurance policy for their impoverished parents, while some men are more likely to remit when they expect return compensation in the form of an inheritance (De la Bri re, et al., 2002). Because Brazilian men on average earn more than Brazilian women in North America (Goza, 1994), and because they are also more integrated into the cultural tradition that expects them to financially care for other family members, we predict men to be more likely to remit than women and when remitting, to send larger amounts.

The final measure included in the first model subset monitors Brazilian state of birth. Some authors (Durand, et al., 1996; Massey and Basem, 1992) have demonstrated that one's specific place of origin within a sending nation can be a significant predictor of remittance behavior. We believe that this argument will also apply to the Brazilian experience since one state provides more emigrants than any other. Hence we contrast those born in Minas Gerais, the state that sends the most immigrants to North America, with all others in order to monitor this state's place of origin effect. Scholars, the popular press, and even Brazilian television shows have long recognized the unique position Minas Gerais occupies as Brazil's primary emigration region. For this reason numerous scholars (e.g., CEDEPLAR, 1989; Goza, 1994; Fusco, 2001; Margolis, 1994; Sales, 2003) have gone there to study this phenomenon first-hand. Their research traces this movement back to the 1940s when missionaries and commercial enterprises established important links between the United States and the municipality of Governador Valadares (situated in the State of Minas Gerais). Since then these links have continued to evolve, such that today this region is much more developed in the area of international migration than any other in Brazil and now also possesses linkages to Canada, Australia and numerous European nations. Because of the *Mineiro* (i.e., those from Minas Gerais) desire to maintain links with their origin area communities (Goza, 2003), we hypothesize that *Mineiros* will be more likely to remit and to send more money, when remitting, than their non-*Mineiro* counterparts. Furthermore, because of this well developed "culture of international migration" and the desire many have to return at some future point, we also expect that their remittances will more often be directed towards productive investments than will occur among non-*Mineiros*. For example,

some will invest in farm land to be rented out, others will build homes which they will eventually occupy and/ or invest in businesses that employ family members left behind.

The second variable subset to be included in the multivariate models monitors the effect of various types of investments (e.g., psychological, educational, etc.) immigrants can make in their host country on remittance behavior. This subset not only monitors newcomer investments in North America, but also the effects of increased stability and familiarity with North America.

The first two variables in this subset are *months in N.A.* and *months in N.A. squared*. We include the quadratic term because we expect that the effect of North American residence on remittance activity will be non-linear. The inclusion of these two variables will also allow us to test the “remittance decay hypothesis” (Brown, 1997; Brown and Connell, 2006; Hunte, 2004). This hypothesis posits that as immigrants become more acclimated to life in the host society and less likely to return home they also become less likely to remit, and when they do remit, they remit less. Thus, in the case of the models that predict who remits, we expect to observe a positive relationship between sending remittances and months in North America and a negative relationship between sending remittances and the months in North America squared term. Such a relationship would document that the young immigrants are more likely to remit, and that this tendency declines in a non-linear manner as time in North America increases. Regarding Table 6, which models the likelihood remittances are used for productive purposes, we expect both months in North America and months in North America squared to be negatively related to productive investments. This is because new arrivals will likely be busy paying off debts and addressing other basic consumption requirements, while those in North America for an extended period who still remit likely do so as a gesture of goodwill to those left behind rather than because they intend to return one day. We also expect these outcomes because we view tenure in North America as an investment in the host society, whereby one continuously learns the norms of the new society. Such knowledge acquisition often results in additional economic rewards so that the longer immigrants stay the less likely they are to return and consequently the less likely they are to remit for productive purposes.

In a related vein, the variable *filed an income tax return* is included to see if those who have taken the time to invest in learning a North American tax system well enough to file a tax return are less likely to remit. We expect to observe a negative relationship between this variable and remittance sending, since those who file returns are probably positioning themselves to remain in North America for an extended time. On the other hand, those staying for only a relatively short time usually never bother to learn how to prepare or file a tax return. We also expect that those who file a return will send smaller amounts and that these funds will ultimately be used for consumption purposes. Note that the filing of tax returns is not restricted to legal immigrants. In fact, the majority of those working in both the United States and Canada pay federal taxes; however, many foreign workers, both documented and undocumented ones, fail to file tax returns even though forms like the 1040 EZ³ might make this a relatively simple process (Lipman, 2006, 2007).

The next variable in this subset, *stayers* (i.e., those desiring to permanently remain in North America), is viewed as a type of psychological investment in one’s host society. We believe that people who desire to remain in their new country will be less likely to remit, will remit smaller amounts, and generally remit for consumption purposes, as they do not intend to

³The 1040EZ is the simplest IRS form. This “easy” form is typically used by those under age 65, with no dependents, whose annual income is below US\$ 100,000. It has approximately a dozen questions and is designed for ease of completion.

permanently return to Brazil. Consequently, all of their major investments are expected to occur in their new host society and not in Brazil.

The variable *monthly earnings* is also included in this subset because we expect that those with higher monthly earnings will have a greater propensity to remit and that higher earnings will be positively associated with the amount remitted per month. Although such hypotheses may seem commonsensical, some past research has shown that those with higher incomes actually have a lower propensity to remit (Russell, 1986) or behave no differently than those with lower incomes (Sana, 2005). We also hypothesize that higher earnings will not be a significant predictor of productive remittance usage because we believe that those with high earnings will be more likely to permanently remain in North America and accordingly invest most of their earnings there.

The measure *English fluency* is included in this subset as it also monitors another type of investment. In this instance immigrants are attempting to improve upon one of their most important human capital skills, host country language ability, in an effort to advance their economic or social condition in North America. As such, we expect that those who speak English well will be less likely to remit, and when they do, will remit less. Furthermore, we expect the intended purposes of any remittances they send to be for consumption.

Another variable included in this subset is *legal status*. Here we expect that those who have taken the time to either normalize their status or to obtain legal immigration documents prior to relocating will have invested a great deal of time, energy, and often money in order to attain this status. As such, we expect to observe a negative relationship between legal status and the likelihood of remitting, a negative relationship with the amount of funds remitted, and when funds are remitted, to see them used for consumption rather than productive purposes.

Like others scholars (e.g., Lianos, 1997; Menjivar, et al., 1998), we believe that while the sending of remittances is a rational action on the part of the remitter, this action is also compelled because of commitment and allegiance to one's family. Thus the third and final subset of variables to be examined is family obligations. Here we examine the effects of various types of family members on remittance activity. In keeping with most demographic research (e.g., Sana, 2005; Sofranko and Idris, 1999), we expect that those who leave behind nuclear family members will be the most likely to remit, and to remit larger amounts. We also hypothesize that when they remit, they will remit primarily for consumption purposes. This is because we posit that those who leave behind either a spouse and/or minor children are emigrating, at least initially, to meet basic needs rather than to develop a productive investment strategy. Thus with this variable subset we also look at where one's spouse resides and the effect of having left behind minor children (i.e., those less than 21 years of age) in Brazil. The final variable in this subset is number of *relatives in North America*. We believe that those with more family members in North America will have access to additional financial and emotional support in their host country, ultimately leading to an easier adaptation and permanent resettlement experience. For these reasons, we hypothesize that as number of relatives in North America increases, one will become less likely to remit, remit smaller amounts, and when sent they will more likely be used for non-productive purposes.

METHODOLOGY

Data

This comparative study of the determinants of remittances examines data collected in Toronto and Cidade Congelada, a pseudonym for a mid-sized city located in the

northeastern United States.⁴ The data analyzed herein were collected in Toronto between August and December 1991 and Cidade Congelada between August and December 1990. In each location 195 Brazilian born individuals were interviewed. However, one Canadian observation was unusable. Thus our final analyses use a Canadian sample of 194 and a US one of 195.

Because of the non-probabilistic nature of the sampling framework utilized in this study, something that always occurs among populations where many lack proper immigration credentials, it would be inappropriate to attempt to generalize to others not in the framework. Still, the data used herein did represent approximately four percent of each city's estimated Brazilian population and we believe that these results are indicative of general trends and patterns among these newcomers at that time. The initial North American respondents were located on the basis of addresses provided by relatives earlier interviewed in Brazil (CEDEPLAR, 1989). Later a snowball sampling framework was used in each destination area to help locate the additional respondents required to attain the desired sample size. In an effort to avoid various types of response errors and other types of data collection biases, all interviews were conducted in Portuguese by Brazilian sociologists.

The instruments used in these studies were designed to gather information on immigrants at various life cycle stages. Thus in addition to basic socio-demographic variables, background information was also gathered about Brazilian employment and educational activities, as well as the socio-economic status of the migrants' parents. The questionnaires also contained a detailed employment history matrix for all North American work activities, questions about social and linguistic adaptation, migration networks, the international travel experience, many aspects of remittance behavior, as well as future plans.⁵

Brief descriptions of the variables used and their summary statistics are presented in Tables 2 and 3, respectively. A succinct review of the summary statistics is warranted prior to discussing our multivariate models.

Table 3 reveals the high degree of similarity among the two samples as it documents relatively few significant differences when comparing group means. For instance, approximately 65 per cent of each sample graduated from high school. Gender, race and North American tenure were also similar for both samples. Other similarities across samples were number of minor children present in Brazil and in North America and the percentage with their spouse in North America. A further similarity concerns place of origin as approximately 65 per cent of each group was born in the state of Minas Gerais. Furthermore, nearly 20 per cent of each sample came from one municipality within this state, Governador Valadares. As explained above, Valadares has long been known throughout Brazil for its high emigration rate.

Not only were the socio-demographic backgrounds of these two groups extremely similar at time of departure, but so too were their initial experiences in North America. Approximately 65 per cent of each group spent their first night in North America with a friend or relative. Likewise, in both locales more than 55 per cent had at least one relative present at time of arrival. Furthermore, within 30 days of arriving 85 per cent of the men in the United States were employed, while in Canada the corresponding figure was 84 per cent (Goza, 1994). Similarly, regardless of nation of residence, when unemployment hit these highly motivated immigrants quickly rebounded such that in both locales the median unemployment spell was only one month. The reason for their quick reemployment, even in tough economic times,

⁴We use a pseudonym for the US city in order to protect the identity of undocumented residents of this relatively much smaller city.

⁵For additional discussion of this data see Goza (1994, 1999) or Goza and DeMaris (2003).

was because in both destinations they were able to tap into Brazilian ethnic networks (Goza and DeMaris, 2003).

Although their backgrounds and initial experiences were very similar, differences began to emerge once they started adapting to their new host nation. For example, Table 3 reveals that only a minority of both samples possessed proper immigration credentials, however, the Canadian percentage was significantly higher (36% vs. 17%). The reason for the higher percentage of “legal” residents in Canada was that many there had initiated a refugee claimant process and were awaiting the outcomes of those claims (Goza, 1999). Such claimants received various legal rights and permission to remain and work in the country until their case was resolved.

Brazilian residents of Canada also earned significantly more than their co-ethnics in the United States, even after converting their earnings to US currency. Reitz’s (1998) examination of other immigrant and national origin groups also found that they commonly earned more in Canada than in the United States. Borjas (1990) suggests that Canadian immigrants earn more because Canada is more positively selective with its immigration policies. However, given the large number of undocumented workers in both samples and their otherwise similar backgrounds, this argument seems unlikely in the Brazilian case. Rather, our results indicate that Toronto area workers were simply paid more.

Other significant sample differences were that those in Canada on average spoke better English, were more likely to have filed an income tax return, were more likely to desire to permanently remain in North America, and were less likely to have left their spouse in Brazil. Bloemraad (2003) suggests these differences may be because in Canada more funds are dispersed for language training and citizenship classes, both of which are part of the nation’s multiculturalism program designed to help immigrants adapt and feel welcome. If the hypotheses earlier presented were supported, then one would expect those in Canada to send fewer remittances than their co-ethnics in the United States. However, as Table 3 reveals, this was not the case as there were no statistical differences across samples for the three dependent variables (i.e., percent remitting, remittance amounts, and percentage remitted for productive purposes) examined in this study. In both nations approximately 60 per cent remitted and when doing so remitted roughly US\$ 260 per month. In addition, nearly 70 per cent of all remittances were destined for consumption activities, regardless of country of origin. Below we attempt to explain these apparent inconsistencies, as all of these variables and their relationships to the dependent measures are examined in additional detail.

Models

In this study we examine three research questions: 1) what determines who remits?, 2) what determines how much is remitted? and, 3) once remittances are sent, what determines if they are used for productive purposes? Prior to presenting full models results, we first present and discuss findings for key variable subsets. For every model separate national analyses are undertaken. This is because we, like others (e.g., Bloemraad, 2006; Reitz, 1998), hypothesize that the different social contexts and opportunities found on opposite sides of the US/Canada border will generate distinct remittance behaviors.

Models one and three, presented in Tables 4 and 6, estimate the likelihood of remitting and the likelihood remittances are used for productive purposes. For both of these models we use logistic regression because in each case the dependent variable is binary. The value “1” denotes “yes” for remitting in model one and “yes” for productive purposes in model three. The value “0” denotes “no” for both models. All survey respondents are included in model one, which analyzes the first order decision, whether to remit or not. Table 4 presents the results from these analyses.

Table 5 models examine the second order decision, the amount remitted per month. Because our samples consist of both remitters and nonremitters our dependent variable is comprised of discrete values clustered at zero (for the non-remitters) and many continuous values above zero (for the remitters). Tobit regression allows us to use all of these observations to estimate our regression line. Furthermore, this technique does not require a normal distribution, as do others (e.g., ordinary least squares regression), and is an ideal option when dealing with censored observations such as those in this study which are clustered at zero (McDonald and Moffitt, 1980).

In order to retain all of the Canadian observations it was necessary to correct for some missing data on the variable amount remitted per month. This occurred because some respondents indicated that they sent varying amounts at varying times. In these cases ($N = 27$) we used the SAS multiple imputation procedure to fill in the missing values for amount remitted per month.

Table 6 presents our estimates of the likelihood that remittances were used for productive purposes. These models are restricted to only those who remitted. Initial codes indicated that remittances were used in 21 distinct ways. Thus recoding was required in order to generate the consumption and productive categories. Given the long-standing debate over where most remittances are ultimately directed (Koc and Onan, 2004; Russell, 1992) and whether or not all consumption should be viewed as non-productive (Chandavarkar, 1980; Glystos, 2002; Stahl and Arnold, 1986) we had numerous points to consider. Ultimately we decided to consider major housing expenses, a common option, as productive investments. We opted to do so because unlike many consumption behaviors, we consider this to be an investment, something that one is able to use and eventually resell for a profit, if desired. In addition, because of the various multiplier effects that occur throughout the economy, directly and indirectly, as construction inputs are purchased and labour contracted, we believe that housing investments are most appropriately considered productive rather than consumption based expenditures.

Also note that we examined the possibility of multicollinearity by generating various correlation matrices and more importantly by computing the variance inflation factor (VIF) for each of our models. The VIF is a method of detecting the severity of multicollinearity in regression models that actually does a better job of monitoring this than a correlation matrix (Allison, 1999; DeMaris, 2004). A conservative rule of thumb is that if the VIF is higher than 5 then multicollinearity is high. In our case the highest VIF we observed was 2 so we are confident that multicollinearity is not an issue in our models.

RESULTS

Model One—Predicting Who Remits

This discussion begins with the Canadian results presented in columns A to D of Table 4. In column A the first variable subset monitors individual characteristics deemed to be important predictors of remittance activity. This subset produced a significant equation ($p < .01$) as many variables included attained statistical significance. Education was the most powerful predictor of this subset as those with at least a high school degree were less likely to remit ($p < .01$) than those with less education. The measures age and age squared were both modestly significant in the expected directions, suggesting that the young are more likely to remit and that this phenomenon decreases as immigrants age. Finally, as expected, the measure monitoring *Mineiro* status was also modestly significant revealing that those born in Minas Gerais were more likely to remit than other Brazilians.

Canadian subset two, investments in North America, was highly significant ($p < .001$). The most powerful predictor among this subset was legal status, as those legally in Canada were significantly less likely to remit ($p < .01$) than those without proper documentation. The variables months in North America and months in North America squared were both significant, but in the positive direction. The latter result calls into question the remittance decay hypothesis which suggests that the longer people live in another country the less likely they are to remit. The variable monthly earnings was also modestly significant in the expected positive direction.

Subset three, family obligations, resulted in a modestly significant model ($p < .05$), however, none of the three predictors were significant. Nonetheless, the complete model, model D, was highly significant ($p < .001$) as monthly earnings and legal status again attained statistical significance. Thus although many measures were powerful when examined within variable subsets, their importance was reduced when these measures became part of a larger, more comprehensive model. Still the significance of the overall model fit suggests the importance of examining these measures together.

Interestingly, the US results predicting remittance activity were generally very distinct from the Canadian ones. US variable subsets one and two each produced just one significant predictor. Consequently model one was only modestly significant ($p < .1$) while model two was insignificant. The sole individual characteristic to reach significance in model one was race as whites were less likely to remit than non-whites, a result contrary to expectations. However, race was more significant in the United States than Canada, a result that was hypothesized. Within the investments in North America variable subset, only English fluency was significant, as those speaking the best English were least likely to remit. However, in the full model, this variable would become insignificant.

The third US variable subset, family obligations, produced a very significant model ($p < .001$). In this grouping the measures number of minor children in Brazil and number of relatives in North America were both significant in the predicted directions. These family obligation predictors not only maintained their significance levels in the full model, but in the case of minor children in Brazil, became even more significant. Note, however, that the variable spouse in Brazil was not a significant predictor in either of these models. The complete US model for predicting remittance behavior was also very significant ($p < .001$), but the only non-family obligation variable to attain significance in the full model was race, as English fluency ceased to be significant.

Thus although our model predicting remittance behavior worked equally well for both samples ($p < .001$), there was no consistency regarding individual predictors. Subsets results were very different as the family obligation grouping was very significant only for the US data while in the Canadian case the investments in North America subset yielded the strongest results. These findings raise additional questions besides the just noted group differences. For instance, why did income have no effect on US remittance behavior? Although other studies have also reached this conclusion (e.g., Durand, et al., 1996; Massey and Basem, 1992; Sana, 2005), common sense suggests there should be a significant relationship.

Model Two—Predicting How Much is Remitted

Table 5 presents the results for models predicting the amount remitted per month.⁶ Column A reveals that the first Canadian subset, individual characteristics, fit moderately well ($p < .$

⁶Note that Canadian dollars were converted to US dollars so that all comparisons are comparable.

05). Of the two significant predictors, *Mineiro* status was positively associated with the amount remitted, as these individuals on average sent nearly US\$ 200 more per month than non-*Mineiros*. The second significant predictor, possession of at least a high school degree, indicates that those with this degree sent back approximately US\$ 170 less than those without it. When combined with the Table 4 outcomes, these findings provide support for our expectation that *Mineiros* are more likely to remit and when remitting, they send more. These results also suggest that those who are relatively more educated tend to remit less often and in smaller amounts.

Canadian subset two, investments in North America, produced a very strong model ($p < .001$) with two significant predictors. Monthly earnings, as hypothesized, reveals that the more money someone earns the higher their monthly remittances are likely to be. The negative coefficient for North American residence squared also corresponds to expectations suggesting that the longer someone is away the lower their monthly remittances will likely be; a result that provides some support for the remittance decay hypothesis and demonstrates the non-linear nature of North American tenure.

Subset three, family obligations, yielded an insignificant model without a single significant measure. The complete Canadian model, however, was significant ($p < .01$). Still, the only significant predictor in the full model was monthly earnings ($p < .001$).

The first two variable subsets for the US data produced two insignificant models. Not one individual characteristic was significant and under the subheading investments in North America only two measures attained significance. The first, monthly earnings, was positive as expected. Note that thus far this is the first and only variable to be statistically significant for both samples. The other significant measure, English fluency, documents that those who speak English better tend to send fewer remittances. This result was earlier hypothesized.

The third US subset, family obligations, was very significant ($p < .001$). As predicted, the presence of a spouse in Brazil was associated with significantly greater monthly remittances ($p < .01$). Also as predicted, more relatives in North America meant that fewer remittances were sent ($p < .05$).

The full US model was very significant ($p < .001$) and several key results conformed to our hypotheses. More specifically, in the full model the coefficient for spouse in Brazil declined to US\$ 323 per month, but increased to US\$ 84 per month for each minor child in Brazil. Meanwhile, each additional relative in the United States resulted in 23 fewer dollars remitted per month. Thus in the US case we see that even when controlling for all other model variables, the location of one's family members remains very important in determining how much is remitted. Although all three family obligation measures were significant in the full model, monthly earnings and English ability now became insignificant.

Table 5, much like Table 4, reveals divergent findings for the United States and Canadian samples. Although both full models were statistically significant, there were few similarities. Thus in models one and two, we observe that the variables attaining statistical significance, with one exception, were different from country to country. Furthermore, many predictors hypothesized to be significant were not.

Model Three—Predicting when Remittances are used for Productive Purposes

In the four Canadian versions of model three only two predictors attained significance (see Table 6). Neither of the first two variable subsets examined produced a chi-square model that was statistically significant. Furthermore, the only variable significant in either of these models was legal status. This revealed that those legally in Canada were more likely to remit

for productive than consumption purposes. This result ran counter to our expectation that those who made the effort to acquire legal documentation would probably only send gifts and similar items (i.e., all unproductive transfers) back to Brazil. Thus model one revealed that those legally in Canada are less likely to remit, but model three shows that when they do remit it is for productive reasons.

Subset three, family obligations, finally yielded a significant result ($p < .01$) for the Canadian sample. This finding indicates that the number of minor children in Brazil was negatively related to the usage of remittances for productive activities. In other words, when young children were left behind the remittances sent by their parent(s) were most likely to be directed towards consumption-related activities. In the full model this statistical significance remains, reinforcing the importance of this finding. The other significant variable in the full Canadian model was legal status, which became even more significant than it had been in subset two.

The US findings presented in Table 6 again diverge from the Canadian results. More specifically, the individual characteristics subset shows that both age and age squared were modestly significant ($p < .1$) in the predicted directions. That is, younger people who remitted were more likely to invest in consumption activities, while older individuals who remitted were more likely to remit for productive motives. In addition, *Mineiro* status was significant as these individuals were more likely to remit for productive purposes. The chi-square result for this model was also modestly significant ($p < .1$).

Subset two, investments in North America, failed to generate a significant chi-square statistic. However, both months in North America and months in North America squared were significant in the positive direction. In other words, irrespective of length of US residence remitters were more likely to remit for productive reasons. Furthermore, those who filed an income tax return were also less likely to remit for productive than consumption purposes, a result that was earlier hypothesized.

Subset three, family obligations, resulted in a modestly significant chisquare ($p < .05$) but only number of minor children in Brazil was a significant predictor ($p < .05$). As hypothesized, the more minor children in Brazil, the more likely one's remittances were directed towards consumption activities. This is also only the second time that the same predictor was significant for both samples. The consistency of this result across samples underlines how important it is to Brazilian parents to care for their children regardless of where they are, and to assist them whenever possible in meeting their day-to-day consumption requirements.

The complete US model also resulted in a modestly significant fit ($p < .05$). In the full model the investments in North America subset retained its prior significance, as three of its six variables, months in North America, months in North America squared, and filed an income tax return were significant ($p < .05$). The variables *Mineiro* status and number of minor children in Brazil were also significant in the full model.

Thus in model 3, as in both earlier models, we observe that the statistically significant variables were consistently different from country to country – with one exception. In both samples those who had minor children in Brazil were more likely to remit for consumption purposes. Otherwise, in each and every case all significant predictors varied from sample to sample even though final models were usually very significant for each sample.⁷

⁷Note that in all models we attempted to incorporate various theoretically important interaction terms, however no meaningful or significant results were ever produced. Because of this insignificance we do not include any of these interaction terms in the presented models.

CONCLUSIONS

This study used data collected during the early 1990s to analyze remittance activity among Brazilian immigrants, a group that had then only recently arrived to Canada and the United States. Multivariate analyses of three dependent variables were designed to identify those measures that best predict who remits, the amount remitted, and remittance usage. However, the newness of this immigrant group also made it possible to determine if measures considered to be theoretically important would be statistically significant for immigrants soon after their arrival in a new host society. While it is possible and perhaps probable that the results identified herein have evolved since the time of data collection, they nonetheless serve to document those predictors that best explained these three dependent variables among immigrants who on average had been in North America less than four years. As such, they provide a clear baseline from which to monitor similar future studies. In addition to modeling the three aforementioned dependent variables, this study also contrasted Canadian and US sample results.

The descriptive portion of this project documented the rapid increase of Brazilian immigration to Canada and the United States over the past two decades and the corresponding significant increase in remittances sent to Brazil. It also documented similar patterns of remittance activity, amount remitted and remittance usage among men and women in Canada and the United States. Next, T-tests were used to reveal the high degree of socio-demographic similarity between these two samples (see Table 3). Thus to this point, groups in both destination areas clearly resembled one another on almost all key background measures.

However, multivariate analyses used to predict the dependent variables exposed very different cross-national results. Perhaps the main finding to emerge from this research was that even among highly similar groups it is possible to observe very distinct results when individual-level predictors are compared and contrasted across nations; even after the passage of just a few years. Because we controlled for numerous background characteristics, this study highlights the importance of country of residence structural effects on remittance activity and reinforces the arguments of those calling for more comparative research within the area of immigration studies (e.g., Bloemraad, 2006; Reitz 1998, 2003).

Although some cross-national similarities were found, there were far fewer than expected. Table 7 summarizes the differences across the two samples by highlighting only those variables that were significant and their directionality. Rather, it was the aforementioned differences among predictors that were the most numerous and noticeable. Some of these differences are interpretable. For example, Table 3 revealed that Brazilians in Canada are more likely to earn more, be legal residents, be more fluent in English, to have filed an income tax return, and to desire to permanently settle in North America. Because at time of arrival this group was so similar to the US sample, these results highlight the important impacts that a host society and its institutions can have on immigrant outcomes, even in a relatively brief time period. Bloemraad (2006) suggests that these divergences developed because the Canadian government takes a more active role, directly and in-directly, to incorporate newcomers into that society.

However, US results revealed that there family obligation measures were the driving force behind remittance activity as these variables were always significant predictors of who remitted, the amounts sent, and their uses. When combined with Table 3 results, a US pattern emerged. Namely, US residents were more likely to be target earners who planned to return to Brazil and presumably, the family members left behind. Consequently, they did

their best to make certain those left behind were able to meet their basic needs, regardless of their US earnings level.

Although we produced some models that fit very well, additional work remains. The first need is to improve upon our conceptual framework so that we can better predict all three of the remittance outcomes studied herein. Recall, our results did not always conform to hypotheses and occasionally ran counter to expectations. Second, we need to understand why some theoretically important variables such as the presence of a spouse in Brazil were rarely significant, while others (e.g., the desire to permanently settle in North America) were never significant for any model in either country. This study also documented the need for new conceptual frameworks that allow for possible inter-societal differences in remittance behaviors rather than assuming that one size fits all. For instance, results revealed that in the US sample family obligation variables were consistently significant, but almost never so in the Canadian case. On the other hand, the investment in North America variable subset was usually very significant for the Canadian sample but never for the US one. Why does this occur when these theoretically important variables should be equally important to both groups? Clearly, these results indicate the need for additional study in this area. Perhaps the answers to these questions will require the incorporation of additional macro- and micro-level factors that were not included in the present study. In addition, the results presented in Tables 4, 5 and 6 serve to highlight the need to develop distinct models for the estimation of remittance activity, remittance amount, and remittance usage. To further advance these findings, it is also recommended that additional waves of data collection be undertaken. Because the data examined herein were collected after only a relatively brief period of North American residence, it is possible that periodic updates would provide additional insights into remittance behavior, its evolution over time, and perhaps even reveal that the behaviors of long-term residents better conform to remittance theory than the activities of recent immigrants. They may also reveal that in the long-term there are fewer inter-societal differences in remittance behaviors than in the short-term. Nonetheless, it is our hope that this baseline study provides insights to future researchers who wish to pursue these questions in additional detail.

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TABLE 1
REMITTANCES SENT TO BRAZIL PER YEAR AND THE NUMBER OF U.S. AND CANADIAN NON-IMMIGRANT VISAS ISSUED TO BRAZILIANS

Year	Remittances in Millions of Dollars ^(a)	Annual Percentage Increase in Remittances	Number of Non-Immigrant Visas Issued for USA ^(b)	Annual Percentage Increase in USA Visas	World Rank for US Non-Immig. Visas	Number of Tourists Entering Canada ^(c)	Annual Percentage Increase in Canadian Visas
1987	NA	NA	244,472	NA		23,495	NA
1988	19	NA	289,629	18.47		31,511	34.12
1989	88	363.16	332,617	14.84		33,986	7.85
1990	527	498.86	377,284	13.43		35,475	4.38
1991	1,057	100.57	495,043	31.21		36,335	2.42
1992	1,719	62.63	486,241	-1.78		28,599	-21.29
1993	1,123	-34.67	548,978	12.90		29,033	1.52
1994	1,834	63.31	622,220	13.34		35,330	21.69
1995	2,891	57.63	829,198	33.26		49,359	39.71
1996	1,866	-35.45	882,952	6.48		40,600	-17.75
1997	1,324	-29.05	NA	NA		55,200	35.96
1998	963	-27.27	934,675	NA		55,900	1.27
1999	1,190	23.57	801,665	-14.23		58,800	5.19
2000	1,112	-6.55	762,559	-4.88		45,500	-22.62
2001	1,178	5.94	733,941	-3.75		50,100	10.11
2002	1,711	45.25	576,442	-21.46		37,000	-26.15
2003	2,018	17.94	497,024	-13.78		35,300	-4.59
2004	2,459	21.85	512,992	3.21		42,900	21.53

^(a) Sources: Balance of Payments Statistics Yearbook, Country Tables, various years and volumes, International Monetary Fund, Washington, D.C.;

^(b) Report of the Visa Office, various years, United States Department of State, Bureau of Consular Affairs, Washington, D.C.;

^(c) Touriscope - International Travel Between Canada, the United States and Other Countries, various years, Statistics Canada, Ottawa.

TABLE 2
DESCRIPTION OF VARIABLES USED IN ANALYSES OF REMITTANCES TO BRAZIL FROM NORTH AMERICA

	Variable Definition	Minimum Value	Maximum Value
<i>Independent Variables</i>			
Age	Age in complete years.	18	67
Age Squared	Age in complete years squared.	324	4,489
Race	1 = white; 0 = nonwhite.	0	1
High School Grad.	1 = high school graduate or beyond; 0 = otherwise.	0	1
Male	1 = male; 0 = female.	0	1
Minas Gerais Native	1 = born in Minas Gerais; 0 = born elsewhere in Brazil.	0	1
Months in North America	Number of complete months in North America.	2	431
Months in North America Squared	Number of complete months in North America squared.	4	185,761
Income Tax Return Files	1 = Federal income tax return filed; 0 = otherwise.	0	1
Desires to Permanently Remain in North America	1 = Desired to stay; 0 = otherwise.	0	1
English Fluency	1 = if speaks English well or better; 0 = otherwise.	0	1
Monthly Earnings	Monthly earnings in \$US	200	9,800
Legal Status	1 = legal; 0 = otherwise.	0	1
Spouse in Brazil	1 = if spouse in Brazil; 0 = otherwise.	0	1
No. of Minor Children in Brazil	Number of children less than 21 years of age in Brazil.	0	8
No. of Relatives in North America	Number of relatives who reside in the same North American nation as the respondent.	0	30
<i>Dependent Variables</i>			
Remit	1 = if remits; 0 = otherwise.	0	1
Amount Remitted	Amount remitted per month in U.S. dollars	0	2,940
Remits for Investment Purposes	1 = if remits for productive purposes; 0 = otherwise.	0	1

TABLE 3
DESCRIPTIVE STATISTICS FOR VARIABLES USED IN ANALYSES OF REMITTANCES TO BRAZIL FROM NORTH AMERICA

Variable	Canada		United States		t-test for Equality of Means
	Mean	SD	Mean	SD	
% Remitting	63.40	0.48	57.95	0.49	n.s.
% Remitting for Prod. Purposes	20.10	0.40	16.41	0.37	n.s.
\$ Remitted Monthly@	284.20	412.69	241.77	342.45	n.s.
Age	30.32	7.44	32.18	8.67	**
Age Squared	974.61	554.71	1110.33	647.18	**
Race	0.75	0.44	0.68	0.47	n.s.
High School Grad.	0.64	0.48	0.65	0.48	n.s.
Male	0.71	0.45	0.74	0.44	n.s.
M.G. Native	0.65	0.48	0.64	0.48	n.s.
Months in North America	48.53	39.17	42.43	53.88	n.s.
Months in N. Am. Squared	3880.98	8990.25	4688.17	18277.87	n.s.
Monthly Earnings@	1849.91	1179.88	1570.89	1002.86	**
Income Tax Filed	0.59	0.49	0.24	0.43	****
Desires to Permanently Stay in N.A.	0.44	0.50	0.28	0.45	****
English Fluency	0.70	0.46	0.47	0.50	****
Legal Status	0.36	0.48	0.17	0.38	****
Spouse in Brazil	0.06	0.23	0.14	0.35	***
▲Spouse in North America	0.33	0.47	0.35	0.48	n.s.
No. of Minor Children in Brazil	0.46	0.98	0.60	1.13	n.s.
▲No. of Minor Children in N.A.	0.35	0.75	0.41	0.79	n.s.
No. of Relatives in North America	2.38	4.39	4.09	5.41	****

* p < .10,

** p < .05.

*** p < .01,

**** p < .001. //N = 195 for the U.S. and 194 for the Canadian samples.

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@ Canadian Dollars were converted to US dollars at 1991 rate of 1.20.

▲ Variables not used in analyses but presented to highlight sample similarities.

TABLE 4
 LOGISTIC REGRESSION MODELS PREDICTING THE LOG ODDS OF REMITTING FUNDS TO BRAZIL, BY COUNTRY (STANDARD
 ERRORS IN PARENTHESES)

Independent Variable	Canada				United States			
	A	B	C	D	A	B	C	D
<i>Individual Characteristics</i>								
Age	0.215* (0.114)			0.111 (0.138)	0.106 (0.109)			0.005 (0.122)
Age Squared	-0.003* (0.002)			-0.002 (0.002)	-0.002 (0.001)			-0.001 (0.002)
Race	-0.171 (0.375)			-0.133 (0.412)	-0.763** (0.335)			-0.688* (0.387)
H.S. Graduate	-0.991*** (0.373)			-0.595 (0.434)	-0.482 (0.327)			0.042 (0.402)
Gender	0.042 (0.350)			0.382 (0.405)	0.025 (0.339)			-0.123 (0.394)
Minas Gerais Native	0.624* (0.336)			0.277 (0.387)	0.189 (0.324)			0.462 (0.389)
<i>Investments in North America</i>								
Months in North America		0.025* (0.014)		0.014 (0.016)		0.006 (0.009)		0.014 (0.011)
Months in N. Am. Squared		0.000** (0.000)		0.000 (0.000)		0.000 (0.000)		0.000 (0.000)
Desires to Permanently Remain in North America		-0.162 (0.332)		-0.204 (0.344)		0.373 (0.347)		0.450 (0.409)
Monthly Earnings		0.025* (0.014)		0.028* (0.015)		0.027 (0.018)		0.016 (0.020)

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TABLE 5
TOBIT COEFFICIENTS PREDICTING MONTHLY AMOUNT REMITTED TO BRAZIL, BY COUNTRY (STANDARD ERRORS IN PARENTHESES)

Independent Variable	Canada				United States			
	A	B	C	D	A	B	C	D
<i>Individual Characteristics</i>								
Age	23.711 (33.303)			13.933 (35.339)	2.660 (28.916)			-27.691 (28.841)
Age Squared	-0.456 (0.458)			-0.286 (0.472)	-0.061 (0.393)			0.165 (0.394)
Race	-8.092 (99.894)			2.181 (95.155)	-117.924 (84.115)			-67.282 (80.493)
H.S. Graduate	-169.690 * (94.661)			-141.590 (97.619)	-102.949 (83.826)			18.137 (86.870)
Gender	31.626 (98.051)			-148.854 (100.096)	99.851 (90.993)			44.022 (89.863)
Minas Gerais Native	202.148 ** (98.156)			134.125 (95.494)	100.352 (86.761)			98.864 (82.724)
<i>Investments in North America</i>								
Months in North America		2.679 (3.892)		0.058 (4.114)		1.698 (2.320)		98.864 (82.724)
Months in N. Am. Squared		-0.033 ** (0.017)		-0.023 (0.017)		-0.006 (0.007)		3.541 (2.452)
Desires to Permanently Remain in North America		9.215 (83.338)		8.134 (82.023)		12.893 (89.219)		-0.010 (0.007)
Monthly Earnings		0.192 ***** (0.040)		0.206 ***** (0.042)		9.170 ** (4.317)		17.911 (87.524)
Legal Status		-119.100 (96.005)		-48.775 (100.980)		-100.541 (139.540)		4.083 (4.359)
English Fluency		-87.032 (90.279)		-47.169 (95.542)		-153.287 * (89.107)		-90.683 (132.126)
Income tax Return Filed	58.992 (107.247)			43.142 (115.009)		-35.257 (118.989)		-70.805 (90.958)
<i>Family Obligations</i>								
Spouse in Brazil			136.919 (206.381)	75.221 (188.701)			349.675 *** (121.464)	1.930 (112.047)
Number of Minor Children in Brazil			0.131 (50.706)	2.821 (52.147)			31.726 (38.457)	322.627 ** (126.282)
Number of Relatives in North America			-15.670 (11.596)	0.738 (12.799)			-18.608 ** (8.128)	83.687 * (42.903)
Model chi-square	14.450 **	36.220 *****	2.800	44.450 ***	7.710	8.340	25.050 *****	-22.637 *** (8.323)
Degrees of Freedom	6	7	3	16	6	7	3	41.200 *****
Pseudo R Squared	0.007	0.018	0.001	0.022	0.004	0.005	0.014	0.022

Source: BGSU - "Brazilian Immigration to Ontario, 1991" and Brazilian Immigration to the United States, 1990."

*
p < .10,
**
p < .05,

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p < .01,

p < .001. //N = 195 for the U.S. and 194 for the Canadian samples. 71 left-censored observations for the Canadian sample and 82 for the U.S. one at monthly remittances = 0.

TABLE 6

LOGISTIC REGRESSION MODELS PREDICTING THE LOG ODDS OF REMITTING FUNDS FOR INVESTMENT PURPOSES TO BRAZIL BY COUNTRY (STANDARD ERRORS IN PARENTHESES)

Independent Variable	Canada				United States			
	A	B	C	D	A	B	C	D
<i>Individual Characteristics</i>								
Age	-0.011 (0.283)			0.341 (0.313)	-0.328* (0.187)			-0.378 (0.254)
Age Squared	-0.001 (0.004)			-0.005 (0.005)	0.004* (0.003)			0.006 (0.004)
Race	0.735 (0.499)			0.626 (0.547)	0.641 (0.477)			0.851 (0.570)
H.S. Graduate	0.169 (0.446)			-0.409 (0.546)	0.315 (0.469)			0.506 (0.626)
Male	-0.079 (0.465)			-0.094 (0.557)	-0.088 (0.503)			-0.207 (0.618)
Minas Gerais Native	-0.472 (0.473)			-0.184 (0.560)	1.106* (0.566)			1.255* (0.694)
<i>Investments in North America</i>								
Months in North America		-0.019 (0.023)		-0.023 (0.026)		0.033** (0.015)		0.049** (0.020)
Months in N. Am. Squared		0.000 (0.000)		0.000 (0.000)		0.000* (0.000)		0.000** (0.000)
Desires to Permanently Remain in North America		-0.484 (0.425)		-0.599 (0.471)		-0.423 (0.503)		-0.489 (0.607)
Monthly Earnings		0.000 (0.018)		-0.003 (0.021)		0.014 (0.030)		0.056 (0.037)
Legal Status		0.856* (0.498)		1.196** (0.599)		0.749 (0.827)		-0.687 (0.900)
English Fluency		0.543 (0.466)		0.317 (0.548)		0.806 (0.492)		0.480 (0.623)
Income Tax Return Filed		-0.510 (0.593)		-1.037 (0.741)		-1.286* (0.728)		-2.206** (0.925)
<i>Family Obligations</i>								
Spouse in Brazil			-19.004 (12239.679)	-19.212 (11424.262)			0.232 (0.756)	-0.440 (0.986)
Number of Minor Children in Brazil			-0.788** (0.381)	-0.974** (0.425)			-0.732** (0.320)	-0.753* (0.410)
Number of Relatives in North America			0.041 (0.062)	0.026 (0.081)			-0.015 (0.055)	-0.060 (0.079)
<i>Model chi-square</i>								
Degrees of Freedom	8.995	9.146	15.755****	31.022**	12.151*	9.760	9.506**	31.888**

Source: BGSU - "Brazilian Immigration to Ontario, 1991" and Brazilian Immigration to the United States, 1990."

* p < .10,

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**
p < .05,

p < .01,

p < .001. // N= 123 for the Canadian and 113 for the U.S. samples.

TABLE 7
SIGNIFICANT REMITTANCE PREDICTORS AND THEIR DIRECTIONALITY IN FINAL MODELS, BY COUNTRY

Dependent Variable	Canada			United States		
	Remitts	Amount Remitted	Productive Use of Remit.	Remitts	Amount Remitted	Productive Use of Remit.
<i>Individual Characteristics</i>						
Age/entry>						
Race				+		
H.S. Graduate						
Male						
Minas Gerais Native						+
<i>Investments in North America</i>						
Months in North America						+
Months in N. Am. Squared						+
Desires to Permanently Remain in North America						
Monthly Earnings	+					
Legal Status	-		+			
English Fluency						
Income Tax Return Filed						-
<i>Family Obligations</i>						
Spouse in Brazil					+	
Number of Minor Children in Brazil			-	+	+	-
Number of Relatives in North America				-	-	-