



Demand constraints in a titling program in Uruguay

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Octubre de 2009²

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In this paper we use data before and after the implementation of a titling program in Uruguay to evaluate the program demand constraints. The lack of understanding of the benefits of titling or how to apply to the program can be seen as demand constraints. We found that more educated household heads had higher probability of titling. Besides that, we find very few statistically significant differences between those that benefited from the program and those that did not that could be interpreted as demand constraints. The different degree of success among neighborhoods seems to be more associated with differences in the implementation of the program (supply side) than to demand constraints

Keywords: home ownership, housing policy, housing financing, Uruguay

Documento de Investigación, Nro.51, Octubre de 2009. Universidad ORT Uruguay.
Facultad de Administración y Ciencias Sociales. ISSN 1688-6275.

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² The author wishes to thank Diego Aboal for comments and discussion, the help of Giorgina Piani in the survey design and the work of the Odaly Triay as survey team leader. The survey was financed by a grant from the Research Department of the Inter American Development Bank that is gratefully acknowledged.

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Abstract

In this paper we use data before and after the implementation of a titling program in Uruguay to evaluate the program demand constraints. The lack of understanding of the benefits of titling or how to apply to the program can be seen as demand constraints. We found that more educated household heads had higher probability of titling. Besides that, we find very few statistically significant differences between those that benefited from the program and those that did not that could be interpreted as demand constraints. The different degree of success among neighborhoods seems to be more associated with differences in the implementation of the program (supply side) than to demand constraints.

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1. Introduction

Social policies in less developed countries have been used as anti-poverty instruments for a long time. The heterogeneity of results of such policies is wide. Some of them successfully achieved their goals while others completely failed. The effectiveness of policies depends on the matching between its “supply” and “demand”. For instance during winter time many governments provide places where homeless individuals can find shelter for the night and a warm meal but there are minimum conditions to get access to them (not being intoxicated, no animals, only families or only male/female shelters). Even in the hardest weather conditions there are people that remain on the streets because they distrust the refuges or do not agree to comply with the participating requisites.

When policy recommendations follow from an erroneous diagnostic it is possible that the government’s supply of policies finds an unexpected lack of demand. This note analyses the determinants of demand constraints in a titling program in Uruguay.

Following the influential work of De Soto (2000), international development agencies have fostered land and housing titling programs throughout the world. De Soto argues that poverty in less developed countries is due to the incapacity of the poor to transform assets in capital. Many poor individuals lack formal property rights over the land or house where they live. These assets cannot be used as collateral in the formal credit market. Granting formal property rights would allow them access to credit that could be invested in productive activities inducing a virtuous circle out of poverty. The empirical

support for this argument is mixed.² If any of the links in De Soto's chain of reasoning fails, the whole argument falls. In this note, we focus on the first link. Is it possible that the government offers to transfer formal property rights over a house but its inhabitants are not interested? What determines these demand constraints?

Feder and Nishio (1999) report the benefits of land registration and titling in Asian, African and Latin American countries. They conclude that there are "prerequisites for land registration to be economically viable". The authors discuss factors that are important so that the titling programs have positive outcomes, for instance land productivity depends on complementary investments in public goods like drainage and transport infrastructure. Without these complementary investments, titling programs may not be enough to induce its beneficiaries to perform other productive enhancing investments e.g. clearing of stones. The point made by Feder and Nishio (1999) is an important one. Our paper is clearly related to them. In this note we go one step before and study why some individuals that are offered house titles for free may not complete the steps to acquire formal property rights and therefore do not benefit from the policy while others do.

We find that the education of the household head increases the probability of participating in the program. The lower educational level of the families may have precluded some of them to participate due to ignorance of the benefits of titling or ignorance on how to do it or due to unjustified fears. Besides that, we do not find many

² Galiani and Schargrodsky (2006), Field and Torero (2003), Feder et al. (1988), Place and Migot-Adholla (1998), Carter and Olinto (2002), and Calderon (2004) find weak and ambiguous credit market effects.

statistically significant differences and attribute the success and failure of the program in different neighborhoods to differences in the implementation (supply side) rather than different regional demand constraints.

2. Data

In the seventies, the Instituto Nacional de la Vivienda Económica (INVE, National Institute of Inexpensive Housing), a public institution devoted to provide affordable housing solutions to low income families built several small neighborhoods that were called “comunidades” (communities). In June 1977, the INVE was eliminated by law and its goals and property were assigned to the state-owned mortgage bank Banco Hipotecario del Uruguay (BHU). Over the following years the public management of the communities was defective and the entire population of the communities stopped paying the required installments but no actions were taken.

On December 1987, the BHU concluded that due to the management costs it was in its best interest to sell the houses to the actual occupants at whatever price they were able to pay. By the end of 1988 the board of the BHU set a nominal price of approximately \$100 for those occupants that could not prove to have made any previous payment. Those that made at least one previous payment just had to pay the housing titling expenses (approximately \$20).³

³ The selling of the houses and the assignment of the formal property rights to the occupants could be done in some communities but not in others due to the lack of registered plans (area maps with the land division among houses) at the Municipality of Montevideo. Gandelman (2008 and 2009) exploit this natural experiment to evaluate the impact of granting formal property rights on home investment, education and

Although the price was just a nominal figure only a fraction of the households completed the steps to become homeowners. This apparent lack of demand may have to do with individual or family characteristics or with general implementation problems.

In order to evaluate the demand constraints we study the pre-treatment and post-treatment characteristics of all the inhabitants that could have benefited from titling. The pre-treatment characteristics were obtained from the original files signed in the seventies that contained information on family composition, presence of children, age, income level and working status.⁴ Data on the post-treatment characteristics of the communities' inhabitants comes from a survey conducted during February-March 2007 by a team of four welfare workers and one sociologist specially trained to deal with population of difficult socioeconomic environments. The no-response rate was 3%.⁵

Although each family in these communities could have benefited from property rights only about half of them went through the steps necessary to finally obtain formal rights. Table 1 reports the number of households that, according to the BHU, effectively own their house and the number of households that claim to have all their documents in order. Considering the three communities 63% of the households claim to have the house documents in order but only 45% benefited from the possibility of owning their home. In the three communities a larger percentage of people claim to have the documents in order

health.

⁴ Not all the files could be located. We found 85% of the files of 18 de Julio, 90% of the files of 25 de Agosto and 69% of the files of Lavalleja.

⁵ The Research Department of the Inter American Development Bank provided funding for this survey.

than the percentage of people that actually have formal property rights. There are important differences between the communities. In Lavalleja the difference between the self reports on documents and the BHU information on property rights is small (75% vs 73%). On the contrary, in 18 de Julio and 25 de Agosto about half of the household claim to have their papers in order but only 15% have formal property rights.

It is possible that having or not the documentation in order is one of the reasons why some household were able to finally attain homeownership and others did not. While 80% of those that attained formal property rights claim to have their documents in order, only 48% of those that did not attain formal property rights declare to have the house documentation in order. This difference is statistically significant at any significance level.

About three-quarters of the households in Lavalleja were able to obtain formal property rights but only 15% of the households in 18 de Julio and 25 de Agosto benefited from the possibility of titling. It is important to consider why the program was much more successful in Lavalleja than in the other two communities. It may be that the population living in Lavalleja was different from the population living in the other communities and therefore the same policy had much more success there. We analyze household differences in the next section but also there were differences in the implementation. In Lavalleja, a team of one social worker and one notary were in charge of explaining the families of the possibility to title their home. The team was able to organize periodic meetings in the neighborhood school and to organize a committee of neighbors to support

the implementation, clarifying doubts and dissipating fears. On the other hand, in 18 de Julio and 25 de Agosto the notary never went to the neighborhood and the interested neighbors had to go to the BHU. Also the social worker in charge of establishing the contacts with the families could not find a fixed place to organize periodic meetings to attend the population of the communities.

Table 1. Formal property rights and documents in order					
<i>Property rights according to official records</i>			<i>Documents in order (self reported)</i>		
	Cases	Percent		Freq.	Percent
Yes	71	44.65	Yes	99	62.26
No	88	55.35	No	60	37.74
Total	159	100.00	Total	159	100.00
18 de Julio					
Yes	5	14.71	Yes	16	47.06
No	29	85.29	No	18	52.94
Total	34	100.00	Total	34	100.00
25 de Agosto					
Yes	7	15.91	Yes	22	50.00
No	37	84.09	No	22	50.00
Total	44	100.00	Total	44	100.00
Lavalleja					
Yes	59	72.84	Yes	61	75.31
No	22	27.16	No	20	24.69
Total	81	100.00	Total	81	100.00

3. Results

In this section we consider several variables that could explain the lack of demand for titling. In order to do so we disaggregate our analysis between those that obtained formal property rights and those that did not attain formal property rights. Also we wonder if

besides the differences in the implementation in three communities there are differences in the population that could explain the relative success of the program in Lavalleja vis a vis the failure in 18 de Julio and 25 de Agosto.

3.1. Pre-treatment characteristics

Table 2 reports summary statistics on the characteristics of the inhabitants of the communities in the seventies when they signed agreements with the INVE. In many dimensions those that finally attained property rights are very similar than those that did not attain formal property rights. The two dimensions where the mean values are, according to a t test of equality of means, statistically different between both households are: income per capita (at 5% significance level) and employment rate (at 5% significance level). Those that ended up not attaining formal property rights had in the seventies 44% higher income per capita but their employment rate was lower among those that attain formal property rights, 53% vs 62%. Female headship was also larger for those that finally attained formal property rights but the difference is statistically significance only at 15% significance level.⁶

In other dimensions the differences are in absolute terms lower and not statistically significant. The household head in the seventies of those households that finally attained property rights was originally about one year and a half older. The percentage of married household heads was exactly the same in both groups. There are very small differences in

⁶ In this note Female headship is attributed to a family when a woman signed the contract with the INVE. This explains why we have a much larger share of female-headed households that in household surveys

family composition. The households that finally attained property rights were composed on average 4.8 individuals of which 45% were below 18 years old. Those households that did not attain property rights were in the seventies composed by 4.3 individuals of which 40% were minors. The school enrollment rate was almost the same for both groups.

Considering neighborhoods, the households of Lavalleja and the other two communities had similar characteristics in the seventies. Only at 15% significance level there are two differences: the lower share of female-headed families and the larger family size in Lavalleja.

were house headship is self-declared.

Table 2. Pre-treatment characteristics									
	<i>Property Rights</i>								
	Yes			No			Total		
	Mean	SD	Cases	Mean	SD	Cases	Mean	SD	Cases
Age household head	41,4	13,6	40	39,9	15,5	61	40,5	14,7	101
Female household head	52,1%	50,5%	48	41,8%	49,7%	67	46,1%	50,1%	115
Married household head	31,7%	47,1%	41	31,7%	46,9%	63	31,7%	46,8%	104
Household members	4,8	2,6	48	4,3	2,3	66	4,5	2,5	114
Minors in the household	44,7%	27,4%	48	39,6%	28,2%	66	41,8%	27,8%	114
Schooling enrollment rate	84,4%	21,8%	29	85,6%	33,7%	33	85,1%	28,5%	62
Employment rate	62,2%	32,3%	47	53,3%	29,8%	62	57,1%	31,1%	109
Income per capita (\$ of march 2007)	11097	7408	40	16026	1625	58	14014	13527	98
	<i>Program Success</i>								
	Yes			No			Total		
	<i>(Lavalleja)</i>			<i>(18 Julio+25 Agosto)</i>					
Mean	SD	Cases	Mean	SD	Cases	Mean	SD	Cases	
Age household head	41,1	13,8	47	39,9	15,6	54	40,5	14,7	101
Female household head	40,7%	49,6%	54	50,8%	50,4%	61	46,1%	50,1%	115
Married household head	35,4%	48,3%	48	28,6%	45,6%	56	31,7%	46,8%	104
Household members	4,8	2,6	53	4,2	2,3	61	4,5	2,5	114
Minors in the household	41,5%	28,5%	53	42,0%	27,5%	61	41,8%	27,8%	114
Schooling enrollment rate	90,0%	18,4%	30	80,5%	35,2%	32	85,1%	28,5%	62
Employment rate	59,8%	31,6%	52	54,7%	30,7%	57	57,1%	31,1%	109
Income per capita (\$ of march 2007)	14656	17288	42	13533	9967	56	14014	13527	98

3.2. Post-treatment differences between titled and not titled households

In the 2007 survey we gather information on the form and date in which the families ended up living in their current home. Half of the households still living in the communities were assigned to them by a public institution. About 14% inherited the house from someone assigned to it by a public institution. Considering these two dimensions together 72% of the households that ended up without property rights have a direct or inherited connection with the original public assignment of families to the

communities. Only 55% of those that attained formal property rights can link themselves to the original family assignment. This difference is explained by the much larger share of individuals that were able to sell-buy their house among those that attained property rights. In Lavalleja where the program was more successful the share of individuals that bought their home is 32%, significantly higher than the 18% that bought their home in the other communities. Moreover, the sale of the house for those that did not attain property rights must have been an informal sale lacking legal value because they could not formally do so.

Table 3. Home tenure in 2007					
	<i>Property rights</i>		<i>Program Success</i>		Total
	Yes	No	Yes (Lavalleja)	No (18 Julio+ 25 Agosto)	
<i>Cases</i>					
Assigned by a public institution	34	46	45	35	80
House inherited from someone assigned by a public institution	5	18	3	20	23
Bought the house	25	15	26	14	40
Rent	2	2	2	2	4
Occupant	5	7	5	7	12
Total	71	88	81	78	159
<i>Percent</i>					
Assigned by a public institution	48%	52%	56%	45%	50%
House inherited from someone assigned by a public institution	7%	20%	4%	26%	14%
Bought the house	35%	17%	32%	18%	25%
Rent	3%	2%	2%	3%	3%
Occupant	7%	8%	6%	9%	8%
Total	100%	100%	100%	100%	100%

The higher mobility among those that attained formal property rights can be seen also in the arrival date to the communities. Although the difference in average arrival dates is of only one year (not statistically significant), the distribution of arrival dates for those that attain formal property rights is skewed to the right. The median arrival date is 1990 for those that attain property rights vs 1986.5 for those that did not and the 75 percentile is 2000 vs 1997.5. These differences are even clearer when comparing Lavalleja with the other two communities.

Table 4. Arrival date distribution					
	Mean	P25	p50	P75	p90
<i>Property rights</i>					
Yes	1988,5	1976	1990	2000	2004
No	1987,2	1977	1986,5	1997,5	2004
<i>Program success</i>					
Yes (Lavalleja)	1989,0	1978	1989,5	1998	2005
No (18 Julio +25 Agosto)	1986,6	1975	1984	1997	2004
Total	1987,8	1976	1988	1998	2004

Table 5 presents summary statistics for various socioeconomic characteristics of the individuals living in the communities disaggregated between those that titled and those that did not.

As before, with the pre-treatment characteristics we do not find many statistically significant differences between those that have and those that have not formal property rights. The average age of the household head is higher for those that do not have formal property rights but at the same time the average adult living in a house without formal property rights is younger than the average adult living in a house with formal property rights. The data from the seventies indicated a larger share of female-headed households for those that had formal property rights than those that had not. In the 2007, this relation is reversed but the difference in female headship is not statistically significant. The marital status of the individuals also seems to be about the same. The only statistically significant difference in marital status is a larger presence of widows in those that have formal property rights.

The average household has 4.5 members of whom 35% are minors. The current family structure looks very similar to the family structure of the seventies (4.5 members and 42% minors).

Education is one of the dimensions in which the differences between the two groups considered is statistically significant (at 10% level). The average schooling of the household head is very low, equivalent only to the first 6 years of primary school. The half-year difference between those that obtained and did not obtain formal property rights implies a higher proportion of individuals that at least completed primary school among those that obtained property rights.

The labor market and income indicators are also very similar. About three-quarters of household heads are employed but 40% of them have changed their employment at least twice in the last year. Only a minority (7%) has a business of their own. The average household head income and the average income per capita are almost identical. Finally, we gathered information on the participation on other social programs. The Emergency Plan was a cash transfer program to low income families that was implemented between 2005 and 2008. The “Asignaciones familiares” is a conditional cash transfer program for families that send their children to school. The participation in the Emergency Plan is larger for those that did not attain formal property rights but the reverse happens with respect to the Asignaciones familiares program. Therefore, we do not have clear evidence that one of the groups is more prone to participate and benefit from social programs.

Table 6 reports the same summary statistics as in Table 5 but disaggregating between Lavalleja and the other communities. The differences reported do not help to explain the different success of the programs in Lavalleja and the other communities. The only statistically significant differences are the larger share of widows (10% level) and the larger percentage of household heads with unstable unemployment (10% level) in Lavalleja. At the 15% significance level Lavalleja has a smaller share of female-headed families.

Table 5. Summary (post-treatment 2007) characteristics by titling									
	<i>Property rights</i>						Total		
	Mean	SD	Cases	Mean	SD	Cases	Mean	SD	Cases
Age (average adults)	41,1	11,5	71	39,7	10,6	88	40,3	11,0	159
Age (household head)	48,3	14,1	71	49,8	15,5	88	49,1	14,9	159
Female household head	36,6%	48,5%	71	40,9%	49,4%	88	39,0%	48,9%	159
Household head marital status:									
Married	7,0%	13,0%	71	8,1%	13,2%	88	7,6%	13,1%	159
Divorced	6,7%	14,8%	71	8,3%	15,5%	88	7,6%	15,2%	159
Widow	4,7%	16,3%	71	1,3%	6,3%	88	2,8%	11,9%	159
Single	11,0%	14,6%	71	10,7%	19,3%	88	10,9%	17,3%	159
Household composition:									
Household members	4,4	3,0	71	4,6	2,4	88	4,5	2,7	159
Minors in the household	35,0%	27,1%	71	35,5%	25,2%	88	35,3%	26,0%	159
Education:									
Illiterate household members	18,3%	42,5%	71	21,6%	46,6%	88	20,1%	44,7%	159
Schooling household head	6,2	2,5	71	5,7	2,4	88	5,9	2,4	159
Household head with complete primary education	67,6%	47,1%	71	63,6%	48,4%	88	65,4%	47,7%	159
Labor market:									
Household head employed	73,2%	44,6%	71	71,6%	45,4%	88	72,3%	44,9%	159
Unstable employment	42,3%	49,7%	71	35,6%	49,0%	88	40,3%	49,2%	159
Entrepreneur	7,0%	25,8%	71	7,0%	25,8%	88	7,0%	25,8%	159
Income:									
Income household head	4483	3198	71	4368	3435	88	4419	3322	159
Income per capita	1986	1138	71	2000	1236	88	1994	1190	159
Participation in social programs									
Emergency Plan	18,3%	39,0%	71	22,7%	42,1%	88	20,8%	40,7%	159
Asignaciones familiares	57,7%	49,7%	71	53,4%	50,2%	88	55,3%	49,9%	159

Table 6. Summary (post-treatment) characteristics by program success

	<i>Program success</i>								
	Yes (Lavalleja)			No (18 Julio – 25 Agosto)			Total		
	Mean	SD	Cases	Mean	SD	Cases	Mean	SD	Cases
Age (average adults)	41,1	10,9	81	39,5	11,0	78	40,3	11,0	159
Age (household head)	48,8	14,2	81	49,5	15,6	78	49,1	14,9	159
Female household head	34,6%	47,9%	81	43,6%	49,9%	78	39,0%	48,9%	159
Household head marital status:									
Married	6,9%	12,7%	81	8,3%	13,5%	78	7,6%	13,1%	159
Divorced	7,1%	16,6%	81	8,1%	13,7%	78	7,6%	15,2%	159
Widow	4,2%	15,3%	81	1,4%	6,7%	78	2,8%	11,9%	159
Single	11,2%	15,3%	81	10,5%	19,2%	78	10,9%	17,3%	159
Household composition:									
Household members	4,5	2,9	81	4,5	2,4	78	4,5	2,7	159
Minors in the household	36,3%	26,5%	81	34,2%	25,5%	78	35,3%	26,0%	159
Education:									
Illiterate household members	21,0%	41,0%	81	19,2%	48,5%	78	20,1%	44,7%	159
Schooling household head	6,1	2,4	81	5,8	2,4	78	5,9	2,4	159
Household head with complete primary education	70,4%	45,9%	81	60,3%	49,3%	78	65,4%	47,7%	159
Labor market:									
Household head employed	72,8%	44,8%	81	71,8%	45,3%	78	72,3%	44,9%	159
Unstable employment	45,7%	50,1%	81	34,6%	47,9%	78	40,3%	49,2%	159
Entrepreneur	6,2%	24,2%	81	9,0%	28,8%	78	7,5%	26,5%	159
Income:									
Income household head	4318	3075	81	4524	3576	78	4419	3322	159
Income per capita	1929	1063	81	2061	1312	78	1994	1190	159
Participation in social programs									
Emergency Plan	18,5%	39,1%	81	23,1%	42,4%	78	20,8%	40,7%	159
Asignaciones familiares	58,0%	49,7%	81	52,6%	50,3%	78	55,3%	49,9%	159

3.3. Regression results

The analysis performed so far is unable to control for joint interactions of relevant variables. In order to do so we ran three qualitative dependent variable multivariate regressions models. We have two subsets of data: data from the files from the seventies

and current data from the 2007 survey. The data from the seventies is completely exogenous but unfortunately we do not have complete information for all households. The current data adequately covers all households but it may be suffer from endogeneity and reverse casualty problems. For instance, De Soto would argue that formal property rights could allow families to have access to formal credit institutions. Using pre-treatment data on credit access from the seventies would be useful to understand whether credit access improves the chances of obtaining formal property rights but unfortunately we lack this information. There is no way to disentangle whether a positive relation between credit access and formal property rights is due to i) De Soto argument or ii) the fact that access to credit helps the families to participate in the housing program (because they can pay the minimum costs of the house, because they have credit history, etc.). Therefore we try to use variables that are less likely to be affected by this endogeneity problem.

The housing economics literature has focused on four types of variables to explain homeownership: life cycle status, income and wealth, location and neighborhood attributes and a variety of socioeconomic indicators. By construction in our data there are no differences in location. The life cycle status variables considered are: age and whether the household head is married and the number of household members. We use two proxies for human capital. In the post-treatment we use the number of years of formal education of the household head. This data was not available for the pre-treatment data so we use the children enrollment rate. Since we had very incomplete information on schooling attendance, we run the pre-treatment regression with and without this variable

(this almost doubles the number of observations in the regression). Employment data (household employment rate for the pretreatment data and a dummy whether the household head is employed) were also included.

Table 7 presents the marginal effects of the estimations, the coefficient of the probit models are reported in Table A1. According to the pre-treatment regression, the number of household members and the adult employment rate are positively associated with twenty years latter achieving formal property rights. Age of the household head, female headship, marital status and children schooling attendance do not have a statistically significant effect. Income has a negative impact on attaining formal property rights. We verified that the BHU did not differentiate on an income basis the population of the communities so we do not have an explanation or intuition for this result.

The regression using post-treatment data shows that the older the adults in the household and the more educated the household head the larger the probability that the house attained formal property rights. More educated people are more likely to be able to understand the benefits of the titling program, fear less from unexpected negative consequences of titling and to know how to follow the steps to apply. The marginal effect of one extra year of education is 3%. Considering that the average household head attained 6 years of schooling and the unconditional probability of attaining homeownership, the implied elasticity with respect to education is 3.7. The other variables turn out not to be significant.

Table 7. Determinants of the probability of titling (marginal effects)				
	Pre- treatment			Post-treatment
Age household head	-0.0003 (0.0074)	0.0047 (0.0039)	Age (average adults)	0.0067 (0.0042)*
Female household head	0.2718 (0.2000)	0.2256 (0.1215)*	Female household head	-0.0848 (0.0950)
Married household head	0.0779 (0.2045)	-0.0164 (0.1378)	Married household head	-0.3909 (0.3557)
Household members	0.0917 (0.0403)**	0.0457 (0.0262)*	Household members	-0.0051 (0.0177)
Schooling enrollment rate	-0.1586 (0.3634)		Schooling household head	0.0314 (0.0184)*
Employment rate	0.9565 (0.3309)***	0.2920 (0.1893)	Household head employed	0.0211 (0.0990)
Income	-0.0069 (0.0031)**	-0.0044 (0.0021)**	Income per capita	-0.0286 (0.0387)
Constant	-2.468 -1.818	-1.499 (0.748)**	Constant	-0.970 (0.747)
Unconditional probability	37.3%	38.2%	Unconditional probability	44.5%
Observations	44	84	Observations	159
Pseudo R2	24.7	9,5	Pseudo R2	2,5

Robust standard errors in parentheses

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

4. Conclusions

The success of social policies depends in how the target public responds to them. In this paper we reviewed a titling program in Uruguay and wonder why some households were able to benefit from the program while others did not. The program studied was relatively successful in one neighborhood but had disappointing results in two other neighborhoods. Using data before the announcement of the possibility of obtaining formal property rights and after the treatment was implemented we found little

differences between those that titled and those that did not title and between Lavalleja (the success story) and the other two communities. Education of the household head is probably the most important characteristic to forecast the reaction of the households to the programs. More educated household heads were more likely to finally obtain formal property rights.

Summing up, from the analysis of the pre and post treatment data, besides education it is very difficult to pinpoint demand constraints for the titling program considered. The success in one neighborhood vis a vis the other two seems to be more related to how the program was implemented (supply side)

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Appendix

Table A1. Determinants of the probability of titling – (coefficient of the probit model)				
	Pre- treatment regressors			Post-treatment
Age household head	-0.001 (0.020)	0.012 (0.010)	Age (average adults)	0.017 (0.011)*
Female household head	0.733 (0.555)	0.596 (0.329)*	Female household head	-0.216 (0.243)
Household members	0.242 (0.108)**	0.120 (0.069)*	Household members	-0.013 (0.045)
Schooling enrollment rate	-0.419 (0.959)		Schooling household head	0.080 (0.047)*
Employment rate	2.527 (0.866)***	0.766 (0.500)	Household head employed	0.054 (0.251)
Income	-0.018 (0.008)**	-0.012 (0.005)**	Income per capita	-0.072 (0.098)
Married household head	0.205 (0.533)	-0.043 (0.363)	Married household head	-0.989 (0.900)
Constant	-2.468 -1.818	-1.499 (0.748)**	Constant	-0.970 (0.747)
Observations	44	84	Observations	159
Pseudo R2	24.7	9,5	Pseudo R2	2,5

Robust standard errors in parentheses

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