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**Another Consequence of the Economic Crisis:
A Decrease in Migrants' Remittances**

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Working Paper Version

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A Decrease in Migrants' Remittances

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Abstract

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Keywords: migration, remittances, financial crisis

JEL Codes: F22, F24, R31

1 Introduction

Remittances – the money that international immigrants send to their countries of origin – have captivated the attention of scholars of different social sciences. This interest stems in part from the large volume of these flows. A recent report from the World Bank (2008) indicates that in 2008, migrants sent about US\$306 billion back to their home countries. Recipients of these transfers typically spend the money on necessities such as food, housing, health care and educational expenses (Amuedo-Dorantes et al. 2007; Edwards and Ureta, 2003; Gitter and Braham, 2007; Valero-Gil, 2008). Moreover, remittances have helped receiving countries deal with financial distress and have been an important source of support during humanitarian crises (Savage and Harvey, 2007). Contrary to foreign direct investment, remittances have a direct impact on household incomes and, since there is no need of direct government intervention, remittances are less likely than foreign aid to end up in the hands of corrupt government officials (Kapur, 2004). In addition, remittances also represent a lucrative business for many banks and money transfer agencies in the United States and abroad (Wucker, 2004).

One of the consequences of the recent economic turmoil has been a slowdown in the flow of workers' remittances. From 1997 to 2007, remittances flows to developing countries registered an average annual growth rate of about 15 percent. These flows increased from US\$71 billion in 1997 to US\$281 billion in 2007. However, the growth rate was just 8 percent for 2008 (compared to 23 percent for 2007) and the World Bank expects remittances to fall by about 5 to 8 percent in 2009 (World Bank, 2008). According to a recent report by the Pew Hispanic Center, among Hispanic immigrants in the United States who sent money back home during the last two years, more than seven-in-ten (71%) say they sent less in the past year compared to the prior year. The report goes on to say that among foreign-born Hispanics who say they sent less money

abroad in the past year, 83% cite tougher financial circumstances as the main reason (López et al, 2009). The effects of the current global crisis are widespread and international immigrants have not been the exception.

Given the importance of remittances for receiving countries and the potential benefits of these flows, it comes as no surprise that the sudden decline in the growth of workers' remittances has generated significant attention from the media.¹ However, there is a need for a more systematic study and economic analysis of the decline in these flows. In particular, it is important to evaluate the size of the decline, investigate some of the specific factors that have triggered the decline, and to understand how remittances may, ultimately, constitute one of the transmission mechanisms of the current financial crisis.

In this paper we document the recent downturn in workers' remittances. We answer questions like: Are some regions more affected than others? What are the countries with the largest decreases in these transfers? What are some of the reasons for the decrease in remittances transfers? Should we expect remittances to comeback in the future? We also present statistical evidence of the impact of some of the factors associated with the global financial crisis (i.e. decrease in housing activity) on remittances flows. While we discuss remittance transfers worldwide, we focus on Latin America, the region with the lowest growth of remittances in 2008. We believe that the topic discussed in this paper is particularly timely and relevant. While the current global economic crisis has many ramifications we need to remember that the money that immigrants send to their home country is an extremely important source of income for

¹ See for instance Wiseman (2/26/2009) USA Today, Dickerson (4/26/2007) in Los Angeles Times, Malkin (2/26/2008) in The New York Times, Castillo (4/1/2009) in Business Week, Jordan (3/17/2009) and Hudson and Campoy (8/29/2007) in the Wall Street Journal, Solis and Corchado (3/7/2008) in The Dallas Morning News and Williams (8/9/2007) and Sanchez (3/14/2008) in the Washington Post, just to name a few.

families and businesses in the developing world. Therefore, it is essential to understand the reasons and consequences of this slowdown in migrants' transfers.

The next section of the paper takes a closer look at the global slowdown in remittances and looks at the patterns of these flows both by region and by type of country. The third section discusses the slowdown of remittances to Latin America. We place special emphasis on the drop of remittances to Mexico and analyze the role of the US housing market on the decrease of remittances flows. The last section includes a summary of the results and the conclusions of the study.

2 The Recent Global Slowdown in Remittances: A Closer Look

Table 1 shows the flow of workers' remittances worldwide and by region of the world from 2000 to 2008. Of the US\$306 billion sent home by immigrants in 2008, about US\$260 billion, or 85 percent of the total flows were sent to middle income countries. Money flows to middle income countries have experienced consistent growth over the years with an average annual growth rate of 17 percent for the time period presented in the table. Hence, the growth of transfers to these type of countries in 2008 (8 percent) is especially noticeable, given that it represents the lowest growth rate of the past 8 years.

<<TABLE 1 ABOUT HERE>>

A similar picture appears for the flows to low income countries, a relatively strong growth rate over the 2000 – 2007 (23.6 percent) period followed by a large decrease in the growth rate for 2008 (12.99 percent). In fact, quarterly data indicates that there is a global decrease in remittances that started in the third quarter of 2008 (Ratha, et al., 2009). This has led the World Bank to change their projections of growth in remittances for 2009 and 2010, to a decrease in these flows of 5 to 8 and 0.1 percent, respectively.

One of the most important reasons for the plunge in workers' remittances is without a doubt the current global economic crisis. Nonetheless, it is important to note that other factors could have artificially increased the growth rate of remittances during the previous decades. First, there has been an increased effort in tracking these flows on the part of central banks in many receiving countries (Suro, 2002). Previously, central banks were not paying enough attention to these flows. However, the evidence regarding the importance and the vast amount of these flows has encouraged many governments to closely follow the patterns of remittances. Part of this increased supervision of remittance flows (especially since September 11, 2001) responds to concerns expressed by governments in developed countries regarding money laundering and the financing of terrorism activities (Maimbo, 2004).² There has also been a shift in the transmission mechanism of this money. In the past it was often the case that important shares of these transfers were sent with family and friends visiting the home country or through some other informal channels. However, there has been a decrease in the cost of remitting through formal channels (Freund and Spatafora, 2008) and, as a consequence, nowadays a larger share of these flows is sent as wire transfers, flows that are more easily recorded by central banks. Still, even if we account for all these facts, the recent decline in remittances is just too dramatic and sudden to be explained solely by improvements in data recording.

The global figures are surprising but it is perhaps even more interesting to look at the recent trend of remittances by regions. In all regions the growth rate of remittances was lower in 2008 than in 2007. Two of the regions merit special attention: Sub-Saharan Africa and Latin America. In the case of Sub-Saharan Africa there was an almost 40 percent decrease in the growth rate of remittances. After an astonishing growth rate of 44 percent during 2007, the

² An October 2001 article in Time magazine, for instance, refers to the hawala system (a worldwide informal remittances system) as "a banking system built for terrorism" (Ganguly, 2001).

growth of remittances to these countries fell to just 6 percent in 2008. The decrease in the growth rate of remittances to Sub-Saharan Africa seems to be strongly related with the difficult economic situation in Europe. The share of remittances that Sub-Saharan African countries receive from Europe is the highest compared to remittances received from other regions of the world (44 percent of their total remittances). Keeping track of these records is important because although the total volume of remittances to Sub-Saharan Africa is not as impressive as the volume of remittances received by other regions, for many poor families in the region, these transfers are the difference between starving to death and surviving another day.

Perhaps more impressive in terms of volume is the slowdown of remittances to Latin America. After growing at an average of 19 percent during the 2000 – 2006 period, the growth rate of remittances fell to just 6.5 percent in 2007 (the lowest growth rate for any region that year) and remittances to Latin America were almost flat for 2008 with a growth rate of just 0.25 percent (again, showing the lowest growth rate for any region that year). Given this remarkable decrease in the growth rate of remittances to Latin America we dedicate the rest of the paper to describe the slowdown in migrants' transfers to this region and to explore the possible reasons for this slowdown. In particular, we focus on the case of Mexico for which data availability allows for a more systematic study.

3 The Drop in Remittances to Latin America: Timing and Causes

3.1 The Overall Picture

Table 2 reports the inflows of remittances for a selected group of Latin American countries. In all cases the growth rate of remittances during 2008 was lower (or similar in the case of Brazil) than that of 2007. One potential reason for this downturn in remittances is the deterioration of the United States housing market. That is, downward fluctuations in the United States construction

sector may have a negative impact in the migrant's budget which, in turn, forces the migrant to decrease the amount transferred to family and friends abroad. A downturn in the housing/construction market hits Hispanic migrants particularly hard because Hispanic workers tend to concentrate in this sector. The Pew Hispanic Center (2007) estimates that of the 2.9 million Hispanics employed in the US construction industry in 2006, 2.2 million were foreign born, representing about 19 percent of the industry's labor force. Moreover, it is estimated that Hispanics lost about 250,000 jobs in the construction sector during 2007 (Kochhar, 2008).

<<TABLE 2 ABOUT HERE>>

While there is an important percentage of Hispanic immigrants in the United States that works in the construction sector, immigrants also tend to concentrate in other sectors such as manufacturing, agriculture, and services (e.g., hotels and restaurants). According to the 2007 US Census of Agriculture there are more than 55,000 Hispanic-operated farms in the United States. Also, a recent report by The Federal Hispanic Work Group (2009) indicates that twenty-four percent of Hispanics in the United States work in the service sector. A downturn in these sectors, and in the economy as a whole, could result in a slowdown of remittances that may not be confined only to problems in the housing sector. In fact, according to the US Bureau of Labor Statistics, overall Hispanic unemployment in the United States has been climbing steadily. The unemployment rate for Hispanics rose to 11.4% in March 2009, 4.4 percentage points higher than in 2008 and 6.8 points higher than its lowest point of 4.6% in October 2006. These high unemployment rates for Hispanics in the United States have not been seen since 1993 (see Mora, 2009).

Other alternative explanations for the slowdown in remittances are tougher migration controls, the recent raids of factories that hire undocumented workers, and the crackdown on

undocumented workers in the United States (Ratha, et al., 2009). The number of undocumented workers arrested at workplaces increased from 500 in 2002 to 3,600 in 2006 (Capps et al., 2007). These raids make it more difficult for undocumented workers, the majority of which are Hispanics, to stay in the United States. This also makes job opportunities for immigrants scarcer over time. It is also likely that given the current economic conditions and the scarcity of jobs in the United States, many potential undocumented migrants may have decided not to cross the border. It is known that migration patterns tend to adjust to changing economic conditions. In fact, there is evidence of a slowdown in the rate of growth of the United States foreign-born population since 2007 (Papademetriou and Terrazas, 2009).

When focusing on the individual Latin American countries, two cases deserve a closer look: Colombia and Mexico. Colombia seems to have experienced a zero percent growth in remittances in 2008 (a drop of 15 percent from the previous year). This is particularly interesting given that Colombia's Central Bank (Banco de la República) has been recognized as one of the best agencies in accounting and reporting remittance transfers (see Inter-American Development Bank, 2006). Moreover, remittances to Colombia account for about 3.3% of the country's gross domestic product (GDP)—a higher share than both Brazil (0.3%) and Mexico (2.9%), the main recipients of remittances in Latin America (International Fund for Agricultural Development, 2007). Figure 1 shows quarterly inflows of remittances to Colombia (million US\$). It is clear that remittances were increasing constantly in Colombia all the way to 2008 when they were basically flat. Moreover, remittances to Colombia also lost importance with respect to other sources foreign exchange. For instance, according to our estimations using data from Colombia's Central Bank, in 2007 remittances to Colombia accounted for 15.3 percent of the exports of the

country (mainly coffee and oil) and 49.7 percent of the foreign direct investment. However, in 2008 these ratios decreased to 13.1 percent and 45.8 percent, respectively.

<<FIGURE 1 ABOUT HERE>>

Even more striking is the negative growth rate of remittances to Mexico in 2008. Migrant transfers to Mexico experienced a very rapid growth during the period 1996 – 2006, going from almost US\$5 billion in 1996 to almost US\$27 billion in 2006 (World Bank, 2008). This remarkable growth rate decreased to only 1 percent in 2007. In fact, it seems that the slowdown in remittances to Latin America started to be experienced in Mexico before it was experienced in other Latin American countries. Figure 2 plots the quarterly inflows of remittances to Mexico. Again, as with Colombia, it is possible to appreciate the positive trend of remittances over time. Notice how remittances were mostly flat for the 1990s before starting to increase significantly in the early 2000s. Figure 3 shows the annualized rate of remittances in which case it is perhaps easier to observe the decline in the flows. A series of factors, other than the economic crisis, may help explain some of this decline. For instance, as we mentioned in another section of this article, there has also been a significant improvement in data about remittances during the last decade. Therefore, some of the increase in remittances during the 1990s may have been artificially generated by the improvements in the collection of the data. Before 2000, monthly remittance levels to Mexico were inferred from an outdated 1990 census of financial institutions and information gathered from money exchange houses and electronic wire-transfer companies (Cañas et al., 2007). Since 2000, additional efforts have been made by Mexico's Central Bank in order to accurately account for these flows.³ Furthermore, the portion of remittances that are transferred through formal channels has increased, making it easier to track flow amounts.

³ In 2002 Mexico's Central Bank mandated that all banks and wire-transfer companies must register and report monthly remittance flows.

Using data from Mexico's Central Bank we can also measure the relative importance of remittances. Remittances to Mexico accounted for 9.6 percent of exports in 2007 and 8.6 percent of exports in 2008. These numbers suggest that remittances to Mexico have decreased in importance over the past two years. However, if we estimate remittances as a share of foreign direct investment we find that in 2007 remittances accounted for about 96 percent of foreign direct investment to Mexico, while in 2008 remittances accounted for 135 percent of foreign direct investment to Mexico. As this last ratio suggests there has also been a significant drop in foreign direct investment to Mexico. This fact points out to the strong economic ties between the United States and Mexico and two of the channels, remittances and foreign direct investment, by which downturns in the United States economy are transmitted to Mexico.⁴ The provided information makes it interesting to look at the impact of the crisis in the United States on the money transfers made by Mexican immigrants. We do this in the next section.

<<FIGURE 2 ABOUT HERE>>

<<FIGURE 3 ABOUT HERE>>

3.2 Remittances to Mexico.

To explore the above issues in more detail we estimate a vector autoregressive model of remittances to Mexico that includes housing variables. While we could conduct an estimation using all the Latin American countries, there are certain advantages in focusing on a single country. For instance, the dynamics and definitions of remittances may vary vastly across countries due to differences in financial systems, migration patterns, stage of economic development and reporting procedures. Furthermore, the type of migrants may also vary across different countries. Since Mexico has a better history of collecting data than most Latin

⁴ Trade is also a very strong link between the US and Mexico. In fact, Cañas et al. (2006) reports that 88 percent of Mexico's exports go to the United States and 56 percent of its imports come from the United States.

American countries and has strong economic ties to the United States, it seems to be better suited for our empirical analysis. Finally, as we showed in Table 2, remittances to Mexico have decreased more dramatically than in other Latin American countries.

In the estimation in addition to remittances (*REM*) we include a series of standard macroeconomic variables that have been suggested in the previous literature as determinants of remittances. These variables are: US output (*USY*), Mexico's interest rate (*I*) and Mexico's exchange rate (*E*). Mexican workers in the United States should be especially sensible to the fluctuations in the US housing market as we have mentioned above. Therefore, we also add a US housing activity variable (*Housing*) to study the impact of shocks to US housing activity in remittance transfers to Mexico. US output, as a reflection of the condition of the United States economy, may have important effects on the budget constraint of migrants and thus an impact on remittances. We include Mexico's interest rate to account for transfers that are motivated by investment opportunities in Mexico, which previous studies have found can be an important motive for remittance transfers.⁵ To better capture the difference in return between investments in the United States and in Mexico, we include Mexico's interest rate as a deviation from an equivalent US interest rate. The exchange rate is included because although immigrants earn money in US dollars, transfers to family members in Mexico are typically converted into Mexican pesos.⁶

In addition to addressing the previous concerns, the use of a VAR model deals with the potential endogeneity among the variables. For instance, although it is possible for remittances to impact the value of Mexico's currency, it is also likely that remittances respond to changes in Mexico's exchange rate. Once the VAR is estimated, we estimate impulse response functions.

⁵ See, for example, Osili (2004) and Woodruff and Zenteno (2001).

⁶ Previous studies such as Faini (1994), Higgins et al. (2004) and Vargas-Silva (2008) show the importance of the exchange rate for remittance transfers.

Impulse response functions simulate the effect of a shock to one variable in the system on the conditional forecast of another variable. For example, if the response of remittances after a shock to the US housing activity is positive, then presumably remittances will respond positively to innovations in US housing activity.

To obtain orthogonal residuals, we use the conventional Cholesky decomposition, which imposes a recursive structure so that variables higher in the ordering are not affected contemporaneously by shocks to variables lower in the ordering. We use the following ordering of the variables in the model: *USY*, *Housing*, *I*, *E*, and *REM*. In this case, we assume that US output is not contemporaneously affected by shocks to the other variables, that US housing is affected contemporaneously only by US output, and that remittances are affected contemporaneously by economic conditions in the United States and Mexico.⁷

We use monthly data for the period January 1998 to December 2008 and include twelve lags of each variable in the estimation. The real exchange rate is defined as Mexican pesos per US dollars and is constructed using the consumer price index of both countries. The consumer price indexes are seasonally adjusted, and the nominal exchange rate is not. Income is measured as seasonally adjusted industrial production for the United States. Note that although we would like to include gross domestic product (GDP) as a measure of output, the data are not available at monthly frequency. The interest rate is the difference between Mexico's government three-month bond rate (CETES interest rate) and the three-month US Treasury bill rate.

We use total family remittances as a measure of Mexico's inward remittances. This variable is seasonally adjusted and expressed in real terms. As measures of housing activity in the United States, we use the number of seasonally adjusted housing starts (new privately owned

⁷ We include these variables in the VAR model in levels. Sims (1980) and Sims et al. (1990) are among the first to suggest that even if the variables are unit root processes they should be included in levels. They argue that the goal of a VAR analysis is to determine the interrelations among variables, not to determine the parameter estimates.

housing units started in the United States) and the seasonally adjusted number of houses sold in the United States. These variables have been suggested by previous studies to be representative of the overall condition of the United States housing market (see Congressional Budget Office, 2008; Ewing and Wang, 2005; Falk, 1986; Fratantoni and Schuh, 2003; Vargas-Silva, 2008). All the Mexican data are obtained from Banco de Mexico (the Mexican Central Bank). All US data are obtained from the database of the Federal Reserve Bank of St. Louis (FRED). All variables, except the interest rate differential, are used in logarithms.

The response of remittances to the other variables included in the estimation has been well documented already in the previous literature (see El-Sakka and McNabb (1999), Faini (1994), Higgins et al. (2004), Vargas-Silva (2008), Vargas-Silva and Huang (2006), among others); therefore, we concentrate on the response of remittances to the housing variables. We conduct two estimations, one with housing starts and the other one with houses sold, both as the measure of housing activity in each of the estimations. The responses of remittances after a one standard deviation shock in the housing variables are presented in Figure 4. The bands represent asymptotic two standard deviation intervals. In both cases the response is positive and significant. In the case of housing starts it seems that the response is positive for the first ten periods and becomes significant for the first time after four periods. On the other hand, the response of houses sold is initially negative (although insignificant) and then turns positive and significant after three periods. This indicates that after controlling for some of the standard macroeconomic determinants of remittances, we are still able to find evidence that shocks to housing activity in the United States have an impact on remittances flows to Mexico. Therefore, at least for the case of Mexico we are able to gather evidence of a direct impact of housing activity in the United States on the flow of migrants' money.

<<FIGURE 4 ABOUT HERE>>

3.3 US Housing Activity and the Slowdown in Remittances.

While the results of the above empirical exercise are interesting, we need to validate the link between housing activity in the United States and remittances flows in general. In particular, in order to link the actual decrease in housing activity to the decrease in remittances to Latin America we must also show that the crisis is actually affecting those markets in which Hispanics remitters tend to concentrate. In order to explore this possibility we look at state level data from the United States. If the housing market is one of the main culprits for the slowdown in remittances, then the housing crisis should be affecting those states in which remitters concentrate. The first column in Table 3 shows the volume of remittance outflows from the United States to Latin America by state during the year 2004. The third column reports the same number for the year 2006 (latest year with available data).⁸ Meanwhile, columns (2) and (4) report the relative rankings of the states in each year. Notice, that the rankings are similar for 2004 and 2006, suggesting that there are no big changes in the ranking of the states with regard to the volume of remittances (at least in the short run). In each case the state with the largest flow of remittances was California with 9,610 (2004) and 13,191 (2006) million US dollars, followed by either New York (2nd in 2004, 3rd in 2006) or Texas (3rd in 2004, 2nd in 2006). This come as no surprise given that California has the largest Hispanic population in the United States with more than 13 million Hispanics or about 36 percent of the state's population (US Census Bureau, 2009).

Column (5) in Table 3 reports the number of foreclosures per 5,000 housing units in December 2008 (end of our sample) for each state, while column (6) reports the ranking relative

⁸ The 2004 sample excludes Alaska, Delaware, Hawaii, Maine, Mississippi, Montana, New Hampshire, North Dakota, Rhode Island, South Dakota, Vermont, West Virginia and Wyoming. The 2006 sample excludes Montana and West Virginia. However, neither of these states has a significant Hispanic population.

to other states. Notice that five states, California, Florida, Illinois, Georgia, Arizona and Virginia are in the top ten states for both remittances and foreclosures. This indicates that the crisis has hit particularly hard those states in which remitters concentrate. Again, it is important to highlight the case of California. This state has been consistently the number one state in terms of remittances sent to Latin America and it comes up second in terms of foreclosures for December 2008.

More evidence on this regard can be found in columns (7) and (8), which report on the decrease in construction activity, growth rate and relative ranking, respectively. The decrease in construction activity is measured as the percentage change in the number housing units authorized between the periods December 2007-2008 and December 2006-2007. First, notice that in all cases the percentage change is negative indicating a decrease in construction activity in the period December 2007-December 2008 in comparison with December 2006-December 2007 for all states. With respect to those states in which remitters reside we see that some states such as Illinois, Georgia and Arizona are in the top ten in both remittances and decrease in construction activity. Moreover, while California does not make the top ten in terms of decrease in construction activity it comes twelve with almost a 42 percent decrease in the number of housing permits.

In order to have a more systematic comparison of the columns of Table 3, let's look at the top of Table 4 in which we report Spearman rank correlation coefficients. For starters in the first cell we have that the rank correlation between remittances in 2004 and 2006 is quite high with a significant coefficient over .90. It also seems to be the case that foreclosures have a strong and significant rank correlation with remittances in both years. The rank correlation between remittances and the change in construction activity (absolute value) is positive as expected,

although not significant. The bottom part of Table 4 shows regular correlation coefficients between our variables. Except for the results of the correlation between remittances in 2004 and construction activity, all other results are in line with our previous findings showing that foreclosures have a strong and significant correlation with remittances in both years.

The evidence presented above points out to the poor shape of the US housing market in those states where remitters concentrate.

4 Conclusion

After showing an impressive growth for most of the current decade, global remittance flows were stagnant during 2008. This has forced the World Bank to revise their previous projection of growth in remittances transfers for 2009 and 2010 to a decrease of 5 to 8 percent and .1 percent, respectively. In this paper we document this recent slowdown in workers' remittances and present statistical evidence of the link between the United States housing market and remittance flows.

Remittance flows to developing countries experienced an average annual growth rate of 17.6 percent for the period 2000 – 2007. However, this growth rate declined to just 8.77 percent in 2008. Furthermore, the growth rate of these flows decreased for all regions of the world in 2008. In relative terms, Latin American stands out because it reported a 0.25 percent growth rate of remittances for 2008 (the lowest growth rate for any single region). Among countries in the region, Mexico (the largest recipient of remittances in the region in terms of volume) seems to be the most affected with a decrease of more than US\$900 million in remittances between 2007 and 2008. In fact, it seems that Mexico started to experience the decrease in remittances before other countries in the region. Colombia (the third largest recipient of remittances in the region) is also

noteworthy because it experienced a zero percent growth in remittances for the year 2008, after an average annual growth rate of 17.1 percent for the period 2000 – 2007.

While this slowdown in remittances is too recent for us to conduct a comprehensive econometric analysis, we are able to present some statistical evidence of the impact of the United States housing market on remittances flows. Using data from Mexico and a vector autoregressive model we are able to show that shocks to housing starts and houses sold in the United States have a significant impact on remittance transfers. We also show that some of the states where Hispanic remitters concentrate (e.g. California, Illinois and Arizona) have been hit particularly hard by the housing crisis in terms of foreclosure rates and decrease in construction activity. Using standard and rank correlations, we are further able to present evidence of a significant correlation between the volume of remittances in previous years and the severity of the current housing crisis at the state level.

Still, it would be hard to argue that the decrease in remittance flows has been exclusively the result of the global economic crisis. Some other factors, such as improvements in data collection, may have artificially increased the growth rate of remittances during the 1990s and early 2000s. In addition, tougher restrictions on undocumented migrants in the United States may have also affected remittances flows. However, the evidence we present suggests that the decrease in construction activity, a sector in which international immigrants tend to concentrate, is a major culprit for the slowdown in remittances. This may be in one sense good news. Remittances often imply a family commitment and its ties are strong. Therefore, we could expect remittance flows to come back at some point in the future if the global economic situation stabilizes and the condition of the United States housing market improves.

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Figure 1 – Quarterly Remittance Flows to Colombia.



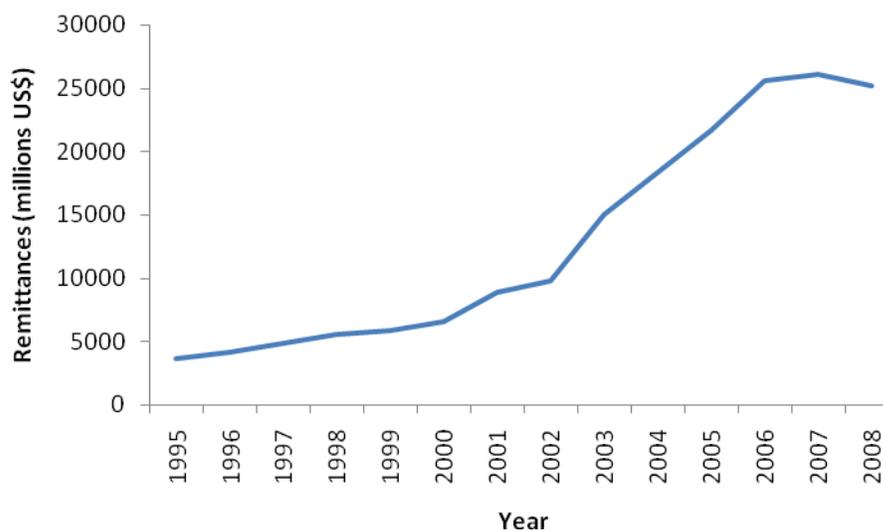
Notes: Source of data is Colombia's Central Bank (Banco de la Republica) at <http://www.banrep.gov.co/>.

Figure 2 – Quarterly Remittance Flows to Mexico.



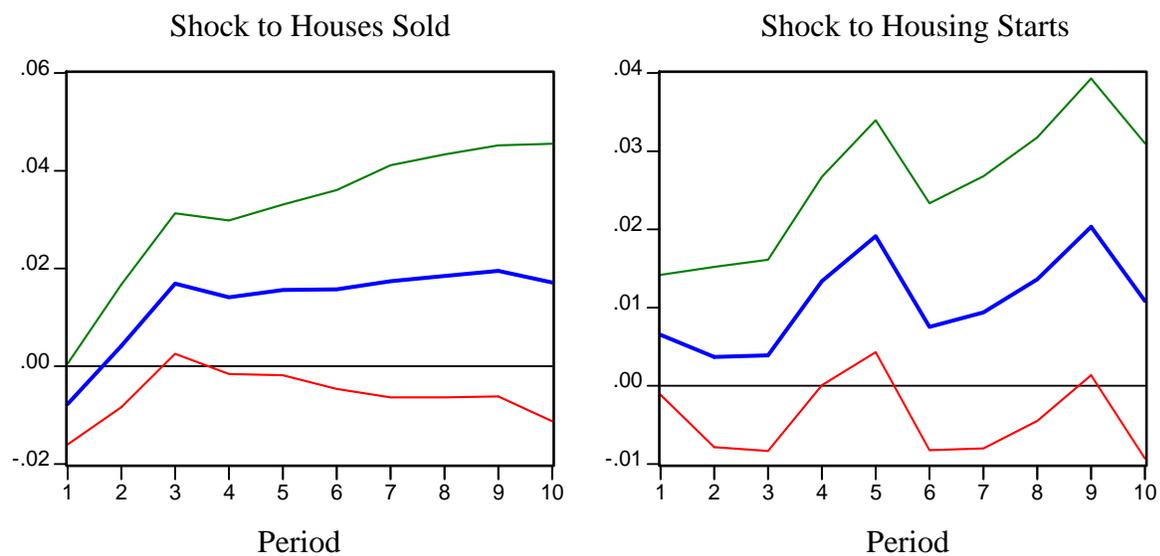
Notes: Source of data is Mexico's Central Bank (Banco de Mexico) at <http://www.banxico.org.mx/>.

Figure 3 – Annual Remittance Flows to Mexico.



Notes: Source of data is Mexico's Central Bank (Banco de Mexico) at <http://www.banxico.org.mx/>.

Figure 4 – Response of Remittances to Shocks in Housing Variables.



Notes: The figure shows impulse response functions derived from a vector autoregression estimation that includes U.S. output, US housing starts or US houses sold, Mexico's exchange rate, the interest rate differential, and remittances. The bands represent asymptotic two standard deviation intervals.

Table 1 - Worldwide Flow of Workers' Remittances (credit, billion US dollars).

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Worldwide	131.52	146.79	169.55	207.28	234.94	267.82	306.64	370.77	397.05
<i>Growth Rate</i>	3.85	11.61	15.50	22.26	13.35	13.99	14.49	20.91	7.09
Developing Countries	84.19	95.22	115.55	144.26	164.42	194.77	228.69	280.68	305.28
<i>Growth Rate</i>	9.00	13.10	21.35	24.85	13.98	18.46	17.42	22.73	8.77
Low Income	8.25	10.88	15.31	16.66	19.62	23.89	30.94	39.94	45.13
<i>Growth Rate</i>	9.00	31.93	40.64	8.83	17.75	21.81	29.49	29.09	12.99
Middle Income	75.94	84.33	100.24	127.60	144.80	170.88	197.75	240.74	260.15
<i>Growth Rate</i>	9.00	11.06	18.86	27.29	13.49	18.00	15.73	21.74	8.06
LDCs (UN-classification)	6.15	6.66	8.42	9.65	10.88	12.05	14.50	17.43	20.74
<i>Growth Rate</i>	7.02	8.41	26.37	14.61	12.72	10.72	20.37	20.23	19.00
East Asia and Pacific	16.68	20.11	29.52	35.45	39.16	46.70	52.95	65.24	69.93
<i>Growth Rate</i>	6.35	20.52	46.83	20.07	10.49	19.23	13.39	23.21	7.20
Europe and Central Asia	12.78	12.39	13.73	15.50	22.18	31.22	38.31	50.38	53.09
<i>Growth Rate</i>	9.93	(3.05)	10.77	12.92	43.05	40.77	22.73	31.49	5.39
Latin America and Caribbean	19.99	24.23	27.92	36.61	43.33	50.12	59.21	63.11	63.26
<i>Growth Rate</i>	13.54	21.22	15.23	31.13	18.36	15.68	18.13	6.58	0.25
Middle-East and North Africa	12.90	14.65	15.21	20.36	23.03	24.26	25.74	31.29	33.66
<i>Growth Rate</i>	0.76	13.61	3.81	33.85	13.13	5.32	6.09	21.57	7.58
South Asia	17.21	19.17	24.12	30.37	28.69	33.09	39.62	52.09	65.98
<i>Growth Rate</i>	14.11	11.39	25.89	25.81	- 5.51	15.33	19.71	31.48	26.68
Sub-Saharan Africa	4.62	4.66	5.03	5.97	8.02	9.38	12.87	18.58	19.75
<i>Growth Rate</i>	4.29	0.86	7.88	18.69	34.35	16.96	37.19	44.39	6.28

Notes: Source of data is the Migration and Remittances Factbook of the World Bank at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html>

Table 2 – Remittances to Selected Latin American Countries(credit, billion US dollars).

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Mexico	7.53	10.15	11.03	16.56	19.86	23.06	26.88	27.14	26.21
<i>Growth Rate</i>	13	35	9	50	20	16	17	1	- 3
Brazil	1.65	1.78	2.45	2.82	3.58	3.54	4.25	4.38	4.50
<i>Growth Rate</i>	- 11	8	38	15	27	- 1	20	3	3
Colombia	1.61	2.06	2.48	3.08	3.19	3.35	3.93	4.52	4.52
<i>Growth Rate</i>	23	28	21	24	4	5	17	15	0
Dominican Republic	1.84	1.98	2.20	2.33	2.50	2.72	3.08	3.41	3.52
<i>Growth Rate</i>	13	8	11	6	8	9	13	11	3
Ecuador	1.32	1.42	1.44	1.63	1.84	2.46	2.93	3.09	3.20
<i>Growth Rate</i>	21	7	1	14	13	34	19	5	3
El Salvador	1.77	1.93	1.95	2.12	2.56	3.03	3.48	3.71	3.80
<i>Growth Rate</i>	27	9	1	9	21	18	15	7	2
Guatemala	0.60	0.63	1.60	2.15	2.63	3.07	3.70	4.25	4.44
<i>Growth Rate</i>	28	6	152	34	22	17	21	15	4
Jamaica	0.89	1.06	1.26	1.40	1.62	1.78	1.95	2.14	2.21
<i>Growth Rate</i>	13	19	19	11	16	10	9	10	3
Nicaragua	0.32	0.34	0.38	0.44	0.52	0.62	0.70	0.74	0.77
<i>Growth Rate</i>	7	5	12	16	18	19	13	6	4
Peru	0.72	0.75	0.71	0.87	1.13	1.44	1.84	2.13	2.20
<i>Growth Rate</i>	7	5	- 6	23	30	27	28	16	3

Notes: Source of data is the Migration and Remittances Factbook of the World Bank at <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:21352016~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html>

Table 3a - Remittances and Housing Activity by State

State	Remittances 2004 ^a		Remittances 2006 ^a		Foreclosures ^b		Construction Activity ^c	
	Level	Rank	Level	Rank	Level	Rank	Level	Rank
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
California	9,610	1	13,191	1	34	2	-41.58	12
New York	3,562	2	3,714	3	2	37	-5.71	50
Texas	3,180	3	5,222	2	5	25	-25.53	44
Florida	2,450	4	3,083	4	30	4	-40.59	14
Illinois	1,528	5	2,853	5	12	9	-48.70	2
New Jersey	1,371	6	1,869	6	6	22	-26.44	43
Georgia	947	7	1,736	7	13	6	-54.17	1
North Carolina	833	8	1,221	9	3	34	-34.27	28
Arizona	606	9	1,378	8	31	3	-48.58	3
Virginia	586	10	1,110	10	11	10	-26.85	42
Colorado	544	11	646	12	13	6	-37.26	20
Massachusetts	527	12	579	14	7	17	-37.87	19
Maryland	500	13	921	11	10	12	-29.91	36
Nevada	447	14	618	13	70	1	-45.13	8
Indiana	386	15	190	32	9	15	-31.48	33
Washington	353	16	504	16	5	25	-36.82	22
Oregon	218	17	383	18	10	12	-43.94	9
Michigan	192	18	337	20	15	5	-43.16	10
Pennsylvania	180	19	517	15	4	32	-32.81	30
Utah	164	20	258	25	10	12	-48.25	4
Tennessee	162	21	407	17	7	17	-40.14	15
Oklahoma	156	22	226	27	4	32	-31.28	35
Wisconsin	152	23	335	21	5	25	-27.16	41
Alabama	149	24	219	28	2	37	-36.53	23
South Carolina	148	25	322	22	5	25	-34.50	27
Minnesota	147	26	292	24	5	25	-39.44	16
Connecticut	129	27	301	23	7	17	-32.87	29
Arkansas	114	28	235	26	7	17	-15.96	48
Ohio	108	29	214	30	11	10	-35.66	24
Missouri	105	30	166	33	6	22	-39.30	17
New Mexico	103	31	370	19	2	37	-35.18	26
Idaho	96	32	142	36	13	6	-42.70	11
Kansas	94	33	215	29	3	34	-31.50	34
Nebraska	80	34	154	35	1	44	-17.24	47

Notes: ^a millions of US\$. Source Inter-American Development Bank at www.iadb.org/mif/remittances/.
^b number of foreclosures per 5,000 units for December 2008. Source Realty Trac at <http://www.realtytrac.com/home.asp>.
^c percentage change in new privately owned housing units authorized for the period December 2007 – December 2008 in comparison with the period December 2006 – December 2007. The rank is based on the absolute value. Source US Census Bureau at <http://www.census.gov/>. N/A indicates that the state was not surveyed in that year.

Table 3b - Remittances and Housing Activity by State (continuation)

State	Remittances 2004 ^a		Remittances 2006 ^a		Foreclosures ^b		Construction Activity ^c	
	Level	Rank	Level	Rank	Level	Rank	Level	Rank
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Iowa	69	35	138	37	3	34	-27.81	39
Louisiana	61	36	208	31	2	37	-29.76	37
Kentucky	53	37	161	34	2	37	-27.74	40
Rhode Island	N/A	N/A	130	38	9	15	-45.25	7
Delaware	N/A	N/A	105	39	6	22	-35.50	25
Mississippi	N/A	N/A	100	40	1	44	-38.56	18
Hawaii	N/A	N/A	34	41	5	25	-40.76	13
Alaska	N/A	N/A	33	42	5	25	-46.61	5
Wyoming	N/A	N/A	33	43	2	37	-21.84	45
N. Hampshire	N/A	N/A	32	44	7	17	-28.22	38
South Dakota	N/A	N/A	23	45	1	44	-21.24	46
Maine	N/A	N/A	22	46	2	37	-37.21	21
North Dakota	N/A	N/A	15	47	1	44	-6.61	49
Vermont	N/A	N/A	9	48	1	44	-31.74	32

Notes: ^a millions of US\$. Source Inter-American Development Bank at www.iadb.org/mif/remittances/.

^b number of foreclosures per 5,000 units for December 2008. Source Realty Trac at <http://www.realtytrac.com/home.asp>.

^c percentage change in new privately owned housing units authorized for the period December 2007 – December 2008 in comparison with the period December 2006 – December 2007. The rank is based on the absolute value. Source US Census Bureau at <http://www.census.gov/>. N/A indicates that the state was not surveyed in that year.

Table 4 – Spearman and Standard Correlation Coefficients

	Remittances 2004	Remittances 2006
a) Rank Correlation Coefficients		
Remittances 2006	0.91* (12.52)	--
Foreclosures	0.38** (2.33)	0.30*** (1.75)
Construction Activity	0.14 (0.78)	0.11 (0.60)
b) Standard Correlation Coefficients		
Remittances 2006	0.99* (41.36)	--
Foreclosures	0.30*** (1.76)	0.30*** (1.80)
Construction Activity	-0.05 (-0.28)	0.01 (0.05)

Notes: The numbers in parenthesis are t values and * indicates significance at the 1%, ** at the 5% and *** at the 10% level.