

## **The effect of Remittances on Investments in Housing: Evidence from Nicaragua**

**Mary Arends-Kuenning**, *University of Illinois at Urbana-Champaign*

**Suzanne Duryea**, *Inter-American Development Bank*

**Analia Olgati**, *Inter-American Development Bank*

Remittances play an increasingly important role in Nicaragua's economy.

Remittances rose from about 5 percent of Gross Domestic Product in 1991 to 25 percent of GDP in 1999 (Orozco 2002). This amounts to \$124 per capita in Nicaragua (Sana 2003). A study of 997 households in five Nicaraguan communities conducted in 2000 and 2002 found that 15 percent of households reported receiving remittances, and of these, 45 percent of the households reported that the remittances were substantial (Sana 2003).

An important research question is whether families use remittances in order to finance investments in housing. Although some argue that investing in housing is a less productive use for remittances than other areas such as micro-enterprise, improvements in specific housing outcomes may generate important productivity gains. Particular improvements made to housing, such as covering dirt floors or improving sanitation removal are associated with improvements in children's health outcomes. The economist Hernando de Soto links home ownership to the ability of the poor to unleash their assets that are typically inaccessible. When individuals have legal title to their property they can use it as collateral and borrow for entrepreneurial ventures.

We propose to use the World Bank's Living Standards Measurement Surveys collected in 1998 and 2001 to examine the impact of remittances on investments in housing. The 1998 and 2001 data comprise a panel. Both years contain detailed questions about household infrastructure and on expenditures and improvements in

housing. Specific improvements (such as improved sanitation removal) can be deduced from changes in the housing characteristics over time. However a general question is also asked in 2001 regarding whether improvements have been made to the dwelling over the past 12 months. The 2001 data also includes detailed information about remittances. The LSMS surveys for Nicaragua are well regarded for their high quality questions regarding housing. Home ownership is distinguished by legal title status which is unfortunately not the standard in the collection of data. The panel nature of the data allows us to counteract biases arising from endogeneity. For example, households that receive remittances might be qualitatively different from households that do not receive remittances if individuals who have higher preferences for housing emigrate and send remittances to finance investments in housing.

We propose to examine changes in housing outcomes between 1998 and 2001, including whether home ownership increases, and whether improvements/repairs have been made in the last 12 months leading up to the 2001 survey. The LSMS data indicate that the share of households with dirt floors has fallen from 47% to 43% over the 3 year period while home ownership has grown. We will examine whether the changes in these outcomes are related to changes in remittances, defined by having a family member who migrated between 1998 and 2001 and who sent remittances.

## References

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