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The Effect of PROGRESA on Demographic Composition

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This case study is based on a number of field visits to the ejido "El Balcón" between March 2001 and May 2002. Information is drawn from documentary research, personal observations, reviews of accounting as well as interviews with Jesús García, Manager of the El Balcón enterprise, Chris Cooper of Westwood Forest Products, Bernadino Ramírez, former President of the Oversight Council, Unión de Ejidos Hermingildo Galeana (UEHG), Alejandro Albarrán, Forest Technical Director (UEHG), Mario Cedillo, Forest Technical Director, Ejido El Balcón Enterprise, Leónidas Chávez, President of the Administrative Council, (UEHG), Fidel López, ejidatario of ejido Bajos de Balsemar, Jorge Villa, forest technician and ejidatario El Balcón, and Jesús López, Comisariado Ejidal, El Balcón. We are sincerely grateful for the research assistance of Josefina Braña, Mariana Mazón, Melina Villagómez and Martino Aguilar. Finally, we would like to thank the Ford Foundation for the finance granted to Florida International University and CIDE to carry out this research.

Abstract

Community enterprises have multiple goals that may not be shared by non community owned enterprises. These enterprises aspire only to maximize their earnings, while many authors have argued that community enterprises seek the generation of sources of employment, the conservation of their resources, the production of resources for collective benefit, and the maximization of the participation of the "comuneros". All these objectives are accompanied by certain economic inefficiencies which sometimes jeopardize the sustainability of the community enterprise. This paper undertakes an examination of the community enterprise "El Balcón", an ejido located in the so-called Costa Grande region of Guerrero. The analysis follows an evaluation of the competitiveness of the enterprise according to Porter's framework and discusses the sustainability of the enterprise under social, economic and ecological perspectives The analysis delineates some of the determinants of El Balcón's relative success in national and international markets and also some of the areas of weaknesses which could undermine the prospects for continued success. It shows that the ejido has demonstrated an impressive capacity to build new social capital which along with the rich forest stock constitutes the basis for their achievements. Finally the analysis demonstrates that common property resources administered by a community enterprise are no necessary hindrance in the marketplace, and may be a source of particular strengths in delivering greater social equity while also assuring enterprise survival.

Resumen

Las empresas comunales tiene objetivos múltiples que podrían no ser compartidos por una empresa no comunal. Estas empresas aspiran a maximizar sus ganancias, mientras que varios autores han señalado que las empresas comunales buscan la generación de fuentes de empleo, la conservación de sus recursos, la producción de bienes para el beneficio colectivo, así como la maximización de la participación de los comuneros. Todos estos objetivos usualmente se acompañan de ciertas ineficiencias económicas, mismas que ponen en peligro la sustentabilidad de las empresas comunales. Este documento examina la empresa comunal "El Balcón", un ejido localizado en la región de la Costa Grande de Guerrero. El análisis sigue una evaluación de la competitividad de la empresa de acuerdo al esquema de Porter y discute la sustentabilidad de la empresa bajo la perspectiva económica, social y ecológica. El análisis deja ver algunos determinantes del éxito relativo de El Balcón dentro de los mercados doméstico e internacional, así como algunas áreas débiles que podrían minar las perspectivas de un éxito continuado. De igual forma, manifiesta que el ejido ha mostrado una impresionante capacidad para construir nuevo capital social, el cual, sumado al rico inventario forestal constituyen la base de sus logros. Finalmente, el análisis demuestra que los recursos de propiedad común que son

administrados por una empresa comunal no necesariamente están obstaculizados por el mercado y podrían ser una fuente de fortalezas particulares al proveer equidad social al mismo tiempo que aseguran la sobrevivencia de la empresa

Introduction

Mexico is in the midst of implementing one of the most ambitious anti-poverty programs ever conceived. In an explicit effort to reduce economic disparities, in 1997, the Government created PROGRESA (the Education, Health and Nutrition Program)[1]. In recent years, the program has been massively expanded and is now being implemented in urban areas. Today, one out of every five Mexicans is enrolled in the program. While PROGRESA seeks to improve investment in human capital—understood as health, nutrition and education--of its beneficiary households, it conditions monetary transfers to clinic attendance of beneficiary household members as well as children's enrollment and schooling attendance. Its monetary transfers correspond on average to a 22% increase in the income levels of the beneficiary families but vary depending on the demographic composition and the number of children in elementary and secondary levels. The program also includes in-kind health benefits and nutritional supplements for children less than five as well as for pregnant and lactating women.

What has this program brought in terms of changes in living arrangements inside beneficiary households? Has this program had an effect of changing the demographic composition of household members? These are questions that have been posed since the onset of the program. Concern exists that PROGRESA program could have had an effect on fertility decisions. On the one hand, given that total amount of transfer received per household depends on the number of children enrolled at school at different grades, households may perceive the program as permanent and decide to have more children with the hope of increasing their levels of transfers and/or extending the grants for a larger number of years, creating welfare dependency. On the other hand, PROGRESA provides health talks at local clinics which includes topics relating family planning and the use of contraceptive methods. This would have a negative effect on the number of children wanted, thus leaving the question of the net effect of the program on fertility to an empirical issue.

Similarly, PROGRESA can affect migration patterns through at least two economic channels. First, given that the program promotes increases in educational attainment of children, young adults who finish secondary education may choose to leave their home village in search for tertiary schools to continue their education or in search for better job opportunities. Second, since PROGRESA benefits are given directly to the mother and it is

[1] The name of Progresa was recently changed to Oportunidades, in this paper nevertheless we continue to refer to the program as Progresa.

them who are responsible of overseeing overall compliance of the rules, we can expect to find less beneficiary head women out migrating as a consequence of the program.

There is a vast literature that studies migration effects of welfare policy in the United States that find inconclusive evidence (See Brueckner 2000 and Meyer 2000 for reviews). Meyer 2000 suggests that the lack of consensus is probably due to differences in methodologies applied, i.e., sample selection, limiting study samples to only poor, inadequate comparison groups, focus on interstate migration. In related research that focuses on the effect of welfare on family structure—in the means of marriage, divorce and childbearing--in the United States, evidence is also mixed (See Moffitt, 1992 for a review). This literature is dominated by the failure to find strong benefit effects, mainly due to methodological issues one being the proper source of exogenous variation for the welfare variable, and another the lack of longitudinal data on the same individuals over time in order to control for unobserved heterogeneity.

The evidence of the effect of public welfare programs on the demographic structure of the household, living arrangements and or migration in less developed countries is quite small. Most studies that exist focus on analyzing the impact of public assistance in the means of public infrastructure investments on certain demographic outcomes, such as fertility (Parker and Ross 1991; Thomas and Maluccio 1996; Gertler and Molyneaux, 1993; Cochrane, Susan 1983; Pitt, Rosenzweig and Gibbons, 1993). In this paper we use micro level data that comes from the PROGRESA rural evaluation surveys to investigate the impact that the program has on living arrangements in general and demographic composition of beneficiary households in particular[2]. To do this, we constructed a longitudinal database at the individual level that identifies original and new household members over 6 waves of data, carried out every six months after the pre-baseline in 1997. We put special emphasis in clearly identifying each household member by not only looking at individual identifiers, which has been the general practice, but by also matching individuals using their names and demographic characteristics across waves. The latter processes corrected approximately 40 percent of matches done solely by using individual identifiers.

This paper contributes to the literature of the impact of welfare programs on the demographic structure of the household not only because it brings new evidence from a developing country but also because the data used allows for identification of the effects with much less controversy than usually found in

[2] PROGRESA has received a lot of attention mainly because it was subject to a rigorous, independent, international evaluation effort in rural areas which included an experimental design.

the literature. We use information drawn from a random experimental design to identify possible unintended effects of PROGRESA on the demographic structure of the beneficiary households and on migration patterns. We find small but significant impacts of the program on both out-migration and in-migration to the household after only two years of the implementation of the program. If these trends are to continue, PROGRESA will have important, perhaps much larger, unanticipated bearing on the general living arrangements of its target population.

The next section describes the PROGRESA program, while section the data and the random experimental design III. The model and results are explained in section IV, while last section concludes.

Description of the Program

PROGRESA is the largest anti-poverty program in Mexico and among the most ambitious such programs in the world. The program is the principal anti-poverty strategy of the Mexican government, representing currently 37.5% of the Federal Government's annual poverty budget. The program began operating in 1997 in poor rural areas only and recently expanded to cover urban areas. There are currently over 2.5 million families in rural areas and total beneficiaries nationwide are now at over 4 million families. The program has captured attention at the international level, particularly in Latin America and the Caribbean, serving as a model for a number of other countries in Latin American and the Caribbean who have developed similar programs.

Perhaps the first innovation of Progresa is the point that the program combines three different components e.g. education, health and nutrition in one program. The reason for linking these three components in one program, as stated in the original document proposing Progresa (Poder Ejecutivo Federal, 1997), was based on the philosophy that the inter-actions between the components would enhance the effectiveness of an integrated program over and above the separate benefits from each component. For instance, children who suffer from malnutrition are more likely to drop out of school or repeat years of school, implying that attempts to insure children go to school will be more effective if combined with adequate nutrition and health programs, thereby helping to break the vicious cycle of intergenerational poverty transmission. (Poder Ejecutivo Federal, 1997).

Under the education component, Progresa currently provides monetary educational grants for each child under 22 years of age enrolled in school

between the third grade of primary and the third grade of high school. These grants increase as children progress to higher grades and beginning at the secondary level, are slightly higher for girls than for boys. The amounts of the monthly grants range from about $US9.50 (95 pesos) in the third grade of primary to about $US54 (540 pesos) for boys and $US62 (620 pesos) for girls in the third year of high school.

The second component, health, provides basic health care for all members of the family, with a particular emphasis on preventive health care. These services are provided by public health institutions in Mexico. The third component, nutrition, includes a fixed monetary transfer equal to about $US14.50 (145 pesos) monthly for improved food consumption, as well as nutritional supplements, which are principally targeted to children between the ages of four months and two years, and pregnant and lactating women. They are also given to children aged 2 to 4 if any signs of malnutrition are detected.

Receipt of the benefits is contingent on fulfillment of certain obligations by the beneficiary families. The monetary educational grants are linked to the school attendance of children so that if a child misses more than 3 school days in a month (for unjustified reasons), the family will not receive the grant that month. Similarly, families must complete a schedule of visits to the health care facilities in order to receive the monetary supports for improved nutrition. The school attendance of children and family health visits are verified through school and clinic records. Progresa has a maximum limit of monthly benefits for each family currently equivalent to about $US75.

All of the monetary benefits are given directly to a woman of the family, most frequently the mother. This is motivated by a belief among the project architects that giving income to women would be more effective in achieving the project goals than giving income to men.

PROGRESA is a means-tested program with beneficiary households being selected based on a set of household attributes including education, demographic and dwelling characteristics.[3] In rural areas, Progresa selects its beneficiary families through a three stage targeting mechanism. In the first stage, Progresa uses geographic targeting to select poor regions and communities. Communities with a high level of margination, as measured by aggregate socio-economic community characteristics, are selected to participate in the program. Next, to identify the beneficiary families, Progresa carries out a survey of socio-economic conditions for all households

[3]See Skoufias, Davis, and Behrman, 1999, for a description and evaluation of the targeting mechanism.

in the selected communities (ENCASEH). With this data, discriminant analysis is used to identify beneficiary households from non-beneficiary households. Households are evaluated to be in extreme poverty not just on the basis of income but on the basis of a number of other characteristics as well, such as dwelling characteristics in the household, dependency ratios, ownership of durable goods, animals and land, and the presence of disabled individuals. That information was then used to assess whether a household was eligible for the program and, once established, eligibility status did not change (at least during the period we study).[4]

Once beneficiary households have been identified, an assembly is arranged in the community where the list of selected families is made public, and an agreement is reached among all families in the community. It is worth noting that, in practice, this last step rarely resulted in significant changes to the list of beneficiary families.

According to the program guidelines, the cash benefit is large and accounts for a significant share of household income. In October 1998, for example, the intended benefit ranged from a minimum of 200 pesos per month (for a household with no children) to 937 pesos per month for a household with 3 or more children.[5] The amount of the intended transfer represents 60 percent of household total income. However, actual transfers differed from the intended benefit due primarily to administrative complexities. According to PROGRESA's records, the transfer amount to beneficiary households actually ranged from 0 pesos per month (those that received nothing, although were entitled to) to 130, representing on average 20 percent of household income. In the analysis we explore the difference that that exist between the two. (See Parker and Teruel 2003 for a more detailed description of the program).

The Data

An important dimension of the design of PROGRESA for the purposes of this study is the fact that the government was committed to conducting a comprehensive evaluation of the impact of the program. The design of the evaluation was experimental. In 1997, 505 communities in 7 states were selected for the evaluation sample and around 60 percent of the communities were assigned to be included in the program in 1998 (treatment communities)

[4]There was an incorporation of from 1997 to 1998 a what was called a densified sample, which contained individuals that did not qualify under the initial rules, but qualified in 1998 under new rules. These rules did not change after 1998. See Skoufias, Davis, and Behrman, 1999, for a description and evaluation of the targeting mechanism.

[5]One peso was worth 0.11 US dollars in 1997.

while the rest were designated to be phased into PROGRESA three years later in 2000 (control communities). Program officials announced, all beneficiaries in the program, including the treatment sample, that the intervention would last at least for the following three years, period after which a revision would take place and decisions about who remained and left the program would be taken. This process would be called recertification[6]. Control households were not notified about the program as of its start. The initial intention was to incorporate this group of households at the end of 2001; however, as time passed, awareness of the operation of program in nearby communities started to emerge and pressure by control communities to participate in the program started to grow. This resulted in the early incorporation of control communities by the end of the year 2000.

Assignment of communities to treatment or control was based on, first, matching communities on characteristics (levels of infrastructure and economic status measured at the community level) and, second, random assignment of one community in each matched pair to the treatment, the other to the control group. (See Behrman and Todd, 1999, for a description of this allocation)

The same census (ENCASEH) was applied to households in all communities selected as part of the PROGRESA evaluation program. It is this evaluation sample that is analyzed in the present study. It consists of 24,077 original households surveyed in 1997[7]. Table 1 reports the distribution of the households: slightly over 50% were deemed eligible for PROGRESA ("poor") and, of those, about two-thirds were in treatment communities, while one-third in control communities. A baseline household survey (ENCEL) was conducted in all the evaluation sample communities in March, 1998, prior to the commencement of PROGRESA in the treatment communities. Follow-up surveys were carried out approximately every six months until 2000. In this study we use information from all six waves (Encaseh 1997 and ENCELS October 1998, June and November 1999, June and November 2000)[8].

For the purpose of this paper we will use all households and individuals originally interviewed in 1997 as our basic initial sample[9]. This consisted of 24,077 households and 125,674 individuals. Since the objective of the paper

[6] In reality, 6 years have passed since the commencement of the program and no recertification process has taken place. There have been individuals who have had to leave the program due to non-compliance of program rules, but they represent less than 2% of the initial sample.

[7] There was an addition of approximately 1,500 households to the evaluation sample in 1998 that was done through what was called *the densification* process, where an effort was made to include households that had been left out of the program either because they had no children, or because they were composed of old adults. For the purpose of this study we only use the original sample.

[8] In March 1998 a baseline survey was carried out but it will not be used here since no information at the individual level is available.

[9] That is, we do not include households incorporated in 1998 or thereafter, such as the densificado sample.

is to investigate demographic changes of beneficiary households over time, accurate identification of every household and household member in every wave becomes crucial. To carry out this task, we used location information including addresses, interview results and complete names and demographic characteristics of individuals, such as sex, age, education, labor outcomes and occupation, in addition to individual identifiers. Matching individuals across waves using individual identification numbers would have been very easy, but would have been wrong since individual identifiers do not seem to correspond on a one to one basis. When we used individual characteristics to match individuals across waves we corrected close to 40 percent of cases. This task was hard, time consuming and challenging since close to 2,000 cases had to be matched by hand. Table 2, Panel A, includes a description of the number of households and individuals originally interviewed in all six waves. Panel B presents information on the number of cases found across all databases. It is worth mentioning that there are cases where individuals or households originally interviewed in 1997 were not found in subsequent waves but were successfully found in one of the last two waves. In the empirical model below, we take this information into account. Table 3 presents a list of all types of cases and frequency that we found across the different waves.

In this paper we will also incorporate information of those individuals that were not original members of the household, as specified in the 1997 interview, but that joined the household later. However we do keep the original number of households from the ENCASEH 1997 survey fixed. This will allow us to capture the effects of the program on in-migration to the household.

Table 4 summarizes descriptive statistics for individuals in our sample taking into account only poor households in treatment localities and eligible (poor) households in controls. The total number of observations is thus reduced to 68, 929. In the empirical model we will focus on two outcome variables: probability of not being in 2000 and probability of arriving in 2000. The first one is a measure of out-migration of the individuals in the household while the latter a measure of in-migration to the household.

Although this survey is longitudinal, no attempt was made to track movers. Attrition is then of concern. At the household level, attrition across the waves is present and large (close to 35% (45%) of households (individuals) were not found in one more waves; close to 17% (29%) of households (individuals) were interviewed in 1997 and again in November 2000, even though they could have missing information for any wave in between). Attrition differs significantly between treatment and control groups, even after controlling for household characteristics and the eligibility criteria (See

Teruel and Rubalcava, 2003 for a general discussion of attrition in these data).

Empirical Estimation and Results

Empirical Strategy

The empirical question we want to analyze is whether PROGRESA has an impact on migration decisions within eligible households. There are many mechanisms through which the Program may affect the timing to migrate. To name a few, if the decision to migrate obeys to the need of poor households to diversify income sources, then PROGRESA´s monetary transfer may prevent household members to move out of their communities. Likewise, if the economic cost of migrating is high and the decision of moving out of the community is still an alternative due to the lack of opportunities at home, then PROGRESA´s benefit may cause the reverse effect. In parallel, both the Program's conditional transfer rule and the female-head-recipient rule may have additional effects on migration decisions, other than the income effect. PROGRESA may increase the relative opportunity cost of out-migrating for women in the age for attending primary school, relative to the cost faced by adult males who saw their human capital increase due to Program.

A direct implication of this analysis is to question the appropriateness of the Program's random trial evaluation design, in the absence of tracking protocols to locate beneficiary movers. A broader concern of this study is to improve our knowledge of how living arrangements respond to exogenous welfare shocks. Our empirical strategy exploits PROGRESA's evaluation random experiment design to investigate the Program's welfare causality on intra-household living arrangements decisions. We start by analyzing the average effects of the Program on individual migration choices by comparing the differential decisions between control and treatment beneficiaries:

$$Y= \alpha +\beta D + \varepsilon, \qquad (1)$$

Where D is an indicator variable that takes the value of one if the individual belongs to an eligible household in a treatment community, and zero if she is a beneficiary household member living in a control community. We then proceed to fully interact the model with individual characteristics in order to capture any differential effects of PROGRESA on household living arrangements.

Let

$$Y= \alpha +\beta_0 D + X\beta_1 +X*D\beta_2 + X\beta_3+\varepsilon, \quad (2)$$

be the new specification, where X corresponds to any set of individual's characteristics other than the control or treatment variable.

PROGRESA welfare can affect family arrangements through at least two mechanisms. First, by lowering some household member's (and increasing other's) opportunity cost to leave the household; and second, by affecting household decisions to host new individuals-perhaps non-corresident family members-as household members. Therefore, in this version of the paper we focus on two basic outcomes: out-migration and in-migration decisions of household members. We model out-migration by constructing a dichotomous dependent variable (Y) that takes the value of one if a household member was present in the 1997 household interview (but not in 2000), and zero if she was present in 1997 but also in the interview of 2000. Likewise, in-migration decisions are modeled by allowing Y to take the value of one if a (new) household member was recorded in the year's 2000 interview (but not in 1997), and zero if she was already a household member in both 1997 and the year 2000. The 1997 data come from the evaluation survey's pre-baseline -- prior to the implementation of the Program --; and the 2000 data comes from the survey's last panel before control communities were incorporated to PROGRESA.

Results

Out-Migration

Table 5 shows the decisions of control and treatment household members to move out after two years of PROGRESA implementation. According to Panel (A), PROGRESA decreases the average likelihood of beneficiary household members to leave their home. The effect, however is small (0.4 percent) and only significant for those household members with less than six years of schooling [column (2)]. To better understand the mechanism through which the Program effect operates, we further interact our model with a gender member categorical variable. Column (2) of panel (B) suggests females with less than six years of schooling are among those household members who are more likely to stay at home if they receive the program.

Moreover, results of panel (3) suggest the Program has a particular effect on daughters with less than primary school and between 0 to 6 years of age, [columns (2) & (4)]. This result is in line with PROGRESA's operational rule that specifically rewards female children for attending primary school in their community. Control daughters with primary age are 1 percent more likely to leave their home if they do not receive PROGRESA after two years. In addition, our results also suggest that household heads are 1.8 percent more

likely to stay with their family if the household receives PROGRESA, as opposed to household heads in control communities, who in the absence of the program choose to migrate out of their communities in search, perhaps, for better economic opportunities.

Inflow Migration

Family living arrangements may also change if PROGRESA alters the household's attitude towards newcomers. Table 6 investigates this possibility. Results of panel B suggest that households receiving PROGRESA are 3.4 percent less likely to admit new female household members, specially if they have no elementary schooling and are less than six years of age. [Columns (1), (2) and (4)]. In order to further investigate the mechanism that underlines this effect, we enrich our model specification and allow the treatment and control categorical variables to interact with the individual's relationship to the head. Our results of Panel C show that household who receive PROGRESA for two years are 5.3 percent less inclined to admit new household members if the newcomer has no direct relationship to the household head (other than spouse, son or daughter) and if she is in the age of attending primary school, [see column (4)].

This result may partially reflect Progresa's conditional transfer design which explicitly establishes caps to the number of children that can be enrolled at one single point in time. From an economic perspective, there would be little incentives to host new non-corresident family members that would only increase costs and would bring no further benefits in terms of more governmental income from PROGRESA. On the other hand, control households with the expectation and hope of soon being incorporated into the program, might internalize that increasing their household size, in particular, by accepting more girls in their household, could effectively increase future resources from the program.

Conclusions

This paper has studied the impact of the PROGRESA program, the largest anti-poverty effort in Mexico, on the demographic structure of beneficiary families and their living arrangements. We use data from a random experimental design to identify unanticipated effects of this welfare program on a sample of poor population two years after the onset of the program. We find small but significant impacts of the program on both out-migration and in-migration to the household after only two years of the implementation of the program. If these trends are to continue, PROGRESA will have important, perhaps much larger, unanticipated bearing on the general living arrangements of its target population. It is also possible that there would be other impacts of the program, which have not been found here, that will appear after a longer period of time has elapsed.

We conclude that all the benefits of having an experimental design for the evaluation can be dissipated by the fact that a significant number of individuals in the evaluation samples are selectively migrating and are not being followed over time if they decide to change residence. Information about the whereabouts of these individuals is very relevant if one wants to conduct bias-free evaluations of different components of the program. As Thomas, Frankenberg and Smith, and Rosenzweig point out (AER, 2003), failure to follow movers seriously impinges on the scientific value of a longitudinal survey because it is not possible to address exactly the kinds of questions about economic, social and geographic mobility that are critical for understanding the process of development in rapidly changing environments like Mexico.

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Annex

Table 1. Distribution of households, by program and sample selection, 1997. (percentages in parenthesis)

	Treatment	Control	Total
Non beneficiary (Non Poor)	7,019 (61) (47)	4,539 (39) (49)	11,558 (100) (48)
Beneficiary (Poor)	7,837 (63) (53)	4,682 (37) (51)	12,519 (100) (52)
Total	14,856 (62) (100)	9,221 (38) (100)	24,077

Source: Own estimation using ENCASEH 1997

Data from the Evaluation Sample. Non beneficiary households are households which, under the rules of the program, are considered to be non-poor. They can either be distributed in Treatment or Control localities. Beneficiary households are those that are considered to be poor and they are also distributed into Treatment and Control Localitites.

Table 2. Number of households and individual members covered in

Survey		Contr T=	Treatme T=	All
PRE PROGRAM/ BASE LINE				
ENCASEH	Househo	9,22	14,85	24,07
	Individua	48,47	77,19	125,67
POST PROGRAM				
ENCEL	Househo	9,91	15,92	25,84
Novemb	Individua	53,39	85,14	138,54
ENCEL	Househo	10,00	16,01	26,02
May	Individua	51,48	81,32	132,80
ENCEL	Househo	10,49	16,47	26,97
Novemb	Individua	55,79	83,63	139,42
ENCEL	Househo	10,51	16,51	27,02
May	Individua	55,33	83,56	138,90
ENCEL	Househo	10,51	16,51	27,02
Novemb	Individua	55,10	83,89	138,99

Source: PROGRESA-OPORTUNIDADES database

Table 3. Status of Households in ENCEL Surveys (Those originally interviewed in 1997)

Type of HH	97	98	99m	99n	00m	00n	HOUSEHOLD STATUS	ABSOLUTE	PERCENT
0	G	H	I	J	K	L	GHIJKL	15788	65.57
1	G						G	522	2.17
2	G	H					GH	386	1.6
3	G	H	I				GHI	264	1.1
4	G	H	I	J			GHIJ	451	1.87
5	G	H	I	J	K		GHIJK	1256	5.22
6	G		I				GI	55	0.23
7	G		I	J			GIJ	43	0.18
8	G		I	J	K		GIJK	78	0.32
9	G		I	J	K	L	GIJKL	333	1.38
10	G	H		J			GHJ	138	0.57
11	G	H		J	K		GHJK	182	0.76
12	G	H		J	K	L	GHJKL	1102	4.58
13	G	H	I		K		GHIK	209	0.87
14	G	H	I		K	L	GHIKL	926	3.85
15	G	H	I	J		L	GHIJL	1150	4.78
16	G			J			GJ	45	0.19
17	G			J	K		GJK	43	0.18
18	G			J	K	L	GJKL	72	0.3
19	G				K		GK	46	0.19
20	G				K	L	GKL	53	0.22
21	G					L	GL	49	0.2
22	G	H			K		GHK	104	0.43
23	G	H			K	L	GHKL	222	0.92
24	G	H				L	GHL	72	0.3
25	G		I		K		GIK	30	0.12
26	G		I		K	L	GIKL	52	0.22
27	G		I			L	GIL	17	0.07
28	G			J		L	GJL	28	0.12
29	G	H		J		L	GHJL	150	0.62
30	G	H	I			L	GHIL	159	0.66
31	G		I	J		L	GIJL	52	0.22
							Total households	24,077	100

Table 4

Descriptive Statistics study sample (only poors in either control or treatment communities).

Description	Median	Std Dev.
PROGRESA Program Variables		
=1 if treatment	0.617	(0.486)
Demographics in 1997		
=1 if male in 1997	0.500	(0.500)
=1 if female in 1997	0.500	(0.500)
= 1 if age 0-5 in 1997	0.232	(0.422)
= 1 if age 6-12 in 1997	0.231	(0.421)
= 1 if age 13-15 in 1997	0.078	(0.268)
= 1 if age 16-25 in 1997	0.131	(0.338)
= 1 if age 26-45 in 1997	0.192	(0.394)
= 1 if age 46-65 in 1997	0.073	(0.260)
= 1 if age over 66 in 1997	0.025	(0.156)
= 1 if schooling 0-5 years in 1997	0.672	(0.470)
= 1 if schooling 6 years or + in 1997	0.270	(0.444)
= 1 if hhold head in 1997	0.145	(0.352)
= 1 if spouse of hhold head in1997	0.150	(0.357)
= 1 if son of hhold head in 1997	0.304	(0.460)
= 1 if daughter of hhold head in 1997	0.281	(0.450)
= 1 if other relative/friend, etc. of hhold head in 19	0.116	(0.320)
Age of household head in 1997	41.740	(13.136)
Years of schooling of household head in 1997	2.510	(2.587)
Demographics in 2000		
= 1 if age 0-5 in 2000	0.132	(0.338)
= 1 if age 6-12 in 2000	0.243	(0.429)
= 1 if age 13-15 in 2000	0.098	(0.297)
= 1 if age 16-25 in 2000	0.192	(0.394)
= 1 if age 26-45 in 2000	0.212	(0.408)
= 1 if age 46-65 in 2000	0.090	(0.286)
= 1 if age over 66 in 2000	0.033	(0.179)
= 1 if schooling 0-5 years in 2000	0.655	(0.475)
= 1 if schooling 6 years or + in 2000	0.273	(0.446)

Table 4 (Continuation)
Descriptive Statistics study sample (only poors in either control or treatment communities).

Description	Median	Std Dev.
Household Wealth in 1997		
= 1 if wall/ceiling/floor made of concrete	0.094	(0.292)
# Chickens, turkeys in 1997	47.384	(59.315)
# Cows, oxen, horses, donkeys in 1997	11.308	(26.194)
# Pigs, sheep in 1997	18.832	(51.331)
# Household members btw 0_6 yrs old	1.722	(1.238)
# Household members btw 7_12 yrs old	1.279	(1.040)
# Household members 13 yrs or older	3.319	(1.536)
Household monthly total expenditure	871.061	(413.537)
Dependent variables		
Probability of not being in 2000	10.32904	(30.434)
Probability of arriving in 2000	11.30511	(31.666)
Observations	68929	

Table 5 Outflow

	All sample	Years of Schooling		Years of Age					
		Less than 6	6 or more	Less than 6	6 to 12	13 to 25	26 to 44	45 to 65	66 and more
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(A)									
constant	1.8597	-1.2783	-2.7956	-3.2293	-3.1934	0.9868	10.7627	38.7788	40.9401
	[0.8384]**	[0.5738]**	[1.0148]***	[1.3002]**	[1.2359]***	[1.4740]	[1.6749]***	[4.3358]***	[6.7204]***
treatment	-0.2409	-0.4396	0.1167	-0.5699	0.2301	-0.3591	-0.3887	-1.221	-2.2735
	[0.2944]	[0.1924]**	[0.3966]	[0.4027]	[0.3438]	[0.6591]	[0.5159]	[1.1345]	[2.2984]
Observations	61416	39554	18055	14220	15384	21142	12692	4801	1369
R-squared	0.12	0.04	0.09	0.06	0.04	0.23	0.12	0.19	0.24
(B)									
male	1.2847	-1.4128	-3.949	-3.2886	-3.5886	-0.9339	11.4692	37.1898	35.6044
	[0.8607]	[0.5835]**	[1.0522]***	[1.3318]**	[1.2380]***	[1.5474]	[1.7310]***	[4.4559]***	[7.5935]***
female	2.2299	-1.1495	-2.0098	-3.1794	-2.6889	2.7081	8.591	38.1302	39.4728
	[0.8583]***	[0.5902]*	[1.0597]*	[1.3239]**	[1.2764]**	[1.5265]*	[1.7111]***	[4.5431]***	[7.1651]***
Treatment interactions									
*male	-0.2901	-0.2897	0.0251	-0.3917	0.1791	-0.3738	-0.9073	-2.0102	0.688
	[0.3646]	[0.2481]	[0.4881]	[0.5315]	[0.4244]	[0.8628]	[0.7432]	[1.4467]	[3.0734]
*female	-0.1779	-0.5833	0.2695	-0.7516	0.3013	-0.293	0.1106	-0.3038	-4.6482
	[0.3802]	[0.2460]**	[0.5722]	[0.5192]	[0.4941]	[0.8502]	[0.6633]	[1.6182]	[3.2347]
Observations	61416	39554	18055	14220	15384	21142	12692	4801	1369
R-squared	0.12	0.04	0.09	0.06	0.04	0.23	0.13	0.19	0.24
(C)									
head	6.3076	-0.8691	-3.6572	.	.	4.2872	17.8143	19.1706	37.7603
	[0.9580]***	[0.5873]	[1.1453]***	.	.	[1.6135]***	[1.8184]***	[4.7463]***	[9.7927]***
spouse	3.1114	-1.3226	-4.1461	.	.	2.2588	14.9785	16.4734	42.9516
	[0.8949]***	[0.5592]**	[0.9900]***	.	.	[1.5019]	[1.8026]***	[4.9542]***	[10.1722]***
son	1.8613	0.8179	-0.992	3.6271	-0.3209	17.2779	20.4379	25.7447	27.4473
	[0.8720]**	[0.5918]	[1.1724]	[1.3021]***	[1.1782]	[2.3563]***	[3.3928]***	[11.0849]**	[11.1496]**
daughter	4.0941	1.8192	1.3921	4.4006	0.695	22.8996	24.982	9.856	8.6668
	[0.8795]***	[0.6162]***	[1.2298]	[1.2942]***	[1.2111]	[2.4140]***	[3.9069]***	[8.7999]	[8.0940]
other	11.2911	6.4492	0.5007	19.2306	7.2489	25.0325	29.0014	39.8101	39.4472
	[1.4282]***	[1.0830]***	[1.8101]	[2.4184]***	[2.0333]***	[2.7763]***	[3.6797]***	[5.1691]***	[7.4414]***
Treatment interactions									
*head	-1.8119	-0.2025	-0.3718	.	.	-0.4516	-1.2934	-2.9269	-0.6328
	[0.6290]***	[0.2182]	[0.5250]	.	.	[1.1291]	[0.7324]*	[1.4467]**	[3.2743]
*spouse	-0.2639	0.1255	-0.0188	.	.	0.348	-0.1388	-0.0097	-6.1689
	[0.5341]	[0.1302]	[0.2966]	.	.	[0.5984]	[0.6432]	[1.6558]	[4.1463]
*son	0.5209	0.0673	-0.0355	0.4532	0.3053	-0.7875	1.1579	-2.2365	-6.8646
	[0.4174]	[0.3015]	[0.6264]	[0.4137]	[0.3739]	[1.0112]	[3.0374]	[12.6037]	[6.4824]
*daughter	0.2374	-1.0041	0.5897	-0.7514	0.074	0.5043	3.4854	8.4567	33.4031
	[0.4696]	[0.3446]***	[0.7665]	[0.4247]*	[0.4452]	[1.2541]	[4.0542]	[11.7594]	[20.0542]*
*other	-0.829	-1.3667	-0.2245	-2.9881	0.8984	-2.3888	2.3956	2.497	-1.3036
	[1.4460]	[1.1615]	[1.7229]	[2.1682]	[2.0772]	[1.9853]	[3.8801]	[4.6063]	[4.4431]
Observations	61371	39533	18038	14207	15371	21133	12686	4799	1367
R-squared	0.13	0.06	0.1	0.09	0.05	0.24	0.14	0.21	0.24

Table 6 Inflow

	All sample	Years of Schooling		Years of Age					
		Less than 6	6 or more	Less than 6	6 to 12	13 to 25	26 to 44	45 to 65	66 and more
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(A)									
constant	22.231	24.1038	5.2906	73.595	7.7223	13.2544	4.0037	14.2394	29.7814
	[0.7718]***	[0.8651]***	[0.9484]***	[2.0674]***	[1.1143]***	[1.1455]***	[0.9499]***	[2.4762]***	[4.0838]***
treatment	-0.539	-0.6967	0.2096	-1.3117	-0.371	-0.2817	-0.12	0.3718	-1.4639
	[0.2769]*	[0.3188]**	[0.3131]	[0.9008]	[0.3554]	[0.3948]	[0.3621]	[0.4450]	[1.1187]
Observations	62211	43613	17616	8639	16190	26505	13163	5298	1658
R-squared	0.11	0.12	0.06	0.48	0.08	0.14	0.07	0.06	0.12
(B)									
male	22.4383	24.4061	5.9533	72.6495	7.3584	12.3218	5.7559	14.7445	27.759
	[0.7973]***	[0.8928]***	[1.0079]***	[2.2496]***	[1.1230]***	[1.1846]***	[1.0281]***	[2.4864]***	[4.1655]***
female	21.9296	23.5895	4.8881	73.7107	8.0738	14.0225	1.3226	13.3329	30.1347
	[0.7947]***	[0.9025]***	[0.9479]***	[2.2421]***	[1.1533]***	[1.1770]***	[0.9511]	[2.5273]***	[4.1894]***
Treatment interactions									
*male	-0.2249	-0.3001	0.4515	0.7363	-0.1105	-0.3984	-0.2912	0.0705	-0.7988
	[0.3739]	[0.4476]	[0.4538]	[1.3661]	[0.4634]	[0.5062]	[0.6298]	[0.6726]	[1.2556]
*female	-0.8775	-1.1155	-0.0954	-3.4714	-0.6231	-0.1312	0.0029	0.6943	-2.0372
	[0.3633]**	[0.4302]***	[0.3885]	[1.3748]**	[0.4635]	[0.5588]	[0.3549]	[0.5287]	[1.7991]
Observations	62211	43613	17616	8639	16190	26505	13163	5298	1658
R-squared	0.11	0.12	0.06	0.48	0.08	0.14	0.08	0.06	0.12
(C)									
head	18.634	18.9978	8.0519	.	.	10.8267	15.6277	7.8234	2.7459
	[0.7137]***	[0.7895]***	[1.2544]***	.	.	[1.4482]***	[1.2483]***	[2.1675]***	[4.8324]
spouse	15.9837	16.9174	3.4932	.	.	10.1324	12.5012	6.2142	2.823
	[0.6433]***	[0.7253]***	[0.9209]***	.	.	[1.1583]***	[1.2065]***	[2.2098]***	[5.0587]
son	25.3999	27.6131	7.1787	73.2411	8.1595	20.8261	30.2609	14.555	2.6421
	[0.7587]***	[0.8663]***	[1.0954]***	[2.5330]***	[0.9802]***	[1.4127]***	[2.7260]***	[6.4597]**	[6.2682]
daughter	25.2158	27.3214	7.1001	73.0559	8.2615	20.4469	30.496	16.3191	1.8181
	[0.7544]***	[0.8671]***	[1.0712]***	[2.4973]***	[0.9789]***	[1.4050]***	[2.9527]***	[7.1946]**	[4.9957]
other	39.9041	40.4818	8.3255	90.5046	18.7041	38.0018	32.487	18.8298	21.2311
	[1.3260]***	[1.4679]***	[1.6539]***	[3.8693]***	[2.0332]***	[2.0342]***	[3.0767]***	[3.1279]***	[4.3236]***
Treatment interactions									
*head	-0.0526	-0.0781	-0.5239	.	.	1.9286	-0.1667	0.4531	-0.002
	[0.3897]	[0.4144]	[0.9353]	.	.	[1.8811]	[0.5684]	[0.5729]	[0.7357]
*spouse	-0.0504	-0.0669	-0.1135	.	.	-0.5144	0.0333	0.2215	-0.8909
	[0.1773]	[0.1854]	[0.3627]	.	.	[1.0072]	[0.2004]	[0.3319]	[0.9029]
*son	-0.2569	-0.517	0.7801	1.024	0.0679	-0.3519	-1.0091	-1.6416	1.5238
	[0.4204]	[0.5430]	[0.5324]	[1.5594]	[0.2068]	[0.4864]	[2.2380]	[7.2310]	[2.8644]
*daughter	-0.5976	-0.7437	-0.1443	-1.8533	-0.1487	-0.2299	-0.9095	0.2882	14.751
	[0.4255]	[0.5553]	[0.4985]	[1.5685]	[0.1990]	[0.4986]	[2.8465]	[8.7453]	[13.3354]
*other	-0.1637	-0.7449	0.8715	-5.3194	0.4092	-0.8787	0.2878	3.6799	-2.8507
	[1.2756]	[1.3983]	[1.2792]	[2.5278]**	[1.7348]	[1.6063]	[2.7856]	[3.6436]	[3.3756]
Observations	60571	42293	17576	7585	15869	26122	13147	5292	1656
R-squared	0.14	0.14	0.06	0.42	0.1	0.17	0.12	0.1	0.16

Novedades

DIVISIÓN DE ADMINISTRACIÓN PÚBLICA

Rivera Urrutia, Eugenio, *Teorías de la regulación. Un análisis desde la perspectiva de las políticas públicas*. AP-133

Del Castillo, Arturo y Manuel Alejandro Guerrero, *Percepciones de la corrupción en la Ciudad de México ¿ Predisposición al acto corrupto ?* AP-134

Mariscal, Judith, *Digital Divide in Mexico*. AP-135

Kossick, Robert & Judith Mariscal, *Citizen Participation in the Digital Age: The Initial Experience of Mexico*. AP-136

Bracho González, Teresa, *Administración centrada en la escuela*. AP-137

Rowlland, Allison, *Assessing Decentralization: GAT Role for Municipal Government in the Administration of Justice?*. AP-138

Cabrero, Enrique, Isela Orihuela y Alicia Zicardi, *Ciudades competitivas-ciudades cooperativas: conceptos claves y construcción de un índice para ciudades mexicanas*. AP-139

Cabrero, Enrique, Claudia Santizo y César Nájera, *Improving Accountability and Tranparency in Schools: The Mexican Program of Schools of Quality*. AP-140

Kossick, Robert M., *La transformación en la prestación de servicios gubernamentales en México: El caso del portal de Tramitanet*. AP-141

Sour, Laura, Irma Ortega y Sergio San Sebastián, *Política presupuestaria durante la transición a la Democracia en México: 1997-2003*. AP-142

DIVISIÓN DE ECONOMÍA

Ramírez, José Carlos, *Usos y limitaciones de los procesos estocásticos en el tratamiento de distribuciones de rendimientos con colas gordas*. E-282

Antón, Arturo, *On the Welfare Implications of the Optimal Monetary Policy. E-283*

Torres Rojo, Juan M., y Arturo G. Valles Gándara, *Crecimiento poblacional de rodales puros y mezclados de coníferas y latifólidas*. E-284

Rubalcava Peñafiel, Luis y Graciela Teruel Belismelis, *The Effect of PROGRESA on Demographic Composition*. E-285

Bazdresch, Carlos, Gustavo A. Del Ángel y Francisco Suárez Dávila, *La nacionalización bancaria. Un enfoque analítico*. E-287

Mayer, David, *Human Development Traps and Economic Growth*, E-288

Bazdresch, Carlos, *¿Fue necesaria la nacionalización?* E-289

Torres Rojo Juan Manuel, Klaus Von Gadow and Frantisek Vilcko, *Evaluation of Thinning Schedules for Beech Forests Using Dynamic Programming*. E-290

Di Giannatale, Sonia, *Moral Hazard and Film Size: A Dynamic Analysis*. E-291

Di Giannatale, Sonia, *On the Long-Run Component of the Executive Pay-firm Performance Relationship*. E-292

DIVISIÓN DE ESTUDIOS INTERNACIONALES

Mahon, James, *Fiscal Contracts, International Capital and the Quest for a Liberal*. EI-94

Kahhat, Farid, *Democracy as a Collective Problem In the Western Hemisphere: The Case of Peru During the 1990s*. EI-95

Ortiz Mena, Antonio, *Mexico in the Multilateral Trading System*. EI-96

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Kahhat, Farid, *Los estudios de seguridad tras el fin de la Guerra Fría*. EI-100

Jones, Adam, *Straight as a Rule Heteronormativity, Gendercide and non-combatan Male*. EI-101

Kahhat, Farid, *El tema de la corrupción en la literatura en ciencia política*. EI-102

Kahhat, Farid, *Balance of Power, Democracy and Foreign Policy in South America's Southern Cone*. EI-103

DIVISIÓN DE ESTUDIOS JURÍDICOS

Magaloni, Ana Laura y Layda Negrete, *El poder Judicial federal y su política de decidir sin resolver*. EJ-1

Pazos, María Inés, *Derrotabilidad sin indeterminación*. EJ-2

Pásara Pazos, Luis, *Reforma y desafíos de la justicia en Guatemala*. EJ-3

Bergman S., Marcelo, *Confianza y Estado de Derecho*. EJ-4

Bergman S., Marcelo, *Compliance with norms: The Case of Tax Compliance in Latin America*. EJ-5

Pásara, Luis, *Cómo sentencian los jueces en el D. F. en materia penal*, DTEJ-6

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Colomer M., Josep, *Taming the Tiger: Voting Rights and Political Instability in Latin America*. EP-154

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Nacif, Benito, *Instituciones políticas y transición a la democracia en México*. EP-158

Langston, Joy, *Senate Recruitment and Party Organizational Change in Mexico´s PRI*. EP-159

Langston, Joy & Alberto Díaz- Cayeros, *The Consequences of Competition: Gubernatorial Nominations in Mexico 1994-2000*. EP-160

Crespo, José Antonio, *México: El fin de la hegemonía partidista*. EP-161

Beltrán Ugarte, Ulises, *The Combined Effect of Advertisement and News Coverage in the Mexican Presidential Campaign of 2000*. EP-162

Negretto, Gabriel, *Minority Presidents and Types of Government in Latin America*. EP-163

DIVISIÓN DE HISTORIA

Pipitone, Ugo, *Caos y Globalización*. H-18

Barrón, Luis, *Un civil en busca del poder: La carrera política de José Vasconcelos 1910-1924*. H-19

Barrón, Luis, *La tercera muerte de la Revolución Mexicana: Historiografía reciente y futuro en el estudio de la revolución*. H-20

García Ayluardo, Clara, *De tesoreros y tesoros. La administración financiera y la intervención de las cofradías novohispanas*. H-21

Medina Peña, Luis, *Porfirio Díaz y la creación del sistema político*. H-22

Sauter J., Michael, *Visions of the Enlightenment: Johann Christoph Woellner and Prussia's Edict on Religion of 1788*. H-23

Sauter J., Michael, *Preachers, Ponytails and Enthusiasm: On the Limits of Publicness in Enlightenment Prussia*. H-24

Bataillon, Gilles, *Guatemala: de L´instauration du terrorisme d´état au réagencement du pouvoir militaire*. H-25

Sauter, Michael J., *Clock Watchers and Stargazers: Berlin's Clock Between Sciencie, State and the Public Sphere at the Eighteenth Century's End*. H-26

Pipitone, Ugo, *Desigualdades. (Segundo capítulo de* Caos y Globalización*)*. H-27