The Effects of a Non-Contributory Pension Program on Labor Force Participation: The case of 70 y Más in Mexico

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Abstract

We estimate the effect of 70 y Más, an age-conditioned cash transfer program for individuals age 70 and older in rural Mexico, on the labor force participation of beneficiaries and of younger individuals who live with them. Exploiting the age and locality population eligibility thresholds for identification, we find that the program reduces the labor force participation of elderly men, but has a much weaker effect on that of elderly women. We also find a significant negative effect on boys age 12 to 17 who live in households with at lasty one elderly member.

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1 Introduction

In Mexico, as in other developing countries, many older adults do not qualify for a pension due to the low coverage of the contribution-based social security system, so they keep working beyond the normal retirement age. In addition, poverty rates among those age 65 and older are higher than those for the population as a whole (Parker and Wong 2001). In rural areas, the likelihood of receiving a pension is even lower, which results in labor force participation and poverty rates among the elderly that are higher than those in urban areas.

In 2007, the Mexican federal government started the 70 y Más program, which pays a monthly cash transfer of about 38 dollars to individuals age 70 and older in qualifying rural localities. This transfer is conditioned exclusively on age and locality of residence, and not on any measure of socioeconomic status, labor supply or previous social security contributions. In this paper, we examine whether this program decreases the labor force participation of the intended beneficiaries and allows them to retire. We also estimate the effect of the program on the labor force participation of prime-age individuals and adolescents who live with potential beneficiaries.

Previous studies on the effect of a large and unexpected rise in the non-contributory pensions paid to poor elderly households in South Africa, find that the public transfers paid to the elderly also affect the labor supply of their younger co-residents. For instance, using a cross section dataset collected after this policy change, Bertrand, Mullainathan, and Miller (2003) find a large drop in labor supply for prime-age males who live with a female pensioner, and no significant effect for prime-age women. In contrast, using panel data, Ardington and Hosegood (2009) show a positive effect of the pension on the labor supply of prime-age individuals, which is mostly explained by an increase in the probability of migrating for work after the household gains pension status. Regarding child labor, Edmonds (2006) finds that the South African pension decreases the work hours, but not the labor force participation, of boys age 13-17 who live with a male pensioner, and has no effect on the labor supply of same-age girls.

For Mexico, Juárez (2010) finds that a state cash transfer program for Distrito Federal (DF) residents age 70 and older, the first non-contributory program of its kind in the country, has no significant effects on the labor supply of potential beneficiaries, but it reduces that of prime-age men and women who live with a female beneficiary. Our paper contributes to this

literature by providing evidence on the labor supply effects of a federal, age-conditioned transfer for the Mexican rural elderly, who have much higher labor participation rates than their urban counterparts in DF. We also contribute by showing whether the resources targeted to the rural elderly are reaching other age groups and affecting their labor supply.[1]

In 2007, when the 70 y Más program started, only individuals age 70 and older in localities with less than 2,500 inhabitants, which are the smallest in the country, were eligible for benefits. Galiani and Gertler (2009) conducted an impact evaluation of the program using data collected specifically for this purpose in the first two years of operation.They use a difference-in-differences strategy to compare the change in the labor supply of individuals age 70 and older in localities with less than 2,500 inhabitants between 2007 and 2008, with the change for same-age individuals living in localities with 2,500-3,300 inhabitants, and find that the program decreases the probability of working for pay, and increases that of working at home. They also find that the program reduces the labor income of non-elderly members who live with beneficiaries. A potential problem with their empirical strategy is that, due to the rapid expansion of the program in the early years, localities just above the initial population threshold were incorporated to the program in 2008. To avoid any such potential contamination of the control group, in this paper we use the 2010 Mexican Census and exploit the 2009 expansion of the program, which incorporated localities with less than 30,000 inhabitants, because no further expansions were either announced in 2010 or implemented until 2012.

We use a sample of individuals at least 60 years old in localities with 25,000 to 35,000 inhabitants from the 2010 Mexican Census, and we exploit both the age and the locality population thresholds for identification. Our treatment group is composed of individuals who are at least 70 years old and live in localities with 25,000 to 29,999 inhabitants, who were exposed to the program in 2010. Same-age individuals in localities with 30,000 to 35,000 inhabitants, and individuals age 60-69 in both types of localities were not affected by the program in that year, so they are our control groups. For the effects on the labor supply of younger co-residents, we use a similar strategy and a subsample of individuals age 12-59 who live with at least one individual over the age of 60 in treated and control localities. Other

[1]Other mechanisms through which non-contributory pensions end up benefiting younger individuals are the nutrition and schooling and children (Duflo 2003, Edmonds 2006, Gutierrez and Rubli 2011) and family transfers (Jensen 2004, Juárez 2009, Amuedo-Dorantes and Juárez 2012).

differences between the Galiani and Gertler (2009) report and our paper are that we present results by gender and type of household, and by wealth quintiles.

Our main results show that the program mostly reduces the labor force participation of elderly men, but not that of elderly women. Elderly men who live alone, reduce their labor force participation by 37 percent in response to the program, and even more so if they are relatively poor. For elderly men who live in a couple or in an extended household, the negative effects are only statistically significant for those in the lowest wealth quintiles. In contrast, the effects of the program on the labor force participation of elderly women are not statistically significant, except for the reduction of 17 percentage points for women who live with their spouse and belong to the first three wealth quintiles. These differences in the labor supply responses of elderly men and women might be explained by the low labor force participation of women, which is between 9 and 11 percent, whereas that of same-age men is 34 percent. In addition, in the robustness checks section, we show that the private transfers received by elderly women decrease more in response to the program than those received by men, which dampens the income effects of the program for women even further.

Our results for elderly individuals living in couples also show that the individual's own eligibility for the program reduces his or her labor force participation, whereas the eligibility of his or her spouse does not. This is consistent with non-unitary models of the household (McElroy and Horney 1981) and previous studies in which it is the individual's own non-labor income what matters for his or her own labor decisions, and not that of other members of the household (Schultz, 1990). Overall, we also find that the program tends to decrease the labor supply of poorer elderly individuals to a larger extent, across household types, as would be expected given that the transfer from the program represents a higher income fraction for them.

Regarding the labor force participation of younger individuals, we find no effect of the program for either prime-age men or women who live with age-eligible individuals in treated localities, not even for those who are relatively poor. These results are different from those in similar papers in the literature, which as mentioned above, find that an age-conditioned public transfer for the elderly affects the labor supply of individuals in their prime (Juárez 2010, Bertrand, Mullainathan, and Miller 2003, Ardington and Hosegood 2009). They are also different from the results in the Galiani and Gertler (2009) evaluation report, but we cannot directly compare our estimates to theirs

because of the differences in the sample, dependent variable (labor force participation versus labor income) and estimation strategy.

For adolescents, we find that boys age 12-17 in the first three quintiles in treated localities decrease their labor force participation by 6.4 percentage points for each potential beneficiary that lives with them. This effect, which amounts to a 32 percent decrease, is mostly driven by boys who live with a female beneficiary. In contrast, for girls age 12-17 we find that the effects of the program on labor force participation are negative, but never statistically significant. These differences in the program effects between boys and girls, roughly consistent with those found by Edmonds (2006) for South Africa, might be explained by the lower probability of working in the market of girls, compared to same-age boys, and their higher probability of working at home, which we do not measure.

Our main results for the poor are robust to tightening the bounds around the 30,000 inhabitants threshold, and to the exclusion of states that implemented their own local programs between 2006 and 2010. In both cases, the sign and magnitude of our estimates remains mostly unchanged, but we lose significance due to smaller sample sizes.

To shed more light on the differences in the labor supply responses between elderly men and women, and across household types for men, we look at the effect of the program on the living arrangements of the elderly and the private transfers they receive. We find no significant effects for the probability of living in a one-generational household, so we can attribute the observed decrease in the labor supply of older men to the income effect of the transfer, and not to an endogenous shift in household structure induced by the program. For the probability of receiving private transfers, we find evidence of crowding out for elderly women, particularly for those who are relatively poor, but not for men. As explained above, this could partly explain the weaker labor response of elderly women we find, and it also suggests that the program might be less effective in increasing their non-labor income.

Overall, our results suggest that the program is having a larger impact on the labor force participation of the intended beneficiaries, i.e. the elderly, and particularly of those who are relatively poor. In extended households, we find no evidence that the program is either encouraging or discouraging work among prime-age individuals, but it is mostly reducing the labor force participation of adolescent boys, who are probably the marginal workers in these households. Finally, a broader picture of the program impact on the well being of beneficiaries requires further research on other outcomes of

interest, such as consumption and health.

2 Background and description of the program

In Mexico, social security pensions are mostly provided through two main public institutes: the Mexican Institute of Social Security (IMSS) for salaried employees in the private sector, and the Institute of Health and Social Security for Government Employees (ISSSTE) for federal employees [2]. Funds come from employer and employee wage-based contributions, which are deposited into individual saving accounts. Only salaried workers are legally forced to save for their retirement through these institutes, whereas other kinds of workers, like the self-employed, are allowed to participate voluntarily in IMSS, but in practice only few of them do (Levy 2008). In addition, as in other developing countries, evasion is widespread even among eligible workers, and transitions between covered and uncovered employment lower the likelihood of receiving a pension, which depends on the accumulated years in formal employment. As a result, the fraction of the elderly population that actually receives a formal pension is low, especially in rural areas: in our sample, only 25 percent of individuals age 70 and older report receiving a social security pension in 2010. Given this, according to data from before the 70 y Más program, elderly individuals were among the poorest in Mexico (Parker and Wong 2001) and most of their income came from work at advanced ages and family support rather than from public contribution-based pensions (Aguila, Diaz, Manqing-Fu, Kapteyn, and Pierson 2011).[3]

This context provides the rationale for the 70 y Más (70 and older) federal program, which pays a non-contributory pension of 1000 pesos (about 77 USD) every two months to individuals age 70 and older in qualifying localities. This program started in 2007 by covering about a million of age-eligible individuals living in localities with up to 2,500 inhabitants, which are

[2]The military and employees of Pemex, the national public oil company, and of state local governments are covered through their own social security institutes. Employer-provided private pension plans are very limited, and they are provided only to a small fraction of workers in addition to, and not in place of, IMSS coverage (Aguila, Diaz, Manqing-Fu, Kapteyn, and Pierson 2011).

[3](Parker and Wong 2001) use the 1996 round of the Mexican Income and Expenditure Survey (2001) to calculate poverty measures. Aguila, Diaz, Manqing-Fu, Kapteyn, and Pierson (2011) use the 2001 round of the Mexican Health and Aging Study.

the smallest in the country, and it expanded rapidly afterwards. In January 2008, the program was extended to localities with up to 20,000 inhabitants, and the number of beneficiaries grew to 1.9 million. In 2009, localities with up to 30,000 inhabitants were included in the program. This particular roll-out responds to the low pension receipt observed among the elderly living in small, rural localities, as mentioned before. The program also promotes the use of health care services provided by Seguro Popular (Popular Insurance) among its beneficiaries.[4] During this initial expansion, and until 2011, the transfer from the program was exclusively conditioned on age and locality of residence, so it was not means-tested and not taxable. As a result, in the first four years of the program, eligibility was not correlated with past labor and saving decisions, or with unobservable factors that affect the labor supply of beneficiaries. To enroll in 70 y Más, an individual must present an official ID, proof of age (her birth certificate or unique population id number, CURP), and a utility bill to verify her address. In addition, the applicant must not be an Oportunidades beneficiary and, if she is, she must drop participation in that program to receive benefits from 70 y Más.[5]

In January 2012, all localities with more than 30,000 inhabitants were finally incorporated into the program. However, an additional eligibility requirement was introduced with this last expansion: new applicants age 70 and older must not receive any other pension income to qualify. This change does not affect our empirical strategy because we use data from the 2010 Mexican Census, and in that year, no requirements were added and no further expansions of the program were announced to the public.

As part of an early evaluation of 70 y Más, Galiani and Gertler (2009) examine the effect of the program on the income, expenditures, savings and

[4]Seguro Popular, which started in 2004, is a federal program that provides public health care services to the uninsured. This program does not contaminate our results because our data are for 2010, after the major expansion of Seguro Popular took place, and eligibility for this program is not conditioned on age. In addition, we are using localities just below and above the 30,000 inhabitants threshold, which reduces the potential differences in the quality of health services provided by the program between our treatment and control groups.

[5]The Oportunidades program pays cash transfers mainly to poor families with school-age children since 1998, but it has a component for elderly individuals living in participating households. The Oportunidades transfer for the elderly is about 610 pesos (47 USD) every two months, which is currently less than the transfer from 70 y Más, so it is actually convenient for a senior to drop it. Also note that, until 2011, 70 y Más was not means-tested, so it covered a broader elderly population than Oportunidades.

time use of beneficiaries. Their data is a panel specifically collected for the evaluation in 2007 and 2008, before and after the program's implementation, respectively. They use a difference-in-differences strategy to compare the change in the labor supply of individuals age 70 and older in localities with less than 2,500 inhabitants between 2007 and 2008, with the change for same-age individuals living in localities with 2,500-3,300 inhabitants, and find that the program decreases the probability of working for pay, and increases that of working in the household. However, a potential problem with their strategy is that, due to the rapid expansion of the program in the early years, localities just above the initial population threshold were incorporated to the program in 2008. In this paper, our strategy is similar to theirs, but we use the 2010 Mexican Census and both the age 70 and 30,000 inhabitants cutoffs. Given that localities above 30,000 inhabitants were unexpectedly incorporated into the program in 2012, we believe our strategy has advantages over theirs. Other differences between their work and ours are that we present results by gender and type of household, and by wealth quintiles.

The 70 y Más program is not the only non-contributory pension scheme in Mexico. In 2001, the state government of Distrito Federal implemented the first program of this type for residents age 70 and older. By 2010, 15 states had also implemented similar programs of their own. These state programs vary in their rules and coverage: some cover only urban individuals, who were not eligible for 70 y Más in 2010, and some are means-tested. In section 5, we show that our main results are robust to the exclusion of the states that had such programs in 2010 from our sample.

3 Data and Empirical Strategy

Our individual and household level data come from the micro sample of Mexico's year 2010 national census, carried out between May 31 and June 25, i.e. almost a year and a half after the program was expanded to localities with 20,000-30,000 inhabitants, which are in our treatment group. The country's decennial main census applies an extended questionnaire to a 10 percent random sample of households, representative at the municipal level. This produces a large cross-sectional data set of more than 10 million observations capturing a large number of individual and household characteristics. The population threshold of 30,000 inhabitants is large enough to identify almost

all localities around the discontinuity in the micro data. Thus, as mentioned before, we run a regression discontinuity (RD) design, comparing treatment localities with 25,000-30,000 inhabitants to a control group of localities with 30,000-35,000 inhabitants.

Program participation, however, is not perfectly determined by residing in a treatment or control locality. For one, not everyone eligible will enroll into the program, implying that assignment into treatment does not perfectly predict actual treatment. In addition, there is also the possibility that individuals living in control localities find ways to receive the benefit, for example by declaring to reside with a close friend or relative in a treatment locality. The ideal set-up would therefore be to run a "fuzzy" RD by using assignment into treatment (actual place of residence) as an instrument for actual treatment received. Unfortunately, in the census we are not able to observe whether or not a person receives transfers from the program. For that reason, we restrict ourselves to conducting the analysis directly on the assignment variable. Although Mexico regularly conducts a number of different surveys that collect more detailed information on the variables we are interested in, such as actual program participation (e.g. the *Encuesta Nacional de Ocupación y Empleo (ENOE)*), none of these is large enough to exploit the discontinuity in the locality population criterion. We believe that only observing assignment into treatment is a price well worth paying for a clear cut identification strategy.

As argued by Lee and Lemieux (2010) RD designs are a form of quasi-randomization around the threshold value under the assumption that towns with 25,000-30,000 inhabitants are on average not systematically different from towns with 30,000-35,000. In our case, randomization is only possible over a limited number of localities. This raises the concern that some remaining residual mean differences between our two samples may contaminate our estimates. We address this problem by employing a difference-in-differences approach, similar to that in Galiani and Gertler (2009), in conjunction with the RD design. However, given that we have only one cross section of data, instead of exploiting the before and after dimension, we take the double difference between elderly individuals 60-69 years of age, who are not yet eligible for the program, and those 70 years of age or older, who are. This strategy allows us to take into account any remaining mean differences in unobserved characteristics between treatment and control localities.

We estimate the effect of the program transfer on the labor force participation of the elderly and the non-elderly who live with them. We report

only results on participation, because the effects on hours worked for those still working are mostly not significant, which suggests that the additional income from the program affects mostly the extensive margin, rather than the intensive one. For brevity, these results are not shown, but they are available upon request. Thus, our outcome of interest is a variable equal to one if a person declared she worked for at least one hour during the week prior to the interview, or if she actively looked for a job. We estimate a standard probit model for which the latent dependent variable for observation i, living in locality l is constructed as:

$$\begin{aligned} y^*_{i,l} =& \alpha_0 + \alpha_1 Locality < 30,000_l + \alpha_2 Age70 +_{i,l} + \alpha_3 Locality < 30,000_l * Age70 +_{i,l} \\ & + \beta_1 Locality\ Population_l + \beta_2 Age_{i,l} + \gamma X_{i,l} + u_{i,l}, \end{aligned} \tag{1}$$

where "$Locality < 30,000_l$" is a dummy variable equal to one if i lives in a treatment locality, "$Age70+_i$" is a dummy variable equal to one if i is age 70 or older, and α_3, our parameter of interest, measures the strength of their interaction term. Assuming a linear relationship around the threshold, we also control for the actual number of inhabitants in the locality and the individual's age in years. In some specifications we will control additionally for a number of individual and locality level characteristics, denoted here by $X_{i,l}$. This basic model will undergo slight modifications when applied to different household structures and members.

For the program expansion, localities were selected into treatment based on their total population in the 2005 census.[6] This allows us to easily identify the localities in the treatment and control group. However, due to confidentiality reasons, the locality of residence is not coded in the micro data if it is smaller than 50,000 inhabitants. For the observations we are interested in, which are those living in localities with 25,000-35,000 inhabitants, we are only able to observe the state and municipality of residence, and whether the locality has between 15,000 and 49,999 inhabitants. Fortunately, almost all municipalities have at most one locality of that size. This enables us to clearly identify observations from 73 out of 83 localities of interest. We drop

[6]Mexico conducts two different types of censuses: the principal one is carried out every year ending in zero and collects information on a large number of variables. In addition, every year ending in five the country carries out another census (*Conteo*) collecting only a small number of characteristics.

a further two localities because, according to the 2005 and 2010 census data, they had unrealistically large changes in their population. This leaves us with observations from 71 localities.

Quasi-randomization around the locality population threshold results in 42 treatment and 29 control localities. The treatment group can be expected to be larger, as there are always more agglomerations of a smaller size[7]. The narrower band used in the robustness checks divides localities evenly in two groups of 20 each. Figure (1) shows the geographical distribution of treatment and control localities. The former are in lighter shades, while the latter are in darker ones; squares show localities that do not fall within the narrower margin, whereas circles are always part of the sample. No systematic geographical pattern emerges, and the two types of localities can be found in every Mexican region. The concentration in Mexico's central region is expected given the higher population density there.

(Figure 1 about here)

Our final data set consists of households with at least one member age 60 and older in these 71 localities. This leaves us with a total of 16,947 elderly individuals, living in 12,563 households. Of these households, 1,870 are single member households, 1,756 are couples with at least one member 60 years of age or older, and 7,639 are households with more than two members. These are the three groups we will consider separately for males and females (i.e. the only kind of household not being considered are two member households that are not couples).

We perform our analysis for three different age groups: individuals age 60 and older, adults age 18 to 59 and children age 12 to 17; and break them down by gender. Table (1) shows the proportion of individuals in the labor force for each of these groups in treatment and control localities. As would be expected, the labor force participation is highest among individuals 18-59 years old, and it declines with age. At all ages, women are substantially less likely to be in the labor force than men. Comparing treatment and control localities, the numbers are almost identical, with a slightly higher participation rate for all women in the treatment group.

(Table 1 about here)

[7]See for example Fujita, Krugman, and Venables (2001), Chapter 12, for a discussion on city sizes following a power law.

As explained above, in the 2010 census data we are not able to directly observe whether an individual is actually receiving the transfer from 70 y Más. We only observe whether she receives any sort of public transfer, which could originate at any level of government.[8] While this variable might be too crude to measure actual treatment in our case, in table 2 we nonetheless check whether it reflects the increase in the public transfers received by age-eligible individuals in treated localities, caused by the 70 y Más program.

Table 2 reports the probit partial effects for the probability that individuals age 60 and older receive any contributory pensions (columns 1 and 2) and any government cash transfers (columns 3 and 4). In these estimations, we include only the controls shown in the table. Columns 1 and 2 show that for older men and women, being age 70 and older in a locality with less than 30,000 inhabitants, where the program operates, has no statistically significant effect on the probability of receiving a contributory pension. This is reassuring given that, for individuals who are age 60 and older in 2010, such probability depends on their total years of formal employment, which are the result of labor decisions taken long time before the start of the 70 y Más program.[9] The effect of being age 70 and older in the first two columns of table 2 is positive, because older individuals have a higher probability of receiving a pension, but significant at 10 percent only.

In contrast, in columns 4 and 5, being age-eligible in a treated locality increases the probability of receiving government cash transfers of elderly men and women by 27 and 32 percentage points, respectively. In these columns, the positive and significant effects of the age dummy suggest that individuals age 70 and older have a higher probability of receiving public transfers than their younger counterparts in both types of localities. This could be explained by the existence of other programs targeted at this population at the state level. In addition, some individuals in control localities might take advantage of a close friend or relative living in a locality with less that 30,000 inhabitants and benefit from the 70 y Más program by declaring residence there, even though they are not supposed to. Nevertheless, in columns 3 and 4 the estimates for our key interaction are at least two times those of the age dummy alone, and they are significant at 1 percent, which confirms that

[8]To a large extent, this is due to a last-minute budget cut for the 2010 census caused by the 2009 economic crisis, resulting in a significantly shorter questionnaire compared to the 2000 census.

[9]For instance, to qualify for the minimum guaranteed pension, an individual must accumulate 25 years of contributing to IMSS, i.e. of formal employment.

the 70 y Más program effectively increased the public transfers received by the eligible in treated areas. Furthermore, being in a treated locality has no statistically significant effect on either pension or government transfer receipt, which is additional evidence of the similarities between treatment and control localities.

(Table 2 about here)

The concern that the relatively small number of localities may not allow for proper randomization can partly be addressed by comparing the means of observed variables between treatment and control groups, as we do in table 3 for a number of locality level characteristics obtained from the 2010 census, and that will be included as additional control variables. As can be seen, the two groups look almost identical.

(Table 3 about here)

Table (4) provides summary statistics on individual and household characteristics for individuals age 60 and older in our sample. For household characteristics, the means are weighted by the number of elderly members. We break down the statistics by age and locality groups to compare individuals age 60 to 69 and individuals age 70 and older in treatment and control localities. For both age groups, we observe once again that the mean characteristics are almost identical between the two types of localities. When comparing older to younger individuals, we see some expected patterns. For instance, the mean years of schooling are low for both, but more so for the older group, which is expected given that schooling levels have been increasing across age cohorts in Mexico. In addition, about 40 percent of individuals in the oldest group in both treated and control localities report being disabled, whereas only about 18 percent of the younger group do so.

(Table 4 about here)

To be able to estimate the effects of interest by wealth quintiles, we constructed a wealth index, which is also shown in the table. It is based on 20 different binary variables at the household level, indicating the quality

of the dwelling and the existence of certain durable consumption goods.[10] Using these variables, we use a standard principal components approach to construct the index, which is based on the entire 10 percent micro sample and, thus, it is representative of all Mexican households. Table 5 shows the percentage of households in our sample that, according to this wealth index, belong to each wealth quintile in treatment and control localities. It can be seen that the top and bottom quintiles are underrepresented, whereas the central three quintiles, in particular the second and third, are over-represented. Wealth can be expected to correlate strongly with city size, as the highest levels of poverty can be found in rural areas and most of the richest individuals live in big cities. Given that our sample consists only of smaller towns, this explains the observed pattern. Also, the fraction of households in the upper three quintiles is larger in control localities than in treated ones, so control households appear to be slightly wealthier.

(Table 5 about here)

In the next section, we present our main estimation results by age, household type and gender. For each of these groups, we present results for the entire sample, and for two subsamples of relatively poor individuals: those in the first three wealth quintiles, and in the first quintile. As we restrict the sample, we lose some observations, but we also expect to find a stronger effect for two reasons. First, elderly individuals in better-off households might not take the time to sign up for the modest cash transfer from 70 y Más in the first place, so excluding the two richest wealth quintiles could result in a closer alignment between assignment and actual treatment. Second, we would also expect the marginal effect of the additional income on labor market decisions to be higher for poorer households. Our preferred specification includes additional control variables at the individual (*indigenous, years of schooling, disabled*), and household (*wealth index*) levels, plus all the locality-specific characteristics listed in table 3. For a few cases, we also present the results for the most parsimonious specification (see expression (1) above), and for the inclusion of state-level fixed effects.

[10]The first group of characteristics indicates whether or not the dwelling has solid floors, solid walls, a solid roof, a separate kitchen, piped water, its own toilet with a water connection, a connection to the sewage system, a gas or electric stove, a water cistern, hot water, a shower, or an electricity meter. The consumption variables capture whether or not the household has a radio, a tv set, a fridge, a washing machine, a car, a computer, a phone(either landline or mobile), or an internet connection.

In all estimation, standard errors are clustered at the locality level, as suggested by Bertrand, Duflo, and Mullainathan (2004). For ease of interpretation, the tables present average partial effects of the probit model and their corresponding standard errors. Furthermore, each column reports the wealth quintiles for the sample, the total number of observations and the number of localities included (since we lose a few localities when restricting the sample).

4 Results

4.1 Effects on the elderly

Tables 6 to 7 present the average partial effects from probit estimations for the labor force participation of individuals age 60 and older by gender and by whether they live alone, in a couple, or in an extended household.

In table 6, columns 1 to 3 show the estimation results for full sample of elderly men who live by themselves. In column 1, the estimation includes only the regressors shown in the table, and not any other individual, household or locality level controls; in column 2 we add those additional controls, which were described in the previous section; and in column 3, we further control for state fixed effects. In columns 6 to 8 we repeat this exercise for the full sample of elderly women who live by themselves.

For single elderly males, column 1 shows that being age 70 and older in a locality with less than 30,000 inhabitants, where the program operates, has a negative effect of 15.7 percentage points on the probability of working, which is significant at 5 percent. Given that about 34 percent of men age 70 and older work in both types of localities, as shown in table 1 , this effect amounts to a 46 percent decrease in their labor force participation. Columns 2 and 3 show that adding individual, household and locality characteristics and state fixed effects changes our key estimate only slightly, and it remains significant at 5 percent, so it is robust to the inclusion of these additional controls. For single elderly men in the first three wealth quintiles, the program estimate in column 4 is about the same as in the first three columns, and in column 5, as would be expected, it is the largest in magnitude for the poorest men in quintile 1, who reduce their labor force participation by 20 percentage points if they are age-eligible in a treated locality.

In contrast with the results obtained for single elderly men, columns 6 to 10 in table 6 show that for single elderly women, being age 70 and older in a locality with less than 30,000 inhabitants has a negative, but not statistically significant, effect on the probability of working. Even though the estimated effect for women is never statistically significant, it is not sensitive to the inclusion of additional controls and state fixed effects, as shown in columns 6 to 8; it is large relative to their 9 to 11 percent probability of working; and it becomes the largest for women in the first wealth quintile, as expected.

Other results worth noting from table 6 are that the coefficient on the dummy for being age 70 and older by itself is mostly not significant across columns, except for column 6, and so is the dummy for being in a treated locality, except for columns 2, 4 and 5, in which it is significant, but at 10 percent only. In column 10, the locality dummy is large and significant at 5 percent, indicating that elderly women in the first quintile have a higher labor force participation if they live in a smaller locality. Despite these exceptions, overall these results confirm that elderly single men and women living in localities just below and above the 30,000 inhabitants threshold are comparable in terms of their labor force participation. In all columns, age has a negative and significant effect on the probability of working,as would be expected, whereas the locality population has a positive, but not statistically significant effect.

(Table 6 about here)

As shown in table 6, the program effects are robust to the inclusion of other control variables. This holds for all our estimations, so to avoid repetition in the remaining tables we only show our preferred estimates, which are those that control for individual, household and locality characteristics, but not state fixed effects. The reason for not including state fixed effects is the loss of precision resulting from a smaller number of observations when we restrict our samples to the poorest quintiles, and in the next section, to localities in a narrower band around the 30,000 population threshold.

Table 7 show the results for elderly men and women who live with their spouse and no one else in the household. In this table, our key independent variables are the interaction of having a male age 70 and older in the household in a locality with less than 30,000 inhabitants, and a similar one for having a female age 70 an older in the household. Given that we run estimations for men and women, these interactions allow us to separate the effect

of being individually eligible for the program in a participating locality, from the effect of having a spouse that qualifies for the program. The first row of table 7 shows that for men, the effect of being individually eligible for the program in a treated locality on their labor force participation is positive, but small and not statistically significant, in columns 1 and 2. In those same columns, the effects of living with an age-qualifying woman in a treated locality are also small and not statistically significant either. So, for the whole sample of older men who live in a couple, and for those among them who are in the first three wealth quintiles, the program did not affect their labor participation decision either through their own eligibility or that of their spouse. However, column 3 shows that for men in the lowest wealth quintile, being age-eligible for the program in a treated locality has a negative effect of 25 percentage points on their probability of working, which is significant at 5 percent. Conversely, in that same column the effect of living with an age-qualifying woman in a treated locality is positive, but not statistically significant.

Columns 4 to 6 in table 7 report the results for older women who live with their spouse. The second row shows that the effects of being individually eligible for the program in a treated locality on the labor force participation of older women are all negative, but they become larger in magnitude and more statistically significant only for relatively poor women. In column 5, for women in the first three wealth quintiles, the program has a negative effect of 8.4 percentage points on their labor supply, which is significant at 10 percent, and in the last column, for women in the lowest wealth quintile, the corresponding effect is -16.7 percentage points, which is significant at 5 percent. As before, the effect of having an age-eligible spouse in a treated locality, which for women is reported in the first row, is positive, but small and not statistically significant, in the last three columns.

Thus, the results for both older men and women living in a couple confirm that the program decreases the labor force participation of those beneficiaries who are relatively poor. This is expected given that the transfer represents a higher proportional income increase for them. In addition, these results show that the program affects labor force participation through the individual's own exposure to the program, and not through that of his or her spouse, which is consistent with non-unitary models of the household (McElroy and Horney 1981) and previous empirical work on the subject (Schultz 1990).

(Table 7 about here)

Table 8 presents the estimates for older men and women in extended households, i.e. those in which more than one generation live together. The majority of the elderly individuals in our sample live in extended households, as can be seen by comparing the sample sizes in this table with those in previous ones. For all elderly men in such households, being age-eligible in a treated locality has a negative, but small and not statistically significant, effect on their labor force participation in the first column. As before, the effects are larger in absolute value for the poor. Men in the first three wealth quintiles decrease their labor force participation by about 6 percentage points when exposed to the program, and so do those in the lowest quintile, but only the estimate in column 2 is significant at 5 percent. However, the loss of significance is probably the result of the much reduced sample size. In columns 1 to 3 of table 8, the effects of having other age-qualifying individuals in the household in treated localities are close to zero and not statistically significant, confirming that the reduction in labor supply caused by the program is working through the income of the individual, rather than that of the household.

For elderly women who live in extended households, table 8 shows that being age 70 and older in a treated locality has positive, but statistically insignificant effects on the probability of working in the last three columns, even for those in the lowest wealth quintiles. In addition, the effects of having other age-eligible individuals in the household in a locality in which the program operates are close to zero and not statistically significant either, except for the positive effect of 12 percentage points in column 6, which is significant at 5 percent. Thus, having other potential beneficiaries in the household actually increases the labor force participation of elderly women living in the poorest extended households. Given that the majority of households that have more than one individual over the age of 70, have two of opposite sex, for the poorest women this positive effect is likely due to the presence of a male beneficiary. A potential explanation for this result is that poor elderly men receiving the program reduce their work for pay, as shown in columns 2 and 3, and increase their housework time, thus freeing up time for poor older women to participate in the labor market. However, we find no comparable effect for poor women living in couples.

(Table 8 about here)

In summary, our results suggest that the program effectively decreases the labor force participation of eligible men, particularly those who are relatively

poor, and has a weaker effect on that of eligible women. Specifically, we only find significant negative effects for women who live with their spouse and belong to the first three wealth quintiles. These differences by gender could be due to the low labor force participation of elderly women to start with, which is a third of that of elderly men as shown in table 1, so the program would have a lower impact on that margin for them. In addition, if the program reduces the private transfers received by women more than those received by men, as shown in the robustness checks section, the income effect of the program would be further neutralized for elderly women. For elderly men, the magnitude of the negative effect on labor supply varies across household structures. Specifically, the effects for elderly men in extended households are roughly between 25 to 50 percent of those found for men living by themselves or in a couple. The possibility of exploiting economies of scale in larger households, and the housing transfer that elderly men might be receiving through shared living arrangements probably makes their labor force participation less responsive to the program transfer.

4.2 Effects on other household members

The transfer from the program could potentially affect the labor force participation of non-elderly individuals that live with beneficiaries, so in table 9 we present the estimates for adults age 18-59 and children age 12-17 by gender. In these estimations, our key regressor is the interaction of the number of age-qualifying individuals in the household with the dummy for a treated locality, which captures both household eligibility for 70 y Más and variation in the amount potentially received from the program. In the literature, given that resources owned by women are often found to have different effects than those owned by men, it is standard to further control for the gender of the beneficiary, as in Bertrand, Mullainathan, and Miller (2003), Juárez (2010), and Edmonds (2006). However, for our samples of prime-age adults and adolescents, we only find significant differences in the program's effect by beneficiary's gender for boys age 12-17. So, for the sake of brevity, we omit these results, but they are available upon request.

The first row of the top panel in table 9 shows that for prime-age men and women living in extended households, our key coefficients are all small and not statistically significant, not even for those who are relatively poor. So, we find no evidence of the program changing the work participation

decision of prime-age individuals. As mentioned above, for prime-age adults no significant effects are found when explictily controlling for the gender of the age-eligible individuals in the household either. These results are different from those found by similar papers in the literature, in which an age-conditioned public transfer for the elderly reduces the labor supply of individuals in their prime (Juárez 2010, Bertrand, Mullainathan, and Miller 2003). For the 70 y Más program, Galiani and Gertler (2009) find that the program decreases the labor income of individuals age 25-54, when comparing households with age-qualifying individuals in localities just above and below the 2,500 inhabitants threshold. We cannot directly compare our estimates to theirs because of the differences in the dependent variable (labor income vs work participation), sample and estimation strategy. We also estimate similar regressions for the probability of migrating for work, as do Ardington and Hosegood (2009) for the South African pension. These results, which we omit, show no significant effects of the program on migration either.

The bottom panel of table 9 shows that, for all boys age 12 to 17, having an additional individual age 70 and older in the household in a treated locality has a negative effect of 4.5 percentage points on their labor force participation. This effect is about 22 percent of the labor force participation rate for boys in this age group, as shown in table 1, but it is significant at 10 percent only. In column 2, for boys in the first three wealth quintiles, this effect increases to 6.4 percentage points, and becomes statistically significant at 5 percent. In both cases, this negative effect is mostly driven by the effect of living with a female beneficiary in a treated locality (not shown). However, column 3 shows that for the poorest boys, the program effect becomes positive and statistically insignificant.

Even though, as argued before, we would expect the negative effects to be stronger among the poorest, in the case of rural adolescent boys, another program might explain why we find otherwise. The Progresa/Oportunidades program, which started in 1997 and continues to operate, pays a generous cash transfer to poor households for keeping their children in school, and has been found to decrease the labor force participation of rural adolescent boys in both the short and medium term[11]. Thus, the preexistence of Progresa

[11] Skoufias and Parker (2001) show that Progresa reduced the labor force participation of adolescent boys by 15 to 20 percent in the early years of the program. Behrman, Parker, and Tood (2007) show that, in the medium term, Progresa lowers their probability of employment by keeping them in school and making them postpone their entry to the labor market.

might explain why the 70 y Más program causes no further decrease in the labor force participation of the poorest boys.

For girls age 12-17, columns 4 to 6 in the bottom panel show that the effects of the program on labor force participation are negative, they become larger in absolute value for those in the lower wealth quintiles, but they are not significant at any conventional levels. Controlling for the gender of the recipient yields no significant results either, so we omit these results. Once again, these gender differences among adolescents might be due to the lower probability of working in the market of girls, compare to same-age boys, and a higher probability of working in the house, which we do not measure.

(Table 9 about here)

5 Robustness Checks

We conduct two additional exercises to check the robustness of our main results. First, we narrow the bounds around the 30,000 inhabitants cut-off point to 27,000-33,000 for our most important results presented above. As explained in section 3, this yields a more evenly divided sample of 20 treatment and 20 control localities. Second, we exclude from our sample those states that implemented similar local transfer programs for individuals age 70 and older between 2006 and 2010. Both of these exercises reduce the number of localities to around 40, roughly cutting our sample size in half. We may, therefore, find results not always to maintain statistical significance and the lower number of localities may pose, in some cases, threats to randomization. Finally, to shed more light on our main results we examine the program effects on living arrangements and the private transfers received by the elderly.

Table 10 shows the results from the first exercise. For elderly individuals and adolescents, we present results only for those who are relatively poor, i.e those in the first three quintiles or only in the first one, depending on the column. We do not present results for prime-age adults, because we found no significant effects for them in the previous section. For the elderly living by themselves, results are presented for the lowest three wealth quintiles. Comparing the first column in table 10 with column 4 in table 6, we see that narrowing the bounds around the population threshold yields an even stronger negative effect of 24.7 percentage points on the labor force participation of single men, which is significant at 1 percent. For single elderly

females, the estimate in column 2 of table 10 is about the same magnitude and significance as the one in column 9 of table 6.

For the elderly living in couples, we focus on those who belong to the first wealth quintile, given that we only got significant results for them in table 7. Once again, we find a stronger negative effect of 48 percentage points for men if they qualify for the program themselves, which is significant at 1 percent, and no significant effect if their spouse qualifies, as before. For the sake of completeness, we also present results for elderly females living in couples. However, after narrowing the bounds, we are left with only 11 women who participate in the labor force out of 102 observations, so we are forced to conduct the estimation with the most parsimonious model, excluding all the additional individual and locality level characteristics. As a result, in column 4 of table 10, the negative program effect we previously found for women is no longer statistically significant, which is expected given the small number of labor force participants in this subsample.

For the elderly living in a multi-generational households, we show results for the sample comprising the lowest three wealth quintiles in columns 5 and 6 of table 10. The statistically significant effect found in table 8 for males disappears. However, it must be noted that the program effect for elderly men in extended households was already weaker compared to the effect for men who live by themselves or in a couple in our main tables. In column 6 of table 10 we continue to find no effect on older females living in extended households.

The last two columns of table 10 show the results for adolescent boys and girls. In column 7, for boys we find a point estimate of -6 percentage points, which is almost identical to the corresponding one in table 9, but not statistically significant. As before, this loss of significance is likely the result of reducing our sample from 1,242 to 690 observations. The corresponding t-statistic drops from 2.133 to 1.5, and a simple back-of-the-envelope calculation shows that this is almost exactly what would be expected due to the reduction of the sample size if it occurred by random sampling. For girls, we find no significant effect of the program on labor force participation, as before.

(Table 10 about here)

As mentioned before, several Mexican states have also implemented their own non-contributory pension schemes for individuals age 70 and older. Except for the age cutoff, these programs differ in their additional eligibility

rules, transfer amounts and year of implementation[12]. So, as an additional robustness check, we exclude the 6 states in our sample that implemented such parallel programs between 2007 and 2010, and re-estimate the effects of the 70 y Más federal one[13]. The results are presented in table 11 for the same groups of poor individuals as in table 10.

Even though we use the wider bounds for this exercise, we also lose many observations from the excluded states. Nevertheless, in the first two columns of table 11, we obtain an estimate for single elderly men that is very similar to the corresponding one in table 6, and an insignificant estimate for single elderly women, which is also consistent with our main results. For elderly men and women who live in a couple, we now find larger negative effects of own eligibility, which are both significant at 1 percent. Thus, elderly men and women who live in a couple and belong to the first wealth quintile reduce their labor force participation by 42 and 34 percentage points, respectively, if they are eligible for the program themselves. In contrast, having a spouse who is eligible for the program has no significant effect, as in table 7. For the elderly living in extended households, in columns 5 and 6 we obtain estimates that are close in magnitude to those in table 8, but the estimate for men is no longer statistically significant. Finally, in the last two columns, the program effect for boys is about the same magnitude as in our main tables, but becomes statistically insignificant, and the effect for girls remains insignificant.

In summary, our main results are robust to tightening the bounds around the locality population threshold and to the exclusion of states with their own local programs.

(Table 11 about here)

Given that we find different effects of the program on the labor force participation of the elderly, depending on the type of living arrangements they have, it is important to know whether these arrangements themselves are being affected by the program. In addition, we estimate the program effect on the private transfers received by the elderly. In our sample 11 percent of elderly males and 16 percent of elderly females report receiving transfers from friends and family. If 70 y Más crowds out these private

[12]For a summary of these state programs, their rules, coverage and year of implementation, see Aguila, Diaz, Manqing-Fu, Kapteyn, and Pierson (2011), table A.1..

[13]These states are Durango, Jalisco, Sinaloa, Sonora, Tabasco and Yucatan.

transfers, then the program's impact on labor force participation would be reduced.

We present these additional results in table 12 for the full samples of elderly men and women, and for those in the first three and first wealth quintiles. In the top panel, the dependent variable is a dummy equal to one if the person lives in a one-generational household, i.e. either alone or only with his or her spouse. In all columns, being age 70 and older in a treated locality has a positive, but mostly small and statistically insignificant effect, on the probability that elderly men and women live in a one-generational household. Thus, at least until 2010, the program had no effect on the living arrangements of beneficiaries, not even of those who are relatively poor.

In the bottom panel of table 12, the dependent variable is a dummy indicating the receipt of a transfer from friends or family. In columns 1 to 3, for elderly men our key estimates are positive, but close to zero and statistically insignificant. Thus, we find no evidence of crowding out of private transfers at the extensive margin for elderly men. In contrast, in columns 4 to 6, being age-eligible in a treated locality has a negative effect on the probability of receiving a transfer from friends and family for elderly women. For the full sample of women, the effect is small and not statistically significant, but for those in the first three wealth quintiles, the effect becomes larger and statistically significant at 10 percent. In the last column, for the poorest women, we find that the program reduces the probability of receiving private transfers by 8 percentage points, an effect that is significant at 5 percent. These findings show that the private support received by older women decreases in response to 70 y Más, but not that received by older men.[14] So, the mostly insignificant effects of the 70 y Más program on the labor force participation of elderly women could be partly explained by the larger crowding out of private transfers we observe for them, in addition to their low labor force participation to begin with.

[14]These results are broadly consistent with those reported by Amuedo-Dorantes and Juárez (2012). Using the Mexican Income and Expenditure Survey (ENIGH), they find that 70 y Más crowds out the private transfers received by women to a larger extent than those received by men.

6 Conclusions

Over the course of the last decade, many Latin American countries have implemented non-contributory social protection schemes aimed at providing a minimal safety net for their most vulnerable citizens. These programs, many of which are not means-tested, are relatively easy to administer and their benefits are usually hard to be embezzled or diverted towards clientelistic ends by local officials. The crucial question is to what extent these programs are able to meet the policy goals they were designed for.

In this paper, we estimate the effect of the non-contributory rural pension scheme 70 y Más in Mexico on labor force participation. As a pension scheme, the primary goal of this program is to relieve the poor of the need to work at an advanced age. However, given that a large fraction of the Mexican rural elderly live in extended households, the program might also benefit non-elderly individuals if the pension is partly shared with them.

Applying a difference-in-differences estimation around two eligibility thresholds, age and locality population, we find that the program significantly reduces the labor force participation of male beneficiaries. This effect is particularly pronounced for men in the lowest wealth quintiles, and for those living either by themselves or only with their spouse. Given these groups might be the most vulnerable, the program seems to accomplish its stated goals. Yet, for elderly women, we find mostly insignificant effects of the program on their labor supply, which are explained by their low participation in market work and a significant crowding out effect of the program on their probability of receiving private transfers. This finding suggests that some of the program resources are ultimately benefiting younger individuals.

Finally, we find no effects of the program on the labor force participation of prime-age individuals, but a negative and significant effect on that of poor adolescent boys, who can be considered the marginal worker within a household. This once again shows a certain degree of fungibility of program benefits, even if in a way that may be considered desirable. Given that we only focus on the labor supply response at the extensive margin, a broader picture of the program impact on the well being of beneficiaries requires further research on other outcomes of interest, such as consumption and health.

Figure 1: Treatment and control localities

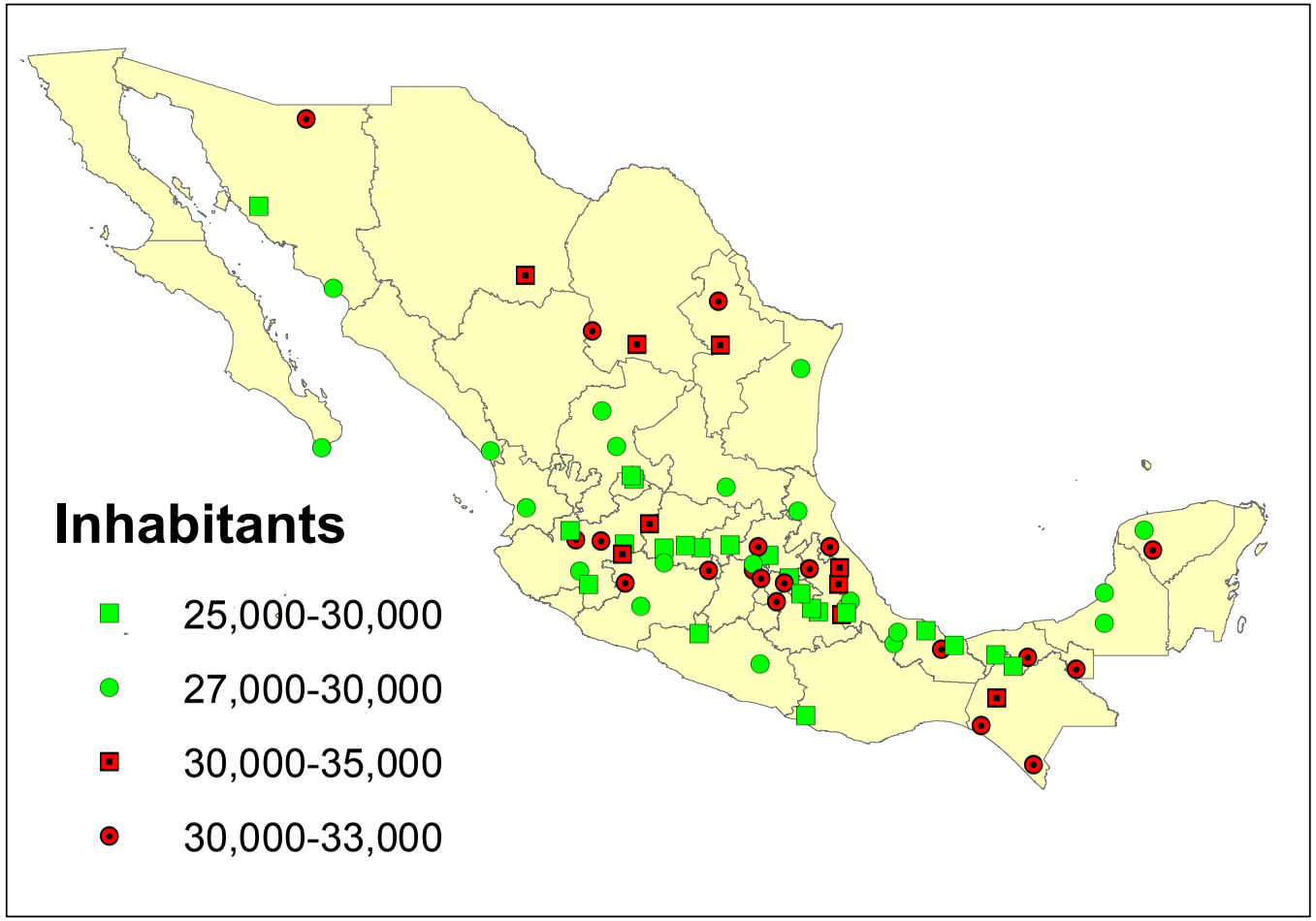

Table 1: Labor force participation by gender and age

	Treated loc	Control loc	N
Men			
Age 12-17	0.20	0.19	1829
Age 18-59	0.83	0.83	8464
Age 60-69	0.65	0.62	4217
Age 70+	0.34	0.34	3492
Women			
Age 12-17	0.08	0.07	1789
Age 18-59	0.50	0.49	10981
Age 60-69	0.25	0.22	4852
Age 70+	0.11	0.09	4326

Table 2: Determinants of pensions and government transfers for individuals 60 years of age or older.

	(1) Pension Male	(2) Pension Female	(3) Gov't Transfer Male	(4) Gov't Transfer Female
Age 70+*Locality <30,000	-.003	-.017	.269***	.316***
	(.027)	(.015)	(.043)	(.041)
Dummy=1 if age 70+	.042*	.027*	.119***	.153***
	(.023)	(.015)	(.033)	(.033)
Dummy=1 if locality <30,000	.027	.054	.033	-.034
	(.069)	(.040)	(.057)	(.062)
Age	.0009	.0006	.007***	.003***
	(.001)	(.0008)	(.0009)	(.0009)
Locality population	.0000177	.0000145*	.0000112	4.38e-06
	(.0000158)	(8.44e-06)	(8.55e-06)	(9.27e-06)
Obs.	7709	9178	7709	9178

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Point estimates show average partial effects of a Probit estimation on receiving a pension or a government transfer, respectively. Standard errors are clustered at the level of the locality.

Table 3: Summary statistics for locality level characteristics for treatment and control group (means and, in parenthesis, standard deviation)

	treated loc	control loc
Elevation (m)	1024	1187
	(877)	(867)
Female fraction of the population	0.52	0.52
	(0.01)	(0.01)
Elderly fraction of the population (age≥65)	0.06	0.06
	(0.01)	(0.01)
Average fertility	2.36	2.31
	(0.20)	(0.14)
Indigenous fraction of the population	0.06	0.06
	(0.09)	(0.15)
Average years of schooling for those age≥15	8.52	8.66
	(0.89)	(0.86)
Labor force as fraction of population	0.53	0.53
	(0.03)	(0.03)
Female fraction of the labor force	0.35	0.35
	(0.03)	(0.03)
Unemployment rate	0.04	0.04
	(0.02)	(0.02)
Female unemployment rate	0.02	0.03
	(0.01)	(0.01)
Fraction of labor force in formal sector	0.36	0.40
	(0.13)	(0.14)
N	42	29

Table 4: Summary statistics for individual and household characteristics for each group (means and, in parenthesis, standard deviation).

	70+treated	70+control	6069 treat	6069control
Age	77.62	77.60	63.97	63.97
	(6.39)	(6.33)	(2.87)	(2.83)
Female	0.55	0.56	0.54	0.53
	(0.50)	(0.50)	(0.50)	(0.50)
Indigenous	0.19	0.14	0.19	0.13
	(0.40)	(0.34)	(0.39)	(0.34)
Years of schooling	2.78	3.41	4.58	5.22
	(3.44)	(3.74)	(4.32)	(4.41)
Disabled	0.40	0.37	0.18	0.17
	(0.49)	(0.48)	(0.39)	(0.38)
Wealth Index	1.14	1.35	1.46	1.59
	(1.98)	(1.93)	(1.93)	(1.89)
Lives alone	0.14	0.15	0.08	0.08
	(0.35)	(0.35)	(0.27)	(0.28)
Lives only with spouse	0.17	0.17	0.17	0.20
	(0.38)	(0.37)	(0.38)	(0.40)
Lives in an extended hh	0.58	0.58	0.67	0.65
	(0.49)	(0.49)	(0.47)	(0.48)
Someone disabled in hh	0.50	0.48	0.31	0.31
	(0.50)	(0.50)	(0.46)	(0.46)
Household size	3.67	3.62	3.97	3.88
	(2.38)	(2.32)	(2.34)	(2.36)
Individuals age 12-17 in hh	0.75	0.68	0.87	0.80
	(1.25)	(1.17)	(1.29)	(1.27)
Boys age 12-17 in hh	0.36	0.34	0.45	0.41
	(0.74)	(0.70)	(0.81)	(0.77)
Girls age 12-17 in hh	0.38	0.34	0.42	0.39
	(0.78)	(0.74)	(0.79)	(0.78)
Individuals age 18-59 in hh	1.39	1.39	1.57	1.53
	(1.48)	(1.47)	(1.45)	(1.44)
Men age 18-59 in hh	0.62	0.66	0.67	0.66
	(0.84)	(0.85)	(0.85)	(0.85)
Women age 18-59 in hh	0.77	0.73	0.90	0.87
	(0.94)	(0.91)	(0.96)	(0.94)
Individuals age 70+ in hh	1.34	1.36	0.17	0.17
	(0.49)	(0.50)	(0.40)	(0.40)
Men age 70+ in hh	0.61	0.61	0.11	0.11
	(0.51)	(0.51)	(0.31)	(0.31)
Women age 70+ in hh	0.73	0.74	0.06	0.06
	(0.50)	(0.49)	(0.25)	(0.25)
Number of observations	4311	3467	4995	4074

Table 5: Percentage of households in each wealth quintile for treatment and control localities.

	1	2	3	4	5
Treatment	16.48%	25.45%	24.95%	21.57%	11.55%
Control	14.53%	22.36%	27.9%	22.18%	13.03%

Table 6: Results for elderly living by themselves

	(1) Males	(2) Males	(3) Males	(4) Males	(5) Males	(6) Females	(7) Females	(8) Females	(9) Females	(10) Females
Age 70+*Locality <30,000	-.157**	-.125**	-.144**	-.132**	-.199**	-.058	-.060	-.061	-.050	-.118
	(.062)	(.063)	(.060)	(.067)	(.098)	(.044)	(.043)	(.044)	(.049)	(.093)
Dummy=1 if age 70+	.074	.041	.048	.059	.044	.082**	.064	.060	.062	.067
	(.066)	(.066)	(.064)	(.071)	(.087)	(.040)	(.042)	(.043)	(.041)	(.076)
Dummy=1 if locality <30,000	.081	.114*	.116	.121*	.189*	-.032	.013	.065	.001	.200**
	(.095)	(.064)	(.083)	(.064)	(.108)	(.065)	(.049)	(.051)	(.055)	(.088)
Age	-.020***	-.017***	-.016***	-.017***	-.016***	-.018***	-.015***	-.015***	-.015***	-.013***
	(.003)	(.003)	(.003)	(.003)	(.004)	(.003)	(.003)	(.002)	(.002)	(.005)
Locality population	-7.43e-06	.0000105	6.79e-06	9.63e-06	1.74e-06	-.0000153*	-4.81e-06	5.01e-06	-9.38e-06	.0000212
	(.0000154)	(.0000109)	(.0000145)	(.0000115)	(.0000198)	(9.16e-06)	(7.91e-06)	(9.01e-06)	(8.78e-06)	(.0000166)
Num. Loc.	69	69	68	68	63	70	70	70	70	61
Obs.	737	727	724	608	268	1133	1125	1125	917	269
Wealth Quintiles	All	All	All	1-3	1	All	All	All	1-3	1
All Controls	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	Yes	No	No	No	No	Yes	No	No

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 7: Results for elderly living in couples

	(1) Males	(2) Males	(3) Males	(4) Females	(5) Females	(6) Females
Male 70+ in hh* Locality<30,000	.022	.051	-.250**	.005	.020	.017
	(.055)	(.061)	(.114)	(.053)	(.068)	(.073)
Female 70+ in hh* Locality<30,000	.007	-.016	.056	-.050	-.084*	-.167**
	(.066)	(.077)	(.113)	(.047)	(.046)	(.070)
Dummy=1 if a male 70+ in hh	.012	-.051	.134	.062	.053	-.049
	(.051)	(.058)	(.082)	(.042)	(.055)	(.062)
Dummy=1 if a female 70+ in hh	.052	.063	.070	.023	.011	.055
	(.057)	(.063)	(.102)	(.050)	(.052)	(.099)
Dummy=1 if locality <30,000	-.036	-.058	.023	.075***	.065**	.104
	(.033)	(.043)	(.083)	(.027)	(.031)	(.064)
Age	-.018***	-.017***	-.022***	-.009***	-.005*	-.002
	(.002)	(.003)	(.005)	(.003)	(.003)	(.007)
Locality population	-.036	-.058	.023	.075***	.065**	.104
	(.033)	(.043)	(.083)	(.027)	(.031)	(.064)
Num. Loc.	71	71	59	70	70	57
Obs.	1648	1075	228	1304	866	182
Wealth Quintiles	All	1-3	1	All	1-3	1

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All specifications include all control variables, but not state level fixed effects. Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 8: Results for elderly living in multigenerational households

	(1) Males	(2) Males	(3) Males	(4) Females	(5) Females	(6) Females
Age 70+*Locality <30,000	-.024	-.066**	-.061	.029	.041	.055
	(.027)	(.033)	(.072)	(.023)	(.033)	(.072)
Others age 70+ in hh* Locality<30,000	-.002	.002	.099	.0002	.035	.124**
	(.035)	(.039)	(.096)	(.022)	(.025)	(.057)
Dummy=1 if age 70+	.029	.011	.032	-.019	-.030	-.065
	(.027)	(.027)	(.058)	(.024)	(.033)	(.075)
Others age 70+ in hh	.019	.005	-.051	-.017	-.056***	-.132***
	(.023)	(.028)	(.059)	(.020)	(.021)	(.047)
Dummy=1 if locality <30,000	-.009	.009	-.002	.023	.005	-.011
	(.030)	(.033)	(.096)	(.018)	(.024)	(.046)
Age	-.021***	-.019***	-.018***	-.010***	-.010***	-.011***
	(.001)	(.002)	(.003)	(.001)	(.002)	(.004)
Locality population	-3.09e-07	-2.62e-06	1.14e-06	2.31e-06	4.01e-07	-8.03e-06
	(5.61e-06)	(6.23e-06)	(.0000152)	(3.31e-06)	(3.52e-06)	(8.32e-06)
Num. Loc.	71	71	68	71	71	65
Obs.	4922	2974	592	5565	3376	658
Wealth Quintiles	All	1-3	1	All	1-3	1

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All specifications include all control variables, but not state level fixed effects. Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 9: Results for non-elderly individuals living in a household with at least one elderly individual

	(1) Males	(2) Males	(3) Males	(4) Females	(5) Females	(6) Females
18-59 years of age:						
# age 70+ in hh* Locality<30,000	.016	-.0003	.038	.006	-.008	.017
	(.011)	(.015)	(.031)	(.019)	(.022)	(.059)
# age 70+ in hh	-.029***	-.021**	-.015	.016	.026*	.030
	(.007)	(.009)	(.022)	(.015)	(.015)	(.037)
Dummy=1 if locality <30,000	-.030*	-.013	-.042	-.012	-.017	-.064
	(.018)	(.019)	(.032)	(.026)	(.032)	(.056)
Age	.006***	.004***	.003**	.003***	.003***	.001
	(.0004)	(.0005)	(.001)	(.0005)	(.0005)	(.001)
Locality population	-1.80e-06	-1.01e-06	-5.00e-06	-2.31e-06	-3.13e-06	1.28e-06
	(3.04e-06)	(3.22e-06)	(6.77e-06)	(4.17e-06)	(5.04e-06)	(9.66e-06)
Num. Loc.	71	71	69	71	71	69
Obs.	8386	5213	1101	10873	6552	1246
12-17 years of age:						
# age 70+ in hh* Locality<30,000	-.045*	-.064**	.033	-.006	-.027	-.063
	(.024)	(.030)	(.067)	(.022)	(.027)	(.039)
# age 70+ in hh	.009	.004	-.002	-.004	-.009	.009
	(.020)	(.022)	(.045)	(.017)	(.021)	(.032)
Dummy=1 if locality <30,000	.026	.050	.006	.007	.004	.039
	(.042)	(.052)	(.074)	(.029)	(.032)	(.064)
Age	.099***	.112***	.128***	.039***	.041***	.040***
	(.005)	(.007)	(.010)	(.005)	(.005)	(.011)
Locality population	5.68e-06	7.02e-06	3.67e-06	-1.56e-06	-3.66e-06	-2.92e-07
	(7.23e-06)	(1.00e-05)	(.0000149)	(3.92e-06)	(4.78e-06)	(.0000113)
Num. Loc.	71	71	53	71	71	50
Obs.	1818	1242	317	1783	1168	265
Wealth Quintiles	All	1-3	1	All	1-3	1

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All specifications include all control variables, but not state level fixed effects. Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 10: Results for elderly in localities with 27,000-33,000 inhabitants

	(1) Single Males	(2) Single Females	(3) Couples Males	(4) Couples Females	(5) Multi Males	(6) Multi Females	(7) Minor Males	(8) Minor Females
Age 70+*Locality <30,000	-.247***	-.058			-.010	.001		
	(.066)	(.050)			(.041)	(.040)		
Male 70+ in hh* Locality <30,000			-.478***	.035				
			(.080)	(.080)				
Female 70+ in hh* Locality <30,000			-.019	-.091				
			(.143)	(.089)				
Others age 70+ in hh* Locality<30,000					-.080*	.045		
					(.048)	(.029)		
# age 70+ in hh* Locality<30,000							-.060	-.003
							(.040)	(.034)
Dummy=1 if age 70+	.158***	.038			.009	-.057		
	(.061)	(.046)			(.035)	(.044)		
Dummy=1 if a male 70+ in hh			.177**	.040				
			(.082)	(.055)				
Dummy=1 if a female 70+ in hh			.052	.055				
			(.098)	(.080)				
Others age 70+ in hh					.021	-.080***		
					(.033)	(.024)		
# age 70+ in hh							-.009	-.035
							(.030)	(.022)
Dummy=1 if locality <30,000	.168**	.009	-.049	.120	-.005	.004	.067	.005
	(.072)	(.062)	(.164)	(.086)	(.040)	(.033)	(.066)	(.041)
Age	-.022***	-.012***	-.022***	-.002	-.021***	-.008***	.118***	.039***
	(.004)	(.003)	(.005)	(.005)	(.002)	(.002)	(.010)	(.006)
Locality population	-9.91e-06	1.59e-07	-.0000294	.120	-9.69e-06	-2.84e-06	3.09e-06	-9.85e-06
	(.000032)	(.0000221)	(.0000414)	(.086)	(.0000148)	(.0000113)	(.0000229)	(.0000146)
Num. Loc	38	39	33	31	40	40	40	40
Obs.	376	542	141	103	1768	1911	690	648
Wealth Quintiles	1-3	1-3	1-3	1-3	1	1	1-3	1-3

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All specifications include all control variables, but not state level fixed effects. Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 11: Results excluding states with their own programs

	(1) Single Males	(2) Single Females	(3) Couples Males	(4) Couples Females	(5) Multi Males	(6) Multi Females	(7) Minor Males	(8) Minor Females
Age 70+*Locality <30,000	-.140*	.024			-.050	.063		
	(.085)	(.072)			(.042)	(.059)		
Male 70+ in hh* Locality <30,000			-.421***	.089				
			(.154)	(.164)				
Female 70+ in hh* Locality <30,000			-.091	-.342***				
			(.182)	(.100)				
Others age 70+ in hh* Locality<30,000					.024	.004		
					(.051)	(.028)		
# age 70+ in hh* Locality<30,000							-.066	-.006
							(.045)	(.035)
Dummy=1 if age 70+	.095	.044			.010	-.061		
	(.085)	(.065)			(.037)	(.054)		
Dummy=1 if a male 70+ in hh			.218*	-.207				
			(.113)	(.127)				
Dummy=1 if a female 70+ in hh			.253**	.177				
			(.111)	(.158)				
Others age 70+ in hh					-.015	-.040*		
					(.042)	(.023)		
# age 70+ in hh							-.001	-.041
							(.037)	(.025)
Dummy=1 if locality <30,000	.275***	-.098	-.019	.081	.019	.026	-.0008	.066*
	(.081)	(.099)	(.232)	(.162)	(.051)	(.041)	(.067)	(.035)
Age	-.022***	-.019***	-.029***	-.003	-.019***	-.009***	.114***	.050***
	(.005)	(.003)	(.007)	(.015)	(.002)	(.002)	(.007)	(.006)
Locality population	.000036*	-.0000135	-.0000111	.0000188	1.43e-06	4.40e-06	-3.01e-06	.0000149**
	(.0000196)	(.0000144)	(.0000362)	(.0000347)	(7.89e-06)	(4.90e-06)	(.00001)	(7.08e-06)
Num. Loc.	40	42	34	33	43	43	43	43
Obs.	315	486	128	103	1626	1841	706	650
Wealth Quintiles	1-3	1-3	1-3	1-3	1	1	1-3	1-3

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. All specifications include all control variables, but not state level fixed effects.Point estimates show average partial effects of a Probit estimation on labor force participation. Standard errors are clustered at the level of the locality.

Table 12: Results for living arrangements

	(1) Males	(2) Males	(3) Males	(4) Females	(5) Females	(6) Females
Living Arrangements:						
Age 70+*Locality <30,000	.017	.009	.011	.021	.004	.022
	(.022)	(.029)	(.052)	(.019)	(.023)	(.045)
Dummy=1 if age 70+	.063**	.047	.036	.050**	.069**	.155***
	(.027)	(.036)	(.066)	(.021)	(.027)	(.041)
Dummy=1 if locality <30,000	.052*	.052	.070	.021	.026	.067
	(.030)	(.033)	(.075)	(.028)	(.030)	(.061)
Age	.0005	.002	.004	-.001	-.001	-.004
	(.001)	(.002)	(.003)	(.0009)	(.001)	(.002)
Locality population	.0000113**	.0000107*	.0000114	5.14e-06	5.39e-06	5.25e-06
	(5.58e-06)	(6.12e-06)	(.0000134)	(4.95e-06)	(5.07e-06)	(9.38e-06)
Num. Loc.	71	71	70	71	71	70
Obs.	7653	4910	1172	9137	5979	1304
Sample Means	.3115	.3434	.4241	.2665	.2986	.3485
Family Transfers:						
Age 70+*Locality <30,000	.003	.002	.023	-.016	-.030*	-.064**
	(.014)	(.018)	(.033)	(.016)	(.016)	(.029)
Dummy=1if age 70+	.023*	.015	-.058*	.044***	.040***	.071**
	(.012)	(.017)	(.031)	(.014)	(.015)	(.028)
Dummy=1if locality <30,000	.024	.014	-.041	.010	.017	.082**
	(.022)	(.025)	(.036)	(.028)	(.029)	(.040)
Age	.002***	.003***	.005***	.001	.001	.0002
	(.0006)	(.0008)	(.001)	(.0008)	(.001)	(.002)
Locality population	6.98e-06*	5.41e-06	-2.54e-06	6.02e-06	6.53e-06	9.39e-06
	(3.88e-06)	(4.35e-06)	(6.82e-06)	(5.34e-06)	(5.57e-06)	(8.37e-06)
Num. Loc.	71	71	70	71	71	70
Obs.	7558	4846	1157	9048	5915	1290
Sample Mean	.1081	.1066	.1013	.1612	.1559	.143
Wealth Quintiles	All	1-3	1	All	1-3	1

Notes: ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.All specifications include all control variables, but not state level fixed effects.Point estimates show average partial effects of a Probit estimation on whether an elderly indivodual lives in a one generational household or receives transfer payments from family members, respectively. Standard errors are clustered at the level of the locality.

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