

Grandfathers and Grandsons: Should cash transfers be targeted to women?

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Abstract

An interesting feature of conditional cash transfers (which have increased in popularity in recent years) is that the transfers are usually given directly to women (mothers). The main arguments behind this are that: 1. Improving women's position within the household is a desirable outcome per se; and 2. When households do not function as a unitary entity, money in the hands of women is more likely to be spent on investment in children's human capital. However, the validity of this last statement is clearly setting-specific, as differences in men's and women's preferences for children can vary across geographical space.

This paper uses the introduction of an unconditional cash transfer to older adults in Mexico City to test whether money transfers have different effects on household expenditures and on children's school enrollment depending on whether they are received by women or men. We conclude, as most of the existing literature on this topic, that money in the hands of women is spent differently than in the hands of men, so households cannot be treated as a unitary entity. However, while money in the hands of women has a higher impact on household expenditures on children and education, it does not affect the probability that these children enroll in school. On the other hand, money distributed to men, while not increasing the expenditures on schooling, has a strong and positive effect on children's school enrollment.

We then conclude that the general belief that money in the hands of women is more likely to be spent on children should not necessarily be taken for granted. At least for the sample and setting analyzed in this paper, money bestowed to men can have higher effects on some of the children's outcomes.

1. Introduction

Most countries in Latin America have implemented antipoverty conditional cash transfer programs in which the money is generally given to the female household head. The logic behind this feature is the current prevalence of the notion that money in the hands of mothers is most likely spent on children's well-being, whereas giving the transfer to men would not entail the same result. In general, it is thought that endowing women with a cash transfer increases their intra-household bargaining power. Improving women's status within the household may be itself a desired outcome of these programs. However, as one of the main objectives of the antipoverty programs consists in improving children's human capital – in an effort to break the poverty cycle and improve wealth across generations – governments are interested in channeling resources to this effect. Showing that the increased women's bargaining power translates into higher investment in children's human capital is then of crucial importance to evaluate these programs' designs.

Moreover, even as policy makers consider that women are more likely to spend the income increases resulting from these cash transfers on socially desirable outcomes, the cost of requesting that exclusively women collect the money should also be taken into account. Imposing this restriction in the program's design does not necessarily mean that it is the most cost-effective decision for each family¹. On the contrary, it could entail important economic losses for the household. Therefore, as constraining the program recipients solely to women implies a certain cost, it is important to assess the supposed impact on outcomes of doing so, in order to weigh the benefits versus the costs of imposing said restriction. If the benefits of a cash transfer are not contingent on

¹ For example, it could be the case that men have more flexible work schedules. If collecting the transfer is time-consuming, a more flexible schedule for men would imply that they face a lower opportunity cost of collection than women.

the recipient's gender, then removing the program's constraint would further increase social welfare in the sense that each family could decide how to collect the money in the most cost-effective way.

Considering the difficulties most studies have encountered in trying to determine the effects of targeting women on desired outcomes, this paper attempts to evaluate the importance of the recipient's gender on children's outcomes in the Mexican context. To do so, we exploit a pension program for senior adults, the *Pensión Alimentaria para Adultos Mayores* (PAAM, Nutrition Transfer for Senior Adults). This program's design satisfies the condition that both genders receive an exogenous non-labor additional income (when aged 70 or older) which was unexpected at the time of household formation.² The fact that the PAAM was not carried out at the country level and the existence of data before and after its implementation allow for the regional and time variation in the implementation of the program to be empirically exploited.

With data from the ENIGH 2004, 2006 and 2008 rounds, comparing households with members who were eligible for the program after its implementation in Mexico City, with those outside of Mexico City, we prove, as most of the existing literature on this topic, that money in the hands of women is spent differently than that in the hands of men, thus showing that households cannot be treated as a unitary entity. However, while money in the hands of women has a higher impact on expenditures on children and education, it does not affect the probability that these children enroll in school. Conversely, money in the hands of men, while not increasing the expenditures on schooling, has a strong and positive effect on children's school enrollment rates.

² This could be violated if the existence of the transfer program in Mexico City has had an effect on household composition. However, the sample used in this paper, as a percentage of the total ENIGH sample size, does not seem to have changed considerably around the introduction of the program. In 2000, 3.30% of households in Mexico City enter our sample, 3.84% in 2004, 3.54% in 2006, and 3.18% in 2008.

The paper is presented as follows. The next section briefly reviews the existing empirical literature on this topic, with a special emphasis on studies for the Latin American region, where most of the conditional cash transfers programs (targeted to women) are in place. Section 3 describes the nature of the program analyzed in this paper. Section 4 describes the data used in the empirical analysis. Section 5 describes our empirical strategy. Section 6 shows and discusses our results and presents some robustness checks. Finally, section 7 concludes.

2. Existing literature

There is an extensive empirical literature that attempts to prove that money is “better” spent if given to women instead of men, in the sense that mothers are thought to be more prone to invest in children’s human capital and their general welfare.

The basic model of household behavior comes from Becker (1964), who expanded the neoclassical model of individual consumption to the household level. The main assumption here is that all members of the household pool their resources to act as a single utility-maximizing entity. In recent years, there has been an effort in the literature to analyze the household differently and to try to disprove the validity of the neoclassical unitary model.

The majority of studies providing evidence that households should not be treated as single unitary decision makers consider intra-household allocation as a bargaining power model, such as Manser and Brown (1980) who insert the household decision problem into a bargaining framework applying cooperative game theory to their model. This literature thus contrasts men’s and women’s total income coefficients on household expenditures. The idea is that, since outcomes are dependent on the relative income of

each member of the household, there should be a significant difference between how men's and women's total income affects the final resource allocation decisions of the household. Browning and Chiappori (1998) theoretically prove that individual preferences of each of the household members with bargaining power must be taken into account when modeling the household, further substantiating their claim with survey data from Canada. Bourguignon, Browning, Chiappori and Lechene (1994) find that the final expenditure decisions on each household member for a Canadian sample depends significantly on their relative income. However, this estimation fails to consider that labor supply and consumption are jointly determined.

In contrast to the literature that compares the correlation of men's and women's income with the household consumption pattern, Thomas (1990) considers instead the effect of non-labor income. He thus provides evidence that suggests that asset income in the hands of women has a much larger impact on children's welfare measured by health and nutrition in the Brazilian context. This finding contributes to the rejection of the common preference household model, since assets are spent differentially depending on gender. However, even if asset ownership does not directly affect outcomes, both of these could be correlated. Also, the way in which the household was formed must also be taken into consideration.

Thomas (1990), Attanasio, Battistin and Mesnard (2009), Rubalcava and Contreras (2000), Glewwe and Olinto (2004), and Maluccio and Flores (2005) evaluate the impact of conditional cash transfer programs (CCTs) in Brazil, Colombia, Chile, Honduras and Nicaragua, respectively. Generally speaking, all of these studies find an increase in food and education expenditures, an improvement in school attendance and higher investment in children's human capital as a result of the CCTs. However, given that the recipients of all these programs are women, it is impossible to determine whether

mothers do indeed have a stronger preference for their children's well-being or if the observed impact on outcomes would also be present if the money were given to fathers. This means that the income effect cannot be distinguished from the effect of giving the cash transfer to women instead of men. The lack of a counterfactual where fathers receive the transfer makes it difficult to assess the idea that mothers are more concerned with their children's welfare. Finally, non-observable variables (for example, preferences or changes in household composition) and the programs' design (for example, whether self-selection into the program exists) also confound these studies' results.

Specifically for Mexico, Rubalcava, Teruel and Thomas (2002) discuss the effect of empowering women within the household by making them the recipients of the Mexican CCT program *Progresa*. They show that not only do expenditures on children's clothing go up, but more money is spent on what women deem to be more important (such as substituting staple goods for high-protein ones). Nonetheless, the counterfactual of having men as the recipients once again does not exist, making it impossible to assert that the observed outcomes are due to the fact that women increase their intra-household bargaining power by receiving the program's money. Also, Martinelli and Parker (2003) show that the conditionality of cash transfer programs has effects on the composition of household expenditures. Given this, in the context of CCTs, the bargaining power effect is not only confounded with the income effect, but also by the changes in relative prices induced by the conditionality. Lastly, Bobonis (2004) analyzes the short-term impact of *Progresa* on household composition, finding that cash transfers to women imply an increase in divorce rates. While his results suggest that households should not be modeled as a unitary entity, they do not shed light on the differential preferences of men versus women towards children.

In order to precisely estimate if the impact on children's outcomes is higher when the recipients are women, it would be necessary to find a program that gave money to both men and women without the possibility of self-selection, and analyze the effects on outcomes. To the authors' knowledge, empirical studies containing these characteristics do not exist for the Latin American region. In the context of South Africa, Duflo (2000), whom we follow closely, attempts to do this by exploiting data from the old age pension program implemented in this country. According to this program, all women above 60 and men above 65 years old receive a pension without constraining this benefit to only one recipient per household. With these data, it is therefore possible to compare the effects on children's welfare depending on the gender of the pension's beneficiary, using the discontinuity in eligibility status given by the age of each household member.

Duflo finds that money in the hands of women has a considerable effect on girls' anthropometric measures, but only a small impact on boys'. Furthermore, no significant results were found for pensions collected by men. Her findings not only confirm that the unitary model of the household should be discarded, but suggest that women indeed have a stronger preference for their children's (or grandchildren's) well-being than men in the South African context. However, as Duflo explicitly states, her findings cannot be generalized to other developing countries, as differences in preferences and cultural norms could lead to opposite outcomes in other regions.

Within this line of research and considering the difficulties most studies have encountered in trying to determine the effects of targeting women on desired outcomes, this paper attempts to evaluate the importance of the transfer recipient's gender on children's outcomes in the Mexican context. To do so, we exploit a similar program to the one in South Africa: the *Pensión Alimentaria para Adultos Mayores* (PAAM, Nutrition Transfer for Senior Adults). The Mexican program PAAM was only

introduced in Mexico City in 2001 and consists of a cash transfer that targets men and women aged 70 and older. This program's design satisfies the condition that both genders receive an exogenous non-labor additional income, and was arguably unexpected at the time of household formation (if household composition did not change as a result of the program). The fact that the program was not carried out at the country level allows for this regional variation to be empirically exploited. The available data not only refers to the post-program period, but also to the time before its implementation. This time variation can therefore also be exploited to validate our findings. A more precise description of the program is provided in what follows.

3. The Nutrition Cash Transfer for Senior Adults (PAAM)

The PAAM is a local program that consists of cash transfers for adults aged 70 and over living in Mexico City. This program was announced in January 2001, with the first beneficiaries receiving the old age pension in March 2001. In the beginning, only eligible adults living in the poorest households were incorporated into the program, gradually increasing the scope of beneficiaries throughout 2002. By the end of 2003 all senior adults with at least three years residence in Mexico City became PAAM eligible regardless of their individual or household income. The monthly transfer – which amounts to approximately between 60 and 70 U.S. dollars (862 Mexican pesos in 2010), or 30% of the eligible individuals' mean income in our data – is only conditioned on age, meaning that any past decisions regarding labor force participation and contributions to the social security system do not affect eligibility. Thus, any unobservable characteristics affecting labor and saving decisions are not correlated with being a PAAM beneficiary. In 2007, the federal government announced a similar

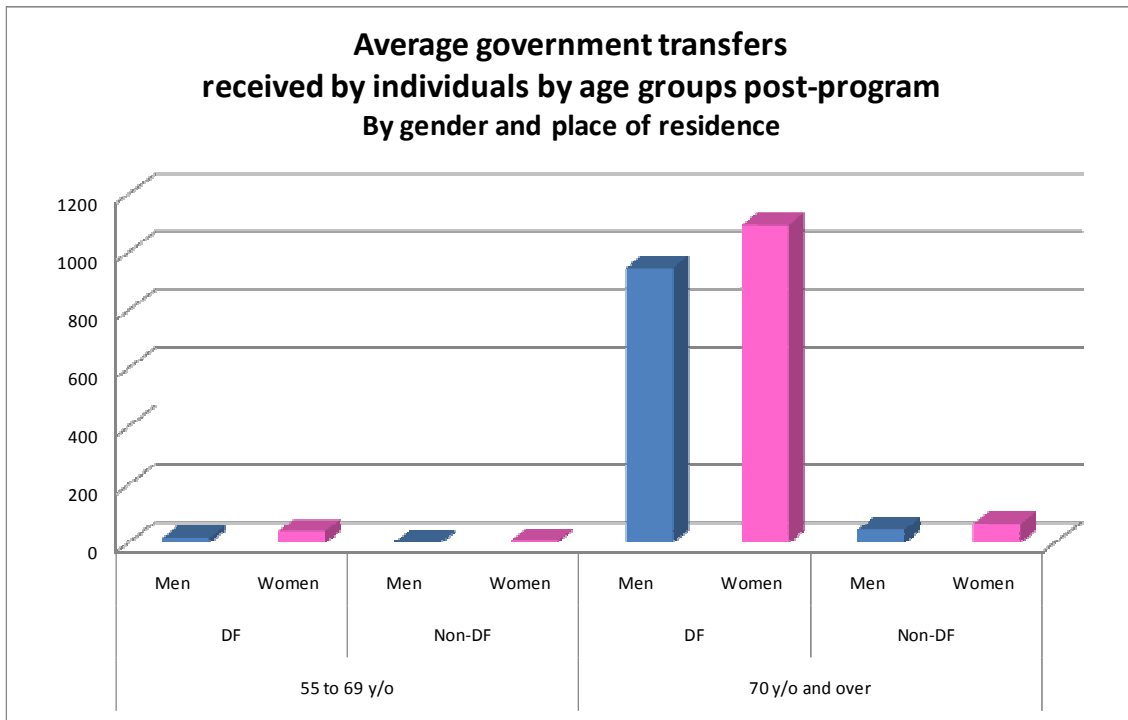
program (*70 y más – 70 and Over*), which would gradually expand the old age pensions to other states in Mexico, but only to those individuals living in poor rural areas.

Figure 1 shows the average government transfers received by individuals post-program (using data from the 2004, 2006 and 2008 ENIGH survey rounds³) by gender and place of residence, restricting the sample to urban areas outside Mexico City⁴. The right panel contains information for individuals at least 70 years old, while the left side displays persons aged 55 to 69 years old. As is clear, government transfers received by these last individuals are close to zero regardless of gender and place of residence. On the other hand, transfers to the 70 and over age group in Mexico City are much bigger and similar in magnitude for men and women. As for the rest of the country, even though the transfers are different from zero for individuals over 70 years old, they are much lower in comparison to Mexico City. These numbers are most likely due to the fact that some people managed to obtain the old age pension even though they were not living in Mexico City (possibly if living in contiguous states).

³ Even though a 2002 ENIGH survey round exists, it is not included in any of our estimations since the program was being put in place during that year. For clarity, we know for sure that in 2000 not a single household received the PAAM benefits, while in 2004 all eligible households in Mexico City were receiving the cash transfer.

⁴ To maintain comparability across regions, all non-rural areas were excluded from the rest of the country in all our estimations.

Figure 1. Average government transfers received by individuals (in Mexican pesos)



4. Data

The Mexican ENIGH (*Encuesta Nacional de Ingresos y Gastos de los Hogares* – Household Income and Expenditure National Survey) is a nationally representative survey collected every two years. It provides information pertaining each individual’s sources of income – including government transfers – as well as household expenditures. Other important characteristics are reported such as children’s school enrollment. As this paper focuses on the impact of the transfer on investment in children’s human capital, we will restrict the sample to households with both a male and a female adult aged 56 or older and at least one child less than 19 years of age. The data from the 2004, 2006 and 2008 surveys is used as the post-program sample, while data from 1994, 1996, 1998 and 2000 represents the pre-program information in the robustness checks. The datasets for 2004, 2006 and 2008 contain information on 22

474, 20 774, and 29 122 households respectively for each round (of which 9.11% are in Mexico City). Once we restrict to the sample used in this paper⁵, we are left with 1,091 households in total for all three post-program survey rounds, with 233 of these (21.36% of the sample) residing in Mexico City, thus qualifying for the cash transfer. Lastly, 1,742 individuals under 19 years of age are included in our restricted sample (of which 358, equal to 20.55%, live in Mexico City).

In trying to determine whether the impact of an old age pension similar to the one studied in this paper is affected by gender, Duflo (2000) compares an anthropometric measure of weight-for-height for children living in a household without a pension recipient, one with an eligible man and one with an eligible woman. However, as she points out, this comparison confounds the results if there are important differences between households with and without eligible members. Therefore, the same comparison is carried out for the height-for-age measure, considering that this relation is more of a long-term outcome reflecting not only current but past conditions as well. No results are found for the younger individuals in the sample when using height-for-age as an outcome, confirming the study's validity.

The ENIGH does not contain individuals' anthropometric measures. However, it does contain detailed information on household's income and expenditures, as well as individual's school enrollment. This paper will then evaluate the effect of the pension program on expenditure shares (on food, children and education), and individual's school enrollment for all individuals aged 6 to 18, by gender and age groups. We will examine if differences in household composition are correlated with the observed

⁵ The sample we use restricts to non-rural households (meaning all rural households outside Mexico City are excluded), where there is at least one male and one female adult aged at least 55 and at least one child under 19 years old, and where household characteristic and age group controls do not report a missing value.

outcomes (biasing the estimates of the program's impact), by exploring this relationship in households outside of Mexico City, where the program does not exist.

Table 1. Descriptive Statistics for the 2004-2008 sample

	Mexico City			Rest of country		
	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.
<i>School Enrollment</i>						
6 to 12 y/o	0.99	0.11	181	0.99	0.11	713
Boys	0.98	0.16	83	0.98	0.12	380
Girls	1.00	0.00	98	0.99	0.09	333
13 to 18 y/o	0.84	0.37	113	0.74	0.44	493
Boys	0.83	0.38	61	0.69	0.46	244
Girls	0.85	0.36	52	0.77	0.42	249
6 to 18 y/o	0.93	0.25	294	0.89	0.31	1206
Boys	0.92	0.28	144	0.88	0.33	624
Girls	0.95	0.22	150	0.90	0.30	582
<i>Expenditure Shares (HH level)</i>						
Food	0.38	0.13	219	0.36	0.14	858
Education	0.11	0.12	219	0.10	0.11	858
Children	0.11	0.12	219	0.10	0.11	858
<i>HH Members by age</i>						
Children < 19 y/o						
Boys	0.91	0.88	219	0.91	0.90	858
Girls	0.81	0.75	219	0.85	0.84	858
> 54 y/o						
Men	1.02	0.13	219	1.01	0.09	858
Women	1.04	0.19	219	1.03	0.16	858
> 59 y/o						
Men	0.78	0.43	219	0.75	0.44	858
Women	0.66	0.50	219	0.61	0.51	858
> 64 y/o						
Men	0.54	0.50	219	0.49	0.50	858
Women	0.38	0.49	219	0.36	0.48	858
> 69 y/o						
Men	0.32	0.47	219	0.31	0.46	858
Women	0.24	0.43	219	0.23	0.42	858
> 74 y/o						
Men	0.12	0.33	219	0.16	0.36	858
Women	0.11	0.31	219	0.10	0.30	858
<i>Other HH Characteristics</i>						
Number of rooms	5.27	1.77	219	5.22	1.76	858
Bathroom (0,1)	0.97	0.16	219	0.94	0.24	858
No-dirt floor (0,1)	1.00	0.06	219	0.98	0.13	858

Descriptive statistics for the post-program sample in both Mexico City and the rest of the country are shown in Table 1. School enrollment descriptive statistics are presented by age groups and by gender. As expected, the mean for children in elementary school (aged 6 to 12) is very high regardless of gender and place of residence. Therefore, it

would be difficult to expect a big impact of the program at the basic education level, since enrollment rates are already so high. The information for children aged 13 to 18 (mostly in middle and high school, though not necessarily so) shows a much smaller mean. Furthermore, mean enrollment rates for this age range in Mexico City are much higher than those for the rest of the country. In both cases, girls have a slightly higher tendency to attend school at this age in comparison to boys, though the difference is so small it is not statistically significant. Given this information, one would expect that a positive effect of old age pensions on children's school enrollment – if any – would be exhibited in the second age group.

The mean expenditure share for food shows that this concept is what households spend the most money on and it is fairly consistent across regions. Education is a category that includes expenditures on schools, day care, school supplies, books, school transportation and entertainment. These concepts plus school uniforms, children's clothing and toys make up the expenditures on children category. As is evident in the descriptive statistics for education and children, almost all of the expenditures on children come from expenditures on education. Also, the mean expenditure shares on these categories are fairly low and exhibit a high variance.

The next section in Table 1 shows the mean number of household members by age group. The fact that these statistics are very similar between Mexico City and the rest of the country implies that household composition is fairly similar in the whole country. Even though some small differences are apparently present in some categories (for example, girls under 19 years of age), running difference in means tests shows that the means between Mexico City and the rest of the country are not statistically different from one another.

The final section presented in Table 1 shows the descriptive statistics for a number of household controls, which are included in the regressions. The first variable indicates the number of rooms in the house, while the other two represent whether a household has a bathroom and a floor (different than a dirt one). As expected, due to the correlation of these household variables to a family's income level, Mexico City means are slightly higher than those for the rest of the country. Nevertheless, this difference is not statistically significant.

5. Empirical Specification

The outcome variables studied in this paper are total household expenditure shares on food, education and children, as well as school enrollment rates for children. Naturally, the first set of variables is measured at the household level, while the second one is estimated at the individual level. Also, the second set of regressions pertaining to individuals is carried out by gender and age groups, to identify differences in outcomes for boys and girls at different ages.

The objective of our identification strategy (similar to Duflo, 2000) is to compare households with both an older man and an older woman, and contrast the different outcomes analyzed when the older man is eligible for the program benefits with a situation where the older woman is eligible. Thus, we are trying to compare outcomes between similar households where the gender of the cash transfer recipient is different. However, as the PAAM only exists in Mexico City, we can also account for differences in expenditures and school enrollment correlated with the composition of the household, by controlling for these differences in households living outside of Mexico City.

The sample is restricted to households where at least one female and one male member are over 54 years old and there is at least one child under 19 years of age. For all households outside Mexico City, only non-rural areas were considered. Finally, households that did not contain information regarding controls for household characteristics and age groups were excluded from the sample. Likewise, the individuals aged 6 to 18 considered for the school enrollment rates regressions are those living in this type of household.

The dataset does not contain precise information about the source of the government transfers received by individuals. Given this, our comparison is focused on eligibility status (i.e., households that include at least one senior adult over 69 years old, without considering whether they receive PAAM benefits) even though individuals actually obtaining the pension are not necessarily similar to the eligible ones who did not apply for the benefits.⁶ For interpretation and generalization purposes, it is also worth noting that the fact that our subsample includes only households with at least one child aged 18 or younger restricts the analysis to families where older adults live with their young children, a characteristic of poorer households. In other words, there is no reason to believe that senior adults who choose to live with their grandchildren are similar to those living by themselves.

Therefore, when analyzing outcomes at the household level, the regression estimated is:

$$w_j = \alpha DF + \pi_f E_{fj} + \pi_m E_{mj} + \beta_f DF * E_{fj} + \beta_m DF * E_{mj} + \gamma W_j + \delta DF * W_j + \varepsilon_j$$

Where w_j is our outcome variable (expenditure shares on food, children and education) for household j ; DF is a dummy variable taking value of one for all households residing

⁶ Later we show that the increase in government transfers is similar in magnitude for households with an eligible man or woman in our sample.

in Mexico City; E_{fj} is a dummy variable indicating if there is an eligible woman living in household j ; E_{mj} indicates the presence of an eligible man in household j ; W_j is a vector of other household characteristics, including: a dummy variable for each year, the number of male and female adults aged over 54, 59, 64, 69 and 74, the number of male and female household members aged 0-3, 4-6, 7-12, 13-18, 18-24, 25-44, and 45-54, and the household characteristics reported in the last section of Table 1; and ε_j is an error term.

A very similar strategy is employed when analyzing school enrollment:

$$S_{ij} = \alpha DF + \pi_f E_{fj} + \pi_m E_{mj} + \beta_f DF * E_{fj} + \beta_m DF * E_{mj} + \gamma W_j + \delta DF * W_j + \varepsilon_{ij}$$

Where S_{ij} is a dummy variable indicating if individual i in household j is enrolled in school, and all other variables are defined as before.

The coefficients of the interactions of the dummy variable for Mexico City and the one for household members over 69 years old (β_f for women and β_m for men) show the effect by gender of the PAAM cash transfer on children's outcomes. This means that the observed effect on the dependent variable is not only contingent on the presence of a senior adult, but also on living in Mexico City (where the program was implemented). If the program has an effect on expenditures and school enrollment, we expect the coefficients for the Mexico City interactions with the dummies indicating if an eligible man or woman resides in the household (β_f and β_m) to be statistically different from zero. If the effect is different depending on the recipient's gender, β_f will be different from β_m . If these results are not driven by differences in household composition correlated with our outcomes, we expect the coefficients for the eligibility dummies

alone (π_f and π_m), not interacted with the Mexico City dummy to be close to zero and insignificant.

6. Results

6.a. Household level regressions: Government Transfers.

Before analyzing the regression results on our outcomes of interest, it is important to determine if, for the sub-sample analyzed, we observe a similar pattern in cash transfers received from the government as the one shown in Figure 1 for the whole sample of senior adults. It is important to assess if both older men and women receive, on average, the same amount of government cash transfers in order to interpret the differences by gender in the estimated regression coefficients on our outcomes of interest. Furthermore, it must be determined whether indeed we observe a discontinuity in the amount of transfers received when individuals are eligible for the PAAM benefits (aged older than 69).

Table 2 presents the regression results for the same specification described in the previous section, using the log of one plus the total government cash transfers received by each household as the dependent variable. The controls included in the regression presented in Column 1 are dummy variables for each year, variables indicating the number of men and number of women in different age groups living in the household (over 54, 59, 64, 69 and 74 years old), number of boys and girls aged 18 and under, and the total number of household members aged 0-3, 4-6, 7-12, 13-18, 18-24, 25-44, and 45-54. Column 2 further includes household characteristics controls (number of rooms, bathroom and no-dirt floor), their interaction with the Mexico City dummy variable, and

the interaction of this variable with the age group controls. In what follows, the specification in Column 1 will be referred to as “no controls”, while the one in Column 2 will be called “all controls”.

As can be seen, both the coefficients of the interaction of the Mexico City dummy and eligibility for men and women show positive and significant coefficients similar in magnitude. Households in Mexico City with an eligible woman experience a slightly lower increase in government transfers in comparison to households with an eligible man. Furthermore, no statistically significant effects exist outside Mexico City.

Table 2. PAAM effect on government transfers.

	Government transfers	
	post-program	
	no controls	all controls
women >69 * DF	2.247**	2.270**
	[0.950]	[0.949]
men >69 * DF	2.955***	2.580***
	[0.819]	[0.843]
women >69	-0.274	-0.267
	[0.210]	[0.214]
men >69	-0.075	-0.111
	[0.147]	[0.155]
Constant	-0.120	-0.622
	[0.656]	[0.527]
Observations	1,091	1,091
R-squared	0.53	0.55

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Once we have shown that cash transfer patterns for men and women in and out of Mexico City are in fact consistent with the story presented in Figure 1, we can proceed to estimate the impact of the PAAM on household and individual outcomes.

6.b. Household-level regressions: expenditure shares

The first set of regressions carried out at the household level looks at the effect of the program on expenditure shares. Table 3 presents the results for the category of food. As stated above, this analysis considers the post-program sample and presents two different results – with and without the different controls previously described – which are shown in Columns 1 and 2.

For this first regression, not much can be concluded from the results obtained. However, as is evident, the coefficients for the eligible men and women interacted with the Mexico City dummy are substantially different, even if they are not statistically significant. Therefore, as the women’s coefficient is larger than the men’s, it could be inferred that at least some weak evidence exists consistent with the literature and the common belief that money in the hands of women is more likely to be spent on food.

Table 3. PAAM effect on food expenditure shares

	Expenditure shares: food	
	post-program	
	no controls	all controls
women >69 * DF	0.012 [0.0481]	0.032 [0.0474]
men >69 * DF	-0.001 [0.0409]	0.012 [0.0395]
women >69	0.012 [0.0272]	0.009 [0.0267]
men >69	-0.016 [0.0258]	-0.008 [0.0248]
Constant	0.361*** [0.0567]	0.523*** [0.0698]
Observations	1,091	1,091
R-squared	0.05	0.12

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Next, the same results are presented in Table 4 for the expenditure shares on children. Once again, the coefficients for eligible women in Mexico City are much higher than those for men, which are basically zero. Also, in this case the former estimates are significant at 10% while the latter are not. This result implies that the PAAM benefits given to women had a significant positive impact on the share of total expenditures the household allocated to children, whereas the cash transfer awarded to men did not have that effect. Of equal importance is the fact that the coefficients for male and female senior adults not interacted with the Mexico City dummy are not significant, very similar between men and women, and close to zero, thus suggesting that the estimated coefficients are contingent on receiving the program and not on age.

Table 4. PAAM effect on children expenditure shares

	Expenditure shares: children	
	post-program	
	no controls	all controls
women >69 * DF	0.077*	0.077*
	[0.0404]	[0.0414]
men >69 * DF	-0.005	-0.007
	[0.0341]	[0.0335]
women >69	0.007	0.009
	[0.0181]	[0.0182]
men >69	0.012	0.010
	[0.0184]	[0.0185]
Constant	0.091*	0.039
	[0.0477]	[0.0628]
Observations	1,091	1,091
R-squared	0.06	0.08

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

Lastly, Table 5 presents the results for education expenditure shares. As stated above, most of the expenditures on children are made up of what is spent on education. Therefore, it is no surprise that the results for this category are similar to the ones for total children expenditures. Again, it appears that these estimates are consistent with the literature, showing that women are more prone to spend on education than men.

Table 5. PAAM effect on education expenditure shares

	Expenditure shares: education	
	post-program	
	no controls	all controls
women >69 * DF	0.079* [0.0406]	0.079* [0.0415]
men >69 * DF	0.001 [0.0343]	-0.001 [0.0338]
women >69	0.007 [0.0182]	0.009 [0.0183]
men >69	0.009 [0.0184]	0.007 [0.0185]
Constant	0.080* [0.0478]	0.031 [0.0629]
Observations	1,091	1,091
R-squared	0.08	0.09

Robust standard errors in brackets
 * significant at 10%; ** significant at 5%; *** significant at 1%

6.c. Individual-level regressions: school enrollment

The next set of regressions is carried out at the individual level attempting to determine the effect of the PAAM program on children’s school enrollment rates by gender. Table 6 presents the results for all children – both boys and girls – by age groups and including all controls in the regressions. The first column shows the regression for ages 6 to 12 (i.e., children in the age range typically corresponding to elementary school). As was previously mentioned, given the high enrollment rates exhibited at this educational level, there is no expected effect on this particular outcome. This is evident in the estimates for the coefficients, which are not statistically different from zero at a high level of significance. Nevertheless, this category presents higher coefficient estimates for men than women receiving the PAAM benefits. Furthermore, these results are

higher than those for senior adults in the rest of the country, which are very close to zero and similar between men and women.

Column 2 in Table 6 considers only children between 13 and 18 years of age (the age range during which they should be attending middle and high school). In this case, the coefficient for the dummy variable of eligible men living in Mexico City is positive, whereas the one for women is negative. Even though this estimate is not significant (quite possibly due to the small number of observations in Mexico City in the restricted sample), the difference between the coefficients is substantial.

The last regression output presented, Column 3, groups both age categories, estimating the effect for all children. Since in a sense the results in this column are a weighted average of the previous two and the sample size increases, the estimates are as expected. Here, we show that PAAM benefits handed out to men have a positive effect on children's school enrollment (which is around 14% and statistically significant), while for women the estimate is null (exhibiting a negative coefficient). The implication here is that children living in a household in which an older man receives the program benefits must have increased their school enrollment. This finding thus indicates that money in the hands of women does not have an effect on whether children go to school, while targeting the cash transfers to men does. Because it is counterintuitive in the sense that the literature suggests that men are not prone to spend more money than women on children, we believe this result to be very interesting.

Finally, it is important to point out that for all three columns the coefficients for the variables indicating men and women aged 70 and over (not interacted with the Mexico City dummy) are very low and not statistically different from zero, implying that the

effect on this particular outcome is specifically contingent on living in Mexico City, where the program was implemented.

Table 6. PAAM effect on school enrollment for all children by age groups

	School Enrollment: boys and girls by age groups		
	6 to 12 y/o	post-program 13 to 18 y/o	6 to 18 y/o
women >69 * DF	0.083 [0.0651]	-0.087 [0.115]	-0.035 [0.0641]
men >69 * DF	0.105 [0.0743]	0.160 [0.151]	0.143* [0.0839]
women >69	-0.011 [0.0140]	0.007 [0.0730]	0.013 [0.0362]
men >69	-0.022 [0.0138]	0.025 [0.0702]	-0.010 [0.0358]
Constant	0.766*** [0.123]	1.548 [1.641]	0.230 [0.161]
Observations	906	836	1,742
R-squared	0.06	0.27	0.31

Robust standard errors clustered at the HH level in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

All regressions include all controls.

Table 7 shows the results of calculating the effect of the program on children's school enrollment estimating the regression separately for boys and girls (aged 6 to 18)⁷. The first three columns exclude the controls previously defined while the last three columns include them. Columns 1 and 2 show that the previous finding holds up specifically for boys, where the coefficient of eligible men living in Mexico City is positive and statistically significant. On the other hand, the same coefficient is not significant for girls' school enrollment rates and is considerably smaller. However, even in this case the estimates are very different between eligible men and women, with the former coefficient being positive and the latter negative. Column 3 presents the results for both

⁷ We ran regressions splitting the sample further, not only by gender but also by age groups (as defined in Table 6). The coefficient for eligible men living in Mexico City remained positive, unlike that for eligible women. However, as the standard errors increased substantially as a result of the reductions in the sample sizes, no strong conclusions could be derived in terms of differential results depending on the children's gender. Results for these regressions are available from the authors upon request.

boys and girls, which is very similar to the one reported in Column 3 of Table 6. Columns 4, 5 and 6 show the same estimates with the inclusion of all controls. In this case, even though the coefficient for eligible men in Column 4 loses statistical significance, it still exhibits a much higher magnitude than the same estimate for girls in Column 5.

The results in Table 7 indicate that PAAM benefits distributed to men have a positive effect on boys' enrollment rates, which implies that grandfathers that receive a cash transfer increase their grandsons' (aged 6 to 18) school enrollment by approximately 23% (when considering the regression output that excludes controls). Once again, these effects are present only for men over 69 years old living in Mexico City, since the estimated coefficients for the variables indicating eligible men and women are very small and not statistically different from zero.

Table 7. PAAM effect on school enrollment by gender

	School Enrollment by gender					
	Children Aged 6 to 18 y/o - post-program					
	no controls			all controls		
	Boys	Girls	Total	Boys	Girls	Total
women >69 * DF	0.002	-0.032	0.006	-0.020	-0.087	-0.035
	[0.0973]	[0.0775]	[0.0682]	[0.0986]	[0.0711]	[0.0641]
men >69 * DF	0.231**	0.011	0.133*	0.177	0.079	0.143*
	[0.115]	[0.0841]	[0.0784]	[0.125]	[0.0881]	[0.0839]
women >69	0.015	0.001	0.005	0.018	0.009	0.013
	[0.0489]	[0.0542]	[0.0400]	[0.0465]	[0.0489]	[0.0362]
men >69	-0.078	0.075	-0.003	-0.055	0.056	-0.010
	[0.0530]	[0.0516]	[0.0398]	[0.0478]	[0.0502]	[0.0358]
Constant	0.528***	0.704***	0.550***	0.074	0.522**	0.230
	[0.161]	[0.178]	[0.128]	[0.199]	[0.228]	[0.161]
Observations	887	855	1,742	887	855	1,742
R-squared	0.29	0.30	0.27	0.34	0.32	0.31

Robust standard errors clustered at the HH level in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

6.d. Robustness

Thus far, we have shown that households with male and female PAAM beneficiaries spend different fractions of their income on education, and that school enrollment is dissimilar for younger children in these two types of households. We argue that these differences are not driven by differences in household composition correlated with expenditure or children's school enrollment patterns - unrelated to the existence of the program - by showing that these differences are not present for households living outside of Mexico City (not eligible for the program benefits).

However, it is still possible that differences in the correlation between household composition and expenditure and school enrollment patterns for Mexico City and the rest of the country, not related to the existence of the program, are driving our results. While Table 1 does not show significant asymmetries in household composition between Mexico City and the rest of the country, this is still a potential problem which must be addressed.

In this section, we explore the possibility that expenditure and school enrollment patterns are different for households with potentially eligible individuals between Mexico City and the rest of the country regardless of the existence of the program, by running the same specification as in the previous section, but using the information contained in the ENIGH for a period during which the program had not yet been introduced. We combine the information on all households with a male and female adult aged over 55 and at least one individual aged younger than 19 years old from the 1994, 1996, 1998 and 2000 ENIGH rounds, and run the same specification as in the previous section. If the coefficients shown in the previous section are not driven by the existence of the program, we would expect the coefficients for these survey rounds to be similar

in sign and magnitude to those for the survey rounds for dates when the program was in place.

Table 8 shows the results of the same specification carried out in section 6.b for expenditure shares in education (Column 1), and in section 6.c for school enrollment for children aged 6-18 (Column 2).

As can be seen in Column 1, eligible women in Mexico City exhibit a negative significant coefficient in the pre-program years, while eligible men have a small, positive estimate which is not significant. Observing the coefficients for eligible adults, the situation is reversed (the coefficient for women is not statistically significant, while the one for men is negative and significant). Though the optimal result would have been an identical finding between households in Mexico City and those in the rest of the country, these results still show that our previous findings are not driven by asymmetries between households since the magnitudes and effects are different to those presented for the post-program years. This implies that the positive and significant coefficients shown in section 6.b. on the dummy indicating if there is a female PAAM beneficiary interacted with the Mexico City dummy is only present for survey rounds after the introduction of the program. The fact that the coefficient for eligible women in Mexico City pre-program was negative but positive post-program suggests that our finding may be biased downwards (if the trends exhibited before the program's introduction continued throughout 2008).

Column 2, on the other hand, shows coefficients that are both negative and similar in magnitude for the interaction of the Mexico City dummy with the men and women older than 70 dummy variables. These two coefficients suggest that there were differences in school enrollment correlated with household composition between

Mexico City and the rest of the country before the introduction of PAAM. However, they are opposite in sign to those shown in Table 6 for the post-program years. If the differences in school enrollment observed before the introduction of the program between households in and outside of Mexico City were constant over time, regardless of the introduction of the program, this result suggests that the estimated impact of the program in the previous section is biased downwards, and that the difference in school enrollment for households with a male vs. a female beneficiary would remain even when controlling for regional differences in school enrollment correlated with household composition before the introduction of PAAM.

Table 8. Robustness Checks

Robustness Checks: Pre-Program Effects		
	Expenditure share in Education	School Enrollment Children 6-18 y/o
women >69 * DF	-0.114** [0.0559]	-0.233* [0.141]
men >69 * DF	0.047 [0.0448]	-0.191** [0.0961]
women >69	0.010 [0.0193]	0.064 [0.0619]
men >69	-0.031* [0.0183]	0.037 [0.0559]
Constant	-0.055 [0.0401]	0.189 [0.292]
Observations	698	1,170
R-squared	0.22	0.35

Robust standard errors in brackets. Clustered at the HH level for Column 2.

* significant at 10%; ** significant at 5%; *** significant at 1%

All regressions include all controls.

7. Conclusions

Conditional cash transfers, which have become an increasingly popular anti-poverty tool in middle and low-income countries, commonly share the feature that the transfers

are given directly to women. One of the main arguments behind this is the general belief that households cannot be treated as a unitary entity and that money in the hands of women is more likely to be invested in children's human capital. However, the validity of this last statement is clearly setting specific, as differences in men's and women's preferences for children can vary across geographical space. Surprisingly, while evidence exists for specific contexts showing that in fact women tend to spend more resources on their children, no convincing studies have been carried out for most of the countries and regions where conditional cash transfers have been implemented.

This paper uses the introduction of an unconditional cash transfer to older adults in Mexico City to test if money transfers in the hands of men are spent differently than those in the hands of women. Consistently with the existing literature, we first explore if this is the case for expenditures on food, children and education for the Mexican context and the sub-sample of senior adults living with children aged 18 and under. Later, given that most cash transfers are conditional on school enrollment, we investigate if, for this same subset of households, unconditional cash transfers given to older women have differential impacts on children's school enrollment rates than those given to older men.

Our findings advance the idea – as most of the existing literature on this topic – that money distributed to women is spent differently than when awarded to men. This confirms the notion that households cannot be treated as a unitary entity. However, while money in the hands of women has a higher impact on household expenditures on children and education, it does not appear to affect the probability that these children will enroll in school. Furthermore, cash transfers bestowed on men, while not increasing the expenditures on schooling and children, do have a strong and positive effect on children's school enrollment rates.

It is perhaps important to stress that we do not necessarily believe that our results can be extrapolated to all Mexican households receiving government cash transfers, as they might be specific to the sub-sample analyzed in this paper. However, we do conclude that the general belief that money in the hands of women is more likely to be spent on children should not necessarily be taken for granted. We conclude that at least for the sample and setting analyzed in this paper, money in the hands of men can have higher effects on some of the children's outcomes.

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