6

Do Conditional Cash Transfers Increase Poor Households' Coping Capabilities? Assessing the Effect of *Oportunidades* in Poor Urban Settings in Mexico

Claudia Vinay

This paper examines whether Mexico's conditional cash transfer (CCT) program, *Oportunidades*, has an effect on poor urban households' coping decisions when faced with an idiosyncratic shock. Poor households are often uninsured and thus have limited risk coping capabilities. While evaluations have found the program to have a positive effect on outcomes such as school enrollment and health seeking behavior, they have primarily focused on rural areas and not examined whether the program helps urban households cope with risks. This paper explores the effect of Oportunidades on poor, urban households' risk-coping strategies by using the latest External Urban Household Evaluation Survey (ENCELURB). The results indicate that the program does not have a strong or consistent effect on the decisions households make when faced with a negative idiosyn-

Claudia Vinay is a Ph.D. student at the School of Public Policy at the University of Maryland, where she focuses on poverty reduction and social protection policies and programs. She can be reached at cvinay@umd.edu.

cratic shock. Rather, household characteristics seem to be more important. The paper concludes with policy recommendations and areas for future research.

I. Introduction

In the past decade, conditional cash transfer programs (CCTs) have become increasingly popular in Latin America and other developing countries as the keystone of poverty-reduction strategies. One of the most widely recognized programs of this type is the *Oportunidades* program in Mexico, which has been in operation since 1997 (originally under the name *Progresa*). Through this program, the government provides a periodic cash amount to the mother (or female head) of poor households who engage in certain pre-specified behaviors deemed socially desirable, including sending their children to school and taking them to receive regular health check-ups. Oportunidades has been heavily evaluated on the dimensions of efficiency and effectiveness and has been shown to have a positive impact on school enrollment and the health of beneficiary children, among other outcomes.[1]

However, further exploration is needed to understand the effectiveness of Oportunidades and other conditional cash transfer programs in not only helping poor households get out of poverty, but also stay out of poverty. Negative idiosyncratic shocks, for instance, often require significant financial resources and pose one of the hardest blows to a poor household's stability and fragile income. Since most families receiving cash transfers are uninsured (Lustig 2000; World Bank 2005), they have very limited ability to save and the services they receive are often very basic. These families are often not prepared to finance a funeral, rebuild a house or business after a fire, or cope with extended periods of unemployment. It can take years for these households to recover from the expenses required to face these shocks. It could also have an impact on the accumulation of human capital if children have to be taken out of school to work and contribute to the family income.

In response to shocks, households resort to different coping strategies, such as spending less, borrowing money, getting help from friends or family, or simply working more. Some of these strategies could be more desirable than others in terms of the potential impact on the future income of poor households. Could a social program or strategy also help households manage and cope with a potential shock?

Although risk management and coping are not an explicit objective of Oportunidades, the program aims to strengthen human capital in poor

households to help break the inter-generational cycle of poverty and increase the certainty of a minimum level of consumption for poor households in the short term (Levy 2006, 21). In this sense, the ability of households to cope with negative shocks and smooth consumption through difficult times without having a catastrophic effect on their financial future is relevant when considering the sustainability of the program's achievements.

This paper explores whether there is any benefit for urban Oportunidades households in terms of being better able to cope with the types of negative shocks discussed previously. To do so, the study relies on the latest Oportunidades External Urban Household Evaluation Survey (ENCELURB, Spanish acronym). This survey contains information on idiosyncratic shocks, or the shocks that affect individual households, as opposed to macroeconomic or covariant shocks in which a group of households faces the same circumstances. It also contains information on the coping strategies adopted by these households, which range from borrowing money to spending less. This paper limits its analysis to the most frequent types of shocks faced by Oportunidades families in urban areas. It focuses on urban households because the rural component of the program has been studied more thoroughly. Overall, there is extensive literature analyzing the coping behaviors of rural households. However, this has not been the case for urban households, which face different choices and, subsequently, may rely on different coping strategies (Fay and Ruggeri Laderchi 2005, 197).

The rest of this paper is structured as follows. Section II reviews the theoretical arguments regarding the impact that shocks have on poor households, different coping strategies that households use when faced with shocks, and the effectiveness and limitations of conditional cash transfer programs in responding to shocks. Section III provides a brief background and description of how the Oportunidades program operates, how household eligibility is determined, and some of the measures of success of the program. Section IV presents a description of the data and methodology of the ENCELURB. Section V discusses the proposed statistical model to analyze the effect of the program on the most frequent household coping strategies—borrowing, spending, and getting help—in response to idiosyncratic shocks, followed by a discussion of the results in Section VI. The results of this analysis indicate that the program does not have a strong or consistent effect on the decisions urban households make when faced with shocks. Rather, other characteristics, such as whether the head of the household is a woman and whether the household is active in the community, seem to have more weight on household coping deci-

sions, possibly pointing to the importance of social networks and informal arrangements.

II. Risk-coping, CCTs, and the Rationale for Government Intervention

The World Bank defines a household's vulnerability as the likelihood of experiencing loss of welfare in the future. Vulnerability is determined by the characteristics of the risks households face and their ability to manage these risks through private or public mechanisms (World Bank 2005). Vulnerability can be expressed as: a loss in the accumulation of human capital, to which children and youth are particularly vulnerable; a loss in the capacity to generate income, which affects the working age population; and an inability to generate income due to old age.

Under normal circumstances, a household can handle shocks by tapping into savings, receiving remittances, using private insurance schemes, or relying on social protection instruments such as social security or social assistance systems. However, poor households have more limited access to private insurance or financing schemes than better-off households and therefore have to rely more heavily on informal mechanisms and institutional assistance.

Every household, including poor households, can expect to face a certain degree of risk. To be prepared for unexpected shocks, an average household might purchase private insurance and strive to save "for a rainy day." As poor households generally do not have access to private insurance and formal financial markets, these households, in an attempt to "self-insure," may forgo more productive but less liquid investments in favor of more liquid assets that they could sell more quickly if needed. This generates a loss of efficiency and affects the household's potential for future income (Dercon 2003). Unexpected shocks often require the flexibility to tap into accumulated resources. The average household could draw on savings, make use of their insurance premiums, or obtain a loan through the formal financial system. Poor households, however, typically do not have access to these resources and have to rely more heavily on informal mechanisms that include some rather destructive coping strategies, such as: drastically reducing consumption, which can, in turn, affect the household's health and well-being; selling productive assets; pulling children out of school so that they can enter the labor market; or migrating (Lustig 2000; Carter et al. 2005). Fay and Ruggeri Laderchi argue that even if these coping strategies are a rational exercise in which households weigh short versus long-term objectives, this does not mean that households are able to reach

an optimal strategy (Fay and Ruggeri Laderchi 2005, 197). In fact, these short-term coping strategies could trap households in poverty.

Both government interventions, such as social welfare policies, and non-government interventions, such as private insurance or microfinance programs, could be envisaged to mitigate the risks that poor families face and help them avoid potentially damaging risk-management strategies. Government intervention may be necessary to address the private insurance and credit market failures that leave poor families unable to make use of these avenues to mitigate risk or cope with shocks. For the very poor, there is really no major risk of crowding-out private insurance and credit mechanisms since these tend to be very scarce, costly, and fragile (World Bank 2005). In addition, some authors argue that the detrimental effect of some coping strategies, such as when households disinvest in education and human capital and sell their productive assets, generate negative externalities that affect the performance of the economy in general and lead to poorly endowed communities (Lustig 2000; Dercon 2003).

Could conditional cash transfer programs provide another strategy to mitigate risk? There has been some debate regarding the efficacy of CCTs as a risk-management and risk-coping strategy for poor households. Lustig argues that programs such as Oportunidades in Mexico are actually able to serve as social safety nets by providing a consumption floor and protecting the accumulation of human capital (Lustig 2000). Research by Sadoulet and Vakis supports this idea with findings that indicate that transfers from Oportunidades compensate for shocks and protect child schooling in rural households (Sadoulet and Vakis 2004).[2] In response to Lustig, however, François Bourguignon points out that these programs may not be flexible enough to respond swiftly and reach other households; given their eligibility and implementation mechanisms, these programs may help households that are already poor but do not necessarily help households that fall into poverty because of a shock (Bourguignon 2000). Bourguignon suggests, as do de la Brière and Rawlings (2006), de Janvry et al. (2006), and Sadoulet and Vakis (2004), that CCTs may be adapted to include varying mechanisms for households that are at risk of falling into poverty if faced with a shock. In addition, another limitation of some CCTs, including Oportunidades, is that they exclude the poorest of the poor because these individuals live in communities that do not have the basic services that would allow them to fulfill the program's conditionalities.[3] As such, the program does not necessarily have consumption smoothing benefits for the poorest households.

CCTs should not be the only mechanism considered for helping the

poor face shocks. In fact, this may not be their main purpose. However, in order to be successful in helping achieve sustained poverty reduction, CCTs should tie in broader economic, political, and institutional considerations, such as the dynamism of the labor market, the risks of political capture, or the lack of effective social safety networks—all of which affect the behavior of the poor when facing risks and trying to reduce their vulnerability.

III. The Oportunidades Program in Mexico

In 1997, Mexico launched an innovative program that was originally named Progresa (Spanish acronym for Program for Education, Health, and Nutrition). This program substituted in-kind transfers and food subsidies with targeted direct cash transfers that allowed families freedom to decide how to spend them. However, the program imposed certain conditions upon households in exchange for these transfers by requiring them to send their children to school, receive regular health check-ups, and participate in the community.

Despite many strategies for combating poverty, in the mid-1990s it was estimated that nearly 24 percent of all households and 50 percent of rural households lived in extreme poverty (Levy 2006). Food subsidies were costly and unevenly distributed, favoring urban areas and often captured by non-poor households. The 1994 Tequila Crisis[4] served as a powerful reminder of the impact that an economic shock could have on poorer households. While the government tried to mitigate the immediate effects of the crisis, there was consensus among policymakers on the need for a new approach to long-term poverty reduction. With limited resources, the government implemented Progresa as a targeted approach that involved the beneficiaries directly in the process of building human capital through "co-responsibility" in fulfilling the program's conditionalities.

Data from this program was periodically and consistently collected, allowing researchers to assess the program's success in increasing school enrollment and attainment as well as better health outcomes among children. These successes encouraged the expansion of the program; by 2007, it covered 5 million households (approximately 25 million people) and had a budget of $3.5 billion (SEDESOL 2007). In 2000, the program's name was changed to Oportunidades.[5]

Description of Program Operation and Household Eligibility[6]

In the Oportunidades program, households receive bi-monthly cash transfers and scholarships that vary according to the sex and number of children in school, children's progression through school, and the number of older

adults (70 years of age or older) in the household. Transfer amounts are reviewed every six months and adjusted for inflation according to the Consumer Price Index published by the Bank of Mexico. In 2010, the maximum amount a household received was $184.56 per month, excluding an additional transfer for older adults.

Eligibility is determined geographically. First, communities with a high degree of marginalization and concentration of poverty that meet some minimum criteria of access to education and health services are identified. Then, information on households' socioeconomic status is collected to determine which households are eligible to participate in the program. Based on a statistical analysis of household socioeconomic characteristics, each household in the community receives a "poverty score" that provides a comparative measure of the level of poverty that a given household faces.

External Evaluation

Since its inception as Progresa in 1997, and through its transformation into Oportunidades in 2000, the program has been subjected to strict monitoring and evaluation by external entities. The initial phase of implementation in rural areas between 1997 and 2000 was evaluated by the Institute for Food Policy Research (IFPRI) in Washington D.C. Since 2000, the program has been evaluated by a variety of institutions in Mexico,[7] including the Mexican National Institute of Public Health (INSP), which has evaluated the urban component using data from the Urban Household Evaluation Surveys (ENCELURB) from 2002, 2003, and 2004. Initially, the urban evaluation had a quasi-experimental design, drawing on the fact that communities were gradually phased into the program. By 2004, all communities meeting the criteria had access to the program. The INSP evaluation focused on examining measures of health, school enrollment and others, but not specifically on how poor urban households respond to shocks.

In urban areas, the Oportunidades program focused on localities with a population between 50,000 and one million inhabitants. Families were identified using the 2000 National Income and Expenditure of Households Survey (ENIGH, Spanish acronym). In contrast to the rural component, in urban areas potential beneficiaries from eligible areas were given the opportunity to apply and participate in the program. For data analysis purposes, households that participated in the intervention were part of the treatment or intervention group while non-participating eligible or quasi-eligible households were part of the comparison group. This issue is addressed later in the paper through a Heckman correction for self-selection bias.

The intervention group sample size was determined to be 6,000 participating households, 2,000 eligible but not incorporated households, 4,000 almost eligible households, and 2,000 non-eligible households. The comparison group was determined using nearest-neighbor matching methods with replacement, guaranteeing the comparability between street blocks in at least one series of observable variables. Households in this group were all potentially eligible and quasi-eligible households (INSP 2005).

The 2002 ENCELURB served as the baseline, and the subsequent 2003 and 2004 ENCELURBs constituted the 1st and 2nd panels for the evaluation. This paper focuses on the 2004 ENCELURB as an exploratory tool into the relationship between program benefits and the ability of Oportunidades households to cope with unexpected shocks.

IV. Description of Data

Although this analysis relies solely on the 2004 ENCELURB and thus cannot benefit from the program's quasi-experimental design, it is still possible to gain insight into the program's possible effects on the coping strategies of poor urban households in the face of exogenous shocks. Of note, by 2004 Oportunidades families would have received cash transfers for three years and the data might reflect the accumulated benefits of the program on households' financial situations.

The 2004 ENCELURB has observations for 17,326 households and contains information on whether households experienced a shock and, if so, which strategies they used to cope with it (SEDESOL 2004). This study relies on the sample of households that experienced a shock and for which there was information regarding whether the head of the household was male or female.[8] This reduced the number of observations to 3,541 households (2,208 in the intervention group and 1,333 in the comparison group) that had experienced a shock such as the death or unemployment of a member of the household, a property-damaging fire, the loss of a business, or some other idiosyncratic shock, including accidents, illness, marital separation, and problems with the law.

Households used one of the following strategies to cope with shocks: selling some property, borrowing money, asking for help from friends and/or family, reducing spending, seeking employment, working more, and/or using their savings. Other strategies included migrating in search of employment and not doing anything, either because the households were not strongly affected or because they were unable to do anything. Remarkably, only two households reported having a child that had to

drop out of school in response to a shock, although this strategy might be masked by finding a job or working more hours.

Table 1 in the Annex presents some summary descriptive statistics of the population under observation. The households in the intervention group accounted for 62 percent of the sample. The most common shocks experienced by households were death and unemployment, which accounted for over 50 percent of households in each group in every case.[9] The most common coping strategies were, in order: reducing consumption, borrowing money, and getting help. Together, they formed 75.9 percent of all coping strategies chosen. The differences in coping strategies between the intervention and comparison group were slight and proved not to be statistically significant through simple tests of proportion. Notably, the data does not provide information about the amount that households borrowed or the amount by which they reduced consumption, so we cannot tell if there was a difference between intervention and comparison groups in that sense.

Both variables in the household characteristics category were significantly different between the intervention and comparison groups. There were slightly more female-headed households in the intervention group, but this could be associated with the fact that the program makes the cash transfer directly to women. However, since the urban component of the program was opened for voluntary sign-up, it may be that female heads of household were more interested in benefiting from the program or believed that it was a prerequisite for participation.

In the community participation category, there were several variables that were significantly different between intervention and comparison groups. In the intervention households, participation in a political party, a neighborhood association for cleaning, a healthcare association, and a religious group, among others, seemed to be more common than in the comparison groups. The statistical difference between treatment and control groups in belonging to a political party could be worrisome for the validity of the program results if the difference was a by-product of the program somehow being politically manipulated. Given that this is a cross-sectional analysis, we cannot tell if households were already participating in a political party prior to receiving the intervention, in which case they might have been favored to participate in the program. The data, as it stands, does not give us information about the political party affiliation of individual households or what is precisely meant by participating in a political party. This result could warrant further research through panel data analysis and perhaps additional fieldwork to collect more precise information about

household participation characteristics.

Participation in neighborhood and healthcare associations, among others, was statistically different between treatment and intervention households in other areas. This could be explained by the requirements of the program itself. Oportunidades requires households to participate in health-related activities and community activities through the Community Promotion Committees. These committees are charged with liaising with health and education services to help achieve the objectives of the program by promoting health-related activities, hygiene, and sanitary living conditions.

Higher participation in a religious group could be explained by the fact that households learned about the program from their friends and neighbors at religious services. As in the case of participation in a political party, it would be useful to use baseline and time series data to examine if the program has had an effect on this variable. This paper does not explore these possible endogeneities, but it could be interesting for further research.

There were also several significant differences between intervention and comparison households in financial status. Having a bank account, past savings, and current savings could be a result of increased income due to the program, and this could be explored by looking at the data from previous surveys. The "goods transfers from households" variable was significantly different between intervention and comparison households, but the difference was small in magnitude. It would merit further research to examine whether this is a pattern or if it was particular to this year.

With regard to participation in other social programs, there were two significant differences between intervention and control households. Participation in the popular insurance scheme was significantly higher for intervention households. Importantly, participation in this scheme is voluntary and has no formal linkage with Oportunidades. The greater participation of intervention households could reflect public communication efforts taking advantage of the program's infrastructure to promote the scheme. On the other hand, the higher proportion of comparison households benefiting from grocery support could be strongly linked to the fact that the cash transfer from Oportunidades intends to substitute grocery support programs. Households not covered by the program are eligible for other consumption support programs.

V. Model Construction

Considering that the strategy chosen for coping with a shock might be influenced by the availability of financial resources, this paper sets out to

explore the effect that participating in Oportunidades has on the type of strategy chosen. The most common strategies used by the households (i.e. getting help, selling property, and borrowing money) in the sample lie across a spectrum of "desirability." Interestingly, selling property, which could be considered the least desirable household coping strategy given its potential impact on future financial stability, is also the least common strategy among Oportunidades beneficiary households. On the other hand, borrowing money, which could be considered the second least desirable strategy given its potential impact on future earnings, is the second most common. Borrowing money to face a shock, whether formally or informally, could have a very detrimental effect on a household's potential to stay out of poverty. Using a household's savings to cope with a shock could also hinder future welfare.

On the other hand, households may pursue coping strategies that have fewer implications for their financial future and are, therefore, more desirable. This may include getting help, other than borrowing money, from friends and family, such as childcare support. In this scenario, households are relying on a social safety network and neither losing nor risking their assets.

Since the dependent variable is dichotomous (i.e. whether a particular strategy has been chosen or not), a probit model was generated for each of the most common coping strategies. Since households can choose more than one strategy to face a shock, multinomial logit analysis would not be adequate; an ordered logit model is similarly inappropriate as the coping strategies are not ordered in the survey. The specter of desirability has been specifically conceptualized for this paper and does not derive from the way the strategies are handled in the survey.

Initially, the model determines whether the household is in the intervention or comparison group in order to isolate the effect of the program. It then controls for household characteristics such as the sex of the head of the family and the size of the household. The model also controls for current financial status, which could affect the decision to use one strategy over another. Financial control variables include whether the household took out a loan in the past year, has a bank account, has had savings in the past, has savings currently, and any monetary and in-kind transfers to and from the household. Community participation is also controlled for, as this could indicate that the household has a strong social safety net. The variables in this group include household participation in productive or credit associations, religious groups, political parties, neighborhood associations, and other types of community groups. Finally, the model

controls for whether the household is a beneficiary of other social programs, such as popular insurance or other scholarships and in-kind institutional transfers.

In summary, in the model, the adoption of a coping strategy is a function of the household's participation in Oportunidades, household characteristics, financial status, community participation, and transfers from other social programs.

The evaluation sample has already been matched through a nearest neighbor method, which aims to eliminate bias based on observable characteristics. However, as stated above, matching can only account for selection bias due to observable characteristics and is, therefore, highly dependent on the data collected and the accuracy with which it is measured.

Since households signed up for the program voluntarily, it could be argued that there might be characteristics not measured by the survey that could have an effect on the decision to apply for the program. With this in mind, this model applied a Heckman two-step selection correction method to attempt to control for bias based on unobservables. The probability of being in the intervention group was estimated based on the sex of the head of the household, size of the household, the variables for financial status, and whether the household participated in other social programs. This equation included information in the baseline data collection that classified households as poor, almost poor, and not poor, as this should be an important predictor of participation in the program.

Table 2 in the Annex presents the marginal effects of the Heckman selection equation. The most significant variables for predicting participation in the intervention group are whether the household was headed by a woman, the size of the household, and the baseline poverty classification. Four measures of participation are also highly significant: participation in neighborhood associations for cleaning and services, health care associations, participating in a religious group, and other social programs. This suggests that people who are better connected to social networks perhaps find out about the program and are encouraged to join by their fellow members. Likewise, participation in some other social programs (e.g. receiving scholarships, popular insurance, and support for groceries) is also significant in predicting the probability of being in the intervention group. Again, this would make sense if the government is using registration cadastres for these programs to reach potential beneficiary families.

Once the probability of being in the intervention group is estimated, then the error term from this equation is used to form a new variable called the Inverse Mills Ratio (IMR) (Sales et al. 2004). This variable captures the

unobservables by virtue of being estimated based on the error term. The IMR is then included as a variable in the general probit models estimated for the most common coping strategies. The results of this exercise permit a comparison between the basic probit model and the one corrected through the Heckman method to assess whether there could be bias based on unobserved characteristics.

The Heckman method has some strong assumptions and some disadvantages. There is an assumption of normality of the error term. This makes the technique highly sensitive to the model specification and the results may not be very informative. Nevertheless, it serves as a tool to check the robustness of the results of the simple probit model.

VI. Results

Tables 3, 4 and 5 in the Annex present the main results of the probit regression and Heckman model analysis for the three most common coping strategies in the sample: spending less, borrowing money, and getting help from friends and family.

As can be observed in Table 3, being in the intervention group is positively associated with spending less but it is not significant until the variables for financial status are introduced. In model specification five, being in the intervention group is associated, at the mean, with a 4.1 percentage point increase in the likelihood of a household choosing to reduce consumption when faced with a shock. For the full model, being in the intervention group is associated, at the mean, with a 4.4 percentage point increase in the likelihood of choosing to reduce consumption. The variable ceases to be significant in the Heckman model although it is still positively associated with choosing to spend less. In the Heckman model, being in the intervention group has a smaller effect: at the mean it is associated with a 2 percentage point increase in the likelihood of a household choosing to reduce consumption, but is no longer significant. It seems, then, that the probit model is over-estimating the effect of being in the intervention group. This result is not necessarily expected. It would be reasonable to think that the monetary transfers to the household from the program could help smooth consumption when faced with idiosyncratic shocks. However, households in the intervention group seem to be adopting one of the most common strategies for poor households—reducing consumption—to sometimes dangerously low levels. This could indicate that while the transfer helps households improve their basic consumption, it is not sufficient to prepare for a shock.

Being a female-headed household is highly significant and consistently

and negatively associated with spending less. These results also hold in the Heckman specification. Female-headed households are, at the mean, between 6.4 and 7 percentage points less likely than male-headed households to reduce consumption in order to finance a shock. This might mean that women are less prone than men to adopt a strategy that reduces the consumption, and thus, potentially, the welfare of their families. The size of the household is not statistically significant in any specification. Being in a credit association is negatively associated and statistically significant in column four. This could indicate that households have mechanisms to access funds without having to reduce consumption. However, this variable ceases to be significant once the financial status and social program variables are introduced and is not significant in the Heckman specification.

Households that benefit from the popular insurance are 7.4 percentage points less likely, at the mean, to reduce consumption to face a shock, and this result is statistically significant. Intuitively this makes sense, as the insurance scheme is precisely intended to allow households to better weather unexpected medical expenses. This variable, however, ceases to be significant in the Heckman specification. Once again, it seems that the probit model is over-estimating the effect of having the popular insurance.

Receiving other institutional transfers is negatively associated with spending less and is statistically significant, even in the Heckman model. At the mean, receiving other institutional transfers is associated with a 1.8 percentage point reduced likelihood that a household will choose to spend less when faced with a shock. This could indicate that the transfers from the program are not sufficient to allow households to finance shocks. Unfortunately, it is not possible to determine what kinds of transfers are contained in this variable from the data.

If we accept the results of the Heckman model as indicative of the true effects of the different variables on the household's decision, it would seem that only being a female-headed household and receiving other institutional transfers matter when deciding to spend less.

Table 4 presents the results for the analysis of "borrowing" as a coping strategy. For this dependent variable, being in the intervention group does not have a statistically significant effect on the decision to borrow money as a coping strategy in any of the model specifications. The coefficients also behave somewhat erratically. For the first two specifications, being in the intervention household is negatively associated with borrowing money as a coping strategy. The sign is then reversed when the size of the household is introduced and remains positive throughout the rest of the probit specifications. In the Heckman model, being in the intervention

household is once again negatively associated with borrowing money as a coping strategy, and the magnitude of the coefficient is quite large, although not significant. A negative association could be desired if it means that households in the program do not need to get a loan, but since the coefficient is not significant the Heckman result is inconclusive.

The effects of being a female-headed household and the size of the household were both highly significant throughout the various specifications, including the Heckman model. Female-headed households are between 6.8 and 7.8 percentage points less likely than those headed by men to borrow money as a coping strategy. As in the previous analysis, this makes sense if we consider that women might be hesitant to borrow money and potentially affect the household's future income. However, this might also reflect women's more limited access to formal credit markets even if they often participate in informal credit schemes. The dataset does not specify whether these loans are formal or informal, so it is impossible to determine the exact reason just based on the available data.

Although highly significant, the coefficient for household size is not large. For each additional member, households become between 1.2 and 1.3 percentage points more likely to take out a loan. This could indicate that household consumption overall is larger for larger households and that households might resort to external funding when facing shocks.

We also see that being part of a health care association has a statistically significant effect on the decision to borrow money once the variables for other social programs are introduced. The direction and significance is maintained in the Heckman model. Households involved in this type of organization are between 8.6 and 10.5 percentage points less likely to borrow money than those that are not. This again could point to the fact that social networks may serve as mechanisms through which households can avoid more destructive coping strategies. The higher magnitude of the result in the Heckman model could indicate that this variable is more important than what the probit results indicate.

Being in a neighborhood association for cleaning is not significant in any of the probit specifications, but becomes significant in the Heckman model. Once again, this could indicate that community participation is more important than what the probit models indicate.

Having past savings is consistently significant in the probit specifications. Households with past savings are, at the mean, between 7.1 and 7.3 percentage points less likely to borrow money than those that do not. This could be a very reasonable result as households could use their savings before having to borrow money. In the Heckman model, however, past

savings ceases to be significant while current savings becomes significant.

Benefiting from the popular insurance scheme is negatively associated and statistically significant only in the probit model but not in the Heckman specification. In the probit model, having popular insurance is associated, at the mean, with 6.4 percentage points reduced likelihood that households will take out a loan to face a shock. As in the previous analysis for spending less, receiving other institutional transfers becomes significant in the Heckman model.

Table 5 presents the results of the analysis for the "most desirable" strategy: getting help. Being an intervention household becomes significant once the size of the household is introduced into the model. It remains negatively associated with getting help and statistically significant throughout the probit specifications. Households that are in the program are between 3.4 and 4.2 percentage points less likely to get help than those that are not in the program. This relationship might require further exploration with other variables not used in this paper. In this model, it could point to a positive effect of the program to the extent that households do not need to get help because the shock is offset, at least in part, by the extra income from the program transfers. On the other hand, households could not be getting help because they are unable to find it. The coefficient changes direction and loses significance in the Heckman model which indicates, once again, a possible over-estimation of its effects in the probit models. The direction of the result in the Heckman model would have been expected if we believe the program offers enhanced opportunities for community involvement and stronger social ties.

Female-headed households are between 6.4 and 7.6 percentage points more likely to get help, and the coefficient is statistically significant in all probit specifications. The results are similar in the Heckman model. This could confirm the idea that women are more connected to extended family and community, and therefore might be able to rely more on informal help from friends and family to deal with a shock than their male counterparts.

On the other hand, the larger a household is, the less likely it is to get help, and this finding is statistically significant across the board. A one-member increase in the household is associated with between 1.6 and 1.7 percentage points reduced likelihood of getting help. This could mean that more members also translate into greater household income and greater household potential for maximizing the transfers from the program as well as spreading costs.

Among the community participation coefficients, both being in a neighborhood association for cleaning and being in a religious group

are positively associated with getting help, and this finding is statistically significant in all probit models. Households involved in a neighborhood association for cleaning are between 10.8 and 11 percentage points more likely to get help. Those that participate in a religious group are between 5.2 and 5.5 percentage points more likely to get help. These results seem reasonable as connections through community groups could easily translate into a support network when a household faces hard times. However, both variables cease to be significant in the Heckman model.

The effect of having past savings is significant in all probit specifications and the Heckman model as well. Households that have had savings are between 7.8 and 10.6 percentage points less likely to get help, probably because they can tap into their resources before having to ask for help. The magnitude increases markedly in the Heckman model.

Receiving grocery support is positively associated with getting help and is statistically significant both in the probit and the Heckman models. This merits further research to determine why it would be important. It could mean that households that receive grocery support and not cash transfers are more constrained in their decisions of how to allocate income and thus have to ask for help to face shocks.

Two variables become statistically significant in the Heckman model. Receiving scholarships and having popular insurance seem to matter once we control for unobservables. Households receiving scholarships are 10 percentage points more likely to get help than those that do not receive this transfer. This could point to a conclusion similar to the one for receiving grocery support (i.e. less flexibility in income allocation decisions). However, it could also mean that there are some community linkages that strengthen social capital for beneficiary households. Households that have popular insurance are 7.4 percentage points more likely to get help than those that do not have this protection. As previously stated, this could be a reasonable result given that the insurance would allow households to better face a shock.

VII. Concluding Remarks and Policy Implications

This paper has explored whether being in Oportunidades has an effect on poor urban households' coping decisions when faced with a shock. Since the urban component had a different design (i.e. households signed up for the program instead of being included in it by virtue of certain characteristics), it posed an interesting methodological challenge for dealing with the potential self-selection bias. This challenge was addressed using

a Heckman two-step correction method.

In general, being in the program does not seem to be very significant and is consistently insignificant when controlling for unobservables using the Heckman procedure. On the other hand, being a female-headed household is consistently significant and the results point towards adopting more desirable risk-coping strategies. The Heckman model confirms these results.

Overall, the program does not seem to be relevant in a household's choice of risk-coping strategy. This is perhaps not surprising as the program was not designed specifically for this purpose. It has a longer-term objective of building human capital in order to allow families to break the inter-generational transmission of poverty. At the same time, when faced with a catastrophic idiosyncratic shock, families might need to cut back on nutrition, health or educational expenses, or require children to leave school to help support the household's income. This could have a very destructive effect on the accumulation of human capital and set back the very objectives that Oportunidades seeks to achieve. A large part of the logic for the design of this program was cost-effectiveness, but if sudden idiosyncratic shocks are not taken into account, the program might not be able to yield the expected returns in terms of human capital accumulation and even result in families falling more deeply into poverty. Although in some cases households might be able to join formal private insurance and credit markets, there is still much room for government intervention, particularly for households that have been traditionally denied access to formal insurance schemes and financial markets.

This analysis yields several policy implications. First, it is necessary to explore different options for making programs like Oportunidades more flexible in responding to sudden shocks. The program has already identified poor communities, which are also those that are most vulnerable to shocks, and has extensive distribution channels for bi-monthly cash payments to families. As such, the program could provide a ready-made channel to allocate greater, or additional, transfers to beneficiaries in the event of a shock. For example, during the 2008 rise in food prices, Oportunidades served to transfer a larger amount to beneficiary households. The program could include a component for beneficiary households to apply for additional benefits when faced with an idiosyncratic shock. If the program guidelines do not allow the flexibility to respond to shocks, at a minimum there should be a stronger link with programs that do offer support for idiosyncratic shocks, such as temporary work programs or popular insurance schemes. Nonetheless, households that are not in the

program cannot benefit from any of these measures. The inclusion process of new households into the program is not flexible enough to include households that become poor due to a sudden shock. This underscores the importance of thinking about complementary strategies that can protect other households that are vulnerable to falling into poverty as a result of a shock. In El Salvador, for example, the government has recently piloted a temporary income support program (PATI) in response to the effects of the global economic crisis in the country. This program offers cash transfers, beneficiary participation in community activities, and job training. It also includes poor households not currently covered by their ongoing CCT scheme, namely the urban poor (FISDL 2009).

One important limitation of the program is its decision not to cover the poorest of the poor that amount to up to 8 million people in Mexico. The poorest households are particularly vulnerable to the often long-lasting effects of short-term shocks. Although trying to fulfill the conditionalities of the program could actually be burdensome for these households given their distance to basic services, it is necessary to give minimum support to these families and encourage risk-pooling mechanisms.

The impact of the recent popular insurance scheme was of particular interest in this analysis. Although its effects are not consistent either in magnitude or significance, it will be important to monitor its performance to determine whether it can effectively protect households against shocks and whether it can be linked to Oportunidades.

Other variables that merit further research are the relationship between the program and migration and remittances as well as the different community participation schemes that consistently showed significant impacts on households' risk-coping decisions. The migration of some family members could be one way in which households could attempt to face shocks with the expectation that remittances from those who migrate might be a more regular source of income.

The present analysis is mostly an exploratory incursion into the relationship of the program to shocks and the coping strategies of poor households. However, there is significant scope for future research. This paper used data from the 2004 ENCELURB. Future research might use a panel design that also draws on the program's 2002 baseline data and 2003 follow-up survey. A panel data analysis could allow for better assessment of the effects of being in the program over time, and the coping strategies and "recovery" time of poor households that experienced shocks at various stages in the program. This analysis also did not include controls for characteristics of locality. Obtaining this information will require going outside this dataset

and pairing the locality codes to information from the National Institute of Statistics, Geography and Information (INEGI) to determine more precisely the characteristics of the communities in question.

Notes

[1] For discussion on results see: Levy (2006), Levy and Rodriguez (2005), Gertler (2004, 2006), Skoufias (2005), Skoufias and Parker (2001), Cruz, et. al. (2006), Lustig (2000), and Rawlings (2005).

[2] Research conducted for the rural component only.

[3] The program does not cover 8 million people living in areas too remote from schools and health centers (World Bank 2005).

[4] In December of 1994, the Mexican peso experienced a sudden and drastic devaluation given a lack of foreign reserves to back-up the currency. This situation prompted deep financial problems for companies holding debt in U.S. dollars and resulted in lay-offs.

[5] Oportunidades translates literally as "Opportunities" in English.

[6] From Official Operation Rules of the Oportunidades Program published in the Diario Oficial de la Federación on February 28, 2007 (SEDESOL 2008).

[7] Institutions include the Center of Higher Research and Studies in Social Anthropology (CIESAS Occidente) and the College of Mexico (Colmex), both of which are academic institutions. The second phase of evaluation has used both quantitative (conducted by INSP), qualitative (CIESAS), and gender-focused methodologies (Colmex).

[8] The data compiled for the evaluation is divided into 13 distinct datasets. For constructing the dataset for this analysis, it was necessary to merge the household-level socioeconomic dataset with the individual-level dataset to obtain the information about female heads of household, which is contained in the latter.

[9] The fact that the totals exceed 100 percent might mean that some households experienced more than one shock.

Annex

Table 1. Summary Statistics

Variable	Mean intervention group	Mean comparison group	p-value
Shocks			
Death	.57	.54	.08
Unemployment	.50	.53	.148
Coping Strategies			
Borrow money	.37	.38	.541
Get help	.34	.36	.232
Spend less	.40	.37	.138
Household characteristics			
Female headed household	.26	.20	.000
Size of household	4.6	5.4	.000
Community participation			
Productive association	.006	.006	.969
Credit association	.05	.04	.116
Political Party	.02	.01	.018
Neighborhood assoc. for services	.04	.04	.729
Neighborhood assoc. for cleaning	.05	.02	.000
Health care association	.05	.00	.000
Security organization	.01	.00	.677
Religious group	.15	.07	.000
Other Community participation	.01	.00	.008
Financial status			
Bank account	.12	.02	.000
Past savings	.10	.04	.000
Current savings	.08	.03	.000
Monetary transfers from household	.05	.04	.138

Table 1. Summary Statistics Continued

Variable	Mean intervention group	Mean comparison group	p-value
Goods transfers from household	.09	.07	.016
Monetary transfers to household	.15	.11	.000
Goods transfers to household	.16	.16	.952
Other social programs			
Scholarship	.03	.04	.145
Popular insurance	.08	.04	.000
Grocery support	.04	.08	.000
Housing support	.002	.003	.675
Other institutional transfers	.01	.01	.272

Table 2. Heckman Selection Equation (probit, marginal effects)

Independent Variables	Intervention Group
Female headed household	0.059**
	(0.021)
Size of household	-0.014**
	(0.004)
Baseline poverty classification	0.236**
	(0.013)
Productive association	0.036
	(0.104)
Credit association	-0.009
	(0.049)
Political party	0.062
	(0.075)
Neighborhood assoc. for services	-0.151**
	(0.055)
Neighborhood assoc. for cleaning	0.188**
	(0.041)
Health care assoc.	0.358**
	(0.019)

Security org.	-0.207
	(0.112)
Religious group	0.164**
	(0.025)
Other community participation	0.238**
	(0.090)
Loan in past 12 months	-0.001
	(0.017)
Bank account	0.325**
	(0.051)
Past savings	0.012
	(0.046)
Current savings	0.099*
	(0.048)
Monetary transfers from household	-0.031
	(0.034)
Goods transfers from household	0.003
	(0.034)
Monetary transfers to household	0.029
	(0.028)
Goods transfers to household	-0.041
	(0.027)
Scholarships	-0.104*
	(0.049)
Popular insurance	0.144**
	(0.033)
Grocery support	-0.134**
	(0.040)
Housing support	-0.138
	(0.150)
Other institutional transfers	-0.135
	(0.100)
Constant	3293**
	(0.090)
Observations	3293

Robust standard errors in parentheses

** significant at 5%; ** significant at 1%*

Table 3. Dependent variable "spending less" as coping strategy (probit, marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Heckman
Intervention group	0.025	0.030	0.029	0.030	0.041*	0.041*	0.044*	0.020
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.173)
Female headed household		-0.069**	-0.069**	-0.070**	-0.070**	-0.070**	-0.068**	-0.064**
		(0.019)	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.021)
Credit assoc.				-0.081*	-0.049	-0.049	-0.043	-0.031
				(0.040)	(0.042)	(0.042)	(0.042)	(0.045)
Popular Insurance							-0.074*	-0.059
							(0.033)	(0.037)
Other institutional transfers							-0.181**	-0.181*
							(0.069)	(0.072)
Inverse Mills Ratio								0.021
								(0.107)
	3543	3541	3541	3541	3541	3541	3541	3293

Robust standard errors in parentheses

** significant at 5%; ** significant at 1%*

Table 4. Dependent variable "borrowing" as coping strategy (probit, marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Heckman
Intervention group	-0.010	-0.006	0.001	0.005	0.011	0.011	0.012	-0.207
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.171)
Female headed household		-0.078**	-0.070**	-0.069**	-0.070**	-0.070**	-0.068**	-0.074**
		(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.020)
Size of household			0.012**	0.013**	0.013**	0.013**	0.013**	0.012**
			(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Neighborhood assoc. for services				-0.024	-0.027	-0.027	-0.027	-0.088*
				(0.044)	(0.043)	(0.043)	(0.044)	(0.043)
Health care assoc.				-0.072	-0.079	-0.079	-0.086*	-0.105*
				(0.042)	(0.043)	(0.043)	(0.043)	(0.047)
Past savings					-0.071*	-0.071*	-0.073*	-0.050
					(0.036)	(0.036)	(0.036)	(0.038)
Popular Insurance							-0.064*	-0.061
							(0.033)	(0.037)
Other institutional transfers							-0.073	-0.177**
							(0.076)	(0.067)
Inverse Mills Ratio								0.133
								(0.106)
Observations	3543	3541	3541	3541	3541	3541	3541	3293

Robust standard errors in parentheses

** significant at 5%; ** significant at 1%*

Table 5. Dependent variable "getting help" as coping strategy (probit, marginal effects)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Heckman
Intervention group	-0.020	-0.025	-0.034*	-0.042*	-0.041*	-0.041*	-0.036*	0.099
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.018)	(0.162)
Female headed household		0.076**	0.064**	0.066**	0.065**	0.065**	0.065**	0.066**
		(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.020)	(0.021)
Size of household			-0.017**	-0.016**	-0.017**	-0.017**	-0.017**	-0.017**
			(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Neighborhood assoc. for cleaning				0.108*	0.109*	0.109*	0.110*	0.042
				(0.048)	(0.048)	(0.048)	(0.049)	(0.052)
Religious group				0.051*	0.052*	0.052*	0.055*	0.039
				(0.026)	(0.026)	(0.026)	(0.026)	(0.028)
Past savings					-0.078*	-0.078*	-0.078*	-0.106**
					(0.033)	(0.033)	(0.033)	(0.034)
Scholarships							0.086	0.101*
							(0.047)	(0.049)
Popular insurance							-0.040	-0.074*
							(0.033)	(0.036)
Grocery support							0.080*	0.082*
							(0.037)	(0.039)
Inverse Mills Ratio								-0.081
								(0.103)
Observations	3543	3541	3541	3541	3541	3541	3541	3293

*Robust standard errors in parentheses * significant at 5%; ** significant at 1%*

References

Bourguignon, François. 2000. Comments in response to "Crises and the Poor: Socially Responsible Macroeconomics" by Nora Lustig, Economia 1(1): 1-19. In Economia 1(1): 23-26.

Carter, Michael, Peter D. Little, Tewodaj Mogues, and Workneh Negatu. 2005. The Long-Term Impacts of Short-Term Shocks: Poverty Traps and Environmental Disasters in Ethiopia and Honduras. Basis Brief No. 28. Collaborative Research Support Program. Madison: University of Wisconsin at Madison.

Cruz, Carlos, Rodolfo de la Torre, and César Velázquez comp. 2006. Evaluación externa de impacto del Programa Oportunidades 2001-2006: Informe compilatorio. Cuernavaca, Mexico: Instituto Nacional de Salud Pública.

de Janvry, Alain, Elisabeth Sadoulet, Pantelis Solomon and Renos Vakis. 2006. Uninsured Risk and Asset Protection: Can Conditional Cash Transfer Programs Serve as Safety Nets? SP Discussion Paper No. 0604. Washington D.C.: The World Bank.

de la Brière, Benedicte and Laura Rawlings. 2006. Examining Conditional Cash Transfer Programs: A Role for Increased Social Inclusion? SP Discussion Paper No. 0603. Social Protection Network. Washington, D.C.: The World Bank.

Dercon, Stefan. 2003. Poverty Traps and Development: The Equity-Efficiency Trade-Off Revisited. Oxford University, mimeo.

Fay, Marianne. and Caterina Ruggeri Laderchi. 2005 Relying on Oneself: Assets of the Poor. In Fay M. ed. The Urban Poor in Latin America. Washington, D.C.: The World Bank.

FISDL. 2009. Comunidades Solidarias Urbanas Lanza Intervención Piloto - Apoyo al ingreso. In http://www.fisdl.gob.sv/novedades/ciudadano/1928-comunidades-solidarias-urbanas-lanza-intervencion-piloto-en-ahuachapan.html?start=1 (accessed January 15, 2010).

Gertler Paul. 2006. Investing Cash Transfers to Raise Long-Term Living Standards. World Bank Policy Research Working Paper 3994. Impact Evaluation Series No. 6. Washington, D.C.: The World Bank.

—. 2004. Do Conditional Cash Transfers Improve Child Health? Evidence from PROGRESA's Control Randomized Experiment. The American Economic Review 94(2): 336-341.

Instituto Nacional de Salud Pública and Coordinación Nacional del Programa de Desarrollo Humano Oportunidades (INSP). 2005. General Urban Methodology Note. Mexico City: Instituto Nacional de Salud Pública.

Levy, Santiago. 2006. Progress Against Poverty: Sustaining Mexico's Progresa-Oportunidades Program. Washington, DC: Brookings Institution Press.

Levy, Santiago and Evelyn Rodriguez. 2005. Sin Herencia de Pobreza: El Programa Progresa-Oportunidades de Mexico. Mexico City: Inter-American Development Bank-Planeta.

Lustig, Nora. 2000. Crises and the Poor: Socially Responsible Macroeconomics. Economia 1(1): 1-19.

Rawlings, Laura. 2005. A New Approach to Social Assistance: Latin America's Experience with Conditional Cash Transfer Programmes. International Social Security Review 58: 2-3. Oxford: International Social Security Association, Blackswell Publishing.

Sadoulet, Elisabeth and Renos Vakis. 2004. Can Conditional Cash Transfer Programs Improve Social Risk Management? SP Discussion Paper No. 0420. Washington, D.C.: The World Bank.

Sales, Anne E., Mary E. Plomondon, David J, Magid, John A. Spertus and John S. Rumsfeld. 2004. Assessing response bias from missing quality of life data: The Heckman method. Health Qual Life Outcomes 2(49). http://www.hqlo.com/content/2/1/49 (accessed January 15, 2010).

SEDESOL. 2008. Reglas de Operación del Programa de Desarrollo Humano Oportunidades para el ejercicio fiscal 2007. Mexico City: Diario Oficial de la Federación.

—. 2007. Oportunidades: Un programa de resultados Mexico City: SEDESOL

—. 2004. Encuesta de evaluación de los hogares urbanos (ENCELURB) 2004, México. http://evaluacion.oportunidades.gob.mx:8010/es/index.php (accesed January 15, 2010).

Skoufias, Emmanuel. 2005. Progresa and Its Impact on the Welfare of Rural Households in Mexico. Research Report 139. Washington, D.C.: International Food Policy Research Institute.

Skoufias, Emmanuel and Susan Parker. 2001. Conditional Cash Transfers and Their Impact on Child Work and Schooling: Evidence from PROGRESA Program in Mexico. Economía Fall 2001.

World Bank. 2005. An Overview of Social Protection. Mexico: Income Generation and Social Protection for the Poor, vol. 3. Washington, D.C.: The World Bank.