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Conditional public transfers and living arrangements in rural Mexico

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ABSTRACT

This paper sheds light on the impact that conditional public cash transfers exert on living arrangement decisions by analyzing the effect of PROGRESA on the composition of beneficiary households. We use data collected for its evaluation and compare eligible households in communities receiving the Program to eligible households in communities not incorporated. Results based on double differences using propensity score matching compare the change in demographic composition, over a five year period, before and after the Program's implementation.

Results show that households that have benefited from the public aid are more prone to shelter new members of the extended family, who resided elsewhere prior to the intervention. Absent sons and daughters –alone or with their couples and young children-- are more prone to return home, while parents and grandparents of the household head, tend to adhere as well. We also find a partition effect of beneficiary households in which conditional transfers provide greater independence to young adults, sons and daughters of the household head, who detach from their original household and constitute their own families, even outside their community boundaries.

1. INTRODUCTION

Living arrangements are an essential component of an individual's well-being. Whom we choose to live with and how we relate to members of the extended family depicts how we accommodate ourselves with respect to the day-to-day decisions about consumption, home production and labor choices, (Benjamin, 1992). Moreover, research in developing countries has found a close bond between arrangements in daily living and long-standing strategies of risk diversification and regional mobility, (Rosenzweig 1988; Rosenzweig and Stark 1989); and household partition (Foster 1993); and fertility decisions (Fricke and Teachman, 1993); and power within the household (Thomas, 1990), among others.

While there is recognition of an important correlation between income and living arrangements in this literature —see for example, Butcher, 1993; Grimard, 2000-- only a few studies have analyzed the causal effect of an increase in income on changes in the demographic composition of the household (For an example see Frankenberg, Smith and Thomas, 2003). There is also little evidence on how income-related social interventions affect living arrangements in developing countries. Our knowledge mainly comes from studies that have shown pensions exert an effect on cohabitation decisions, among the elderly (Edmonds, Mammen and Miller, 2005; Hamoudi and Thomas, 2005).[1] Therefore, legitimate concerns have been raised regarding the extent to which this evidence can be generalized to other income-related interventions with program recipients of different demographic characteristics.[2]

This concern is addressed directly in this paper which analyzes the medium term impact of the PROGRESA[3] Program over the demographic dynamics of beneficiary households in rural Mexico. PROGRESA grants significant monetary transfers to eligible poor households conditional on keeping their children in school, and on periodical attendance to local health facilities. The monetary subsidy in rural communities added up to an average of 22 percent of total income of beneficiary households.

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[1] A great deal of the existing literature on developing countries analyzes the impact of public assistance, measured as investment in infrastructure, and its relation with specific demographic indicators, such as fertility. See Thomas and Maluccio (1996); Gertler and Molyneaux (1994); and Cochrane (1983).

[2] As opposed to the literature in developing countries, a significant number of studies in the United States have analyzed the relation of pensions, AFDC benefits, and TANF wavers on living arrangements. See, for example, Costas (1997, 1999); Englehardt, Gruber and Perry (2002); McGarry and Shoeni (2000); Hu (2001); Bitler, Gelbach and Hoynes (2002); and Moffitt (1998, 2003) for a review on the relation of AFDC and on TANF wavers on family structure.

[3] The Program is currently known as OPORTUNIDADES.

Results using double-difference matching analysis based on data of program-eligible beneficiary and program-eligible non beneficiary households show that conditional cash transfers' interventions of the type of PROGRESA affect family arrangements decisions, not only among beneficiary household members but also among their extended family. The analysis gains special importance in today's international moment, where the World Bank and the Inter-American Development Bank widely recommend PROGRESA as a policy example, and where public interventions based on conditional cash transfers are currently being implemented by many developing countries as a way to fight poverty.

We use information from households before (1997) and almost six years after (2003) the implementation of the program derived from an quasi-experiment in which eligible households in treatment communities are compared to eligible households in communities not incorporated into the Program as of 2003. The data on treatment and comparison households allow us to reconstruct a longitudinal base with information of a) individuals who remained in the same household between1997 and 2003, b) household members who left during that period, c) new individuals who joined original households and d) members of the household who migrated outside their community of origin between 1997 and 2003. Using a non-parametric method of propensity score matching in double differences, we compare the change in demographic composition of the household before and after the Program's implementation.

The analysis suggests there is a differential change in household structure between treatments and comparisons over the period of analysis that points towards a moderate effect of the conditional transfer. The effect is shown to be heterogeneous across household members with different ages and gender profiles and with different relationship to the household head.

Households which have been exposed to the program for five years or more show a greater ability to attract new members who are closely related to the household head. Absent sons between 22 and 30 years old and absent daughters who were between 15 and 40 years old in 1997 are more prone to return and become household members again. Some household head children are more likely to return with their own family -- spouse and children, especially daughters in the age to start primary and thus eligible to get the public aid. We also find evidence that beneficiary households are more likely to incorporate new members that belong to the extended family, especially parents and grandparents of the household head who resided elsewhere prior to the intervention.

Likewise, we find that beneficiary households are more likely to experience a partition effect relative to those who have not participated in the Program for a five year period. Sons and daughters of the household head between 22 and 40 years old are more likely to detach from their home if they belong to a beneficiary household. The evidence suggests that some of them leave the household together with their spouse or partner and young children.

We conclude our analysis by using complementary data on individual migration to better understand the effect of the conditional transfer on household member's decisions to leave their home. Results based on double-differences propensity score matching with household fixed effects on the individual's probability to migrate show that the conditional transfer is seen--by men and women between 22 and 30 years old in beneficiary households--as the opportunity to reside outside the community in order to get married (especially women), and less so for the purpose of searching for a better job. The evidence suggests that some of these men and women who left the community may have done it with their young children with the expectation they would continue their studies. The analysis on individual migration decisions corroborates the hypothesis of an effect on household partition. Receiving conditional transfers for over five years apparently provides to the household enough resources to allow independence to household members, mainly women, who are old enough to get married and start their own families, even if it means crossing community boundaries.

The structure of the paper is as follows: Section II provides an overview of the design and operational rules of PROGRESA. Section III provides an analytical framework and discusses some mechanisms through which the conditional transfer may alter family structure of beneficiary households. Segment IV describes the dataset used for this study and the steps followed to build the longitudinal data from which the present analysis is derived. Part V summarizes the empirical strategy and discusses the results. The last section concludes.

2. PROGRAM DESCRIPTION

PROGRESA is the most important poverty-combat Program in Mexico. In 2004 it represented 37.5 percent of the entire Mexican Federal Government budget assigned to poverty alleviation. The public intervention began in 1997 in rural communities, but it was after a while expanded to urban areas. Nowadays it has 2.5 million beneficiary families in rural communities and a total of 5 million all over the country. The Program has drawn

international attention, especially in Latin America and the Caribbean where several countries have followed the design of PROGRESA to fight poverty.

The design of PROGRESA brought together three components –health, nutrition and education- into one single intervention, under the belief that interactions between the components would raise the Program's efficiency to combat poverty. Through the educational component, PROGRESA grants scholarships for individuals below 22 years old, who are enrolled between the third grade of primary school and the third grade of high school. The amount of the transfer that the household receives increases along with the grade in which each household member is enrolled, and it is slightly higher for girls (women). The total monthly amount of the transfer for boys varies from $220 pesos[4] ($6^{th}$ grade of primary school) to $615 pesos ($3^{rd}$ grade of high school); for girls the amount varies from $220 pesos ($6^{th}$ grade of primary school) to $700 pesos ($3^{rd}$ grade of high school).

The second component, health, provides basic health-care services to beneficiary household members, with a special emphasis on preventive care. Such services are provided by local public medical clinics.

The third component, nutrition, includes a monthly lump-sum monetary transfer, equivalent to $165 pesos so that beneficiary households can improve the quality of their diet by acquiring better food. In addition, the Program gives a nutritional supplement to women in reproductive ages who fall into the following categories: i) women who are pregnant or lactating, ii) women with children between 4 months and 2 years of age, and, iii) women with children between 2 and 4 years who suffer from undernourishment.

Governmental aid is conditional on beneficiary households fulfilling certain obligations. The schooling grants require children to attend school. If a child misses school more than three days in one month without proper justification, then the household will not receive the scholarship corresponding to that particular month. In the same way, household members are expected to attend clinics and health units periodically in order to receive the monetary support related to the nutrition component. Mothers have to attend to a series of health-care educational sessions. Children's schooling attendance and mother's health talks' attendance, is registered and verified through the records.

The monetary transfers given to the beneficiary households in rural communities correspond to an average of 22 percent of the household's total income. Nowadays, the amount varies from $165 pesos (households without children) to $1710 pesos (households

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[4] One peso roughly corresponds to 0.10 US dollars according to exchange in the last years.

with children enrolled in secondary education). Monetary transfers are delivered directly to a female member of the household, usually the mother, with the objective of increasing the mother's power in the allocation of household's resources (Rubalcava, Teruel and Thomas, 2004).

PROGRESA's targeting mechanism follows eligibility criteria based on pre-program household demographic and socioeconomic characteristics, (Skoufias, Davis and Behrman, 1999).[5]

3. CONCEPTUAL FRAMEWORK

The estimation of the effect of conditional public transfers over the family structure is embedded within the literature that studies the impact of income shocks over cohabitation decisions and the living arrangements of household members including the extended family; and specifically, within the literature that studies the influence of cash-benefit social programs on family composition. There are multiple mechanisms through which PROGRESA--conditional transfers-- may influence family living arrangements. We next describe some of them:

The neoclassical agricultural household model assumes that households optimize consumption independently of home production as a consequence of family and hired labor being perfect substitutes. Nevertheless, empirical research has demonstrated that the separation hypothesis does not hold, suggesting that home production is correlated to household living arrangements in the presence of imperfect markets, (Benjamin, 1992). PROGRESA beneficiary households live in poor and isolated rural communities phasing most likely liquidity constraints and imperfect labor and market prices. Thus, from the production perspective, the conditional transfer may have an impact on household structure, by allowing beneficiary members to purchase (or borrow) market substitutes for consumption goods and production inputs otherwise provided by the household members. Under this scenario, for example, as a result of the Program, prime age household members, who are no longer required in home production activities may choose to leave the household in search for better job opportunities outside their community. Alternatively,

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[5] In rural areas, the Program selects its beneficiaries through a three-staged targeting process. In the first stage, PROGRESA uses geographic information to decide on those regions and communities with high poverty rates. Within these regions, the Program selects the communities with the highest poverty levels – measured through the community's socioeconomic characteristics- but with access to health and educational services. In a second stage, PROGRESA runs a socioeconomic census in the selected communities and, with this information, PROGRESA discriminates beneficiary from non-beneficiary households based on socioeconomic and demographic variables. In the third and final stage, PROGRESA makes public the list of beneficiary households within each community.

those, with a smaller reservation (market) wage may return home as a consequence of others leaving.

Secondly, living arrangements, cohabitation and regional mobility have also been associated to mechanisms of risk diversification among family members. Butcher (1993) associates changes in child fostering with household economic status and strategies of household consumption smoothing in Cote d'Ivoire. Rosenzweig (1988) documents how income volatility in low-income agricultural environments can partially explain size and composition of households in terms of risk mitigation. Furthermore, Rosenzweig and Stark (1989) hypothesize that marriage of daughters to locally distant yet kinship-related households in Rural India is correlated to intra-family contractual arrangements that aim to facilitate consumption smoothing against unexpected income shocks. The literature on contracts, however, states that enforcement of contractual agreements depends, among other things, on how agents perceive the variance and persistence of aggregate and idiosyncratic shocks (Thomas and Worrall (1988); Kocherlakota (1996); Ligon et al., (2002)). For example, Attanasio and Rios-Rull (2000) conjecture a crowding-out effect of PROGRESA on the size of household monetary transfers, by the Government implicitly providing a safety net to beneficiaries against unanticipated shocks. If living arrangements are viewed as a risk diversification mechanism, differences in household composition associated to PROGRESA could be interpreted as a redefinition of pre-program family contractual arrangements.

From the consumption perspective, beneficiary individuals may prefer to share the bread and wine with members that have common tastes, that are closer or more intimate or with those for whom cohabitation is the vehicle through which care and aid is provided to each other. Moreover, if household behavior is at odds with the unitary model (Thomas, 1990), and family decisions depend on the extra resources that PROGRESA allocates in the hands of beneficiary women, then changes in household composition associated to a social intervention can be indicative of a shift in power within beneficiary households. For example, Rubalcava, Teruel and Thomas (2004) use information of PROGRESA administrative records on actual payments and conclude that PROGRESA benefits increase the power of women to allocate resources; that preferences of women differ from those of men; and that women are more inclined to invest in the future. In this context changes changes in household structure can be indicative to revealing preferences over living arrangements.

These broad mechanisms that serve as an analytical framework for our study are not intended to be exhaustive and neither are the specific pathways which we highlight as ways by which a transfer program can affect the re-composition of living arrangements. Rather, we want to provide direction that can help explain why cohabitation outcomes may vary as a consequence of the implementation of the transfer. Along these lines, in addition to the important income effect that Progresa exerts, the conditioning aspect of the programs's operational rules (keeping children in school and making household members periodically attend health local facilities) may have additional effects on living arrangements. For example, children and elderly people of the extended family who did not co-reside before the Program was implemented, may become part of the household to benefit from the transfer.

The complex interaction of income and Program's rules, by means of conditioning such transfers, may generate changes in household structure with important welfare distributive implications that transcend the traditional definition of the household and our current knowledge of how income-related social programs influence family living arrangements in beneficiary families. We next turn to the discussion of the data and the empirical strategy which is based on the household[6] as the study unit.[7]

4. DATA

An important dimension of the Program's design for rural areas --one especially relevant for this study-- is the fact that the Government decided to conduct a comprehensive evaluation of the impact of the Program. In 1997, previous to the Program's implementation, 506 communities distributed in seven different states, were selected to be part of the rural evaluation sample. Approximately 60 percent of all eligible communities were chosen to be beneficiaries of the Program (treatment group), while the complement (control group) did not received the Program until the year 2000. In 1997, within the context of the evaluation, an economic census was conducted to all treatment and control households. This data can serve as a baseline of the evaluation sample. It is composed of 24,007 households. In order to build the longitudinal database, we match this census with a series of household survey rounds conducted every six months to the

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[6]We adopt the definition of household as the group of people sharing the same roof and food, independently of their genetic relationship.

[7]Ideally, the decisional unit should be the extended family, given that living arrangements are the result of the interactions between co-resident and non co-resident family members. Nevertheless, the evaluation database only contains about extended family once they are co-residents of the household.

same population, starting in March 1998 and continuing for three consecutive years up to year 2000. In 2003 a seventh round was conducted.

By 2003, in the seventh round, another 6,768 households were included to the original evaluation sample. These additional households were distributed among 151 rural communities with similar observed poverty levels as the original communities, but that had not been included in PROGRESA when the experiment was originally planned. The objective to include this new sample of households was to have a new group of comparison that allowed the analysis of the medium-term impact of the Program by using non-experimental methods.

The communities of new-comparison were chosen using a matching process based on socioeconomic and demographic information at the community level. The matching process compared the original 506 communities with a set of 14,000 potential matches of communities that had not been incorporated to the Program by 2003 [See Todd, (2004) for a more detailed explanation].

The 2003 evaluation round includes detailed demographic and socioeconomic information of eligible and non eligible households in the treatment and in the new-comparison groups. Additionally it includes a retrospective module applied to households in the comparison group which collects information about their household demographic structure in 1997.

For households in the comparison group, we use the demographic information gathered in the 2003 evaluation round about their demographic structure at the time of the interview and back in 1997 using the retrospective module, to build a longitudinal data set with two points in time (1997 and 2003). For treatments we build the corresponding database using information about demographic status of the household collected at the time of the survey (2003) and using demographic information from 1997 collected during the 1997 census.

We analyze the observed change in the demographic composition of treatment and comparison households between 1997 and 2003 (before and after the intervention) to measure the medium-term effect of PROGRESA on living arrangements' dynamics of beneficiary households.

Table 1 summarizes the distribution of treatment and comparison households in the 2003 evaluation survey for the period of study. Program-eligible households in treatment communities that have not stopped receiving the benefit since 1998 represent 35 percent of the sample. Eligible households that belong to the comparison group, correspond to 32

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percent of the total. We next explain the steps followed to construct the database for this analysis.

In reconstructing the changes in the demographic composition of treatment households between 1997 and 2003, it was necessary to be extremely careful in identifying the status of each household member throughout the evaluation panel. This meant figuring out the individual's permanence in the household, the moment of exiting the household and the time of incorporation of a new member. Continuous rotation of members in and out the households demanded we use all available characteristics about each member, including administrative records to identify the status of each individual in every point in time. Individual identifiers across waves were not unique, so connection across rounds of the data required not only using matching by name, age and gender, but also using additional variables such as education and individual's status of residence along the survey. The process allowed us to identify absent individuals in treatment households at baseline (1997) that later became members, in 2003.

In reconstructing changes in the demographic composition of comparison households, we merged current and retrospective demographic information provided in the 2003 round, at the individual level to assemble a panel of individuals who were members of the household both in 1997 and in 2003, in 2003 only or only in 1997. Once this panel was constructed we proceeded to cross-validate each household member's information about his/her name, age, gender and relationship to the household head for the two points in time. The individual's residence status in the household in 1997 and in 2003 was additionally verified with the information on the retrospective migration module collected also in the 2003 survey and administered to both treatment and the comparison groups.

As we will explain in the next section, the analysis of the impact of PROGRESA on living arrangements focuses its attention on these two demographic panels. However, the data in the migration module contained in the 2003 wave provide with important information about the motive and the destination of household members in treatment and in comparison groups who chose to migrate to another community during the study period. We use this information at the end of the analysis to improve our understanding of how conditional transfers may affect the dynamics of members exiting the household.

5. METHODOLOGY AND RESULTS

METHODOLOGY

We use propensity score matching analysis to asses the impact of the transfers' program on the demographic structure of beneficiary households. As a first stage we estimate the conditional marginal propensity of being a beneficiary household, as a function of pre-program household characteristics.[8] For treatment communities of the evaluation sample, we restrict the analysis to those households classified as eligible under the Program's targeting rules. These households (over 99 percent) are the only ones that have received the benefits of PROGRESA for a period longer than 5 years, and are the relevant group to estimate the medium-term effects of the Program over the demographic dynamics of the beneficiaries. For household that have not received the subsidy over a five year period, we restrict the analysis to those classified as eligible in the evaluation sample according to the Program's operational criteria, and who live in the communities of comparison. [See table 1].

Table 2 presents the results of the probit model on the conditional probability of being a treatment household as a function of the demographic characteristics of the head of the household and of his/her spouse in 1997; the household composition in 1997; the dwelling characteristics and availability of public services in 1997; and the wealth level of the household before the Program's implementation, as measured by the possession of several different assets. The model has a predictive power with a pseudo R-square of 0.63.

The probit model generates a propensity-score at the household level of being eligible for treatment or comparison groups, conditional on a set of pre-program household and community characteristics. The propensity score is then used to carry out the matching analysis.

Table 3 displays differences in household composition between treatments and comparison households of similar propensity score, in 1997, before the program was implemented. First matching differences are displayed as the proportion of the number of members of a certain demographic category, living in the household in 1997, with respect to total household size. Demographic categories vary by age and relationship to the head.

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[8] The information to estimate the propensity score for households in treatment communities comes from the baseline (1997) and first panel of the evaluation survey (1998). The information of households in new-comparison communities comes from the socioeconomic and demographic retrospective data to 1997 collected by the 2003 evaluation wave at the time of the interview.

The evidence in table 3 suggests that, prior to the implementation of the Program, there was no significant variation in the observed composition between both groups of households. Except for non-relative members whose presence made treatments household size 0.20 percent larger than that of the comparisons, the vast majority of the angles through which household structure is compared across groups are not significantly different from zero. This suggests that the quality of the retrospective data corresponding to the new comparisons is up to the standard, which makes us more confident in relying on retrospective demographic information of this group to analyze the effect of the Program on living arrangements.[9]

Nonetheless, since comparisons were not randomly selected, there is a legitimate concern that non-observable heterogeneity between groups, does not allow to identify the impact of the Program by only first-differencing matching between treatments and comparisons *after five years of the intervention*. We therefore use double-difference propensity score matching analysis to asses the effect of the conditional transfer on the change in the demographic composition of beneficiary households before the intervention (1997) and more than five years later (2003).[10] Double-difference matching allows us to control for time-invariant unobservable heterogeneity between groups that was present before the Program's implementation and that is related to demographic dynamics of treatment and comparison households.[11] This non-observable heterogeneity may be characterized by differences in local conditions of the labor market; the presence of migrant networks at a community level; the diversity in tolerance and tastes of household members regarding cohabitation; different initial demographic composition of the household; and more amply, by pre-program differences in endowments of the extended

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[9]In using retrospective information for the new-comparisons (and not for treatments) to estimate the effect of the Program, concern exists that differences in household composition between groups may be explained by differential measurement error because of recall bias. Also, differences between groups may be driven by the presence of sample selection if households who report retrospectively their demographics are different from those who once lived in 1997. The fact that pre-program household composition presents no significant differences between new-comparisons and treatments suggests these concerns are less likely to contaminate our results.

[10]The analysis of the effect of PROGRESA on the household composition, as explained by fertility and mortality outcome, is left for further investigation. We have purged the changes in household structure from mortality or birth events.

[11] With regard to how matching performs relative to alternative estimators, this has been a matter of some recent debate, mainly based on programs in the United States. Todd and Smith (forthcoming) use evidence from the NSW (National Supported Work Demonstration) to analyze the performance of different non-experimental estimators and conclude that difference in difference matching is likely the best, in terms of obtaining impacts closest to those derived from an experimental evaluation, due to "eliminating potential sources of temporally-invariant bias, such as geographic mismatch."

family and closeness of its members between treatments and households of the comparison group.[12]

The estimation of the effect of the public transfer on the dynamics of living arrangements is the result of the matching analysis on the differences in demographic changes from 1997 to 2003 between treatment and comparison households with the closest propensity score. We use the non-parametric kernel of *nearest neighborhood* as our matching process. [See Heckman; Ichimura; Todd (1998)].

The empirical strategy relies on the following identities to separately measure the effect of the subsidy on household demographic changes by a) decisions of members at (1997) baseline who left the household by 2003; and b), by decisions of sheltering new members in 2003, who were not present in 1997:

The change in pre-program household size as a result of members leaving the dwelling by 2003

$$\Delta_{97}^{9703} \equiv 100\text{x}(N_{ji}^{97,2003} - N_{ij}^{97})/N_i^{1997} \qquad [1],$$

where $N_{ji}^{97,\ 2003}$ is the number of members of the household *i*, with sex, age, or kinship definition *j*, who were present in the household *both in 1997 as well as in 2003*; [13] N_{ji}^{97} is the number of members of the household *i,* in the demographic category *j* in 1997; and N_i^{1997} represents the total number of members of household *i* –independent from *j*-- before the Program's implementation.

A negative value of -0.03 in [1] represents a contraction of 3 percent of what the household size was in 1997, as a consequence of household members with demographic characteristics *j* deciding to leave the household six years after the introduction of PROGRESA. By definition, Δ_{97}^{9703} cannot take positive values.

The change in pre-program household size as a result of newcomers by 2003

$$\Delta_{9703}^{03} \equiv 100\text{x}(N_{ji}^{2003} - N_{ij}^{9703})/N_i^{1997} \qquad [2],$$

where N_{ji}^{2003} is the number of members of household *i*, with demographic characteristics *j*, present in 2003; N_{ji}^{9703} is the number of members of household *i* with characteristics *j*

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[12] See Heckman, Ichimura and Todd (1998) a; and (1998) b, on the behavior of double matching propensity score analysis in the presence of temporally invariant omitted variables.

[13] Age ranges were determined according to the joint distribution of the age of all members in treatments and new-comparisons; and according to the structure imposed by the formal education system corresponding to primary, secondary, mid-high and high-school levels: namely 0-6 years, 7-12, 13-15, 16-21, 22-30, 31-40, 41-70 and older than 70.

present in the household *both in 1997 as well as in 2003.* A positive value of 0.05 in [2] corresponds to a 5 percent increase of what the size of the household was in 1997 as a result of the adherence of new household members of the demographic cohort j, six years after the Program's implementation. By definition, Δ_{9703}^{03} cannot take negative values.

The double-difference matching estimators analyze the effect of the subsidy over the demographic dynamics of beneficiary households, by computing the difference in [1] and in [2] between treatment and new comparison groups, respectively.

In computing the identity [1] we exclude those members that as a result of death were not present in the household by 2003.

RESULTS

Cohabitation decisions by gender and age of household members

Table 4 displays the effect the conditional transfer on the demographic dynamics of beneficiary households, focusing on gender and age characteristics of its members. Panel A analyzes the Program's effect on the dynamics of living arrangements as result of the departure decisions of individuals who were household members in 1997, but by 2003 had left the household. The effect based on double-difference matching analysis is shown as a percentage deviation of 1997 household size. Panel B displays the subsidy's effect over the household living arrangement dynamics as a result of the adherence of new household members since 1997. Results are also shown as a percentage deviation of the household size in 1997.

Double-difference matching estimators in Panel A show little effect on the decisions of men and women to leave their home. Between 1997 and 2003, their combined decision to depart from home translates to a reduction in the size of treated households of about 1.6 percent, which is not significantly higher than that observed in the new-comparison group. The only significant effect is centered on prime-age male members between 31 and 40 years old whose decisions to leave their home reduce household size of treatments by and additional 0.45 percent relative to the comparison group. [See columns (1) and (2)].

In Panel B presents double-differences matching estimators from computing identity (2). It can be seen [columns (3) and (4)] that beneficiary households took in more men and women between 1997 and 2003, than households of the new-comparison group with similar eligibility propensity scores. Male and female new incomers generate a combined increase in the size of treatment households of the order of 2.5 percent more than the change observed in the new-comparison group during the period of analysis.

Since average household size was close to 6 members in 1997, this means that households benefiting from the conditional transfers are 14 percent more likely to have received a new member than households with similar propensity score, but that have not obtained the Program over the course of five years.

Children in age to attend school and benefit from the Program are more prone to join beneficiary households. The addition of boys whose age in 1997 qualified them to enroll to primary and high school (7-15 years old), and girls suited to begin their formal education (7-12 years old), caused household size of beneficiary households to increase by an additional 0.30 and 0.17 percent, respectively. We believe this result is a consequence of the Program's scholarship.

Nevertheless, the main effect is seen on male incomers between 16 and 70 years old who in 1997 did not reside in the household. The decision of beneficiary households to provide them shelter increases household size by an additional 1.21 percent. [See Panel B, column (3)]. This result suggests that the subsidy also allows beneficiary households to take advantage of the economies associated with cohabitation; it is also consistent with a home production explanation in which households are receiving new members (male)-- mainly in their prime age--who are no longer entitled to receive the program's monetary transfer but are likely to participate in household productive activities.

The analysis based on double-difference matching also shows that the additional resources brought by the conditional transfer allow beneficiary households to share the wine and the bread with female incomers whose age in 1997 was between 22 to 30, 41 to 70 and above 70 years old.

Living arrangements and the relationship to the household head

The analysis so far suggests there is a differential change in household structure between treatments and comparisons over the period of analysis that points towards a moderate effect of the conditional transfer. The effect is shown to be heterogeneous across household members with different ages and gender profiles, but the analysis provides no further information of the reasons why beneficiary households are modifying their structure. Changes in household demographics may be explained by the decision of extended family members to join their relative´s household in order to benefit from the subsidy. They could also be explained by head's children returning home along with their children; or it may be the case that individuals in ages suited to attend school are coming

along to join the household in order to benefit from the scholarship, independently of other adult incomers.

To better understand the mechanisms that explain the change in household structure, we next analyze the effect of the public transfer on the changes in cohabitation decisions among household members with different family ties.

The survey only provides information on family ties based on the relationship to the household head. This means that if the head of the household changed over the period of analysis so did change the rest of the members' definition of family ties. Less than 6 percent of the (treatment and comparison) households in our sample present a change in the household head for the period of analysis; and for the vast majority of them (98 percent) one can attribute the change to the decision of the (original) head to leave the home.

In order to isolate the effect of the transfer on cohabitation decisions of members with different family ties, from that of the household head himself, we restrict the analysis to those households for which the head remained constant between 1997 and 2003. The analysis of the decision of the head to leave the household will be addressed in the next section where we investigate, using the full sample, the effect of the conditional transfer on the decision of every household member to migrate.

Table 5 displays double-difference propensity score matching outcomes by age groups, and relationship to the head of household.[14] Panel A displays the effect of the conditional transfer on the decision of members to leave by 2003 (other than the head), as a percentage deviation of the household size in 1997. Panel B shows the effect on the change in the original household size as a consequence of new incomers by 2003.

In line with our previous results, estimates in column (1) of Panel A, suggest that males in their 30s who leave the household, are primarily sons of the household head. Results in column (2) however, also point out towards an effect of daughters between 22 and 40 years old detaching. Their combined decision (of sons and daughters) to leave the home translates to an additional, statistically significant, reduction in the size of beneficiary households of 0.33 percent relative to the change in size of the comparison group.

Moreover, the effect of the program on the departure decisions of sons-in-law and daughters-in-law [(column (6)], and the effect on grandchildren [columns (3) and (4)],

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[14] Results are restricted to the cells where according to the definition of the relationship-to-the-head there is enough density in the sample to perform the analysis.

suggest that some of the head's children that leave their parent's household make the decision collectively and detach along with their spouse and children.

Grandchildren, who were between 0 to 12 years old in 1997, are 0.61 percent less likely –in terms of a reduction in household size-- to remain cohabiting with their grandparents by 2003 relative to their peers in the new-comparison group in 2003. It is worth to highlight that the subsidy shows no effect on children of the household head of the same age that are eligible to receive the program's scholarship. [See columns (1) and (2)]. This evidence points toward a household partition effect, in which part of the family is able to detach from the household, whereas young children, eligible to receive the schooling grants, stay with their parents.   The evidence suggests that receiving the conditional transfer for over five years facilitates the independence of some old enough members to form their own households.

In parallel, results in Panel B point towards a greater ability of beneficiary households to attract new members who are closely related to the household head. Absent sons between 22 and 30 years old and absent daughters who were between 15 and 40 years old in 1997 are more prone to come back and become household members again relative to any other person with a different relationship to the household head. [See Panel B: columns (1) and (2)]. Some of household head children return with their own family --spouse and with their children, especially daughters in the age to start primary school and thus qualified to receive the public aid--. [Columns (4) and (6)].   However, the effect on granddaughters and children-in-law who join the household is less than the effect that the conditional transfer exerts as a consequence of household partition.

Noteworthy is the fact that beneficiary households are more prone to provide the wine and the bread to new members that belong to the household head's extended family, and who resided elsewhere prior to the intervention. Results show that a consequence of the conditional transfers, beneficiary households increase their size by 0.22 percent more than the new-comparison group, by providing home and shelter to parents and grandparents of the household head who lived elsewhere in 1997, respectively. [Panel B, column (8)]. The same is observed by the adherence of new members who do not belong to the nuclear family, such as sibling and their children --nephews and nieces of the household head--, [columns (5) and (7)]; or by new incomers who are not in any way related to the household head --i.e., employees and friends. [See column (9)].

In sum, the evidence of Table 5 suggests an important redistribution of welfare via a household partition effect or via the adherence of extended family members.[15]

Understanding living arrangements from migration data

We conclude our analysis by using complementary data on individual migration between 1997 and 2003, to better understand the effect of the conditional transfer on household member's decisions to leave their home.

The data for this analysis comes from a migration module which was applied to both treatments and comparisons during the 2003 interview. The module asked the household respondent to identify if any member who ever belonged to the entire (1997-2003) household roster and who could have resided/reside outside the community for a period of at least twelve months. The module provides information about the motive for the change of residence and about the distance between the new and old location.

We analyze the extent to which the decisions to leave the home are associated to migration patterns related to search for better job and schooling opportunities, or to the start of a marriage or union. We also explore distance to new destination as measured by the decision to leave to another county within the same state, to a different state or to leave the country (to the United States).

To accomplish this task, we first identified among the individuals that decided to walk away from home, those who decided to migrate out of their community. Second, we identified the main motives for the decision to migrate. Lastly, we distinguished the place of destination that the migrant decided to move to.

This process allowed us to build a database composed by individuals in treatment and in comparisons groups that, in some point between 1997 and 2003, decided to migrate outside their community of origin. Members who remained in the household were classified as non-migrants. Members who were identified as having walked away from their households in our previous analysis, but who were not found in the migration module, were also classified as non-migrants. We use our entire study sample of households and individuals to establish the link between the outcome of the public transfer over cohabitation and the migration decisions.

The matching analysis on the conditional transfer effect over the individual decision to migrate takes on the propensity score analysis of Table 2. However, in this

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[15] Unfortunately, the lack of information about the well-being of family members that reside outside the household prevents us of further analysis.

particular case, we have carried out the matching at the individual level by taking into account the gender, the individual's relation to the head and the age of the household member. For example, household members between 7 to 12 years of age in treatment households were matched, exclusively, with 7 to 12 years old individual in households of the new-comparison group with similar household propensity scores.

Table 6 displays the propensity score matching estimates on the individual's probability to migrate based on different motives, [Panel A]; and based on the migrant's destination, [Panel B]. Columns (1), (3) and (5) present first-differences matching estimates on the individual's probability to have ever migrated during 1997 and 2003.

Column 1 in Panel A shows that women in beneficiary households migrate out of their community by 7.4 percent more because of marriage (or union) than the women who shared the same intentions and once belonged to households with similar propensity score in the comparison group. Men in households which have received the public transfer for over five years are also more likely to migrate because of marriage or civil unions, but only by an additional 3.1 percent.

However, according to column (3), if the decision to migrate obeys to the search of better job opportunities outside the community of origin, men in beneficiary households are 2.72 percent more likely to leave their communities relative to the (positive) probability of women in the household with the same migration motive, as compared to the gender difference in probability observed in the comparison group. Moreover, this probability is even higher (9 percent) if the individual in the treatment group is other but the head of household.

Results based on first-order matching display that children between 7 to 12 years old are 1.5 percent more likely to migrate for study-related reasons, [Panel A: Column (5)].

As in the previous section, first-differences estimates are likely to be contaminated with the presence of unobserved heterogeneity due to the non-random selection process of the new-comparison group. Since the beginning of PROGRESA in the year 1998, the mandate was to incorporate first the communities with the highest level of poverty index and then to expand the Program to the less deprived community over the years. Since the communities in the new-comparison group had not been integrated into the Program 2003, there is a concern that they were likely, for example, to display more developed labor markets than that prevailing in the treatment communities by 1997. The conditional propensity score used in the matching analysis does not take this (and other) unobservable heterogeneity into account.

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As a result, the direction and magnitude of the bias of the first-difference matching analysis are unknown. First-order results may underestimate the impact of the conditional transfer on the propensity to migrate if, for example, more developed migrant networks are correlated negatively with lower poverty as a result of the incoming flow of resources to the community sent by those who migrated. Nonetheless, overestimation of the Program's impact can be the case if higher poverty levels and less developed labor markets in the community coexist with the formation of migrant clubs.

Instead, it is possible to sweep out this kind of spurious correlation if one looks at the indirect effect of PROGRESA on the individual decisions to migrate by calculating difference-in-difference propensity score estimates which incorporate fixed effects at the household level.

Table 6 in columns (2) (4) and (6) presents the indirect effect of the Program on individual decisions to migrate. The analysis of double-differences matching compares the individual's probability to migrate as deviation from the within-household member's average probability to migrate, across treatments and comparisons.

Column (2) of Panel A shows that the subsidy increases 1.40 percent more the probability of females in beneficiary households to leave their home and move to another community because of marriage reasons relative to the average probability of the rest of the household members. Moreover, the program is seen by individuals between 22 and 30 years old in beneficiary households as the opportunity to reside outside the community in order to get married [column(2)], and less so for the purpose of searching for a better job, [column(3)].

Results in [Panel A] column (6) also show that the conditional transfer exerts an incentive on a small fraction of the children between 7 to 12 years old to leave the community for study purposes. These children are about the same age as the head's grandchildren[16], who in previous analysis we have presumed left the household with their parents. This evidence suggests that a fraction of these grandchildren may have left the community with the expectation to continue their studies.

In sum, the results based on migration decisions corroborate the hypothesis of an effect on household partition (and household formation) found in the analysis of household composition. Receiving conditional transfers for over five years apparently provides to the household enough resources to allow independence to some household members, mainly

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[16]To maintain comparability with the living arrangement analysis, the individual's age corresponds to 1997.

women, who are old enough to get married and start their own families. This takes place even outside the community boundaries.[17]

Panel's B difference-in-difference matching estimates in columns (2), (4) and (6) display the indirect effect of the conditional transfers on the probability to migrate by place of destination. The information displayed in these columns, suggest that the head of the household and the members between 31 to 40 years old are--on average--more likely to remain in their community by about 0.5 percent and 0.3 percent respectively relative to the rest of the members, if they benefit from the welfare assistance. Instead, teenagers whose age range in 1997 was between 13 to 21 years, are almost 2 percent more likely to have moved to another state by 2003 relative to the rest of members in the household, provided they belonged to a treatment group [column (4)]. They also represent the group of members who, as a consequence of the public transfer to the household, are more likely (0.6 percent) to have left the home behind and have assumed the challenge to cross the border into the United States by 2003, [column (6)]. The decision to move to the United States given the subsidy is greater for males by an additional 0.29 percent and lesser by -0.26 percent in the case of females.

6. CONCLUSIONS

This paper nails one more coffin in the literature on living arrangements and sheds light on how conditional public transfers, in the context of a developing country, can affect the cohabitation decisions of poor households. Evidence points towards a partition effect of beneficiary households in which conditional transfers provide greater independence to young couples with their children to detach from their original household and form their own families even outside their community boundaries. In parallel we provide evidence that social interventions of the kind of conditional transfers can generate important welfare distributive effects that transcends the traditional definition of the household. Noteworthy, is the fact that households that have benefited from the public aid are more prone to provide the wine and the bread to new members of the extended family, who resided elsewhere prior to the intervention. These results provide illustrative implications not only for design of operational rules and targeting criteria of antipoverty programs which are

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[17] The importance of marital migration, particularly for women is not confined to Mexico. Rosenzweig and Stark (1989) provide some cross-country examples that suggest that a significant proportion of migration in India and Malaysia, particular in rural areas, is also compose of moves by women for the purpose of marriage.

spreading in developing countries, especially Latin America, but also for consideration in the strategies to follow in the evaluation of such programs.

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TABLE 1
Distribution of households in PROGRESA new evaluation survey

	Program eligible	Program non eligible	Total
Treatment group *(with intervention since 1998)*	6,047 [35.47]	4,996 [29.31]	11,043 [64.78]
New comparison group *(without intervention in 2003)*	5,426 [31.83]	577 [3.38]	6,003 [35.22]
Num. of Hholds.	11,473 [67.31]	5,573 [32.69]	17,046 [100.00]

Percentage with respect to the total in parentheses squared.

TABLE 2

Probit Model on the probability of participating in PROGRESA

D =1 Program eligible household in treatment group.
D =0 Program eligible household in comparison group.

Variable	Coefficient	Std. Error	Variable	Coefficient	Std. Error
Household head Characteristics			**Household's Characteristics**		
Presence in the household	-0.19	(0.10)	Running water	-0.12	(0.04)*
Male	0.15	(0.04)*	Electricity	-0.04	(0.05)
Employed	-0.13	(0.05)*	Dirt Floor	-0.02	(0.03)
Age	0.00	(0.00)	Cardboard, plastic or wooden roof	0.08	(0.04)*
Incomplete Primary school	-0.40	(0.05)*	Cardboard, plastic or wooden walls	0.01	(0.04)
Complete Primary school	-0.28	(0.04)*	# Rooms	0.03	(0.01)*
Secondary school	-0.28	(0.04)*	**Household Assets**		
More than 10 year of schooling	-0.27	(0.03)*	Blender	0.01	(0.03)
Spouse's Characteristics			Refrigerator	-0.13	(0.06)*
Presence in the household	-0.36	(0.27)	Gas oven	-0.13	(0.04)*
Age	-0.00	(0.00)	Water heater	0.00	(0.08)
Incomplete Primary school	-0.39	(0.05)*	Radio	-0.03	(0.03)
Complete Primary school	-0.26	(0.04)*	T.V.	0.02	(0.03)
Secondary school	-0.23	(0.04)*	Washing Machine	0.23	(0.09)*
More than 10 year of schooling	-0.30	(0.04)*	Car	-0.03	(0.07)
Demographic Composition of the HH			# Oxen		
# Males between 0 - 6 years old	0.07	(0.02)*	1 - 3	-0.23	(0.03)*
7 - 12	0.07	(0.01)*	4 - 9	-0.22	(0.06)*
13 - 15	0.12	(0.02)*	# Cows		
16 - 21	-0.01	(0.02)	1 - 5	0.03	(0.03)
22 - 30	-0.03	(0.03)	6 or more	-0.10	(0.04)*
31 - 40	-0.04	(0.03)	# de pigs/sheep/goats		
41 - 70	-0.12	(0.03)*	1 - 5	0.04	(0.03)
over 70 years old	-0.10	(0.05)*	6 - 10	0.05	(0.04)
# Females between 0 - 6 years old	0.04	(0.01)*	11 or more	-0.10	(0.05)*
7 - 12	0.08	(0.02)*	# de horses/mules/donkeys		
13 - 15	0.04	(0.03)	1 - 3	-0.38	(0.04)*
16 - 21	0.04	(0.02)	4 or more	-0.26	(0.03)*
22 - 30	0.07	(0.03)*	# de chickens/hens/turkeys		
31 - 40	0.04	(0.03)	1 - 5	0.23	(0.04)*
41 - 70	0.05	(0.03)	6 - 20	0.04	(0.03)
over 70 years old	0.04	(0.04)	21 - 30	0.04	(0.03)
			31 or more	-0.17	(0.05)*
# Obs. –Hholds:	11,473				

Note: Probit estimates display the marginal change in the probability of being a treatment household as a function of pre-program household characteristics in terms of head and spouse demographics, household composition, dwelling characteristics and availability of public services, household wealth in 1997 and county level categorical variables. Robust standard errors in parenthesis. *Significance <= 5% of incurring in type I error.

TABLE 3

First- differences on household pre-program demographic composition between treatments and new-comparison

	Men (1)	Women (2)	Sons (1)	Daughters (2)	Grandsons (3)	Granddaughters (4)	Nieces and Nephews (5)	Sons-in-law and daughters-in-law (6)	Siblings and Siblings-in-law (7)	Parents and grandparents (8)	Non-relatives (9)
All hh. Members	4.81	-4.69	1.70	-8.24	0.86	0.66	-1.31	-0.16	-2.69	-2.03	-1.63
	(2.68)	(2.60)	(3.45)	(4.5)	(0.53)	(0.35)	(0.85)	(0.58)	(1.71)	(1.30)	(0.79)*
By age of 1997											
0 – 6	0.63	-6.02	0.27	-6.24	0.48	0.30	0.05	--	--	--	--
	(2.19)	(4.03)	(2.16)	(3.90)	(0.26)	(0.21)	(0.07)	--	--	--	--
7 – 12	1.20	1.10	1.39	0.69	0.38	0.36	-0.37	--	--	--	--
	(1.73)	(1.65)	(1.78)	(1.60)	(0.20)	(0.22)	(0.52)	--	--	--	--
13 – 15	1.00	-0.53	1.20	-0.71	--	--	0.09	--	--	--	--
	(0.97)	(1.06)	(0.77)	(1.00)	--	--	(0.03)	--	--	--	--
16 – 21	1.87	0.99	0.83	-0.45	--	--	-0.75	--	--	--	--
	(0.95)	(1.28)	(0.79)	(1.26)	--	--	(0.56)	--	--	--	--
22 – 30	-1.55	-0.86	-1.72	0.22	--	--	0.01	0.12	--	--	--
	(2.23)	(2.19)	(1.59)	(0.23)	--	--	(0.04)	(0.02)*	--	--	--
31 – 40	0.10	-0.82	-0.25	-1.75	--	--	-0.34	-0.29	--	--	--
	(1.32)	(1.66)	(0.57)	(1.52)	--	--	(0.60)	(0.61)	--	--	--
41 – 70	1.01	0.56	--	--	--	--	--	--	--	--	--
	(1.85)	(2.00)	--	--	--	--	--	--	--	--	--
70 +	0.55	0.89	--	--	--	--	--	--	--	--	--
	(0.73)	(061)	--	--	--	--	--	--	--	--	--
#Obs.- Hholds	11,473	11,473	10,706	10,706	10,706	10,706	10,706	10,706	10,706	10,706	10,706

Notes: Coefficients correspond to first-differences propensity score analysis on household pre-program demographic composition between treatments and new-comparisons. Differences are presented as percentages of household size using "nearest neighborhood" matching . Average household size is 5.97 members . Differences by age and kinship are based on a restricted sample of 10,706 households, which household head remained constant over time. "Non-relative" refers to individuals who have no family ties with the household head (ex. employees, friends, etc.). Standard errors based on bootstrapping with 500 replications in parentheses. *Significance <=5% of incurring in type I error.

TABLE 4
Second-order-differences on the change in household demographic composition between 1997 and 2003 across treatments and new-comparisons, by age and gender of the household members

	PANEL A. *% of members who split from the HH*		**PANEL B.** *% of members that arrived to the HH*	
	2nd Differences: *T - C*		**2nd Differences:** *T - C*	
	Men	*Women*	*Men*	*Women*
	(1)	*(2)*	*(3)*	*(4)*
All	-0.99	-0.61	1.25	1.29
	(3.53)	(2.82)	(0.86)	(0.37)*
By age of 1997				
0 – 6	1.07	0.31	-0.20	0.27
	(1.16)	(0.58)	(0.80)	(0.20)
7 – 12	0.51	-0.70	0.14	0.17
	(1.15)	(0.57)	(0.06)*	(0.08)*
13 – 15	-0.70	-0.41	0.15	0.13
	(0.70)	(0.78)	(0.04)*	(0.15)
16 – 21	-1.47	-0.55	0.30	0.22
	(0.26)	(0.61)	(0.14)*	(0.14)
22 – 30	-0.05	0.06	0.40	0.20
	(0.59)	(0.52)	(0.08)*	(0.07)*
31 – 40	-0.45	0.64	0.26	0.04
	(0.07)*	(0.57)	(0.05)*	(0.04)
41 – 70	0.30	0.24	0.25	0.19
	(0.64)	(0.77)	(0.05)*	(0.05)*
70 +	-0.19	-0.23	-0.06	0.07
	(0.14)	(0.11)	(0.16)	(0.03)*
# Obs.- HH	11,473			

Notes: See table 4. Coefficients correspond to double-differences propensity score matching analysis on the change in household demographic composition during 1997 and 2003 between treatments and new-comparisons. Estimates show the change of what the household size was 1997, prior the Program's implementation, as a result of member of different age and gender leaving or entering the household by 2003. In 1997 the average household size in treatments was 5.97 members. Standard errors based on bootstrapping with 500 replications are shown in
parentheses. *Significance <=5% of incurring in Type I error.

TABLE 5

Second-order-differences on the change in household demographic composition between 1997 and 2003 across treatments and new-comparisons, by member's age and relation to the household head.

PANEL A. *% of household members who left the household between 1997-2003. 2nd differences (T - C)*

	Sons (1)	Daughters (2)	Grandsons (3)	Granddaughters (4)	Nieces/Nephews (5)	Sons-in law and Daughters-in-law (6)	Siblings and Siblings in-law (7)	Parents and Grandparents (8)	Non-relatives (9)
All	0.53	-0.77	-0.30	-0.30	-0.22	-0.14	0.91	0.47	0.54
	(2.93)	(2.23)	(0.05)*	(0.06)*	(0.05)*	(0.03)*	(0.95)	(0.72)	(0.91)
By age of 1997									
0 – 6	1.37	0.61	-0.21	-0.18	-0.03	--	--	--	--
	(1.10)	(0.57)	(0.03)*	(0.04)*	(0.02)	--	--	--	--
7 – 12	0.59	-0.48	-0.10	-0.12	-0.06	--	--	--	--
	(1.15)	(0.58)	(0.03)*	(0.04)*	(0.03)*	--	--	--	--
13 – 15	¨-0.56	-0.27	--	--	-0.08	--	--	--	--
	(0.69)	(0.75)	--	--	(0.03)*	--	--	--	--
16 – 21	-1.24	-0.37	--	--	-0.01	--	--	--	--
	(0.24)*	(0.61)	--	--	(0.01)	--	--	--	--
22 – 30	0.43	-0.21	--	--	-0.03	-0.10	--	--	--
	(0.59)	(0.06)*	--	--	(0.02)	(0.02)*	--	--	--
31 – 40	-0.07	-0.05	--	--	-0.002	-0.03	--	--	--
	(0.03)*	(0.02)*	--	--	(0.01)	(0.01)*	--	--	--

PANEL B. *% of members incorporated between 1997-2003. 2nd differences (T - C)*

	Sons (1)	Daughters (2)	Grandsons (3)	Granddaughters (4)	Nieces/Nephews (5)	Sons-in law and Daughters-in-law (6)	Brothers and Brothers in-law (7)	Parents and Grandparents (8)	Non-relatives (9)
All	0.68	0.51	0.07	0.13	-0.34	0.03	0.11	0.22	0.05
	(0.27)*	(0.22)*	(0.14)	(0.06)*	(0.70)	(0.01)*	(0.03)*	(0.05)*	(0.02)*
By age of 1997									
0 – 6	0.18	0.13	0.04	0.12	-0.43	--	--	--	--
	(0.19)	(0.18)	(0.13)	(0.04)*	(0.73)	--	--	--	--
7 – 12	0.10	0.07	0.03	0.005	0.01	--	--	--	--
	(0.06)	(0.08)	(0.02)	(0.03)	(0.01)	--	--	--	--
13 – 15	0.07	0.10	--	--	0.02	--	--	--	--
	(0.02)	(0.04)*	--	--	(0.01)	--	--	--	--
16 – 21	0.15	0.15	--	--	0.02	--	--	--	--
	(0.15)	(0.06)*	--	--	(0.01)*	--	--	--	--
22 – 30	0.15	0.04	--	--	0.03	0.03	--	--	--
	(0.05)*	(0.03)	--	--	(0.02)	(0.01)*	--	--	--
31 – 40	0.03	0.02	--	--	--	--	--	--	--
	(0.02)	(0.01)*	--	--	--	--	--	--	--

Notes: See notes table 4. Estimates show the change of what the household size was 1997, prior the Program's implementation, as a result of member of different age and relationship to the household head, leaving or entering the household by 2003. "Non-relative" refers to individuals who have no family ties with the household head (ex. employees, friends, etc.). We restrict the analysis to those households whose head remained constant between 1997 and 2003. Results are display where there is enough density in the sample to do the analysis according to the cohort's demographic definition. Standard errors based on bootstrapping with 500 replications are shown in parentheses. *Significance <=5% of incurring in Type I error.

TABLE 6

First and second-order differences over the individual probability to migrating between 1997-2003 across treatments and new-comparisons by destiny and reason to migrate.

PANEL A. *By reason for migrating*

	Marriage or civil union		Work related		Study-related	
	1st differences (1)	2nd differences (2)	1st differences (3)	2nd differences (4)	1st differences (5)	2nd differences (6)
All migrants	5.47	-0.01	8.11	-0.07	0.65	-0.02
	(0.46)*	(0.44)	(0.57)*	(0.55)	(0.15)*	(0.13)
Gender						
Male	3.14	-1.18	9.02	1.09	0.91	0.12
	(0.49)*	(0.54)*	(1.78)*	(1.53)	(0.31)*	(0.24)
Female	7.40	1.40	6.28	-1.30	0.47	-0.11
	(0.95)*	(0.80)*	(0.46)*	(0.45)	(0.18)*	(0.17)
^{2}(gender equality)	15.25	6.71	2.25	2.18	1.46	0.61
	[0.00]	[0.01]	[0.13]	[0.14]	[0.23]	[0.43]
Relationship Household head	--	--	2.49	-0.47	--	--
	--	--	(0.37)*	(0.95)	--	--
Other	--	--	9.02	0.17	--	--
	--	--	(0.82)*	(0.73)	--	--
^{2} (relationship equality)	--	--	53.41	0.28	--	--
	--	--	[0.00]	[0.60]	--	--
Age (of 1997) 7 – 12	--	--	--	--	1.53	0.42
	--	--	--	--	(0.23)*	(0.16)*
13 - 21	10.17	1.86	15.72	4.20	0.74	0.15
	(5.03)*	(5.57)	(6.66)*	(5.36)	(0.46)	(0.35)
22 - 30	4.13	0.83	3.82	-0.73	--	--
	(0.54)*	(0.33)*	(0.54)*	(0.39)*	--	--
31 - 40	--	--	2.13	-3.65	--	--
	--	--	(0.41)	(1.17)*	--	--

PANEL B. *By final destination*

	Different County		Different State		United States	
	1st differences (1)	2nd differences (2)	1st differences (3)	2nd differences (4)	1st differences (5)	2nd differences (6)
All migrants	0.69	-0.01	1.94	-0.01	0.86	0.01
	(0.13)*	(0.10)	(0.14)*	(0.11)	(0.09)*	(0.06)
Gender						
Male	0.41	-0.15	1.46	-0.25	1.18	0.29
	(0.34)	(0.18)	(0.18)*	(0.14)	(0.17)*	(0.11)*
Female	0.93	0.12	2.34	0.17	0.50	-0.26
	(0.17)*	(0.14)	(0.21)*	(0.16)	(0.09)*	(0.08)*
^{2}(gender equality)	1.90	1.42	10.30	3.89	12.99	17.21
	[0.17]	[0.23]	[0.00]	[0.05]	[0.00]	[0.00]
Relationship Household head	0.05	-0.11	0.05	-0.52	0.05	-0.07
	(0.06)	(0.06)	(0.05)	(0.11)*	(0.05)	(0.06)
Other	0.87	0.02	2.37	0.11	1.02	0.02
	(0.15)*	(0.11)	(0.17)*	(0.13)	(0.11)*	(0.07)
^{2} (relationship equality)	24.78	0.96	165.59	12.62	63.49	0.91
	[0.00]	[0.33]	[0.00]	[0.00]	[0.00]	[0.34]
Age (of 1997) 13 - 21	1.49	0.47	5.54	1.96	2.36	0.61
	(0.70)*	(0.37)	(0.58)*	(0.44)*	(0.37)*	(0.25)*
22 - 30	0.26	-0.07	0.58	-0.15	0.21	-0.09
	(0.15)	(0.09)	(0.17)*	(0.13)	(0.09)*	(0.07)
31 - 40	0.11	-0.31	0.12	-0.98	--	-0.32
	(0.08)	(0.09)*	(0.07)	(0.18)*	--	(0.10)*
# Obs-Individuals	39,152		39,152		39,152	

Notes: All models are based on complementary data on migration decisions of individuals in treatments and in new-comparisons who moved outside their community between 1997 and 2003. Non-migrants are all members who remained in the household or who left their home but were not registered as leaving the community. Results display propensity score matching analysis on the individual's probability to migrate using the "nearest neighborhood" method. The matching analysis is derived by comparing members of same individual demographics who belong to treatment and new-comparison households with similar household-level propensity score according to Table 2. First-order difference matching estimates display the difference in the individual's probability (x100) to migrate between treatments and new-comparisons. Double-difference matching estimates display the individual's probability to migrate as the within household all