

Gender Differentials in the Housing Markets in Latin America

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Abstract

The gender of the household head has often been treated as an exogenous determinant of housing tenure. We argue that several determinants of homeownership also affect household headship and that failing to explicitly account for this endogeneity leads to inconsistent results. Using individual level data for Chile, Honduras and Nicaragua we show that although on average women have lower probability of being homeowners, those women that head their families (single, separated or divorced) have larger probabilities of attaining homeownership. Thus household level analysis should control for the endogeneity of household headship in order to properly address the gender effect on housing tenure. We estimate a bivariate probit countries and find evidence that all else equal female headed families have lower probability of owning their home in fourteen (out of seventeen) Latin American countries. Without the endogeneity control this evidence was not present in eleven out of this fourteen countries.

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As stated in IADB (2004) “Poverty is both cause and effect of poor housing conditions. Lack of effective demand resulting from the low income of households is the underlying cause that prevents the private provision of houses.... Conversely, improving housing conditions can have a major influence on poverty alleviation through improvements in the living standards of low income families, and on poverty reduction via increased employment opportunities.” Therefore, understanding the determinants of housing tenure and potential gender discrimination is important for poverty reduction policies.

The study of the determinants of housing tenure and the concerns with possible discrimination has been on the research agenda even before appropriate econometric techniques were commonly used. Li (1977) is the first paper that goes beyond linear models and estimates a logit model to the determinants of homeownership but does not consider the gender of the household head.

Several types of variables have received most of the attention of the researchers: income and wealth, life cycle status, location and neighborhood attributes and a variety of socioeconomic indicators. In particular, much attention has been given to the racial or ethnic origin of the father. There is substantial evidence of racial discrimination in the access to mortgage credit and homeownership.

The gender economic discrimination literature has also spent lots of efforts to study the existence of discrimination on dimensions like salaries, promotions, etc. One of the most common strategies is to include as an explanatory variable a dummy for women and conclude that if the estimated coefficient is significantly different from zero, women receive a discriminatory (positive or negative) treatment with respect to men. It is therefore striking the absence of comments on discrimination in the studies of the determinants of homeownership. The reason is that most studies find more favorable outcomes for female headed families or do not find significant results at all.¹ Given the outcomes, in other contexts, of the gender discrimination

¹ Van Leuvensteijn and Koning (2004) and Gandelman and Gandelman (2004) find that women have higher probabilities of owning their household in the Netherlands and Uruguay respectively. Chiuri and Jappelli (2003) and Arimah (1997) do not find gender differences in fourteen OECD countries and Nigeria respectively. Manrique and

literature these results are surprising. We argue that the determinants of women household headship and those of homeownership are correlated and therefore the specification used in most studies has an endogeneity problem that leads to inconsistent and often counterintuitive results.

If women's marital status is not exogenous to the tenure choice, then, even in the presence of discrimination against women in the housing markets, a naive view of the data may reflect that women headed households have higher probabilities of owning their home. For instance, those women that do not have a place were to live, have lower income, have more children, etc. will probably not divorce their husbands even if they want to. There is a selection bias in which women headed families tend to have better socioeconomic indicators than what they would have if female headship were a completely random process. This explains, why a simple view may find that women headed families are more likely to own they house. Thus, the gender of the household head can not be treated as other truly exogenous characteristics like race and ethnic origin.

To the best of our knowledge this is the first paper that focuses on the factors affecting homeownership and household headship jointly by explicitly providing an econometric solution to the endogeneity issues that arise by the joint determination of both variables. Our results for seventeen Latin-American countries show that the biases are important and that female headed families have a substantially worse market outcome in terms of homeownership.

I. Data

Thanks to the collaboration of the MECOVI program and the national institutes of statistics we were able to have access to the household surveys of seventeen Latin American countries. The countries included in this study are: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, Paraguay, Uruguay and Venezuela from South America; Costa Rica, El Salvador, Guatemala,

Ojah (2003) found that men are more likely to own their household but women tend to have higher household expenditure in Spain.

Honduras, Nicaragua and Panama from Central America and Mexico. Table A1 in the appendix presents detailed information on the data sources.

Table 1 presents the housing tenure structure for the countries covered in this study. Argentina is the only country that does not distinguish those that own their house and are still paying for it from those that have already finished paying. On average 72% of all households own their home, 14% rent and 13% use a house with or without owners' approval. Venezuela, Panama, Paraguay and Nicaragua have the largest share of homeowners and lower shares of renters. Colombia is the opposite case with the lower ownership ratio. This may in part be due to the internal forced migration that many Colombians faced on the last decades. The mortgage market seems to be more developed in Chile, Costa Rica, Panama and Uruguay, being the only countries where more than 10% of households own their home but are still paying for it.²

Table 1. Housing tenure					
	Own, already paid	Own, still paying	Rent	User with or without owner approval	Cases
Argentina	72.6%		14.8%	12.6%	26,285
Bolivia	61.2%	2.2%	16.2%	20.4%	4,832
Brazil	69.7%	4.5%	14.8%	11.1%	107,840
Chile	61.8%	10.4%	11.2%	16.6%	68,153
Colombia	45.7%	6.8%	34.3%	13.2%	22,949
Costa Rica	65.1%	10.3%	13.4%	11.2%	11,032
Ecuador	63.2%	4.7%	17.8%	14.3%	18,959
El Salvador	64.2%	5.6%	11.2%	19.1%	16,808
Guatemala	59.9%	1.8%	18.6%	19.7%	2,784
Honduras	69.2%	3.7%	13.4%	13.7%	7,983
Mexico	67.3%	5.9%	14.0%	12.8%	22,130
Nicaragua	77.0%	0.6%	3.2%	19.2%	4,171
Panama	67.3%	11.0%	10.0%	11.7%	6,344
Paraguay	76.6%	1.3%	8.4%	13.7%	9,591
Peru	68.9%	0.4%	10.2%	20.5%	2,163
Uruguay	57.3%	10.6%	16.8%	15.3%	18,338
Venezuela	74.8%	6.2%	9.7%	9.3%	46,287

Source: Own elaboration based on countries' household survey

I.1 Measurement errors

There are potentially difficulties in measuring the two main variables of our analysis. First, the status of household head is self-declared. Female household headship does not necessarily imply that the marital status of the woman of the house is divorced. In principle, a woman household head could be single, married, divorced or a widower. But given the household self-declaration of headship, it is not surprising that in practice in Latin America there are very few cases of married female household heads. To deal with this issue we explored the use of alternative “objective” definitions of household headship, e.g. assigning the household headship to the main income provider or to the more educated household member. We found no significant differences in the main results of the paper.

The second measurement problem is that for most countries home ownership is not observed at the individual level but only at the household level, i.e. we do not know which member of the family is the legal owner of the house. Therefore most of our analysis has to be carried out the household level rather than the individual level as is more traditional in the discrimination literature. There is precise information on the identity of the household owner for Chile, Honduras and Nicaragua. For these three countries, we present our analysis at the individual level that confirms female worse outcomes in terms of homeownership and the endogenous nature of household headship.

The endogeneity stressed in this paper has to do with the explicit decision of women to head their family. This could take the form of a single mother or a divorced or separated woman. Although widows may also be female household heads they became so only after the passing of their partner. Therefore besides criminal cases, women do not take a “decision” to become widows so the endogeneity with homeownership is not present. In our household level estimations and summary statistics we exclude households headed by widows for all countries but Brazil and Ecuador that do not report civil status.

² In Uruguay the state owned Banco Hipotecario del Uruguay has a market share of more than 80% of all mortgage housing credit (Gandelman and Gandelman 2004). As a result of a severe financial crisis in 2002, currently this source of home finance is not available any more.

II. Housing differentials - Individual level analysis

II.1 Methodology

The traditional approach to estimating the determinants of homeownership is to postulate a structural equation

$$Own_i^* = x' \beta_i + \varepsilon_i \quad (1)$$

where $Own = 1$ if $Own^* > 0$ and ε is an error term assumed to distribute normal or logistic. All explanatory variables in x are assumed to be exogenous.

We are in the presence of gender differential effects, if all other things equal, women have lower probability of owning their home. In order to test this gender differential treatment one of the regressors would be a gender dummy. When the estimation is carried out at the individual level there are no problems with the gender variable since, even in these days, sex as race or ethnic origin is not a choice variable and could be taken as exogenous.

II.2 Results

The only three countries where we could observe who is the actual owner of the house are Chile, Honduras and Nicaragua. For these three countries we present for each country in column A of Table 2 an “average” effect on the probability of owning their home for a woman and in column B we desegregate this effect by “types” of women. In particular we distinguish the single women heading a family, single women not heading a family (e.g. daughters living with their parents), women living with her couple (married or not), divorced or separated women and finally widows.

As expected richer, older and more educated people are more likely to own their home. After controlling for these variables, the probability of a woman to own their home is lower than the

probability of men for the three countries and thus we are in the presence of gender discrimination. But this result is not homogenous for all types of women, when desegregating the analysis, we observe that separated women or single female household heads have higher probability of owning their home. Thus, although we have already established for these three countries that women have lower probability of owning their home, when observing data aggregated at the household level, we will likely have that female household headship is associated with a larger probability of homeownership. This is not the true gender effect, it rather reflects the fact that those women that felt they could head their family have larger probabilities of achieving ownership.

Table 4. Determinants of the probability of homeownership – individual level data						
	Chile		Honduras		Nicaragua	
	A	B	A	B	A	B
Woman	-0.089 [0.012]***		-0.284 [0.025]***		-0.230 [0.028]***	
Woman-Single-Not household head		-0.224 [0.024]***		-0.824 [0.060]***		-1.164 [0.093]***
Woman-Single- household head		-0.022 [0.033]		0.303 [0.058]***		0.547 [0.258]**
Woman Separated		0.073 [0.029]**		0.097 [0.074]		0.197 [0.046]***
Woman Couple		-0.066 [0.015]***		-0.289 [0.030]***		-0.257 [0.034]***
Woman Widow		-0.127 [0.024]***		-0.146 [0.070]**		0.009 [0.068]
Income	0.207 [0.008]***	0.206 [0.008]***	0.013 [0.001]***	0.012 [0.001]***	0.084 [0.007]***	0.081 [0.007]***
Age	0.016 [0.000]***	0.016 [0.000]***	0.043 [0.001]***	0.040 [0.001]***	0.044 [0.001]***	0.041 [0.001]***
Schooling	0.049 [0.002]***	0.048 [0.002]***	0.019 [0.003]***	0.020 [0.003]***	0.003 [0.004]	0.006 [0.004]
Illiterate	-0.083 [0.025]***	-0.079 [0.025]***	-0.190 [0.073]***	-0.203 [0.074]***	-0.134 [0.039]***	-0.122 [0.040]***
Constant	-2.698 [0.023]***	-2.671 [0.024]***	-2.836 [0.041]***	-2.725 [0.042]***	-2.248 [0.039]***	-2.170 [0.039]***
Observations	147056	147056	29212	29212	15702	15702

Note: Own=1 if individual owns the house, Wom=1 for females, Schooling is years of formal education, Illiterate=1 if the individual does not know how to read and write.

Standard errors in brackets

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

III. Housing differentials -Household level analysis

III.1 Methodology

When the estimation is carried out at the household level, the Gender dummy will equal one in the presence of a female household head but household headship is not exogenous. For instance, there is evidence that divorces are affected by several income and welfare variables. Shroder (2002) reviews the evidence on indirect effects of housing assistance on the self-sufficiency of assisted families. He concludes that there is a strong association of housing assistance with single-adult household formations. Other papers that report similar evidence include Danzinger et al. (1982) and Hannan and Tuma (1990). It is therefore natural to assume that some of the variables that increase the probability of owning a house also increase the probability of observing women headed families. If this endogeneity is neglected the estimated coefficients of model (1) are inconsistent.

Since for most countries the information about homeownership is at the household level rather than the individual level (i.e. we know if a member of the household owns the house but not whom), we need to provide a remedy for the endogeneity that arises at the household level analysis. Therefore to estimate the differential effect of household head by women we postulate a bivariate probit model in which it is possible to test whether woman headship and housing tenure are exogenous. The model is based on two structural equations.

$$Own_i^* = \beta_1' x_{1i} + \gamma_1 Woman_i + \varepsilon_{1i} \quad (2)$$

$$Woman_i^* = \beta_2' x_{2i} + \gamma_2 Own + \varepsilon_{2i}$$

where Own^* and $Woman^*$ are latent variables, Own and $Woman$ are dichotomous variables that take the following values:

$$Own = \begin{cases} 1 & \text{if } Own^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad Woman = \begin{cases} 1 & \text{if } Woman^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

x_1 and x_2 are vectors of exogenous variables, β_1 and β_2 are vector of parameters, γ_1 and γ_2 are scalar parameters and the error terms are assumed to be distributed bivariate normal with mean 0, variance 1 and correlation $Cov(\varepsilon_1, \varepsilon_2) = \rho$. While the bivariate probit model can be

identified based on the functional form assumptions of the joint normal distribution and therefore there is no need for any extra identification strategies some of the determinants of homeownership should not affect the gender headship regression and vice versa.

As shown in Greene (1998) and Greene (2003), despite the endogeneity of woman headship, a multiple equation specification for two dichotomous variables like equation (2) can be consistently estimated by Full-Information Maximum Likelihood (FIML) methods.³ The intuition behind this result is that the four probability terms that enter the likelihood function can be decomposed in the conditional and the marginal distribution for women. For instance,

$$P(Own = 1, Woman = 1) = P(Own = 1 | Woman = 1)P(Woman = 1).$$

The loglikelihood function to be maximized is given by:

$$\ell(\beta) = \sum_i^N [d_{11}P_i^{11} + d_{10}P_i^{10} + d_{01}P_i^{01} + d_{00}P_i^{00}]$$

where:

$$\begin{aligned} d_{11} &= Own_i Woman_i & P_i^{11} &= P(Own = 1, Woman = 1) = \Phi_i(\beta_1'x_{1i} + \gamma, \beta_2'x_{2i}, \rho) \\ d_{10} &= Own_i(1 - Woman_i) & P_i^{10} &= P(Own = 1, Woman = 0) = \Phi_i(\beta_1'x_{1i} + \gamma, -\beta_2'x_{2i}, \rho) \\ d_{01} &= (1 - Own_i)Woman_i & P_i^{01} &= P(Own = 0, Woman = 1) = \Phi_i(-\beta_1'x_{1i}, \beta_2'x_{2i}, \rho) \\ d_{00} &= (1 - Own_i)(1 - Woman_i) & P_i^{00} &= P(Own = 0, Woman = 0) = \Phi_i(-\beta_1'x_{1i}, -\beta_2'x_{2i}, \rho) \end{aligned}$$

and $\Phi_i(\dots, \rho)$ is the bivariate normal distribution assumed for the perturbations.

This nice result of the bivariate probit model has already been used in empirical work in various areas. Greene (1998) studies the probability of a gender economic courses at Liberal Arts Colleges, White and Wolaver (2003) focus on occupation choice and migration and Greene, Rhine and Toussaint-Comeau (2003) study the decision to patronize check-cashing businesses and the decision to be unbanked. Fabbri, Monfardini and Radice (2004) focus on cesarean delivery utilization across public and private hospitals. This last paper presents Monte Carlo evidence that testing the null of $\rho = 0$ is a valid test for exogeneity.

³ A two-stage procedure paralleling 2SLS for linear simultaneous equations models will yield inconsistent results as discussed in Wooldridge (2003).

III.2 Basis statistics

Table 3 and 4 present descriptive statistics of variables likely to affect the probability of becoming a homeowner and the probability of a woman to head her own household. Some of the variables are for the household as a whole, some are characteristics of the household head and some are characteristics of the woman of the household.

The first two variables are dependent variables of our model at the household level. *Own* and *Woman* are dummy variables. *Own* takes the value of one when the household owns the house where they live and 0 otherwise while *Woman* takes the value 1 whether the household head is a woman and 0 otherwise. Simply looking at the means, women represent a higher percentage of renters than owners and users. In most cases but in Brazil, Ecuador, Venezuela and Nicaragua the percentage of owners is higher in men headed households than in women headed households, at least in the first two countries this is probably due to our inability to deplete the database from widows.

The variables of interest can be classified in the following four categories: income, life-cycle status, location and neighborhood attributes and other socioeconomic characteristics.

We define two income-related variables: total household income (*IncomeHouse*) and total income of the woman of the house⁴ (*IncomeWoman*). There is not a clear pattern in current household income with respect of owners and renters. In many countries the house income level is about the same for both groups. The household income of owners is higher than renters in Colombia, Uruguay and Guatemala and is lower in Chile, Ecuador, Honduras, Nicaragua, Paraguay, Peru and Venezuela. The key differences in income are between owners and renters with those using without explicit rights over the house. The mean values of the *IncomeWoman* and *IncomeHouse* imply that the on average the income of the woman of the house accounts for approximately 30% of total income. Venezuela is an exceptional case where the mean value of *IncomeWoman* is 60% of the mean value on total household income. When breaking these averages by household head it transpires that when the household is headed by a man the share of women's income in total income is much lower (about 20%) and much higher when is headed

⁴ She may be the household head or the household head's wife.

by a woman. Women that potentially earn by themselves more money are likely to feel more independent and therefore this may affect the decision to remain married or not. This is also clear from the comparison in absolute terms of *IncomeWoman* for those women that are household heads and those that are not. For most countries the average income of women heading their household is more than double the income of women not heading their household. The exceptions are Mexico, Paraguay and Venezuela where in any case the average income of women heading their households is more than 40% the average income of women not doing so.

We considered three life-cycle status variables: age of the household head and age of the woman (*AgeHead* and *AgeWoman*), a dummy that takes the value of 1 if the household head is married and 0 otherwise (*Married*)⁵ and the amount of children under 18 years old in the house (*Children*). In female headed families *AgeHead* takes the same value of *AgeWoman*. In most Latin American countries owning a house is a family achievement that can be attained only after many years of efforts. Our tables show that owner household heads and the women of the house are about 10 years older than renters and users.⁶ In couples men are usually older than women and on average our data implies a difference between 2 and 5 years old (Argentina being the minimum and Nicaragua the maximum). The age gap is larger for users followed by owners and renters.

If a person does not believe his actual mate to be stable, it is natural that he may not be interested in getting into a long-term contract as a housing mortgage credit or buying a household that could be considered a marital property in case of divorce or separation. He will prefer a more flexible housing solution like renting. The household head being married and the presence of children are proxies of family stability. The majority of owners are married (figures going up to 74% for Mexico and Bolivia) while only a minority of renters and users are (the share of married household heads in renters and users is above 50% only for Chile, Mexico and Venezuela). Owners tend to have more children than renters and about the same amount than users.⁷ Breaking the analysis in the household head gender dimension, only a very small proportion (in most countries below 20%) of woman households heads are married (Paraguay being the country

⁵ This variable could not be defined for Ecuador and Brazil.

⁶ Haven taken widows out of the sample this age gap is lower than the age gap for the whole sample.

⁷ It may be surprising that the average for *Children* is between 1 and 2 but it should be noted that this is the average number of children per household and not per family.

with the highest share of married female household heads, 31%) and they tend to have less children than households where there is a couple present and the household head is a man.

We defined two variables related to education level and both were divided between the household head and the women of the house. *SchoolingHead* and *SchoolingWoman* are the years of formal education of the household head or of the woman of the house.⁸ *IlliterateHead* and *IlliterateWoman* are dummy variables taking the value 1 if the household head or the woman of the house is illiterate and 0 otherwise.

On average, owners are older than renters are but renters are on average more educated than owners. Given the improvements in education levels over the last decades it is not surprising that the younger groups are more educated than the older ones.

With respect to location *City* is a dummy that takes value one if the house is located in a urban center and 0 otherwise and *CapitalCity* is a dummy that takes the value one if the house is located in the capital city of the country.⁹ Many times there are cultural differences between inhabitants of the urban centers and the rest of the country. Being the latter more conservative is reasonable to have a lower proportion of women headed in rural areas.

⁸ Argentina only reports schooling levels and not actual years. We assume that those with primary incomplete attend 3 years, those that did not completed secondary school attended 8 years, those that did not completed university studies had 13 formal years of education and finally those with university degrees were assigned 16 years of schooling.

⁹ For Bolivia *CapitalCity* takes the value 1 if the household is located either in La Paz or Sucre.

Table 3. Summary Statistics by housing tenure – South America

	Argentina				Bolivia				Brazil				Chile				Colombia			
	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot
Own	100%	0%	0%	71%	100%	0%	0%	61%	100%	0%	0%	74%	100%	0%	0%	70%	100%	0%	0%	50%
Woman	21%	29%	25%	23%	13%	23%	17%	15%	27%	30%	22%	27%	17%	20%	17%	17%	25%	29%	24%	26%
IncomeHouse	876	840	572	830	1707	1596	1696	1685	1309	1336	667	1241	453	519	283	431	2655	1943	1031	2176
IncomeWoman	296	346	198	290	460	503	461	467	404	461	206	391	83	122	54	82	923	731	390	784
AgeHead	50,6	38,1	41,6	47,4	46,2	35,5	37,0	42,4	48,4	39,5	41,3	46,3	51,2	39,9	42,9	48,3	50,9	38,9	40,1	45,1
Agewoman	48,3	36,9	39,1	45,4	43,6	33,6	34,5	40,1	45,4	36,9	37,9	43,4	48,1	37,2	39,6	45,4	47,5	36,2	36,5	42,0
Married	64%	37%	45%	57%	74%	45%	54%	65%					70%	52%	57%	65%	50%	29%	30%	39%
Children	1,3	1,0	1,5	1,3	2,3	1,9	2,0	2,1	1,2	1,1	1,4	1,2	1,3	1,3	1,4	1,3	1,3	1,3	1,6	1,4
SchoolingHead	9.1	10.6	8.8	9.3	7,1	9,2	9,0	7,9	5,9	7,3	4,8	6,0	7,1	10,0	7,7	7,6	7,8	9,1	6,3	8,1
SchoolingWoman	9.2	10.6	9.0	9.4	6,0	8,8	8,8	7,1	6,0	7,3	5,2	6,1	7,1	9,8	7,8	7,6	7,7	9,0	6,6	8,0
City					60%	87%	81%	69%	87%	98%	70%	87%	61%	88%	52%	62%				
Capitalcity	6%	10%	5%	6%	22%	23%	27%	23%									54%	68%	32%	56%
	Ecuador				Paraguay				Peru				Uruguay				Venezuela			
Own	100%	0%	0%	68%	99%	0%	0%	76%	100%	0%	21%	72%	100%	0%	0%	66%	100%	0%	0%	83%
Woman	21%	22%	19%	21%	22%	33%	20%	23%	11%	22%	18%	14%	21%	27%	23%	23%	40%	37%	30%	39%
IncomeHouse	373	468	358	388	114	244	48	116	1687	3152	1113	1723	15732	13810	8285	14188	242	338	201	248
IncomeWoman	90	105	66	90	37	59	29	38	389	1189	333	460	5212	5320	2886	4868	154	203	125	157
AgeHead	51,9	40,9	42,0	48,5	47,3	35,6	38,5	45,0	48,9	40,1	38,9	45,8	54,7	44,5	45,5	51,4	50,4	40,3	41,3	48,7
Agewoman	48,2	37,6	38,1	44,9	43,7	33,0	34,6	41,6	45,6	37,3	36,3	42,8	52,1	42,2	42,4	48,8	48,0	38,2	37,6	46,5
Married					65%	37%	42%	59%	61%	39%	39%	54%	67%	45%	48%	60%	52%	55%	39%	51%
Children	1,8	1,8	1,8	1,8	2,2	1,5	1,9	2,1	1,9	1,9	1,8	1,9	0,8	0,9	1,4	0,9	4,4	3,5	3,1	4,2
SchoolingHead	6,2	8,9	6,8	6,8	6,2	9,4	6,1	6,5	7,9	11,7	9,8	8,7	9,3	10,2	7,9	9,2	7,3	10,6	6,9	7,6
SchoolingWoman	6,1	8,7	6,8	6,6	6,1	8,9	5,8	6,3	6,3	11,0	8,6	7,3	10,1	11,1	9,3	10,1	7,7	10,7	8,3	8,0
City	49%	84%	47%	55%	50%	89%	43%	52%	67%	93%	85%	73%								
Capitalcity					6%	22%	5%	7%	37%	51%	55%	42%	55%	67%	48%	56%				

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table 3 (continuation). Summary Statistics by housing tenure – Mexico and Central America																
	Costa Rica				El Salvador				Guatemala				Honduras			
	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot
Own	100%	0%	0%	75%	100%	0%	0%	69%	100%	0%	0%	61%	100%	0%	0%	72%
Woman	19%	26%	18%	20%	24%	32%	25%	25%	14%	23%	13%	16%	19%	27%	21%	21%
IncomeHouse	239	242	131	226	7987	7555	3640	7089	4230	3840	2629	3837	6710	7919	3830	6480
IncomeWoman	54	68	25	53	2497	2591	1342	2294	860	1119	574	852	2980	4011	1610	2935
AgeHead	47,1	37,4	40,6	45,0	46,6	37,9	39,5	44,1	47,2	37,3	38,8	43,6	47,3	36,1	39,2	44,6
Agewoman	43,5	34,2	36,1	41,4	42,8	35,0	35,6	40,6	43,7	34,7	35,5	40,4	43,0	32,9	34,9	40,5
Married	62%	36%	39%	56%	45%	28%	28%	40%	65%	41%	59%	59%	48%	29%	30%	43%
Children	1,5	1,4	1,8	1,5	4,6	3,8	3,9	4,3	1,4	0,9	1,2	1,3	2,7	1,9	2,3	2,5
SchoolingHead	7,2	8,5	5,7	7,2	5,3	7,6	5,0	5,5	5,6	7,3	5,7	5,9	6,2	7,8	5,8	6,4
SchoolingWoman	7,4	8,1	5,8	7,3	4,9	7,1	4,8	5,1	4,4	6,3	4,6	4,8	6,2	7,6	5,9	6,4
City	59%	40%	75%	58%					65%	94%	67%	71%	47%	89%	39%	52%
Capitalcity													15%	25%	7%	15%
	Mexico				Nicaragua				Panama							
	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot				
Own	100%	0%	0%	72%	100%	0%	0%	76%	100%	0%	0%	77%				
Woman	15%	23%	19%	17%	22%	22%	16%	21%	20%	26%	19%	20%				
IncomeHouse	9919	10282	6853	9565	2888	5610	1928	2784	647	671	434	623				
IncomeWoman	3819	4597	2955	3822	700	1625	447	680	171	227	93	167				
AgeHead	47,7	36,9	39,2	45,0	46,8	39,8	37,7	44,7	48,2	39,6	40,2	46,3				
Agewoman	44,6	34,3	36,7	42,1	42,4	34,2	33,6	40,4	44,4	36,8	35,7	42,7				
Married	74%	51%	59%	69%	46%	40%	33%	43%	34%	24%	21%	32%				
Children	1,7	1,4	1,6	1,6	5,8	4,3	4,7	5,5	1,8	1,2	1,9	1,7				
SchoolingHead	7,6	9,8	8,4	8,1	4,4	8,9	4,5	4,5	7,5	10,3	7,5	7,8				
SchoolingWoman	7,3	9,4	8,2	7,7	4,2	8,2	4,6	4,4	7,7	10,4	7,8	8,0				
City					55%	98%	50%	55%	49%	85%	62%	54%				
Capitalcity					13%	17%	11%	13%	8%	27%	10%	10%				

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table 3. Summary Statistics by household head – South America															
	Argentina			Bolivia			Brazil			Chile			Colombia		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	72%	64%	71%	63%	51%	61%	75%	75%	75%	70%	68%	70%	51%	48%	50%
Wom	0%	100%	23%	0%	100%	15%	0%	100%	30%	0%	100%	17%	0%	100%	26%
IncomeHouse	893	601	825	1720	1492	1685	1361	1032	1263	452	327	431	2169	2197	2176
IncomeWom	234	465	291	353	1035	467	293	624	392	65	166	82	522	1411	784
AgeHead	47,8	45,6	47,3	42,6	41,3	42,4	44,3	50,6	46,2	48,3	48,7	48,3	45,2	44,8	45,1
AgeWom	45,3	45,6	45,3	39,8	41,3	40,1	40,3	50,6	43,4	44,6	48,7	45,4	40,9	44,8	42,0
Married	70%	13%	57%	72%	26%	65%				75%	18%	65%	49%	12%	39%
Children	1,3	1,1	1,3	2,2	1,5	2,1	1,4	1,0	1,3	1,3	1,1	1,3	1,4	1,2	1,4
SchoolingHead	9.3	9.5	9.3	7,9	7,7	7,9	6,1	5,7	6,0	7,6	7,6	7,6	7,9	8,5	8,1
SchoolingWom	9.3	9.5	9.4	7,0	7,7	7,1	6,2	5,7	6,0	7,5	7,6	7,6	7,8	8,5	8,0
City				67%	78%	69%	84%	93%	87%	60%	73%	62%			
Capitalcity	6%	7%	6%	23%	27%	23%							54%	62%	56%
	Ecuador			Paraguay			Peru			Uruguay			Venezuela		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	68%	68%	68%	77%	74%	76%	74%	59%	72%	67%	62%	66%	81%	85%	83%
Wom	0%	100%	21%	0%	100%	23%	0%	100%	14%	0%	100%	23%	0%	100%	39%
IncomeHouse	419	269	388	112	132	116	1727	1697	1723	14987	11481	14188	287	187	248
IncomeWom	70	153	90	34	51	38	378	921	460	3881	7801	4868	131	187	157
AgeHead	47,5	52,6	48,5	45,1	44,5	45,0	46,0	44,9	45,8	51,6	50,7	51,4	47,5	50,5	48,7
AgeWom	42,5	52,6	44,9	40,6	44,5	41,6	42,4	44,9	42,8	48,2	50,7	48,8	43,0	50,5	46,5
Married				67%	31%	59%	62%	8%	54%	74%	12%	60%	76%	11%	51%
Children	1,8	1,8	1,8	2,1	2,0	2,1	1,9	2,1	1,9	0,9	0,8	0,9	4,2	4,2	4,2
SchoolingHead	7,0	5,9	6,8	6,5	6,3	6,5	8,8	8,5	8,7	9,0	10,0	9,2	8,0	7,0	7,6
SchoolingWom	6,9	5,9	6,6	6,3	6,3	6,3	7,0	8,5	7,3	10,2	10,0	10,1	8,8	7,0	8,0
City	53%	62%	55%	49%	65%	52%	71%	86%	73%						
Capitalcity				6%	10%	7%	41%	53%	42%	54%	63%	56%			

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table 3 (continuation). Summary Statistics by household head – Mexico and Central America												
	Costa Rica			El Salvador			Guatemala			Honduras		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	75%	72%	75%	70%	66%	69%	62%	55%	61%	72%	67%	71%
Wom	0%	100%	20%	0%	100%	25%	0%	100%	16%	0%	100%	21%
IncomeHouse	237	179	225	7410	6140	7089	3911	3441	3837	6432	6537	6453
IncomeWom	40	99	52	1813	3536	2294	667	1759	852	2126	5980	2922
AgeHead	44,9	44,6	44,9	44,0	44,5	44,1	43,7	43,3	43,6	44,2	45,1	44,4
AgeWom	40,4	44,5	41,3	39,1	44,5	40,6	39,8	43,3	40,4	39,0	45,1	40,4
Married	67%	8%	56%	50%	8%	40%	67%	18%	59%	50%	13%	43%
Children	1,5	1,5	1,5	4,5	4,0	4,3	1,3	1,2	1,3	2,6	2,2	2,5
SchoolingHead	7,1	7,3	7,2	5,7	4,9	5,5	6,0	5,5	5,9	6,3	7,0	6,4
SchoolingWom	7,3	7,3	7,3	5,2	4,9	5,1	4,7	5,5	4,8	6,2	7,0	6,4
City	61%	48%	58%				69%	82%	71%	48%	65%	52%
Capitalcity										14%	21%	15%
	Mexico			Nicaragua			Panama					
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot			
Own	72%	63%	70%	75%	81%	76%	78%	75%	77%			
Wom	0%	100%	17%	0%	100%	21%	0%	100%	20%			
IncomeHouse	9758	7986	9462	2907	2317	2784	644	539	623			
IncomeWom	3261	5221	3803	574	1053	680	136	272	167			
AgeHead	44,8	43,9	44,7	44,5	45,6	44,7	46,3	46,5	46,3			
AgeWom	41,4	43,9	41,8	38,9	45,6	40,4	41,5	46,5	42,7			
Married	78%	22%	69%	52%	8%	43%	38%	7%	32%			
Children	1,7	1,4	1,6	5,6	5,2	5,5	1,8	1,6	1,7			
SchoolingHead	8,0	8,3	8,1	4,4	5,0	4,5	7,5	8,7	7,8			
SchoolingWom	7,6	8,3	7,7	4,3	5,0	4,4	7,8	8,7	8,0			
City				50%	74%	55%	50%	70%	54%			
Capitalcity				11%	18%	13%	8%	15%	10%			

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

III.3 Results

Table 5 and 6 present the results of the traditional probit estimation for homeownership and women household heads. Table 7 presents the estimation of the bivariate probit model where we control for the endogeneity of woman headship. There are two differences in the ownership regression presented in Table 5 and in Table 7: the simultaneous estimations in the case of the bivariate probit model and the number of observations included. Since the bivariate probit model can be run only when there is information for all variables in both equations the number of observation in Table 7 is lower than in Table 5 for all countries. In order to be sure that our results are not due to composition effects we also run the simple probit models restricting the set of observations to those considered in Table 7. The results do not change qualitatively. In tables A2, A3, and A4 in the appendix we report the same summary statistics than in Tables 1, 2 and 3 but restrict to those observations included in the bivariate probit model. The picture does not change either. Thus, the changes in the estimations from the simple probit model to bivariate probit must be due to the endogeneity control.

The main methodological result of this section can be seen by the reverse of the sign of *Women* in the Homeownership regressions for the cases of Argentina, Chile, Colombia, El Salvador, Mexico, Paraguay, Uruguay and Venezuela.

Table 8 presents the marginal effect of Woman Headship with and without controlling for female headship endogeneity. According to the simple probit models there is statistically significant discrimination in favor of women in Argentina, Chile, Colombia, Costa Rica, El Salvador, Nicaragua, Paraguay, Uruguay and Venezuela. The only country where there is

discrimination against women at the traditional statistical significance levels are Brazil, Ecuador and Peru. On the contrary the bivariate probit models shows evidence of discrimination against women in all cases but in Costa Rica, Nicaragua and Venezuela. The probit model overestimates the marginal effect of women headship on average by 0.36. Considering that around 72% of households own their home an overestimation in the marginal of this magnitude is really big.

The simple probit estimation results suggest in nine countries a more favorably outcome in terms of homeownership for female headed families, a less favorably result for three countries and was inconclusive for five countries. In the bivariate probit model, the three countries that were suggesting a worse condition for women and the five countries that were previously inconclusive show significant evidence of lower probability of homeownership for women. Of the nine countries whose probit model suggested that female headship was associated with larger probability of owning their home, after controlling for endogeneity only three maintain this conclusion while six reverse sign and suggest lower probability for women headed families. Therefore, in the bivariate probit model we recover the intuitive result that female-headed families are not in a better situation than husband-wife families in what respect to homeownership.

The rest of the variables present for the most cases reasonable results. The higher the income of the house the most likely to become a homeowner in all cases but Bolivia, Paraguay and Venezuela. In all cases we found that the higher the income of the woman of the house the more likely to head her own household, in line with the endogeneity expected.

The life cycle variables also have the expected signs for the most. The older the household head the more likely to own his house. Family stability is also associated with less flexible housing tenure options as ownership. The fact of being married significantly increases the probability of becoming a homeowner in the probit model with a marginal effect around 0.15. The change in the sign in the Married variable in the biprobit model is probably produced by the same endogeneity that changes the sign of the woman variable. The number of children also is positively related with the probability of owning the house in sixteen out of the seventeen countries, the exemption being Uruguay a country with the lowest fertility rates in Latin America. Older women are more likely to become household heads. Recalling that we have excluded widows from the household level regressions, this result is not so obvious and may suggest that even for those female household heads their first option was a more traditional both parents family, and after being unsuccessful for some time they choose to head their own family.

With respect to education we found more counterintuitive results. At least in one of the estimation methods the schooling variable reflects that more education is associated with higher probability of being a homeowner in Colombia, Uruguay, Argentina and Costa Rica. On the contrary in Bolivia, Brazil, Chile, Ecuador, Peru and Venezuela more education is associated with lower probability of becoming homeowners. In part this result may be produced by an increase in the level of education of young cohorts that have lower probability of owning their home as reflected in the age variable. We conjectured that more educated women have more labor opportunities and therefore may feel less attached to an unsatisfactory marriage. This seems to be verified for Argentina, Ecuador, Venezuela, Mexico and Nicaragua but not for Bolivia, Brazil, Chile, Ecuador, Paraguay, Peru and Mexico.

Table 5 Determinants of the probability of homeownership (without controlling for endogeneity)

	Argent	Bolivia	Brazil	Chile	Colomb	Ecuador	Parag	Peru	Urug	Vene	Mexico	Costa Rica	El Salvador	Guatem	Hond	Nicarag	Panama
Woman	0.064 [0.022]***	-0.110 [0.060]*	-0.073 [0.010]***	0.149 [0.017]***	0.076 [0.023]***	-0.119 [0.025]***	0.085 [0.038]**	-0.368 [0.132]***	0.107 [0.030]***	0.185 [0.018]***	0.005 [0.028]	0.252 [0.040]***	0.050 [0.027]*	-0.002 [0.076]	-0.059 [0.046]	0.290 [0.064]***	0.011 [0.049]
IncomeHouse	0.009 [0.004]**	-0.094 [0.019]***	0.043 [0.004]***	0.169 [0.006]***	0.016 [0.005]***	0.066 [0.008]***	-0.043 [0.005]***	-0.021 [0.018]	0.143 [0.016]***	-0.007 [0.002]***	0.062 [0.010]***	0.024 [0.008]***	-0.019 [0.005]***	0.002 [0.024]	0.010 [0.016]	0.003 [0.013]	-0.000 [0.013]
AgeHead	0.030 [0.001]***	0.030 [0.002]***	0.023 [0.000]***	0.026 [0.000]***	0.040 [0.001]***	0.026 [0.001]***	0.028 [0.001]***	0.029 [0.004]***	0.028 [0.001]***	0.025 [0.001]***	0.036 [0.001]***	0.027 [0.001]***	0.019 [0.001]***	0.028 [0.002]***	0.033 [0.001]***	0.023 [0.002]***	0.022 [0.001]**
Married	0.399 [0.021]***	0.423 [0.047]***		0.317 [0.013]***	0.360 [0.021]***		0.450 [0.034]***	0.347 [0.098]***	0.408 [0.027]***	0.158 [0.017]***	0.424 [0.023]***	0.570 [0.034]***	0.334 [0.026]***	0.351 [0.058]***	0.346 [0.040]***	0.257 [0.052]***	0.308 [0.046]**
Children	0.085 [0.007]***	0.059 [0.012]***	0.071 [0.003]***	0.058 [0.005]***	0.078 [0.007]***	0.002 [0.006]	0.098 [0.009]***	-0.009 [0.026]	-0.002 [0.010]	0.120 [0.004]***	0.111 [0.007]***	0.044 [0.011]***	0.084 [0.006]***	0.098 [0.020]***	0.113 [0.010]***	0.082 [0.010]***	0.056 [0.011]**
SchoolingHead	0.001 [0.003]	-0.022 [0.005]***	0.001 [0.001]	-0.048 [0.002]***	0.005 [0.002]**	-0.026 [0.002]***	-0.001 [0.004]	-0.057 [0.010]***	0.024 [0.003]***	-0.015 [0.002]***	-0.015 [0.002]***	0.011 [0.004]***	0.004 [0.003]	-0.007 [0.006]	-0.009 [0.005]*	0.001 [0.006]	-0.020 [0.005]**
Constant	-1.211 [0.053]***	-0.527 [0.135]***	-0.733 [0.025]***	-2.698 [0.076]***	-2.325 [0.070]***	-0.910 [0.058]***	-0.390 [0.086]***	-0.165 [0.196]	-2.808 [0.140]***	-0.641 [0.040]***	-1.879 [0.090]***	-1.284 [0.106]***	-0.695 [0.057]***	-1.212 [0.184]***	-1.272 [0.138]***	-0.890 [0.122]***	-0.241 [0.108]*
Observations	26270	4302	106286	60112	19911	18959	8793	1130	15245	42286	20334	9192	14893	2505	5905	3705	5751

Note: Dependent variable: Own=1 if household owns the house, Woman=1 if household the head is female, IncomeHouse= total household income, AgeHead is the age of the household head and SchoolingHead is years of education of the household head, Married=1 if the household head is married, Children=amount of children under 18 in the house.

Standard errors in brackets

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

Table 5 Determinants of the probability of female headship

	Argent	Bolivia	Brazil	Chile	Colomb	Ecuador	Parag	Peru	Urug	Vene	Mexico	Costa Rica	El Salvador	Guatem	Hond	Nicarag	Panama
Own	-0.085 [0.029]***	-0.143 [0.066]**	-0.250 [0.011]***	-0.014 [0.018]	-0.135 [0.027]***	-0.250 [0.027]***	-0.086 [0.044]*	-0.313 [0.142]**	-0.019 [0.035]	0.017 [0.021]	-0.179 [0.036]***	0.084 [0.046]*	-0.067 [0.031]**	-0.107 [0.085]	-0.245 [0.053]***	0.127 [0.071]*	-0.142 [0.056]**
IncomeWoman	0.168 [0.005]***	0.241 [0.013]***	0.194 [0.002]***	0.083 [0.002]***	0.098 [0.002]***	0.248 [0.006]***	0.081 [0.003]***	0.164 [0.026]***	0.131 [0.006]***	0.064 [0.001]***	0.246 [0.011]***	0.104 [0.004]***	0.137 [0.004]***	0.244 [0.016]***	0.188 [0.007]***	0.096 [0.009]***	0.154 [0.010]**
AgeWoman	0.029 [0.001]***	0.016 [0.003]***	0.022 [0.000]***	0.019 [0.001]***	0.030 [0.001]***	0.028 [0.001]***	0.017 [0.001]***	0.025 [0.005]***	0.021 [0.001]***	0.026 [0.001]***	0.015 [0.001]***	0.023 [0.002]***	0.024 [0.001]***	0.013 [0.003]***	0.026 [0.002]***	0.034 [0.002]***	0.027 [0.002]**
Married	-2.171 [0.028]***	-1.422 [0.065]***		-1.670 [0.016]***	-1.536 [0.029]***		-1.136 [0.037]***	-1.954 [0.160]***	-2.142 [0.034]***	-1.389 [0.018]***	-1.773 [0.032]***	-1.991 [0.047]***	-1.596 [0.034]***	-1.447 [0.085]***	-1.407 [0.054]***	-1.662 [0.073]***	-1.563 [0.063]**
Children	-0.015 [0.009]*	-0.105 [0.019]***	-0.015 [0.004]***	0.010 [0.007]	-0.050 [0.010]***	-0.000 [0.007]	0.004 [0.010]	0.043 [0.036]	-0.026 [0.014]*	-0.049 [0.004]***	-0.010 [0.012]	0.016 [0.014]	-0.063 [0.007]***	-0.035 [0.030]	-0.011 [0.013]	-0.025 [0.011]**	0.012 [0.013]
SchoolingWoman	0.002 [0.004]	0.001 [0.007]	-0.028 [0.001]***	0.005 [0.002]**	0.011 [0.003]***	-0.034 [0.003]***	-0.018 [0.005]***	-0.005 [0.015]	0.031 [0.004]***	0.018 [0.002]***	-0.011 [0.004]***	-0.006 [0.005]	-0.000 [0.003]	-0.004 [0.010]	0.025 [0.007]***	0.020 [0.008]***	0.011 [0.006]*
City			0.580 [0.016]***	0.274 [0.018]***		0.223 [0.027]***	0.196 [0.039]***	0.389 [0.158]**			0.030 [0.041]	-0.172 [0.042]***		-0.055 [0.102]		0.356 [0.065]***	0.308 [0.053]**
Capitalcity	-0.195 [0.053]***	0.144 [0.097]			0.062 [0.026]**				0.150 [0.033]***								
Constant	-1.505 [0.070]***	-1.645 [0.140]***	-2.514 [0.026]***	-1.736 [0.044]***	-2.208 [0.064]***	-2.559 [0.056]***	-1.349 [0.084]***	-2.082 [0.280]***	-1.920 [0.091]***	-1.565 [0.041]***	-1.876 [0.108]***	-1.565 [0.105]***	-1.444 [0.064]***	-1.910 [0.176]***	-2.343 [0.111]***	-2.257 [0.134]***	-2.160 [0.120]**
Observations	21190	3965	97569	55317	17820	16824	7981	1039	13745	38136	11000	9193	13480	2335	5534	3491	5074

Note: Dependent variable: Woman=1 if household the head is female, Own=1 if household owns the house. IncomeWoman, AgeWoman and SchoolingWoman are total income, age and years of formal education of the woman of the house, Married=1 if the household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city. Standard errors in brackets

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

Table 7 Determinants of the probability of homeownership and woman household headship

	Argent	Bolivia	Brazil	Chile	Colomb	Ecuador	Parag	Peru	Urug	Vene	Mexico	Costa Rica	El Salvador	Guatem	Hond	Nicarag	Panama
Home ownership																	
Woman	-1.363 [0.015]***	-1.388 [0.062]***	-1.496 [0.007]***	-1.362 [0.012]***	-1.170 [0.021]***	-1.505 [0.017]***	-1.367 [0.031]***	-1.678 [0.089]***	-1.381 [0.027]***	1.466 [0.014]***	-1.536 [0.021]***	1.397 [0.038]***	-1.324 [0.026]***	-1.288 [0.052]***	-1.313 [0.034]***	1.537 [0.051]***	-1.504 [0.034]***
IncomeHouse	0.037 [0.002]***	-0.045 [0.015]***	0.098 [0.002]***	0.107 [0.006]***	0.039 [0.004]***	0.104 [0.005]***	-0.019 [0.004]***	0.007 [0.003]***	0.082 [0.014]***	-0.007 [0.001]***	0.065 [0.004]***	-0.013 [0.004]***	0.021 [0.005]***	0.035 [0.024]	0.063 [0.014]***	-0.016 [0.003]***	0.046 [0.006]***
AgeHead	0.034 [0.001]***	0.031 [0.002]***	0.026 [0.000]***	0.028 [0.001]***	0.039 [0.001]***	0.030 [0.001]***	0.028 [0.001]***	0.029 [0.004]***	0.030 [0.001]***	0.005 [0.001]***	0.031 [0.001]***	0.013 [0.001]***	0.024 [0.001]***	0.027 [0.002]***	0.037 [0.001]***	0.004 [0.001]***	0.027 [0.001]***
Married	-0.515 [0.019]***	-0.068 [0.049]		-0.366 [0.015]***	-0.241 [0.024]***		-0.114 [0.036]***	-0.047 [0.097]	-0.499 [0.030]***	0.795 [0.015]***	-0.472 [0.028]***	1.209 [0.037]***	-0.189 [0.027]***	-0.126 [0.058]**	-0.124 [0.041]***	0.851 [0.048]***	-0.202 [0.044]***
Children	0.046 [0.006]***	0.020 [0.012]*	0.007 [0.003]**	0.033 [0.005]***	0.006 [0.007]	0.001 [0.005]	0.049 [0.008]***	0.005 [0.024]	-0.028 [0.009]***	0.099 [0.004]***	0.071 [0.008]***	0.036 [0.010]***	0.017 [0.006]***	0.074 [0.020]***	0.077 [0.011]***	0.080 [0.009]***	0.008 [0.010]
SchoolingHead	0.008 [0.002]***	-0.010 [0.002]***	-0.007 [0.001]***	-0.023 [0.002]***	0.012 [0.002]***	-0.020 [0.002]***	0.002 [0.004]	-0.037 [0.009]***	0.038 [0.003]***	-0.019 [0.002]***	-0.001 [0.002]	0.000 [0.004]	0.004 [0.003]	-0.003 [0.006]	0.004 [0.005]	-0.011 [0.002]***	0.003 [0.004]
Constant	-0.705 [0.049]***	-0.380 [0.138]***	-0.796 [0.022]***	-1.519 [0.071]***	-1.917 [0.067]***	-1.100 [0.040]***	-0.020 [0.082]	-0.064 [0.199]	-1.514 [0.126]***	-0.507 [0.045]***	-0.763 [0.067]***	-0.863 [0.090]***	-0.391 [0.061]***	-0.959 [0.190]***	-1.417 [0.137]***	-0.533 [0.074]***	-0.377 [0.093]***
Female headship																	
Own	-1.626 [0.016]***	-1.713 [0.047]***	-1.627 [0.008]***	-1.624 [0.016]***	-1.601 [0.019]***	-1.662 [0.016]***	-1.703 [0.034]***	-1.852 [0.087]***	-1.622 [0.031]***	1.515 [0.015]***	-1.759 [0.024]***	1.570 [0.039]***	-1.549 [0.030]***	-1.637 [0.053]***	-1.692 [0.039]***	1.614 [0.051]***	-1.668 [0.034]***
IncomeWoman	0.072 [0.004]***	0.135 [0.011]***	0.121 [0.002]***	0.046 [0.001]***	0.046 [0.002]***	0.142 [0.005]***	0.047 [0.002]***	0.052 [0.019]***	0.060 [0.005]***	0.020 [0.001]***	0.122 [0.006]***	0.037 [0.003]***	0.054 [0.004]***	0.130 [0.014]***	0.100 [0.006]***	0.029 [0.006]***	0.083 [0.009]***
AgeWoman	0.034 [0.001]***	0.024 [0.002]***	0.026 [0.000]***	0.026 [0.001]***	0.038 [0.001]***	0.030 [0.001]***	0.025 [0.001]***	0.029 [0.005]***	0.028 [0.001]***	0.005 [0.001]***	0.027 [0.001]***	-0.000 [0.002]	0.024 [0.001]***	0.024 [0.003]***	0.036 [0.001]***	0.006 [0.001]***	0.027 [0.001]***
Married	-1.523 [0.024]***	-0.689 [0.055]***		-1.129 [0.015]***	-0.796 [0.024]***		-0.676 [0.033]***	-1.384 [0.148]***	-1.339 [0.031]***	-1.034 [0.016]***	-1.065 [0.030]***	-1.590 [0.037]***	-1.066 [0.030]***	-0.728 [0.076]***	-0.794 [0.047]***	-1.091 [0.052]***	-1.158 [0.055]***
Children	0.045 [0.006]***	-0.043 [0.013]***	0.007 [0.003]**	0.034 [0.006]***	-0.003 [0.007]	-0.001 [0.005]	0.036 [0.008]***	0.023 [0.024]	-0.024 [0.011]**	-0.089 [0.003]***	0.050 [0.008]***	-0.020 [0.011]*	0.001 [0.007]	0.038 [0.026]	0.060 [0.011]***	-0.068 [0.009]***	0.015 [0.010]
SchoolingWoman	0.004 [0.002]*	-0.007 [0.004]*	-0.010 [0.001]***	-0.008 [0.001]***	0.012 [0.002]***	-0.025 [0.002]***	-0.006 [0.003]*	-0.024 [0.008]***	0.039 [0.003]***	0.015 [0.001]***	-0.005 [0.003]*	-0.002 [0.004]	0.001 [0.003]	-0.007 [0.006]	0.007 [0.005]	0.016 [0.004]***	0.003 [0.004]
City			0.275 [0.016]***	0.105 [0.013]***		0.048 [0.004]***		0.301 [0.142]**			0.022 [0.004]***	-0.069 [0.038]*		0.003 [0.092]			0.154 [0.046]***
Capitalcity	-0.030 [0.004]***	0.112 [0.054]**			0.016 [0.009]*		-0.027 [0.008]***		0.039 [0.020]*						-0.024 [0.049]	0.035 [0.022]	
Constant	-0.568 [0.044]***	-0.815 [0.111]***	-1.052 [0.025]***	-0.576 [0.032]***	-1.493 [0.051]***	-1.124 [0.040]***	-0.322 [0.073]***	-0.605 [0.243]**	-1.026 [0.064]***	-1.390 [0.038]***	-0.750 [0.066]***	-1.149 [0.099]***	-0.353 [0.061]***	-1.080 [0.170]***	-1.280 [0.095]***	-1.475 [0.096]***	-0.586 [0.089]***
rho	15.087 [460.331]	14.531 [595.295]	14.662 [476.331]	13.810 [636.973]	13.987 [577.761]	14.492 [433.612]	13.623 [542.261]	14.824 [551.617]	13.439 [624.407]	-14.591 [519.625]	13.785 [459.370]	-13.702 [534.423]	11.017 [162.212]	17.320 [771.534]	14.912 [546.623]	-15.005 [502.307]	13.603 [417.290]
Observations	21185	3939	96730	55296	17599	16824	7981	1039	13745	37987	11000	8422	13480	2335	4968	3491	5027

Note: Dependent variables: Own=1 if household owns the house and Woman=1 if household the head is female. IncomeHouse= total household income, AgeHead and SchoolingHead are age and years of formal education of the household head IncomeWoman, AgeWoman and SchoolingWoman are total income, age and years of formal education of the woman of the house, Married=1 if the household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city. Standard errors in brackets, * significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 Marginal Effects of Woman headship over the probability of being a homeowner			
	Probit	Biprobit	Overestimation
Argentina	0.0202**	-0.4710***	0,4912
Bolivia	-0.0420	-0.5097***	0,4677
Brazil	-0.0232***	-0.5319***	0,5087
Chile	0.0486***	-0.5010***	0,5496
Colombia	0.0304***	-0.4352***	0,4656
Costa Rica	0.0740***	0.3223***	-0,2483
Ecuador	-0.0422***	-0.5484***	0,5062
El Salvador	0.0173*	-0.0179**	0,0352
Guatemala	-0.0007	-0.4761***	0,4754
Honduras	-0.0202	-0.4838***	0,4636
Mexico	0.0016	-0.5488***	0,5504
Nicaragua	0.0787***	0.3430***	-0,2643
Panama	0.0032	-0.5236***	0,5268
Paraguay	0.0238*	-0.4749***	0,4987
Peru	-0.1211**	-0.5935***	0,4724
Uruguay	0.0380***	-0.5080***	0,546
Venezuela	0.0456***	0.3429***	-0,2973

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

IV. Conclusions

Although there is a large literature on the determinants of housing tenure and although there is also a large literature on women discrimination there are no studies that point that women -all the rest equal- have lower probabilities of owning their house. We argue that the housing tenure decision and the housing headship decisions should not be treated as exogenous. Among the variables that enter the decision of a woman to divorce her husband are income related issues and family life cycle dimensions that also affect the probability of owning their house. If this type of endogeneity is not properly accounted, it leads to inconsistent and often counterintuitive results.

In this paper, we use individual level data on homeownership from Chile, Honduras and Nicaragua and verify the potential problems with household level estimations that do not

control for headship endogeneity. In this three countries we found evidence that women as a whole have lower probability to own their home but that certain types of women (single family heads, separated or divorced women) have higher probability of being homeowners.

Then we proceed to estimate the gender effect on seventeen Latin American countries using household level data but controlling for this endogeneity with a bivariate probit estimation. We found that a naive simple probit model seems to imply that women headed families have higher probability of owning their home in nine out of the seventeen countries studies and that there are no significant results in five other countries. Once we estimate the bivariate probit model we get that women headed families have lower probability of owning their home in fourteen out of seventeen countries.

With respect to the other variables, as expected, we found that the higher the income of the family the higher the probability of owning their home. The higher the income of the woman of the house the higher the probability of having a woman headed family. The older the household head the higher the probability of being a homeowner and the higher the probability of female household headship. Family status variables like being married and having children have a positive direct effect on the probability of being a homeowner. The only not so intuitive results we get are related to the effect of education of women but this could be due to the increase in the education level of younger cohorts that as recently mentioned have lower probability of owning their home and lower probability of becoming household heads.

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Appendix

Country	Survey	Year	Source
Argentina	Encuesta Permanente de Hogares	2003	Instituto Nacional de Estadística y Censos
Bolivia	Encuesta Integrada de Hogares	2002	Instituto Nacional de Estadística
Brazil	Pesquisa Nacional por Amostra de Domicilios	2003	Instituto Brasileiro de Geografia e Estatística
Chile	CASEN	2003	Ministerio de Planificación
Colombia	Encuesta Continua de Hogares	2003	Departamento Administrativo Nacional de Estadística
Costa Rica	Encuesta de Hogares de Propósitos Múltiples	2003	Instituto Nacional de Estadística y Censos
Ecuador	Encuesta de Calidad de Vida	2003	Instituto Nacional de Estadística y Censos
El Salvador	Encuesta de Hogares de Propósitos Múltiples	2003	Dirección General de Estadística y Censos
Guatemala	Encuesta Nacional de Empleo e Ingresos	2003	Instituto Nacional de Estadística
Honduras	Encuesta Permanente de Hogares de Propósitos Múltiples	2003	Instituto Nacional de Estadística
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares	2004	Instituto Nacional de Estadística, Geografía e Informática
Nicaragua	Encuesta Nacional de Hogares sobre Medicion de Niveles de Vida	2001	Instituto Nacional de Estadística y Censos
Panama	Encuesta de Hogares	2003	Dirección de Estadística y Censo
Paraguay	Encuesta Permanente de Hogares	2003	Dirección General de Estadística, Encuestas y Censos
Peru	Encuesta Nacional de Hogares sobre Medicion de Niveles de Vida	2000	Instituto Nacional de Estadística e Informática
Uruguay	Encuesta Continua de Hogares	2004	Instituto Nacional de Estadística
Venezuela	Encuesta de Hogares por Muestreo	2003	Instituto Nacional de Estadística

	Own, already paid	Own, still paying	Rent	User with or without owner approval	Cases
Argentina	72.2%		14.7%	13.2%	18,572
Bolivia	60.8%	2.4%	16.4%	20.4%	3,965
Brazil	70.5%	4.6%	14.2%	10.7%	96,730
Chile	59.5%	11.8%	11.8%	16.9%	55,296
Colombia	44.9%	7.4%	34.4%	13.4%	17,599
Costa Rica	63.7%	11.4%	13.7%	11.2%	8,420
Ecuador	63.5%	4.9%	17.6%	14.1%	16,824
El Salvador	63.5%	6.3%	11.7%	18.5%	13,480
Guatemala	59.4%	2.0%	18.8%	19.7%	2,335
Honduras	65.0%	5.0%	17.1%	13.0%	4,908
Mexico	65.2%	7.4%	14.6%	12.8%	10,794
Nicaragua	75.9%	0.7%	3.3%	20.1%	3,491
Panama	66.6%	12.3%	9.8%	11.3%	5,027
Paraguay	77.0%	1.4%	8.6%	13.0%	7,981
Peru	71.8%	0.4%	8.3%	19.5%	1,039
Uruguay	55.2%	11.8%	17.4%	15.6%	13,717
Venezuela	74.1%	7.1%	10.4%	8.4%	37,987

Source: Own elaboration based on countries' household survey

Table A2. Summary Statistics by housing tenure (data for biprobit) – South America

	Argentina				Bolivia				Brazil				Chile				Colombia			
Own	100%	0%	0%	72%	100%	0%	0%	63%	100%	0%	0%	75%	100%	0%	0%	71%	100%	0%	0%	52%
Woman	21%	33%	27%	24%	13%	26%	20%	17%	30%	34%	25%	30%	18%	22%	19%	19%	28%	34%	26%	30%
IncomeHouse	941	915	619	895	1724	1624	1702	1703	1332	1326	688	1263	459	514	289	437	2640	1756	969	2113
IncomeWoman	296	346	198	290	460	503	461	467	405	462	206	392	88	137	61	89	894	668	363	745
AgeHead	50,7	38,5	41,2	47,6	46,3	36,1	37,1	42,7	48,2	39,5	40,8	46,2	51,1	39,7	42,3	48,2	51,5	39,5	40,0	45,8
Agewoman	48,2	36,6	38,9	45,3	43,6	33,6	34,5	40,1	45,4	36,9	37,9	43,4	48,1	37,2	39,6	45,3	47,9	36,7	36,8	42,6
Married	69%	44%	51%	63%	78%	50%	58%	69%					74%	57%	63%	70%	53%	32%	32%	43%
Children	1,4	1,2	1,7	1,4	2,3	2,1	2,3	2,3	1,3	1,2	1,5	1,3	1,3	1,4	1,5	1,4	1,4	1,5	1,8	1,5
SchoolingHead	9,0	10,4	8,8	9,2	7,0	8,9	8,9	7,7	5,9	7,2	4,9	6,0	7,2	10,0	7,8	7,6	7,7	8,9	6,2	7,9
SchoolingWoman	9,1	10,6	9,0	9,3	5,4	7,8	7,7	6,3	5,9	7,2	5,2	6,0	7,1	9,8	7,8	7,6	7,6	9,0	6,6	8,0
City					60%	86%	81%	69%	87%	98%	71%	87%	61%	89%	53%	63%				
Capitalcity	5%	9%	4%	6%	21%	23%	25%	23%									53%	68%	31%	55%
	Ecuador				Paraguay				Peru				Uruguay				Venezuela			
Own	100%	0%	0%	68%	100%	0%	0%	78%	100%	0%	17%	75%	100%	0%	0%	67%	100%	0%	0%	84%
Woman	24%	25%	22%	23%	24%	38%	25%	25%	11%	29%	19%	14%	23%	31%	27%	25%	47%	43%	47%	46%
IncomeHouse	382	485	379	400	120	250	59	123	950	1695	790	980	16188	14139	8638	14653	250	337	220	256
IncomeWoman	90	105	66	90	37	59	29	38	207	645	198	241	5212	5320	2886	4868	154	203	124	157
AgeHead	51,4	40,8	41,2	48,1	47,2	35,9	37,9	45,0	49,3	39,6	39,1	46,5	54,8	44,5	44,7	51,5	50,2	40,3	39,7	48,6
Agewoman	48,2	37,6	38,1	44,9	43,7	33,0	34,6	41,6	45,7	35,9	36,4	43,1	52,1	42,2	42,4	48,8	48,0	38,2	37,7	46,4
Married					68%	41%	48%	63%	67%	43%	43%	60%	72%	51%	54%	66%	58%	63%	58%	59%
Children	1,8	1,8	1,9	1,8	2,3	1,7	2,2	2,2	1,9	2,0	1,8	1,9	0,8	1,0	1,5	1,0	4,6	3,7	4,1	4,5
SchoolingHead	6,3	8,9	6,9	6,8	6,2	9,2	6,1	6,5	7,1	11,2	9,1	7,8	9,3	10,2	8,0	9,3	7,5	10,7	8,0	7,9
SchoolingWoman	6,1	8,7	6,8	6,6	6,1	8,9	5,8	6,3	5,3	10,6	7,8	6,3	9,6	10,4	8,3	9,5	7,7	10,7	8,3	8,0
City	50%	84%	48%	56%	50%	90%	44%	53%	59%	95%	80%	66%								
Capitalcity					6%	22%	6%	7%	23%	31%	36%	26%	55%	67%	49%	56%				

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table A2 (continuation). Summary Statistics by housing tenure (data for biprobit) – Mexico and Central America																
	Costa Rica				El Salvador				Guatemala				Honduras			
	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot
Own	100%	0%	0%	75%	100%	0%	0%	70%	100%	0%	0%	61%	100%	0%	0%	70%
Woman	21%	28%	21%	22%	26%	36%	29%	28%	15%	26%	14%	17%	23%	31%	26%	25%
IncomeHouse	245	233	135	231	8146	7714	3845	7298	4239	3873	2689	3864	7954	8287	4450	7556
IncomeWoman	56	69	25	54	2497	2591	1342	2294	860	1119	574	852	3971	4723	2215	3872
AgeHead	46,4	36,8	39,8	44,4	46,4	37,7	38,7	43,9	47,0	37,1	38,3	43,4	44,4	35,3	35,7	41,7
Agewoman	43,2	33,8	36,0	41,1	42,8	35,0	35,6	40,6	43,7	34,7	35,5	40,4	40,6	32,2	32,1	38,1
Married	65%	40%	46%	60%	49%	31%	32%	44%	68%	45%	63%	62%	51%	32%	35%	46%
Children	1,6	1,6	2,0	1,6	4,8	4,0	4,2	4,6	1,4	1,0	1,3	1,3	2,7	2,0	2,4	2,5
SchoolingHead	7,1	8,2	5,7	7,1	5,3	7,6	5,1	5,5	5,5	7,3	5,8	5,9	6,5	7,8	6,0	6,7
SchoolingWoman	7,3	8,1	5,7	7,2	4,9	7,1	4,8	5,1	4,4	6,3	4,6	4,8	6,5	7,7	6,1	6,7
City	59%	41%	75%	59%					64%	94%	66%	70%	55%	90%	46%	60%
Capitalcity													18%	25%	9%	18%
	Mexico				Nicaragua				Panama							
	Own	Rent	Use	Tot	Own	Rent	Use	Tot	Own	Rent	Use	Tot				
Own	100%	0%	0%	73%	100%	0%	0%	77%	100%	0%	0%	79%				
Woman	24%	40%	34%	27%	23%	23%	17%	22%	22%	32%	24%	23%				
IncomeHouse	10134	10105	7154	9748	2893	5786	1966	2802	681	671	460	655				
IncomeWoman	3819	4597	2955	3822	700	1625	447	680	172	227	93	168				
AgeHead	46,9	36,8	39,9	44,5	46,4	39,3	37,2	44,3	48,0	39,5	39,1	46,2				
Agewoman	44,1	34,9	38,0	42,0	42,4	34,2	33,6	40,4	44,4	36,9	35,7	42,7				
Married	71%	46%	57%	66%	49%	42%	35%	46%	38%	28%	25%	36%				
Children	1,8	1,5	1,7	1,7	5,9	4,4	4,9	5,6	1,9	1,4	2,2	1,9				
SchoolingHead	7,7	9,9	8,3	8,1	4,4	8,8	4,5	4,6	7,7	10,4	7,8	7,9				
SchoolingWoman	7,6	9,8	8,3	8,0	4,2	8,2	4,6	4,4	7,7	10,4	7,8	8,0				
City					55%	98%	51%	56%	50%	86%	67%	55%				
Capitalcity					13%	17%	11%	13%	8%	28%	11%	10%				

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table A3. Summary Statistics by householdhead (data for probit) – South America															
	Argentina			Bolivia			Brazil			Chile			Colombia		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	75%	64%	72%	66%	51%	63%	74%	75%	74%	72%	68%	71%	54%	49%	52%
Wom	0%	100%	24%	0%	100%	17%	0%	100%	27%	0%	100%	19%	0%	100%	30%
IncomeHouse	960	683	895	1745	1492	1703	1320	1032	1241	462	327	437	2103	2137	2113
IncomeWom	234	470	290	353	1035	467	293	624	391	72	166	89	492	1352	745
AgeHead	48,3	45,6	47,6	43,0	41,3	42,7	44,7	50,6	46,3	48,2	48,7	48,2	46,0	45,5	45,8
AgeWom	45,2	45,6	45,3	39,8	41,3	40,1	40,3	50,6	43,4	44,6	48,7	45,3	41,3	45,5	42,6
Married	79%	13%	63%	78%	26%	69%				82%	18%	70%	56%	12%	43%
Children	1,5	1,2	1,4	2,4	1,5	2,3	1,3	1,0	1,2	1,4	1,1	1,4	1,6	1,2	1,5
SchoolingHead	9,1	9,4	9,2	7,7	7,7	7,7	6,1	5,8	6,0	7,6	7,6	7,6	7,7	8,5	7,9
SchoolingWom	9,2	9,4	9,3	6,0	7,7	6,3	6,2	5,8	6,1	7,5	7,6	7,6	7,7	8,5	8,0
City				67%	78%	69%	84%	93%	87%	61%	73%	63%			
Capitalcity	5%	7%	6%	22%	27%	23%							52%	62%	55%
	Ecuador			Paraguay			Peru			Uruguay			Venezuela		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	68%	68%	68%	79%	74%	78%	78%	60%	75%	69%	62%	67%	84%	85%	84%
Wom	0%	100%	23%	0%	100%	25%	0%	100%	14%	0%	100%	25%	0%	100%	46%
IncomeHouse	440	269	400	120	132	123	1023	721	980	15719	11481	14653	316	187	256
IncomeWom	70	153	90	34	51	38	204	469	241	3881	7801	4868	131	187	157
AgeHead	46,7	52,6	48,1	45,2	44,5	45,0	46,7	45,2	46,5	51,7	50,7	51,5	47,0	50,5	48,6
AgeWom	42,5	52,6	44,9	40,6	44,5	41,6	42,7	45,2	43,1	48,2	50,7	48,8	43,0	50,5	46,4
Married				74%	31%	63%	69%	8%	60%	84%	12%	66%	100%	11%	59%
Children	1,8	1,8	1,8	2,3	2,0	2,2	1,9	2,1	1,9	1,1	0,8	1,0	4,8	4,2	4,5
SchoolingHead	7,1	5,9	6,8	6,5	6,3	6,5	7,9	7,2	7,8	9,0	10,0	9,3	8,6	7,0	7,9
SchoolingWom	6,9	5,9	6,6	6,3	6,3	6,3	6,1	7,2	6,3	9,4	10,0	9,5	8,8	7,0	8,0
City	53%	62%	56%	49%	65%	53%	63%	83%	66%						
Capitalcity				6%	10%	7%	25%	34%	26%	53%	63%	56%			

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.

Table A3. Summary Statistics by householdhead (data for probit) – Mexico and Central America												
	Costa Rica			El Salvador			Guatemala			Honduras		
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot
Own	76%	72%	75%	71%	66%	70%	63%	55%	61%	71%	65%	69%
Wom	0%	100%	22%	0%	100%	28%	0%	100%	17%	0%	100%	25%
IncomeHouse	246	180	231	7746	6140	7298	3951	3441	3864	7599	7225	7506
IncomeWom	41	101	54	1813	3536	2294	667	1759	852	2872	6821	3847
AgeHead	44,4	44,4	44,4	43,7	44,5	43,9	43,4	43,3	43,4	41,2	42,6	41,6
AgeWom	40,2	44,3	41,1	39,1	44,5	40,6	39,8	43,3	40,4	36,4	42,6	37,9
Married	75%	8%	60%	57%	8%	44%	71%	18%	62%	56%	15%	46%
Children	1,7	1,5	1,6	4,8	4,0	4,6	1,4	1,2	1,3	2,6	2,2	2,5
SchoolingHead	7,1	7,2	7,1	5,8	4,9	5,5	6,0	5,5	5,9	6,6	7,0	6,7
SchoolingWom	7,2	7,2	7,2	5,2	4,9	5,1	4,7	5,5	4,8	6,6	7,0	6,7
City	61%	49%	59%				68%	82%	70%	57%	70%	60%
Capitalcity										17%	23%	18%
	Mexico			Nicaragua			Panama					
	Man	Wom	Tot	Man	Wom	Tot	Man	Wom	Tot			
Own	75%	61%	71%	76%	81%	77%	80%	75%	79%			
Wom	0%	100%	28%	0%	100%	22%	0%	100%	23%			
IncomeHouse	10357	7859	9667	2940	2317	2802	690	541	655			
IncomeWom	3261	5221	3803	574	1053	680	136	273	168			
AgeHead	44,6	43,4	44,3	44,0	45,6	44,3	46,1	46,5	46,2			
AgeWom	41,1	43,4	41,7	38,9	45,6	40,4	41,5	46,5	42,7			
Married	83%	20%	66%	56%	8%	46%	44%	7%	36%			
Children	1,8	1,4	1,7	5,8	5,2	5,6	2,0	1,6	1,9			
SchoolingHead	8,0	8,5	8,1	4,5	5,0	4,6	7,7	8,7	7,9			
SchoolingWom	7,9	8,5	8,0	4,3	5,0	4,4	7,8	8,7	8,0			
City				50%	74%	56%	51%	70%	55%			
Capitalcity				11%	18%	13%	8%	15%	10%			

Note: Own=1 if household owns the house, Wom=1 if household the head is female, IncomeHouse= total household income, IncomeWom= total income of the woman of the house, Age and Schooling are evaluated for the household head and the woman of the house, Schooling is years of education, Married=1 if household head is married, Children=amount of children under 18 in the house, City= 1 if the house is located an urban center and Capitalcity=1 if it is located in the capital city.