Remittance Volatility and Asset Accumulation

Summary

Motivation: Remittances and migration are known to impact the consumption and asset accumulation patterns of households.[1] While it is important to understand how changes in the level of transfers from family abroad affects asset accumulation, it is also essential to gain a better understanding of how the regularity and predictability of such inflows influence household asset accumulation. Some households receive remittances on a regular basis month after month. Other households receive these funds irregularly –perhaps when the emigrant returns home or when s/he has extra discretionary income to share with family members in the home country. As a result, while some remittance-receiving households are able to forecast with reasonable precision remittance inflows, other recipient households are unable to do so. It stands to reason that these two types of households will likely use the remittance inflows differently. Consider one household who receives $200 on a monthly basis. Does the asset accumulation pattern of this household differ from that of a household that receives $1000 over a period of 5 months but on a random and irregular basis? In other words, how does the regularity of remittance receipts affect the asset accumulation behavior of remittance-receiving households? We seek to answer these questions with an analysis of the impact of the regularity of remittance inflows on the accumulation of assets by recipient households.

Main objective: Our intent is to reframe the debate on the usage of remittances by acknowledging that remittances may promote asset accumulation to different extents and through different types of assets (physical, financial or human capital) depending on the regularity of inflows. In this manner, the study will further our understanding of how remittances affect the economics of the household by assessing the role played by the regularity of inflows on household asset accumulation behavior.

Hypothesis: We hypothesize that households with regular and predictable remittance inflows are more likely to use those funds to meet ordinary consumption needs scheduled to be paid with such funds. In contrast, households that receive remittances on an irregular and less predictable basis are more likely to use those funds for asset accumulation. This hypothesized behavior follows from the life-cycle permanent income hypothesis (LCPIH), according to which regular and permanent increases in income will most likely be consumed as individuals can expect to enjoy those income increments over the long term. In other words, the expectation of an increase in income for the long-run allows for an upward adjustment of consumption patterns over the lifecycle. In contrast, irregular increases in income are less likely to be viewed as permanent. Because households cannot count on them for the longer-run, they are more likely to be saved in order to spread the increase in income over the lifecycle.[2]

Data and Methodology: In our analysis, we first portray the consumption and asset accumulation patterns of Mexican households according to their remittance-receiving patterns and the regularity of their remittance receipts. To this end, we use data from the more recent and harmonized 2000, 2002, 2004 and

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[1] See for example, Taylor and Mora, (2006) where they conclude that households affected by international migration modify their expenditure patterns by increasing the share of expenditures on investment at the expense of consumption.

[2] See, for example, Friedman (1957), Ando and Modigliani (1957), Modigliani and Brumberg (1954). This idea is articulated and tested in a study by Adams (1998), where he finds that remittance income (relative to labor income) is more likely to be spent on farming investments in rural Pakistan. In Adams's framework, remittances are viewed as temporary income relative to other sources of income earned by the rural household and, hence, they were regarded as less suitable to finance recurring consumption expenditures. Our hypothesis differs in that we distinguish regular and predictable remittance income from irregular and less predictable remittance income. Households with regular remittance inflows will likely engage in more consumption, while households with less regular remittance income are likely to engage in more asset accumulation, all other things equal.

2005 waves of the Mexican *Encuesta Nacional de Ingresos y Gastos de los Hogares* (ENIGH), a nationally representative survey carried out by the Mexican Statistical Institute (Instituto Nacional de Estadística, Geografía e Informática – INEGI at http://www.inegi.gob.mx) with the purpose of providing information on the size, structure, and distribution of Mexican households' income and expenditures. The ENIGH covers a wide range of income and expenditure topics. With regards to income, we are particularly interested in the detailed information on all monthly income flows received by the household over the past six months, including monthly receipts of international money transfers. This is indeed unique to the ENIGH.[3] By asking respondents about their receipt of remittances over the six months prior to the interview, we are able to exploit the information contained in the time series to derive various measures of remittance income regularity. These measures include the number of months over the past 6 month period when remittances were received, as well as more complex measures of remittance income regularity (variability) including the range of remittance income, the standard deviation, and the coefficient of variation of remittance inflows corresponding to the 6-month period under examination.[4] In addition to household income, the ENIGH contains detailed information on all household expenditures on physical, financial and human capital. We view these expenditures as a form of asset accumulation and, specifically, we focus on expenditures on education, health, micro-enterprises, traditional financial assets and housing.[5] Finally, the ENIGH contains information on general socio-demographic characteristics of all household members.[6]

Subsequently, we analyze the determinats of asset accumulation shares and, in particular, the role played by both the level of remittance inflows and the regularity of those inflows. To that end, we estimate the following benchmark model:

(1) $$Y_i^* = \alpha_0 + \alpha_1 R_i + \alpha_2 RV_i + X_i \beta + \varepsilon_i, \; \varepsilon_i \sim Normal\left(0, \sigma^2\right) \text{ and } Y_i = \max\left(0, Y_i^*\right),$$

for i=1, …, n households. Our dependent variable, Y, measures the share of spending on asset accumulation over the past month. R captures the level of remittances received, RV is our measure of remittance income regularity (variability), and X is a vector of exogenous explanatory household and individual level variables, including the level and variability of other sources of income.

A few econometric issues arise in the estimation of equation (1). First, the outcome of interest is a zero-inflated continuous variable. Second, remittances and the regularity of these monetary inflows may be correlated with the error term in equation (1). As such, remittance income and its regularity may be endogenous and their coefficient estimates biased. To account for both the zero inflated nature of our

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[3] Other Mexican surveys containing nationally representative information on household income and expenditures, such as the Mexican Life Family Survey, do not allow us to: (1) Distinguish between national and international remittance transfers, and (2) Do not contain detailed month to month income information required to construct measures of remittance income regularity. Similarly, the Mexican census lacks the aforementioned information.

[4] Note that we have a selection bias with respect to the sample, as we only have 6 months of data with respect to remittance receipts. Hence, we will be assigning some households who receive infrequent remittances to a non-recipient sub-sample of households simply because we won't observe remittance receipts over that 6 month period, when indeed the household did receive receipts, in, say, January. However, if anything, the bias will make it more difficult to reject the null hypothesis. After all, the variability in remittance receipts among higher frequency remittance-receiving households is smaller than the variability in remittance receipts among high and low frequency remittance-receiving households. Therefore, erroneously assigning households with infrequent remittance receipts to the non-remittance recipient group would, in any event, underestimate the variability in remittance receipts.

[5] Note that poor households often have more limited avenues for accumulating assets owing to their unbanked status and to their mistrust of financial institutions. In those instances, asset accumulation is more likely to take place via the accumulation of non-financial assets, such as housing improvements.

[6] For instance, the survey collects information on respondents' age, gender, relationship to the household head, marital status, as well as educational attainment and employment. Additionally, the survey gathers detailed information on the housing unit and living conditions of the household.

dependent variable and for the endogeneity of remittance income and remittance income regularity, we use the Amemiya Generalized Least Squares (AGLS) estimator for the Tobit with endogenous regressors described in Newey (1987, eq. 5.6); henceforth IV-Tobit. We experiment with instrumenting the level and regularity of remittance income with a variety of variables thought to serve as good instruments based on their exogeneity with respect to remittance-receipt in other studies as well as based on theoretical expectations. For instance, we consider dummy variables indicative of economic downturns in the U.S., changes in the migration costs experienced by Mexican immigrants entering the U.S., and information on the remittance receiving infrastructure in Mexico possibly affecting the dollar amount and frequency with which the money is sent. All instruments are inspected to ascertain their correlation with the level and regularity of remittance inflows. Additionally, we test for their joint exogeneity with respect to our outcomes of interest.

Economic and Social Importance of the Topic: The role of remittance income regularity on households' asset accumulation patterns is important to explore in order to gain a better understanding of some of the key factors shaping how remittance-receiving households end up making use of remittance inflows. This, in turn, has implications for the economic and social impact of remittances. Concern about the effects of remittances in the receiving countries has permeated much of the debate on remittances. In particular, considerable controversy regarding the desirability of remittance inflows has emerged following some studies that conclude that remittances have detrimental impacts on recipient households and on the economy at large (Glytsos, 1993, Durand, et al 1996). At the household level, it has been claimed that remittances are used in ways that breed "dependency" instead of promoting longer term capital accumulation and economic growth. According to this thesis (see Keely and Tran (1989) for a review), remittances are mainly used to finance household consumption, reducing labor force participation of family members in the home country and diminishing the household's longer-term ability to prosper on its own. A priori, we do not necessarily subscribe to this view, as the usage of remittances to purchase food or housing can also have significant social value by adding to the quality of life of the recipient household. However, we recognize that it is important to gain a better understanding of the key factors inducing households to accumulate physical, financial and human capital. These investments are highly desirable as they are recognized to allow for long-term increases in productivity. Additionally, the accumulation of certain assets provides the household with back up savings for consumption smoothing over the lifecycle and with reserves to allow for the engagement in risky entrepreneurial activities. Consequently, a better understanding of the link between remittance receipts and asset accumulation will aid in choosing best policies to harness the most out of remittance inflows.

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