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# Must conditional cash transfer programs be conditioned to be effective? The impact of conditioning transfers on school enrollment in Mexico

Alan de Brauw \*, John Hoddinott \*

International Food Policy Research Institute, 2033 K Street NW, Washington DC, 20006, USA

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# ABSTRACT

A growing body of evidence suggests that conditional cash transfer (CCT) programs can have strong, positive 21 effects on a range of welfare indicators for poor households in developing countries. However, there is little 22 evidence about how important each component of these programs is towards achieving these outcomes. This 23 paper tests the importance of conditionality on one specific outcome related to human capital formation, 24 school enrollment, using data collected during the evaluation of Mexico's *PROCRESA* program. We exploit the 25 fact that some beneficiaries who received transfers did not receive the forms needed to monitor the 26 attendance of their children at school. We use a variety of techniques, including nearest neighbor matching 27 and household fixed effects regressions, to show that the absence of these forms reduced the likelihood that 28 children attended school with this effect most pronounced when children are transitioning to lower 29 secondary school. We provide substantial evidence that these findings are not driven by unobservable 30 characteristics of households or localities.

## 37 1. Introduction

Conditional cash transfers (CCTs) have become a popular tool for 38 poverty alleviation throughout the developing world. As implied by 39 their name, CCTs give cash transfers to households that meet specific 40conditions or undertake certain actions such as ensuring school-aged 41 children go to school or ensuring that pre-school children regularly 42 see a nurse or doctor. Many of these programs have been carefully 43 evaluated to demonstrate their effectiveness.<sup>1</sup> However, evaluations 44 45 usually such evaluations treat the CCT as a "black box," assessing the combined effect of all their components without considering which 46features make them successful at improving child or household 47 welfare. As a result, little is known about whether the imposition of 48 49 conditions on beneficiaries improves the effectiveness of CCTs, an issue of considerable controversy. 50

51 Both public and private perspectives provide good reasons for 52 CCTs to be conditional. From the public perspective, governments may 53 perceive that they know what actions or behaviors will benefit the 54 poor better than the poor do themselves, and that conditioning 55 transfers can modify behavior to better match those perceptions. For 56 example, governments may place greater weight on the intrinsic 57 value of educating girls than do families. Conditioning may help the

\* Corresponding authors.

0304-3878/\$ - see front matter doi:10.1016/j.jdeveco.2010.08.014 government overcome information asymmetries. Governments may 58 be aware of the benefits associated with immunization or screening 59 for chronic diseases but individuals may be unaware or unconvinced 60 of these benefits. When other approaches to such informational 61 problems-such as public health campaigns-have failed, conditioning 62 transfers can be seen as a means of changing behaviors. Finally, 63 conditioning may be help required for political economy reasons. 64 Politicians and policy makers are often evaluated by performance 65 indicators such as changes in school enrollment or use of health 66 clinics. By conditioning transfers on behaviors that increase these 67 indicators, politicians and policy makers can potentially demonstrate 68 accomplishments long before the more important evidence of poverty 69 reduction, in the form of increased productivity or better adult health, 70 occurs. Therefore, politicians can perceive that conditioning transfers 71 is a useful tool to help them stay in office. 72

From the private perspective, the conditional component of CCTs 73 can also have potential benefits. Disagreements may exist within 74 households regarding the allocation of resources. Imposing condi-75 tionality on cash transfers can strengthen the bargaining position of 76 individuals whose preferences are aligned with the government's 77 preferences, who may otherwise lack bargaining power within the 78 household. Conditioning may overcome stigma effects otherwise 79 associated with welfare payments. The stigma attached to welfare 80 payments may discourage those with valid claims from taking them 81 up. From the beneficiary's point of view, conditioning can be seen as 82 part of a social contract between themselves and the state and may 83 legitimize the transfer, overcoming the stigma. Finally, work in 84 behavioral economics emphasizes that when households have 85

*E-mail addresses:* A.debrauw@cgiar.org (A. de Brauw), J.Hoddinott@cgiar.org (J. Hoddinott).

<sup>&</sup>lt;sup>1</sup> Fiszbein and Schady (2009) and Adato and Hoddinott (2010) provide summaries of many CCT impact evaluations.

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hyperbolic discount functions, they undertake actions that can reduce
their own welfare (Laibson, 1997). In such circumstances, households
are better off when constraints are imposed that reduce or limit their
ability to trade-off future for present consumption. Conditionality can
be seen as such a constraint.

There are drawbacks to imposing conditionality. Conditionality 91increases the administrative costs and complexity of running a cash 9293 transfer program. Caldes et al. (2006) show that monitoring conditionality represented approximately 18% of PROGRESA's admin-94 95 istrative costs and 2% of total program costs. Meeting conditions imposes direct costs on beneficiaries, and such costs are not 96 necessarily shared equally among household members; for example, 97 mothers often accompany children to health clinics or attend 98 community meetings (Molyneux, 2007). If preferences of the poor 99 do not align with the conditions placed on their behavior, the 100 restrictions that conditionality imposes on the poor reduce their 101 welfare gains from the CCT. Some households may find the conditions 102 too difficult to meet, and if such households are among the poorest 103 households eligible for the program, imposing conditions may detract 104 from the effectiveness of the CCT's targeting. Conditionality can create 105an opportunity for corruption whereby individuals who are respon-106 sible for certifying that conditions have been met could demand 107 108 payments for doing so. Conditioning transfers can be perceived as being demeaning to the poor; for example, conditioning can be 109 understood to imply that the poor simply do not know what is good 110 for them. Finally, because social protection falls under the Universal 111 Declaration of Human Rights, some argue that it is indefensible to 112 113 attach conditions to the receipt of social transfers (Freelander, 2007).

This paper brings empirical evidence to this debate. We exploit the 114 fact that some beneficiaries of Mexico's pathbreaking CCT program, 115PROGRESA, did not receive the forms needed to monitor the 116 attendance of their children at school and as a result, payments 117118made to these households were effectively unconditional. In households where these forms were received, and payments were 119 conditional on school attendance, we find that the likelihood that 120children attended school was higher. The effect of conditionality 121 depends upon the grade level of the student; the absence of 122 123 conditionality has the strongest impact on the enrollment of children making the transition to lower secondary school, whereas it has no 124 measurable impact on children continuing in primary school. As the 125non-receipt of forms is not random, we complete several robustness 126127 checks to ensure that our results are not due to unobserved heterogeneity at either the household or community level. We 128 provide evidence that the effect is more pronounced among house-129holds with illiterate heads and among households in which the head 130did not perform agricultural labor, indicating the results may be 131 132partially due to informational problems and to the opportunity cost of schooling for such children. 133

# 134 **2. Program description and data**

PROGRESA was introduced by the Government of Mexico in 1997 135as part of an effort to break the intergenerational transmission of 136poverty.<sup>2</sup> The program was primarily aimed at improving the 137 educational, health and nutritional status of poor families, and 138 particularly of children and their mothers. Beneficiaries received 139cash transfers on a bi-monthly basis, and transfers had three 140 components: a scholarship tied to the continued attendance of 141 children at school (the beca, or the education transfer), money for 142 143 school supplies, and a cash transfer for food (the alimento). PROGRESA (1997) provides a more detailed description of the program. 144

To receive the education transfer, school-aged children in grades 145 three and higher had to maintain an attendance record of 85% or 146 better and parents had to attend monthly meetings (platicas). Parents 147 were supposed to receive a form called the E1 in the general assembly 148 when they were inducted into PROGRESA to ensure compliance with 149 the attendance condition. This form was taken to the teacher, who 150 signed the form to register the child, and parents returned the signed 151 E1 form to PROGRESA officials (usually the local promoter). PROGRESA 152 officials then were supposed to match E1 forms with school records of 153 attendance (the E2 form). The E2 form was solely for PROGRESA 154 enrollees and was kept separately from other attendance records. 155 After confirming that attendance was satisfactory, officials arranged 156 for the payment of the education transfer. Payments occurred bi- 157 monthly; promoters spread word in the community that payments 158 would occur on a certain date at a specific place, and PROGRESA 159 officials then set up portable tables and handed envelopes holding 160 payments to beneficiaries. 161

Our study hinges on the fact that a significant proportion of 162 households report never receiving the E1 form, but the administrative 163 data from PROGRESA indicate that these households received 164 education transfers. As a result, payments to such households could 165 not have been conditioned, since teachers would not have monitored 166 their children's attendance on the E2 form. According to Adato et al. 167 (2000), some households reported receiving education transfers, yet 168 they report never having received the E1 form. It seems likely that as 169 the program began, administrative failures allowed these transfers to 170 occur; as the administration improved such households might have 171 either received an E1 or been dropped from the payment rolls.<sup>3</sup> We 172 provide evidence that households who report failing to receive an E1 173 form cannot be related to any household or community level 174 unobservables, and as a result we can use an indicator variable for 175 the receipt of an E1 form to measure the effect of conditionality on 176 school enrollment in the PROGRESA program.

We use two matched data sources for our study. First, we use 178 administrative data on education transfer payments made between 179 March and August of 1999 to measure which households received 180 transfers.<sup>4</sup> We then use household identifiers to match the house- 181 holds that received transfers with those that were interviewed in the 182 evaluation surveys completed as part of PROGRESA. The bulk of the 183 data we use are from the evaluation survey conducted in May and 184 June of 1999 (the seguimento) which included a set of questions on 185 beneficiaries experiences with PROGRESA.<sup>5</sup> The seguimento specifically 186 asked households whether or not they had received the E1 form, as 187 well as a series of questions about the conditions households were 188 supposed to meet in order to receive transfers.<sup>6</sup> In our analysis, we 189 use households that received the education transfer according to 190 the administrative database on transfers and were found in the 191 seguimento.7 192

We find that of the 4383 households that received at least one 193 education transfer between March and August of 1999 for children's 194 school attendance, 464 of them did not receive the E1 form. These 195

<sup>&</sup>lt;sup>2</sup> The program was renamed *Oportunidades* when Vincente Fox became president of Mexico in 2000.

<sup>&</sup>lt;sup>3</sup> We discussed this hypothesis with both Santiago Levy—the architect of *PROGRESA* and Emmanuel Skoufias, who was responsible for leading the evaluation of *PROGRESA*. Both indicated that if the household did not receive an E1 form, no monitoring of attendance was possible, and that it was possible that households received transfers despite not having received the E1 form.

<sup>&</sup>lt;sup>4</sup> Note that subsequent payments to households included in our data set likely became conditioned soon thereafter as administration of *PROGRESA* improved; we do not observe whether they received an E1 form after receiving payments in the period we study around the evaluation survey.

<sup>&</sup>lt;sup>5</sup> The sampling frame for the *seguimento* only included households with at least one child age 6 to 17.

<sup>&</sup>lt;sup>6</sup> We also use several variables from the October 1998 evaluation survey round, such as per capita expenditures and household size.

<sup>&</sup>lt;sup>7</sup> We drop localities from the sample if every household in the locality received an E1 form, as locality level dummy variables would fully explain whether they received the E1.

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4383 households include 5686 children of school age (ages 8-16) who 196 197 have completed grades 3 through 8 and are therefore eligible to be monitored. In the 464 households that did not receive the E1, children 198 199could not have had their attendance monitored by PROGRESA; we label these households as Group 1. The remaining 3919 households 200 with school-aged children that received the E1 form and received at 201 least one beca payment for children's school attendance between 202March and August 1999 are called Group 2. Households in Groups 1 203204and 2 share the following similarities: they are all beneficiaries of the PROGRESA program, they all have school-aged children, and they all 205 received beca payments from PROGRESA for school attendance by 206 207their children. The difference is that the behavior of Group 1 could not 208be monitored and by extension, their transfers could not be 209 conditioned on attendance. As such, comparing outcomes among children of households in Groups 1 and 2 constitute a potential way to 210 assess the impact of conditionality on school attendance. 211

Although the comparison of Groups 1 and 2 may suggest that 212 conditionality affects schooling related outcomes, one might be 213 concerned that households who understood the conditions might 214 assume that the program somehow monitored them, rendering the E1 215form unnecessary. If true, the comparison of Groups 1 and 2 would not 216 test the conditionality of the education transfer. To address this 217218 concern, we develop a second test of conditionality using the seguimento. It asked beneficiary households to list the conditions 219 that they were required to fulfill in order to receive the education 220 transfer. Some households could immediately list conditions, whereas 221 others could not. With this information, we take the same sample of 222 223households and create a further comparison. Households in Group 3 neither received Form E1, nor did they know that they were required 224to send their children to school in order to receive the education 225 transfer. Households in Group 4 received forms to enroll their children 226 227and knew that they were required to send their children to school in order to receive school benefits.<sup>8</sup> Since households in Group 3 neither 228 229received the form necessary for the transfer to be conditional nor knew the conditions for the transfer, the transfers they received were 230clearly unconditional. 231

Even if we can demonstrate a difference in average school 232 233 enrollment or attendance between Groups 1 and 2 and/or Groups 3 and 4, the difference should not be immediately attributed to 234conditionality. There are several plausible reasons that some house-235holds received the E1 form, whereas others did not. Some reasons 236might be related to observable or unobservable household character-237istics, whereas others would suggest that the lack of an E1 form is 238 quasi-experimental. For example, specific communities might simply 239have not received E1 forms, which would imply that endogenous 240 241program placement might have occurred. Alternatively, households 242might have simply missed the meeting at which the E1 form was distributed, for potentially observable (for example, an environmental 243shock) or unobservable reasons. 244

To ensure that our results are due to the lack of conditionality 245rather than differences in either observables or fixed unobservables, 246247we condition unconditional means between groups with differences 248in observable characteristics, using both probit and nearest neighbor matching methods. We ensure that the differences are not driven by a 249few specific communities by examining the receipt of E1 forms at both 250the state and locality level. We then provide several robustness checks 251252to ensure that our results are not due to household level unobservables; in one such test, we control for household level fixed effects, 253 which control for any fixed unobservable differences at the household 254level. 255

### Table 1

Enrollment rates of children  $8_{1}$ 16 who have completed grades  $3_{1}$ 8, by household receipt of E1 forms.

				- +1 0
Group	Sample size	Enrollment rate (%)	Wald test on differences in enrollment rate	t1.2 t1.3
1 (Household did not receive E1 form)	547	83.2	8.63**	t1.4
2 (Household received E1 form)	5090	88.6		t1.5
3 (Household did not receive E1 form and could not describe conditions)	261	80.1	13.44**	t1.6
4 (Household received E1 form and could describe conditions)	2870	89.2		t1.7

Notes: Wald test for equivalence of enrollment rates controls for intracluster correlation within localities. \*\*-indicates significance at the 1% level. \$t1.8\$

# 3. Results

## 3.1. Basic findings

Among children  $8_{-1}6$  years of age who have completed grades  $3_{-258}$ 8, 83.2% of children in Group 1 households were enrolled in school, 259 while 88.6% of children in Group 2 households were enrolled 260 (Table 1).<sup>9</sup> Even after accounting for the clustered nature of the 261 sample, this difference is statistically significant at the 5% level.<sup>10</sup> The 262 difference is larger when we consider whether or not households 263 understood the conditions. The enrollment rate among children in 264 households in Group 3 was 80.1% compared to 89.2% for children in 265 Group 4 households. The differences in mean enrollments are 266 suggestive that conditionality does affect enrollment. 267

The unconditional means mask striking differences by grade level. 268 We calculate the share of children in PROGRESA households found in 269 Groups 1 and 3 by completed grade level (Table 2). We find that the 270 incidence of Group 1 and Group 3 membership is approximately the 271 same for all grade levels. Next, we calculate the mean enrollment rate 272 by grade level and by group (Table 3), and plot the differences 273 between means for Groups 1 and 2 (Fig. 1) and Groups 3 and 4 (Fig. 2). 274 The largest difference in school enrollment is between the groups for 275 children who have completed grade 6; that is they finished primary 276 school and should be entering lower secondary school. Children in 277 households who did not receive Form E1 are much less likely-by 17 278 to 20%-to enroll in lower secondary school, whether or not parents 279 are aware of the attendance conditionality. These differences are 280 significant at the 1% level (Table 3). For other grade levels, the 281 differences are not nearly as large, not always statistically significant, 282 and in some cases children in Groups 1 and 3 are slightly more likely to 283 enroll than children in Groups 2 and 4. The data therefore suggest that 284 conditionality is important when students move from primary to 285 lower secondary school, but not necessarily at other levels. However, 286 caveats regarding both observable and unobservable differences 287 between households remain. 288

To control for observable differences between children, house- 289 holds, and localities, we estimate probits where the dependent 290 variable equals one if the child is enrolled and zero otherwise 291 (Table 4). We include an indicator variable denoting households that 292 did not receive the E1 form in the first specification (Panel A), and 293 households who neither received the form nor knew the conditions 294 (Panel B). In successive specifications, we build up the set of 295 observables we use as controls. We initially control for state of 296

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t1.1

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<sup>&</sup>lt;sup>8</sup> To provide a cleaner comparison between Groups 3 and 4, for this comparison we drop all households that did not receive Form E1 but knew the conditions for receiving the *beca*, and all households that received Form E1 but did not know the conditions.

<sup>&</sup>lt;sup>9</sup> We use age 8 as the lower age cut-off as this is the lowest age where we observe children in grade 3, the first grade for which *PROGRESA* conditionality applied.

<sup>&</sup>lt;sup>10</sup> There is only one round where we have information on Form E1 receipt, knowledge of conditionality *and* administrative data by type of transfer received. Therefore difference-in-difference estimation is inappropriate, as used in many papers on impacts of *PROCRESA* (e.g. Schultz 2004). Nonetheless, we examined average differences in school attendance between Groups 1 and 2 and 3 and 4 in earlier surveys and found no significant difference.

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t2.1 Table 2 Share of children in *PROGRESA* households that did not receive Form E1, by grade level and understanding of conditions.

Last grade level completed	Share in Group 1 (household did not receive Form E1)		Share in Group 3 (household did not receive Form E1 and could not describe conditions)	
	Share	Number of obs.	Share	Number of obs.
3	0.103	1278	0.085	691
4	0.091	1097	0.081	621
5	0.087	1022	0.070	575
6	0.107	1342	0.103	728
7	0.102	489	0.078	271
8	0.081	409	0.065	245

Table 3			
School enrollment rates	by completed grade and group	PROGRESA households	

Last grade	Share enrolled in school		Share enroll	Share enrolled in school	
level completed	Group 1	Group 2	Group 3	Group 4	
3	0.977	0.958	0.966	0.956	
4	0.930	0.956	0.900	0.956	
5	0.978	0.942	0.950	0.942	
6	0.521	0.691**	0.520	0.715**	
7	0.860	0.920	0.714	0.916**	
8	0.879	0.915	0.937	0.913	

t3 1

366

Notes: Group 1 households did not receive Form E1, and are compared with Group 2 households which did receive Form E1. Group 3 households did not receive Form E1 and could not describe the *PROGRESA* conditions, whereas Group 4 households both received Form E1 and could describe the conditions. \*\*-indicates the difference between the share enrolled is significant at the 5% level, accounting for clustering. t3.11

residence, then include child characteristics (age dummies, gender); 297 characteristics of the household head and spouse (age, gender, 298 occupation, indigenous status and literacy of the head; and indige-299nous status and literacy of the head's spouse); basic household 300 characteristics (the logarithm of household size and consumption per 301 capita, both measured in the earlier October 1998 survey round); 302 additional household characteristics (an indicator that the household 303 304 received the PROGRESA manual; whether or not the household had a health register; an indicator for households who served as PROGRESA 305 promoters; and the number of meetings attended and missed by 306 household members); household level shocks (indicators for shocks 307 due to drought, flood, fire, frozen crops, crop disease and earthquake 308 309 tremors); and finally, several community level characteristics (indicators for the presence of electricity, a pre-school, a lower secondary 310 school, and a secondary school).<sup>11</sup> 311

312 Controlling for child characteristics, we find that children in households lacking an E1 form are 4.6% less likely to enroll in school, 313 on average (Table 4, Panel A, column  $\overline{2}$ ). Adding parental, household, 314 and community controls has little effect on the magnitude of the 315 estimated coefficient; when using the full set of controls, the results 316 imply that the lack of an E1 form makes children 4.4% less likely to 317 318 enroll in school, on average (Panel A, column 6). This difference is similar to the difference in unconditional means, 5.4%. When we add 319 that households did not know the conditions to the definition of the 320 indicator variable for conditionality, in the probit estimation control-321 ling for the full set of characteristics (Panel B, column 6) we find that 322 323 children were 7.0% less likely to enroll in school on average, as compared to the unconditional difference of 9.1%. 324

325 The results in Table 4 do not account for potential heterogeneity in the effects of receiving E1. Therefore we replicate the probits for 326 different completed grades, controlling for the full set of state, child, 327 328 parent, household, and community characteristics (Table 5). We find that conditionality has the strongest effect among children who had 329 completed grade 6, which are the children making the transition from 330 primary to lower secondary school. When comparing Groups 1 and 2, 331 we find that children not receiving forms were about 21% less likely to 332 333 enroll in the lower secondary school, and when comparing Groups 3 334 and 4, we find that children not receiving forms and in households unaware of the conditions were 18% less likely to enroll. For children 335 continuing primary school (having completed grades 3, 4 or 5), there 336 is no evidence that conditionality has a significant effect on school 337 enrollment. We may not find an effect of conditionality at these grade 338 levels in part because almost all children were already completing 339 these grades. 340

One could consider the difference in enrollment rates we find between children in Groups 1 and 2 and Groups 3 and 4 as the difference between the effect of conditioning transfers and the effect of increased income on school enrollment for those children 344 completing grade 6. As the point estimate for the effect of 345 conditioning is large-17 percentage points-one might be concerned 346 that the income effect is negative. While Schultz (2004) finds that 347 PROGRESA causes children who have completed grade 6 have an 8.3 348 percentage point increase in enrollment, other estimates of the effect 349 of PROGRESA on enrollment suggest larger impacts, which are in line 350 with either a negligible or slightly positive income effect. Behrman 351 et al. (2005) show that when one considers a larger range of potential 352 educational transitions, the increase in enrollment due to the CCT is 353 much higher than Schultz finds with the more limited difference-in- 354 difference estimator. de Janvry and Sadoulet (2006) also consider 355 heterogeneity on the impact of conditional cash transfers by transfer 356 level among children leaving grade 6, and find that a conditional 357 transfer of \$200/year is associated with a 14 percentage point increase 358 in the probability of enrollment. Since the average transfer amount is 359 \$200/year in their sample, one would expect an even larger impact of 360 income on enrollment, ceteris paribus. They also find suggestively that 361 unconditional transfers should have a small, positive impact on 362 enrollment, implying a small positive income effect. These findings 363 are quite consistent with ours, as the magnitude of our coefficient 364 estimate is similar to theirs. 365

## 3.2. Initial controls for unobservables

Although the unconditional means and the probit results provide 367 prima facie evidence that conditionality affects enrollment, they 368 implicitly assume that non-receipt of these forms is uncorrelated with 369 unobservable characteristics at the household or locality level. It is not 370 difficult to think of reasons why it might be violated. Suppose that 371 there were administrative problems in one location that lead to poor 372



Fig. 1. Difference in school enrollment between those who received PROGRESA forms to enforce conditionality and those who did not, among PROGRESA transfer recipients.

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<sup>&</sup>lt;sup>11</sup> Replacing the state level indicators and the community level characteristics with a full set of *municipi*o or locality dummies does not change the general estimation results.

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**Fig. 2.** Difference in school enrollment, between those who received *PROGRESA* enforcement forms and could name conditions and those who did not receive forms and could not name conditions, among *PROGRESA* transfer recipients.

distribution of the E1 forms. Suppose too that this location had poor
quality schools, or schools that were difficult to get to. If so, the
differences in enrollment rates would reflect these factors and not the
absence of these forms.

There is evidence in the data that the non-receipt of the E1 form is 377 not driven by unobservable differences in administration by commu-378 nity. First, consider the distribution of households not receiving the E1 379 form by state (Table 6). The share of households that did not receive 380 381 E1 forms is spread out nearly evenly across the seven states. Still, it could be that there were a few municipios in each state that did not 382 distribute E1 forms, and hence those states drive the distribution. We 383 therefore illustrate the proportion of households not receiving the E1 384 385form by locality (Fig. 3), which shows that that non-receipt of forms is 386 distributed widely across the sample. Therefore, a bias similar to 387 endogenous program placement bias does not seem to exist for the non-receipt of forms. 388

Next, we consider whether those who did not receive forms were 389 390 systematically poorer than households who did receive Form E1, using the logarithm of per capita consumption measured during the 391 October 1998 survey round (Fig. 4). There is little difference between 392 the kernel density of the consumption distribution for households 393 receiving and not receiving Form E1. We might also consider that 394 395 smaller households might not have received forms, so we next show the distribution of the logarithm of household size, again measured in 396 October 1998, by receipt of forms (Fig. 5). Again, there is little obvious 397 difference in these distributions. 398

While these distributions do not provide obvious evidence of 399 400 observable differences between household in Groups 1 and 2, if we estimate probits where the dependent variable equals one if the 401 household is in Group 1 (receives the E1 form) and zero if the 402 household is in Group 2 (does not receive the E1 form), some 403 significant differences do emerge.<sup>12</sup> Observables found to be signif-404 405icantly related to Group 1 membership include whether or not the 406 household head and spouse were agricultural laborers (both negative); whether a household experienced an earthquake in the 407previous growing season (negative); whether the household received 408the PROGRESA manual (negative); and the number of meetings the 409410 household missed (positive). Shocks, such as earthquakes, have a negative and significant association with E1 form; it could be that 411

some households simply could not attend the general assembly at 412 which the E1 form was distributed (Adato et al., 2000). 413

## 3.3. Matching results

Because these results suggest that non-receipt of these forms may 415 not have been completely random, we extend our analysis by using 416 nearest neighbor matching (Abadie and Imbens, 2006).<sup>13</sup> We estimate 417 the impact of not receiving the E1 form as an average treatment effect 418 on the treated (ATT). To ensure that outliers do not affect our results, 419 we first estimate a propensity score for the receipt of the E1 form, all 420 of the variables in column 6 of Table 4.<sup>14</sup> We then ensure that the 421 propensity scores balance; that is, we test whether or not the 422 treatment and comparison observations had the same distribution 423 (mean) of propensity scores and of control variables within quantiles 424 of the propensity scores. All results presented below are based on 425 specifications that passed balancing tests. The distributions of 426 propensity scores, in fact, overlap each other for almost all of the 427 range for Groups 1 and 2 (Fig. 6) and Groups 3 and 4 (Fig. 7).

We then match treatment and control observations using nearest 429 neighbor matching with bias adjustment (Abadie and Imbens, 2006, 430 2007).<sup>15</sup> The estimator matches each observation to its four nearest 431 neighbors with replacement, and standard errors account for 432 heteroscedasticity.<sup>16</sup> We provide estimates both on the full sample 433 for which common support exists (Table 7, column 1) and on a 434 trimmed sample, which minimizes the variance of the estimator by 435 trimming observations with theoretically imprecise estimates of the 436 propensity score. To determine the optimal amount of trimming, we 437 computed the variance for trims at 0.01 intervals from 0 to 0.1 using 438 the formula found in Crump et al. (2009), and determined that we 439 should drop observations with a propensity score below 0.04 for the 440 comparison of Groups 1 and 2 and below 0.03 for the comparison of 441 Groups 3 and 4.

On average, the matching results imply that children in house- 443 holds that did not receive the E1 form are 7.2 percentage points less 444 likely to enroll in school (Table 7, column 2) and non-receipt of the E1 445 form coupled with the lack of knowledge of PROGRESA conditions 446 reduces the enrollment likelihood by 9.6 percentage points. Again 447 there is a great deal of heterogeneity when we estimate separate 448 coefficients for children by grade completed.<sup>17</sup> We find that the effect 449 is again largest at the point where children transition from primary to 450 lower secondary school and there is some suggestion that non-receipt 451 of the forms together with absence of knowledge of conditions has an 452 even larger effect on attendance than non-receipt by itself.<sup>18</sup> Further, 453 the estimated coefficients are remarkably consistent with the 454 unconditional means and the results from the probits. As with the 455 probit results, we find no evidence that conditionality affected 456 continuing primary school enrollment. In results not reported here, 457 we assessed whether these results differed by gender, but did not find 458

<sup>16</sup> Results are robust to using one-to-one matching, or additional nearest neighbor matches.

 $^{17}$  Because very few children who had completed grade 8 were included in Group 3, we estimate matching results for completion of grades 7 and 8 together.

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<sup>&</sup>lt;sup>12</sup> These models are estimated with all of the control variables found in column 6 of Table 4. We also find significant differences if we estimate probits that attempt to explain Group 3 membership against Group 4 as the control. In the latter regression, the literacy of the head's spouse, the logarithm of per capita consumption, *PROGRESA* promoter status, and the number of missed meetings all have significant influences on the probability of Group 3 membership.

<sup>&</sup>lt;sup>13</sup> Our data meet the criteria required for the validity of matching methods as set out in Heckman et al. (1997, 1998a) and Heckman et al. (1998b): (i) the same data source is used for participants and non-participants, (ii) participants and non-participants had access to the same markets, and (iii) the data include meaningful variables capable of identifying program participation and outcomes.

<sup>&</sup>lt;sup>14</sup> The one difference is that we use child age as a continuous variable rather than as a set of dummy variables, to ensure that we pass the balancing tests.

<sup>&</sup>lt;sup>15</sup> We use nearest neighbor matching because it is root-*N* consistent when we adjust for the potential bias in convergence, it works particularly well when the number of treatment observations is small relative to the control, and because it avoids making parametric assumptions about relationships between the *X* variables in the model. Estimates using propensity score matching methods are nearly identical.

<sup>&</sup>lt;sup>18</sup> We also explored whether, conditional on enrollment, receipt of the E1 forms increased attendance. In general, we find a positive effect but not one that is statistically significant.

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# 6

Table 4

Probit estimates of the impact of non-receipt of the E1 form on school enrollment of children who had completed grades 3<sub>1</sub>8.

t4.2 t4.3		Specification					
t4.4		(1)	(2)	(3)	(4)	(5)	(6)
t4.5	Panel A: comparing Group 1 (did not receive E1 for	m) with Group 2 (rec	eived E1 form)				
t4.6	Household did not receive E1 form	-0.054 (3.37)**	-0.046 (3.68)**	$-0.045(3.53)^{**}$	-0.046 (3.62)**	$-0.049(3.79)^{**}$	-0.044 (2.56)**
t4.7	State controls	Yes	Yes	Yes	Yes	Yes	Yes
t4.8	Child controls	No	Yes	Yes	Yes	Yes	Yes
t4.9	Parental controls	No	No	Yes	Yes	Yes	Yes
t4.10	Basic household controls	No	No	No	Yes	Yes	Yes
t4.11	Household level additional and shock controls	No	No	No	No	Yes	Yes
t4.12	Community controls	No	No	No	No	No	Yes
t4.13							
t4.14	Panel B: comparing Group 3 (did not receive E1 for	m and did not know c	onditions) and Group	4 (received E1 form ar	nd knew conditions)		
t4.15	Household did not receive E1 form	$-0.090 (4.23)^{**}$	$-0.067 (3.97)^{**}$	-0.064 (3.90)**	-0.066 (3.95)**	$-0.074(4.08)^{**}$	$-0.070(3.95)^{**}$
t4.16	State controls	Yes	Yes	Yes	Yes	Yes	Yes
t4.17	Child controls	No	Yes	Yes	Yes	Yes	Yes
t4.18	Parental controls	No	No	Yes	Yes	Yes	Yes
t4.19	Basic household controls	No	No	No	Yes	Yes	Yes
t4.20	Household level additional and shock controls	No	No	No	No	Yes	Yes
t4.21	Community controls	No	No	No	No	No	Yes

Notes: Marginal effects are reported, cluster-robust *z* statistics on parentheses. See Appendix Tables A1 and A2 for full results of Table 4A and B, respectively, as well as the full list of variables included in these regressions. Sample size is 5637 in Panel A and 3131 in Panel B. \*\*—indicates significance at the 1% level.

459 large differences between males and females in the magnitudes of 460 these effects.

## 461 **3.4.** Further robustness checks

462 Our principal finding is that receipt of the E1 form increased the likelihood that children were enrolled in school. However, the average 463 effect masks significant heterogeneity across children in different 464 465grade levels; there appears to be little effect of E1 receipt among children continuing primary school, while the effect of receiving the 466 467 E1 form is quite large for children making the transition from primary to lower secondary school. The results are remarkably consistent, 468 whether we consider simple descriptive statistics, probit regressions, 469 or nearest neighbor matching. As such, these results are robust even 470 after we condition on a wide range of observable characteristics. 471However, as is well known, these approaches do not condition out 472unobservable characteristics. Perhaps households that did not receive 473 the E1 form are different from other households in subtle ways. For 474 example, perhaps they are just unable to understand how the 475 476 program is supposed to work. Or perhaps they are recalcitrant individuals who just do not like having to follow rules or procedures 477 like going to meetings to pick up forms or send their children to school 478 479 because the government tells them to do so. To further ensure that our

### t5.1 Table 5

Probit results of the impact of non-receipt of the E1 form on school enrollment, by completed grade.

t5.3	Completed grade	Household did not receive E1 form	Household did not receive E1 form and could not recite conditions
t5.4	3	0.002 (1.01)	<0.001 (0.042)
t5.5	Number of obs.	1243	411
t5.6	4	0.003 (0.35)	0.001 (0.04)
t5.7	Number of obs.	969	385
t5.8	5	0.013 (1.16)	0.004 (0.20)
t5.9	Number of obs.	927	504
t5.10	6	-0.211 (4.15)**	-0.183 (2.91)**
t5.11	Number of obs.	1308	703
t5.12	7	-0.044(1.30)	-0.255 (2.95)**
t5.13	Number of obs.	453	227
t5.14	8	0.012 (0.34)	Х
t5.15	Number of obs.	393	209

Notes: Marginal effects are reported, cluster-robust *z* statistics on parentheses. Each cell represents a separate regression. All regressions include all controls in column 6 of Table 4a And B. No result is available for members of Group 3 who had completed Grade 8 because the "successes" were perfectly determined. \*\*—indicates significance at the

t5.16 1% level.

results are not driven by unobservables, we report three robustness 480 checks in this sub-section. 481

First, we assess whether selection on unobservables could explain 482 our results by computing an informal test statistic suggested by Altonji 483 et al. (2005). They demonstrate how to estimate the ratio of selection on 484 unobservables to observables that would be necessary to explain an 485 entire coefficient estimate of interest. We calculate this statistic for both 486 the average effect on enrollment using the variables in column 6 of 487 Table 4, and for children who have completed grade 6 in Table 5. To fully 488 explain the coefficients found in Table 4, selection on unobservables into Group 2 would have to be 9 to 13 times larger than selection on 490 observables, and 6 to 7 times larger to fully explain the result for 491 children completing grade 6.<sup>19</sup> Even if household unobservables 492 positively bias our estimates, selection on unobservables cannot be 493 large enough to account for the entire estimated coefficients.

Second, we exploit the fact that some households have more than 495 one child in grades 3 to 8. While our treatment is only observed at the 496 household level, results from Tables 5 and 7 tell us that the impact of 497 the treatment varies by the grade attainment of the child. Therefore, 498 we can interact the last completed grade with either Group 1 or 3 499 membership, and use the linear probability model to regress 500 enrollment on completed grade level, the interactions described 501 above, and household level fixed effects (Table 8).<sup>20</sup> Whether or not 502 we control for age dummies and the child's gender, the coefficients we 503 estimate on the interaction between either Group 1 or 3 membership 504 and completion of grade 6 are negative, statistically significant, and 505 strikingly consistent with the coefficients estimated with either 506 probits or nearest neighbor matching.<sup>21</sup> As the fixed effects in these 507

<sup>&</sup>lt;sup>19</sup> In a linear probability model version of the regression in column 6 of Table 4, the  $R^2$  is 0.2, implying that selection on observables accounts for 20% of the variation in enrollment. Therefore, even if selection on unobservables accounted for the remaining 80% of the variation in enrollment, the coefficient on Group 1 membership would still be negative. For grade 6 completion, the  $R^2$  is 0.29, so again selection on unobservables could not completely explain the negative coefficient.

<sup>&</sup>lt;sup>20</sup> The inclusion of household fixed effects here accounts for any household level unobservables that we cannot account for in the probit or matching models. For example, one might argue that if the survey respondent frequently consumes a lot of alcohol, they could be less likely to enroll their children in school, which is captured in the household fixed effect.

<sup>&</sup>lt;sup>21</sup> Although the fixed effects regression accounts for household unobservables, the results could potentially be explained if initial lower secondary school enrollment is more sensitive to other variables that might be correlated with the lack of forms, and this regression simply measures that sensitivity. To test this hypothesis, we interacted several variables (e.g. income, literacy of the head) with levels of grade completion and re-estimated the household fixed effects model. The estimated coefficients on additional interactions were typically insignificant.

## t6.1 Table 6

Percentage of *PROGRESA* households receiving transfers for school attendance but not receiving E1 forms to monitor attendance by state.

t6.2 t6.3	State	Percent
t6.4	Guerrero	5.9
t6.5	Hidalgo	10.9
t6.6	Michoacan	11.5
t6.7	Puebla	8.7
t6.8	Queretaro	11.1
t6.9	San Luis	8.5
t6.10	Veracruz	9.8
t6.11	All states	9.7



Fig. 3. Proportion of households that did not receive forms to enforce *PROGRESA* conditions, by *municipio*.

regressions account for fixed household level unobservables, they provide strong evidence that fixed unobservables do not drive our results.

Third, we consider an indirect approach. As part of the PROGRESA 511 program, beneficiaries had to attend the monthly meetings, where 512 information and training on health, good diets and nutrition was 513 given by a doctor and/or nurse from the health clinic serving the 514 community. While Hoddinott and Skoufias (2004) show that 515 attendance at monthly meetings was causally associated with the 516 acquisition of calories from fruits, vegetables and animal products, 517 even after controlling for PROGRESA's income effect, eating a better 518 diet was encouraged but not monitored. This evidence suggests the 519 following robustness check: Does receipt of the E1 form affect food 520521acquisition? Our null hypothesis is that conditioning educational transfers should not change caloric acquisition. Since conditions 522



Fig. 4. Kernel density of logarithm of per capita consumption, by whether or not household received E1 form.



Fig. 5. Logarithm of household size, by receipt of E1 form, PROGRESA households.

attached to schooling have nothing to do with patterns of food 523 consumption, rejecting this null would suggest that the variable 524 measuring E1 form receipt captures unobservables related to 525 recalcitrant individuals as described above. 526

The May 1999 survey contained a set of questions on household 527 food consumption in the previous seven days. Following the 528 procedure described in Hoddinott and Skoufias (2004), we use 529 these data to calculate caloric availability per person per day. We 530 then use nearest neighbor matching and OLS to consider whether 531



Fig. 6. Kernel density of propensity scores, by receipt of E1 form.



**Fig. 7.** Kernel density of propensity scores, by whether or not households received Form E1 and whether they could recite *PROGRESA* conditions.

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Table 7

Matching estimates of the impact of receiving E1 forms on school enrollment for the full sample and by grade obtained.

t7.2 t7.3	Sample used	Treatment: Group 1 (households that did not a	Treatment: Group 1 (households that did not receive Form E1)		Treatment: Group 3 (households did not receive Form E1 and did not know conditions)	
t7.4		Full sample	Trimmed sample	Full sample	Trimmed Sample	
t7.5 t7.6	Full sample of children completing By grade	-0.072 (0.018)**	-0.072 (0.019)**	-0.092 (0.028)**	-0.096 (0.029)**	
t7.7	Completed grade 3	-0.007 (0.013)	-0.007 (0.013)	-0.010 (0.023)	-0.010 (0.023)	
t7.8	Completed grade 4	-0.025(0.026)	-0.024(0.027)	-0.037(0.045)	-0.039 (0.048)	
t7.9	Completed grade 5	0.011 (0.020)	0.011 (0.020)	0.007 (0.034)	0.006 (0.034)	
t7.10	Completed grade 6	-0.158 (0.048)**	-0.160 (0.048)**	-0.185 (0.064)**	-0.189 (0.066)**	
t7.11	Completed grades 7_8	-0.027 (0.043)	-0.053 (0.045)	-0.131 (0.079)*	$-0.143 (0.076)^{*}$	

Notes: Matching by nearest neighbor with bias correction (see Abadie and Imbens, 2006; 2007). Standard errors in parentheses are corrected for heteroscedasticity. In columns (2) and (4), the sample was trimmed to minimize the variance of estimation, using the procedure described in Crump et al. (2009). We trim any observations with a propensity score below 0.04 in column (2) and below 0.03 in column (4). \*Significant at the 5% level; \*\*significant at the 1% level.

t7.12

533536

receiving the E1 form affects total per capita calorie consumption as 532well as calories from the following food groups: grains, fruits and vegetables, animal products, and other foods (Table 9). Receipt of the E1 form does not affect the acquisition of calories, and in particular it does not affect the acquisition of calories from sources such as fruit, 537 vegetables and animal products that Hoddinott and Skoufias (2004) show are affected by exposure to the monthly meetings. As such, it is 538 unlikely that recalcitrant individuals unlikely to follow directions are 539the type that did not receive the forms. This exercise provides further 540indirect evidence that our findings are related to conditionality and 541542not unobserved household characteristics.

### 3.5. Heterogeneity by parental characteristics 543

We have shown that the effect of receiving the E1 form is 544heterogeneous by grade level completed; here, we explore whether or 545not coefficient estimates are heterogeneous by three types of parental 546characteristics; whether or not the household head is literate, 547whether or not the head is an agricultural laborer; and whether or 548not the head is indigenous. If the household head is not literate, 549PROGRESA might not be as well understood by the household, and as a 550result the lack of Form E1 might have stronger effect on enrollment. If 551the head is not an agricultural laborer, they might have additional 552information about off-farm jobs, and as a result the opportunity cost 553 of continuing in lower secondary school might be perceived as higher 554 by children completing primary school. If the head is indigenous, one 555 556 might expect that because school takes place in Spanish, indigenous children might be even less likely to enroll in school if their transfers 557558are not conditioned.

We add an interaction between the three indicator variables and 559Group 1 and 3 membership, sequentially, in probit regressions 560(Table 10). We use both the whole sample (columns 1, 3, and 5), 561562and the sample of children who had completed grade 6 (columns 2, 4, and 6).<sup>22</sup> We find that literacy matters, particularly for children who 563have completed grade 6. The marginal effect is only significant for the 564comparison of Groups 1 and 2 (in Panel A), implying that among 565children living in households that did not receive the E1 form, a child 566with a literate head is 27 percentage points more likely than a child 567with an illiterate head to enroll in school. Children in households with 568 illiterate heads are 46 percentage points less likely to enroll in lower 569 secondary school. Clearly, conditionality is particularly important for 570such households. We also find some evidence that when the head has 571572off-farm work, conditionality is more important. When households neither received the E1 form nor understood the conditions, children 573

completing grade 6 were more than 40 percentage points less likely to 574 enroll in lower secondary school, while children whose parents were 575 agricultural laborers were only 16 percentage points less likely to 576

Table 8	t8.1
Impact of receipt of E1 forms by grade completed, OLS with household fixed effects.	

	Treatment: households not receive	that did forms	Treatment household receive for did not kn conditions	: s did not rms and low	t8.3	
Specification:	(1)	(2)	(3)	(4)	t8.4	
Completed grade 4	-0.016 (0.86)	0.013 (0.67)	0.003 (0.12)	0.031 (1.33)	t8.5 t8.6	
Completed grade 5	$-0.026$ $(1.90)^*$	0.054 (2.09)**	-0.017 (0.93)	0.063 (2.04)**	t8.7 t8.8	
Completed grade 6	$-0.303$ $(14.74)^{**}$	$-0.056$ $(1.68)^*$	-0.267 (9.59)**	-0.025	t8.9 t8.10	
Completed grade 7	-0.126 (6.42)**	0.182	-0.116 (3.78)**	0.208 (4.09)**	t8.11 t8.12	
Completed grade 8	(0.12) - 0.161 $(7.51)^{**}$	0.295	(-0.139) $(471)^{**}$	0.338	t8.13 t8.14	
Completed grade 4* treatment	-0.034	(0.05) -0.018 (0.35)	(1.01) -0.099 (1.18)	-0.055	t8.15 t8.16	
Completed grade 5* treatment	0.059	0.025	0.007	(0.05) -0.028 (0.40)	t8.17	
Completed grade 6* treatment	(1.55) -0.178 $(2.85)^{**}$	(0.55) -0.183 $(3.18)^{**}$	(0.03) -0.231 $(2.81)^{**}$	(0.40) -0.211 $(2.75)^{**}$	t8.19	
Completed grade 7* treatment	-0.03	(0.13) -0.035	(2.01) - 0.274	(2.73) -0.146	t8.20	
Completed grade 8* treatment	0.043	0.002	(2.04) - 0.066	(1.10) -0.071	t8.22 t8.23	
Age, gender dummies?	(0.84) No 5656	(0.03) Yes 5656	(U.88) No 3131	(0.82) Yes 3131	t8.24 t8.25	
rumber of 005.	3030	3030	5151	5151	0.20	

Notes: Regressions are estimated using ordinary least squares with household level fixed effects. Standard errors are clustered at the locality level. \*-indicates significance at the 10% level; \*\*-indicates significance at the 5% level. t8.27

### Table 9

Estimates of the impact of receiving E1 forms on household caloric access by type of food.

Sample used	Treatment: househ receive forms	nolds that did not		
	Matching	OLS		
Total calorie consumption	48.6 (32.6)	76.1 (50.8)		
Calories from grains	42.2 (31.0)	65.8 (49.9)		
Calories from fruit and vegetables	0.53 (1.51)	0.20 (1.92)		
Calories from animal products	-2.80(5.47)	1.57 (6.18)		
Calories from other foods	8.72 (6.09)	8.52 (7.26)		

Notes: Standard errors are robust using nearest neighbor matching and are clustered at the municipio level in the OLS regression. \*Significant at the 5% level; \*\*significant at the 1% level

t9.10

t9.1

<sup>&</sup>lt;sup>22</sup> We use the procedure developed by Norton et al. (2004) to compute the marginal effects and their standard errors.

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## t10.1 Table 10

Probit estimates of the impact of receiving E1 forms on school enrollment, by literacy of head, agricultural labor, and indigenous status.

3	(1)	(2)	(3)	(4)	(5)	(6)
L	Grades	Completed	Grades	Completed	Grades	Completed
5 Sample:	3_8	Grade 6	3 <u>-</u> 8	Grade 6	3 <u>-</u> 8	Grade 6
Panel A: Groups 1 and 2 (Group 1 did not	receive Form E1)					
Member of Group 1	-0.093	-0.461	-0.076	-0.334	-0.032	-0.212
3 (1 = yes)	(3.35)**	(3.81)**	(3.65)**	(4.40)**	(2.00)*	(2.91)**
Group 1* head literate	0.068	0.270				
.0	(1.50)	(2.17)*				
1 Received E1* head is agr. laborer			0.044	0.131		
2			(1.29)	(1.58)		
3 Received E1* head is indigenous					-0.037	-0.003
4					(0.81)	(0.01)
5 Head is literate	0.012	-0.019	0.017	0.016	0.017	0.017
6 (1=yes)	(1.15)	(0.46)	(1.86)	(0.38)	(1.89)	(0.41)
Head is agricultural laborer $(1 = yes)$	< 0.001	0.01	-0.004	-0.01	< 0.001	0.008
.8	(0.01)	(0.29)	(0.44)	(0.27)	(0.00)	(0.26)
9 Head is indigenous	0.028	0.131	0.028	0.132	0.032	0.135
(1 = yes)	(2.86)**	(3.19)**	(2.89)**	(3.21)**	(3.09)**	(3.03)**
21 Observations	5503	1308	5503	1308	5503	1308
22						
Panel B: Groups 3 and 4 (Group 3 did not	receive Form E1 and did r	ot know conditions)				
Member of Group 3 (1 = yes)	-0.142	-0.386	-0.143	-0.408	-0.052	-0.174
25	(4.16)**	(2.56)*	(4.39)**	(3.47)**	(2.40)*	(2.13)*
Group 3* head is literate	0.095	0.202				
27	(1.64)	(1.37)				
28 Group3* head is agr. laborer			0.107	0.248		
29			(1.82)	(2.06)*		
Group 3* head is indigenous					-0.043	0.015
31					(0.67)	(0.22)
B2 Head is literate	0.007	-0.028	0.012	-0.006	0.013	-0.004
(1 = yes)	(0.56)	(0.51)	(1.14)	(0.13)	(1.20)	(0.09)
Head is agricultural laborer $(1 = yes)$	0.006	0.016	0	-0.015	0.006	0.015
35	(0.55)	(0.33)	0.00	(0.28)	(0.58)	(0.31)
Head is indigenous	0.024	0.125	0.024	0.128	0.028	0.128
$(1 = yes)^{-1}$	(1.87)	(2.58)**	(1.92)	(2.65)**	(2.13)*	(2.48)*
000 Observations	3071	715	3071	715	3071	715

Notes: All coefficients presented are marginal effects; interaction terms are computed using the procedure outlined in Norton et al. (2004). *t*-statistics based on standard errors t10.39 accounting for clustering at the locality in parentheses. \*-indicates significance at the 5% level; \*\*-indicates significance at the 1% level.

enroll (Panel B, rows 1 and 3). Children in such households may
perceive the opportunity cost of schooling as higher than children
whose parents are agricultural laborers.

## 580 4. Conclusion

A growing body of evidence suggests that conditional cash trans-581 fer programs can have positive effects on a wide range of welfare 582indicators. There is much less evidence on the contributions that 583584individual components of these programs make towards achieving these outcomes. The contribution of this paper has been to assess the 585impact of imposing conditions on one dimension of human capital 586 formation, school enrollment, using data from Mexico's PROGRESA 587 program. We exploit the fact that some PROGRESA beneficiaries did 588 589not receive the forms needed to monitor the attendance of their 590children at school. We show that on average the absence of these forms reduced the likelihood that children attended school, and the 591likelihood was severely reduced when children were making the 592transition to lower secondary school. For children making the 593594transition to lower secondary school, the impact of the transfer on school enrollment can roughly be wholly attributed to conditionality. 595We use a variety of techniques to ensure that our findings are not 596 driven by unobservables. 597

These results speak directly to policy debates regarding conditionality within CCT programs. They suggest that debates over "to condition or not to condition" are overly simplistic. In this case, there is little benefit to conditioning transfers based on enrollment in primary school. However, there are large benefits associated with conditioning at entry into lower secondary school. As such, these findings are consistent with the more general argument advanced in 604 de Janvry and Sadoulet (2006), that there can be considerable 605 efficiency gains to CCTs through more careful design. That all said, 606 additional study of this topic would be worthwhile. Two issues would 607 seem to be particularly valuable to explore. First, an experimental 608 design—where conditionality was randomly assigned—would bolster 609 the evidence base while removing any lingering doubts about the role 610 of unobservables. Second, an experimental design in which the 611 intensity by which information on conditions was varied across 612 beneficiaries would allow policy makers to assess whether the 613 effectiveness of conditionality can be strengthened.

# 5. Uncited references

Behrman and Hoddinott, 2005	616
Bourguignon et al., 2003	617
Coady et al., 2004a	618
Coady et al., 2004b	619
Schady and Araujo, 2006	620

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# 627 Appendix A

# 628

Table A1 Probit estimates of the impact of non-receipt of the E1 form on school enrollment of children who had completed grades 3\_8, comparing Group 1 (did not receive E1 form) with Group 2 (received E1 form).

	(1)	(2)	(3)	(4)	(5)	(6)
Group 1 (1 = ves)	0.054 (3.37)**	0.046	0.045	0.046	0.049	0.044
Child characteristics	(5,57)	(0.00)	(5155)	(3132)	(5175)	(0.00)
Gender		0.011	0.011	0.011	0.01	0.01
(1 = male)		(1.63)	(1.67)	(1.62)	(1.48)	(1.54)
Child is 9 years old		0.053	0.052	0.049	0.049	0.048
		(1.32)	(1.33)	(1.21)	(1.18)	(1.22)
Child is 10 years old		0.049	0.049	0.044	0.043	0.044
		(1.20)	(1.21)	(1.05)	(1.02)	(1.05)
Child is 11 years old		0.003	0.004	-0.003	-0.002	0.003
5		(0.06)	(0.07)	(0.06)	(0.04)	(0.06)
Child is 12 years old		-0.034	-0.033	-0.041	-0.041	-0.035
-		(0.58)	(0.56)	(0.66)	(0.67)	(0.58)
Child is 13 years old		-0.129	-0.127	-0.134	-0.136	-0.123
-		(1.70)	(1.66)	(1.70)	(1.71)	(1.56)
Child is 14 years old		-0.244	-0.239	-0.251	-0.253	-0.244
		(2.75)**	(2.69)**	(2.73)**	(2.73)**	(2.60)**
Child is 15 years old		-0.384	-0.381	-0.393	-0.397	-0.382
		(3.65)**	(3.57)**	(3.59)**	(3.60)**	(3.37)**
Child is 16 years old		-0.558	-0.559	-0.571	-0.57	-0.556
		(4.48)**	(4.39)**	(4.40)**	(4.36)**	(4.14)**
Parental characteristics						
Logarithm, age of household head			0.023	0.023	0.02	0.017
			(1.27)	(1.28)	(1.04)	(0.96)
Head is female			0.027	0.019	0.018	0.017
(1=yes)			(2.32)*	(1.51)	(1.46)	(1.43)
Head is literate			0.018	0.018	0.018	0.019
			(2.00)*	(1.99)*	(2.02)*	(2.04)*
Head is agr. laborer			< 0.001	0.001	< 0.001	0.001
			(0.06)	(0.10)	(0.03)	(0.09)
Head is indigenous			0.032	0.03	0.029	0.029
			(3.15)**	(3.05)**	(2.91)**	(2.95)**
Spouse of head is indigenous			0.008	0.009	0.008	0.005
			(0.64)	(0.69)	(0.60)	(0.37)
Spouse of head is literate			0.023	0.023	0.022	0.021
			(3.23)**	(3.25)**	(2.96)**	(2.94)**
Household characteristics, measured in October 199	8					
Logarithm, per				-0.005	-0.006	-0.005
Capita consumption				(0.69)	(0.84)	(0.73)
Logarithm,				-0.047	-0.048	-0.044
Household size				(4.11)**	(4.03)**	(3.77)**
Additional household characteristics, including shoc	ks					
Household experienced drought					-0.002	-0.001
					(0.21)	(0.14)
Household experienced flood					-0.028	-0.028
					(0.72)	(0.75)
Household experienced freezing crops					-0.012	-0.004
					(0.68)	(0.22)
Household experienced fire					0.002	0.003
					(0.05)	(0.08)
Household experienced crop epidemics					0.011	0.015
· · · · · · · · · · · · · · · · · · ·					(0.79)	(1.14)
Household experienced earthquake tremors					0.015	0.008
					(0.86)	(0.50)
Received PROGRESA book					< 0.001	0.001
<b>B</b> 1 1 11					(0.03)	(0.05)
Received health					-0.006	< 0.001
Register					(0.23)	(0.01)
was a <i>PROGRESA</i> promoter					0.012	0.014
Disting 1 and					(0.78)	(0.92)
Platicas held					0.001	< 0.001
Disting wing 1					(0.43)	(0.05)
Platicas missea					0.001	0.002
Community characteristics					(0.40)	(0.49)
Community has electricity						0.023
						(2.21)*
Community has pre-school						-0.012
						(0.82)
Community has lower secondary school						0.042
						(4.92)**

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Table A1 (continued)						
	(1)	(2)	(3)	(4)	(5)	(6)
Community characteristics Community has secondary school						-0.045 (1.60)
State dummies? Number of obs.	Yes 5637	Yes 5637	Yes 5608	Yes 5608	Yes 5503	Yes 5503

Notes: Group 1 refers to households that did not receive the E1 form. Results of these regressions are the full results corresponding to Table 4, Panel A; standard errors are clustered at the locality. \*-indicates significance at the 5% level; \*\*-indicates significance at the 1% level.

## Table A2

Probit estimates of the impact of non-receipt of the E1 form on school enrollment of children who had completed grades 3, 8, comparing Group 3 (did not receive E1 form and did not know conditions) with Group 4 (received E1 form and knew conditions).

Croup 1 (1 = yes)         -0.067 (3.8)**         -0.067 (3.8)**         -0.075 (3.8)**         -0.075 (3.8)**           Child characteristics         0.006         0.006         0.006         0.005         0.005           Child characteristics         0.006         0.006         0.005         0.005         0.005           Child is 10 years old         (1.3)         (1.40)         (1.3)         (1.40)         (1.3)           Child is 10 years old         (0.61)         (0.63)         (0.63)         (0.63)         (0.63)           Child is 11 years old         (0.63)         (0.64)         (0.63)         (0.63)         (0.63)           Child is 12 years old         (0.67)         (0.74)         (0.73)         (0.74)         (0.73)         (0.74)           Child is 13 years old         (0.67)         (0.64)         (0.66)         (0.67)         (0.64)         (0.68)           Child is 15 years old         (0.77)         (0.73)         (0.74)         (0.73)         (0.74)         (0.74)           Child is 15 years old         (0.77)         (0.67)         (0.61)         (0.77)         (0.73)         (0.72)         (0.72)           Child is 15 years old         (0.77)         (0.74)         (0.77)         (0.72)         <		(1)	(2)	(3)	(4)	(5)	(6)
(1 = yes)       (3.37)"       (3.39)"       (3.99)"       (4.48)"       (3.39)"         Child characteristics       0.006       0.006       0.006       0.006       0.005       0.007         Child is years old       0.011       0.021       0.031       0.	Group 1	-0.09	-0.067	-0.064	-0.066	-0.075	-0.07
Child instructivities         0.006         0.006         0.005         0.005         0.005           Child is 19 years old         0.053         0.044         0.033         0.051           Child is 19 years old         0.053         0.054         0.063         0.051           Child is 19 years old         0.052         0.034         0.039         0.034         0.031           Child is 12 years old         0.032         0.034         0.034         0.035         0.034           Child is 12 years old         0.032         0.034         0.036         0.036         0.036           Child is 12 years old         0.022         0.034         0.046         0.037         0.065           Child is 13 years old         0.027         0.066         0.036         0.036           Child is 13 years old         0.017         0.066         0.037         0.026           Child is 14 years old         0.017         0.026         0.036         0.036           Child is 12 years old         0.037         0.026         0.036         0.039           Child is 12 years old         0.037         0.027         0.027         0.027         0.027           Child is 12 years old         0.031         0.039	(1 = yes)	(4.23)**	(3.97)**	(3.90)**	(3.95)**	(4.08)**	(3.95)**
Cender         0.006         0.005         0.005         0.005         0.005           Child is 9 years old         0.053         0.054         0.053         0.057           Child is 0 years old         0.054         0.065         0.067         0.057           Child is 10 years old         0.054         0.065         0.067         0.057           Child is 11 years old         0.056         0.067         0.067         0.067           Child is 12 years old         0.027         0.021         0.021         0.023         0.023           Child is 12 years old         0.026         0.0406         0.006         0.006         0.006           Child is 14 years old         0.017         0.017         0.015         0.015         0.005           Child is 14 years old         0.017         0.013         0.014         0.048         0.043         0.041           Child is 15 years old         0.027<	Child characteristics						
(1 = mak)       (0.69)       (0.67)       (0.7)       (0.67)         Child is 10 years old       (0.61)       (1.31)       (1.40)       (1.32)       (0.51)         Child is 10 years old       (0.61)       (0.72)       (1.62)       (1.62)       (1.62)         Child is 11 years old       (0.62)       (0.62)       (0.62)       (0.63)       (0.64)         Child is 12 years old       (0.62)       (0.66)       (0.66)       (0.66)       (0.66)         Child is 13 years old       (0.61)       (0.61)       (0.66)       (0.66)       (0.66)         Child is 13 years old       (0.61)       (0.61)       (0.66)       (0.66)       (0.66)         Child is 13 years old       (0.61)       (0.61)       (0.70)       (0.64)       (0.67)       (0.64)         Child is 13 years old       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.66)         Child is 13 years old       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.64)       (0.70)       (0.77)       (0.77)       (0.77)       (0.77)       (0.77)	Gender		0.006	0.006	0.006	0.005	0.006
Child is 9 years old         0.053         0.054         0.033         0.052         0.051           Child is 10 years old         0.064         0.065         0.064         0.062         0.053           Child is 11 years old         0.073         0.074         0.073         0.073         0.073           Child is 12 years old         0.073         0.074         0.073         0.073         0.073           Child is 13 years old         0.071         0.017         0.017         0.017         0.017         0.017         0.0164         0.0044         0.0056           Child is 13 years old         0.017	(1 = male)		(0.69)	(0.69)	(0.67)	(0.57)	(0.67)
Child is 10 years old         (1.31)         (1.40)         (1.40)         (1.32)           Child is 11 years old         (1.69)         (1.76)         (1.72)         (1.69)         (1.61)           Child is 12 years old         (0.67)         (0.74)         (0.73)         (0.74)         (0.74)           Child is 12 years old         (0.67)         (0.74)         (0.07) <td>Child is 9 years old</td> <td></td> <td>0.053</td> <td>0.054</td> <td>0.053</td> <td>0.052</td> <td>0.051</td>	Child is 9 years old		0.053	0.054	0.053	0.052	0.051
Child is 10 years old         0.064         0.065         0.064         0.062         0.059           Child is 11 years old         0.032         0.034         0.034         0.034         0.034           Child is 12 years old         0.032         0.034         0.033         0.035         0.036           Child is 12 years old         0.002         0.006         0.006         0.003         0.003           Child is 13 years old         -0.017         -0.057         0.044         -0.048         -0.045           Child is 14 years old         -0.017         -0.157         -0.159         -0.158           Child is 15 years old         -0.027         0.027         0.026         -0.241           Child is 16 years old         -0.329         -0.277         -0.257         -0.267         -0.267           Child is 16 years old         -0.329         -0.027         0.026         -0.261         -0.261           Child is 16 years old         -0.027         0.027         0.027         0.026         -0.261           Child is 16 years old         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.0	5		(1.31)	(1.40)	(1.40)	(1.39)	(1.37)
(1.69)         (1.76)         (1.72)         (1.89)         (6.15)           Child is 12 years old         (0.67)         (0.74)         (0.03)         (0.03)         (0.03)         (0.03)         (0.03)         (0.03)         (0.03)         (0.03)         (0.03)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.06)         (0.07)         (0.07)         (0.07)         (0.06)         (0.07)         (0.06)         (0.07)	Child is 10 years old		0.064	0.065	0.064	0.062	0.059
Child is 11 years old              0.023               0.024               0.023               0.024            Child is 12 years old              0.002               0.003               0.003               0.003               0.003               0.003               0.003               0.003               0.004               0.003               0.003               0.003               0.003               0.003               0.003               0.003               0.003               0.004               0.004               0.004               0.004               0.003               0.004               0.003               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.004               0.015			(1.69)	(1.76)	(1.72)	(1.69)	(1.61)
Child is 12 years old         (0.67)         (0.73)         (0.73)         (0.73)         (0.73)         (0.73)           Child is 13 years old         (0.03)         (0.11)         (0.10)         (0.05)         (0.06)           Child is 13 years old         (0.03)         (0.11)         (0.10)         (0.05)         (0.06)           Child is 14 years old         (0.17)         (0.67)         (0.64)         (0.77)         (0.67)           Child is 15 years old         (0.28)         (1.88)         (1.84)         (1.89)         (1.88)           Child is 15 years old         (2.60)*         (2.26)*         (2.66)**         (2.66)**         (2.56)*           Parental characteristics         (1.32)         (1.32)         (1.32)         (1.32)         (1.32)           Parental characteristics         (1.02)         (0.02)         (0.02)         (0.03)         (0.02)           Iterate         (0.02)         (0.02)         (0.02)         (0.02)         (0.02)           Iterate         (0.02)         (0.02)         (0.02)         (0.02)         (0.02)           Iterate         (0.02)         (0.02)         (0.02)         (0.02)         (0.02)           Iterate         (0.02)         (0.02)         <	Child is 11 years old		0.032	0.034	0.034	0.034	0.034
Child is 12 years old         0.002         0.006         0.003         0.003           Child is 13 years old         -0.054         -0.044         -0.044         -0.048         -0.045           Child is 14 years old         -0.077         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.64)         (0.70)         (0.66)           Child is 15 years old         -0.157         -0.155         -0.159         -0.157         -0.271         0.026         0.025         0.021         0.012         0.012         0.012         0.012         0.012         0.012         0.012         0.012         0.012         0.012         0.012         0.027         0.026			(0.67)	(0.74)	(0.73)	(0.75)	(0.74)
1000         (0.11)         (0.00)         (0.00)         (0.00)           Child is 13 years old         -0.054         -0.046         -0.046         -0.046           Child is 14 years old         -0.17         -0.157         -0.157         -0.158         -0.158           Child is 15 years old         -0.27         -0.27         -0.27         -0.271<	Child is 12 years old		0.002	0.006	0.006	0.003	0.003
Child is 13 years old       -0.054       -0.044       -0.046       -0.046         Child is 14 years old       -0.17       -0.177       -0.155       -0.159         Child is 15 years old       (2.00)*       (2.26)*       -0.257       -0.277       -0.267         Child is 15 years old       (2.76)**       (2.26)**       (2.26)**       (2.26)*       (2.26)*         Child is 15 years old       -0.431       -0.416       -0.415       -0.422       -0.461         Logarithm, age of household head       -0.237       -0.227       -0.226       -0.426       -0.428         Logarithm, age of household head       0.027       0.027       0.022       -0.0426       -0.0426         Head is female       (1.03)       (1.12)       (1.13)       (1.20)       (1.21)       (1.32)         Head is female       (1.03)       (1.22)       (0.027       0.007       0.	5		(0.03)	(0.11)	(0.10)	(0.05)	(0.06)
(0.77)         (0.67)         (0.64)         (0.70)         (0.67)           Child is 14 years old         -0.17         -0.157         -0.155         -0.158           Child is 15 years old         -0.267         -0.267         -0.267         -0.277           Child is 15 years old         -0.267         -0.267         -0.267         -0.277           Child is 15 years old         -0.471         -0.461         -0.472         -0.422         -0.416           Thild is 16 years old         -0.431         -0.415         -0.422         -0.416           Thild is 16 years old         -0.431         -0.415         -0.422         -0.416           Thild is 16 years old         .0.27         .0.22         0.015         .0.025           Parental characteristics         .0.23         .0.29         .0.005         .0.005           I = yes)         .0.021         .0.012         .0.014         .0.012           Head is female         .0.027         .0.007         .0.007         .0.007           Head is indigenous         .0.028         .0.025         .0.021         .0.025           Spouse of head is indigenous         .0.026         .0.027         .0.029         .0.027           Spouse of head is indigenous <td>Child is 13 years old</td> <td></td> <td>-0.054</td> <td>- 0.046</td> <td>-0.044</td> <td>-0.048</td> <td>-0.045</td>	Child is 13 years old		-0.054	- 0.046	-0.044	-0.048	-0.045
Child is 14 years old         -0.17         -0.155         -0.159         -0.158           Child is 15 years old         (2.00)*         (1.88)         (1.44)         (1.89)           Child is 15 years old         (2.26)*         (2.66)**         (2.66)**         (2.66)**           Child is 16 years old         -0.431         -0.416         -0.425         -0.426           Child is 16 years old         -0.431         -0.416         -0.426         -0.426           Logarithm, age of household head         0.027         0.027         0.026         0.026           Logarithm, age of household head         0.031         0.012         0.015         0.015           (1.33)         (1.29)         (0.026         0.022         0.015         0.015           Head is frenale         0.012         0.012         0.013         0.012         0.013           Head is indigenous         0.067         0.007 <td></td> <td></td> <td>(0.77)</td> <td>(0.67)</td> <td>(0.64)</td> <td>(0.70)</td> <td>(0.66)</td>			(0.77)	(0.67)	(0.64)	(0.70)	(0.66)
(200)*         (1.88)         (1.84)         (1.89)         (1.84)           Child is 15 years old         -0.237         -0.257'         (2.56)*'         (2.56)*'         (2.56)*'         (2.56)*'         (2.56)*'         (2.56)*'         (2.56)*'         (3.15)*'''         (3.15)*'''         (3.15)*''''	Child is 14 years old		-0.17	-0.157	-0.155	-0.159	-0.158
Child is 15 years old        0.287        0.287        0.277        0.277        0.277           Child is 16 years old        0.431        0.416        0.415        0.422        0.416           Jagarith and Characteristics         (3.35)**         (3.19)**         (3.23)**         (3.19)**         (3.23)**         (3.19)**           Jagarithm, age of household head         0.027         0.027         0.026         0.026           Logarithm, age of household head         0.027         0.027         0.026         0.025           Head is female         0.025         0.022         0.012         0.012         0.012           Head is iterate         0.012         0.012         0.012         0.014         0.015           Head is indigenous         0.007         0.007         0.007         0.007         0.007           Spouse of head is indigenous         0.007         0.007         0.007         0.007         0.007           Spouse of head is indigenous         0.0016         0.015         0.015         0.016           Spouse of head is indigenous         0.016         0.016         0.015         0.017           Logarithm, per capita consumption         (1.51)         (1.88)*         (2.12)*			(2.00)*	(1.88)	(1.84)	(1.89)	(1.84)
(2.76)**         (2.60)**         (2.56)*         (2.66)**         (2.56)*           Child is fo years old         -0.416         -0.415         -0.425           Parental characteristics         (3.23)**         (3.19)**         (3.25)**         (3.13)**           Logarithm, age of household head         0.027         0.027         0.026         0.026           Head is female         0.0225         0.022         0.015         0.012           (1.33)         (1.32)         (1.21)         (1.32)         (1.21)           Head is female         0.027         0.027         0.027         0.026           (1.33)         (1.32)         (1.21)         (1.32)         0.012         0.012         0.014         0.015           Head is indigenous         0.012         0.007         0.007         0.007         0.008         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.027         0.028         0.027         0.028         0.027         0.028         0.027         0.028         0.027         0.029         0.028         0.027         0.029         0.028         0.028         0.028         0.028         0.028	Child is 15 years old		-0.287	-0.27	-0.267	-0.277	-0.271
Child is 16 years old       -0.415 (3.35)**       -0.415 (-0.415       -0.422 (-0.415       -0.423 (-0.22)       -0.416 (-0.25)         Parental characteristics       0027       0.0026       0.0026       0.0026         Head is female       (1.33)       (1.32)       (1.21)       (1.123)         I (1 = yes)       (1.53)       (1.22)       (0.90)       (0.94)         Head is female       (0.012       0.012       0.014       0.015         I (1 = yes)       (1.01)       (1.02)       (1.22)       (1.39)         Head is indigenous       (0.007       0.007       0.007       0.008         I (1 = yes)       (0.02)       (0.62)       (0.57)       (0.72)         Head is indigenous       (0.02)       (0.02)       (0.57)       (0.72)         Spouse of head is indigenous       (0.02)       (0.02)       (0.02)       (0.02)         Spouse of head is literate       (0.02)       (0.02)       (0.02)       (0.02)         Logarithm, per capita consumption       -0.014       -0.016       -0.017         Logarithm, per capita consumption       -0.029       -0.033       -0.034         Household experienced free       -0.018       -0.0014       -0.018         Household expe			(2.76)**	(2.60)**	(2.56)*	(2.66)**	(2.54)*
main         (3.35)**         (3.32)**         (3.13)**         (3.25)**         (3.13)**           Parental characteristics         0.027         0.026         0.026           logarithm, age of household head         0.027         0.027         0.026         0.026           Head is female         0.025         0.022         0.015         0.015           (1-33)         (1-32)         (1-11)         (1-32)         (1-11)         (1-20)           (1-21)         0.012         0.012         0.014         0.015           (1-21)         0.012         0.014         0.015           (1-10)         (1-102)         (1-22)         (1-30)           Head is indigenous         0.007         0.007         0.007           Spouse of head is indigenous         0.003         0.029         0.025         0.027           Spouse of head is indigenous         0.005         0.027         (2.26)*         (2.12)*         (2.06)*           Household characteristics, measured in October 1998         (2.46)*         (2.46)*         (2.12)*         (2.06)*           Household characteristics, including shocks         (1.58)         (1.58)         (0.64)         0.031           Household kaperienced free         -0.014	Child is 16 years old		-0.431	-0.416	-0.415	-0.422	-0.416
Parental characteristics         (kms)         (kms)         (kms)         (kms)         (kms)         (kms)           logarithm, age of household head         (1.33)         (1.32)         (1.21)         (1.32)           Head is female         (0.025         0.022         (0.015)         (0.014)           (1=yes)         (1.53)         (1.29)         (0.004)         (0.014)           Head is female         (0.012         0.012         (0.014)         (0.012)           Head is agr. laborer         (0.007         0.007         0.007         0.007           Head is indigenous         (0.03)         0.029         0.025         0.027           Spouse of head is indigenous         (0.016         0.015         0.011           Spouse of head is literate         0.025         0.025         0.021         0.025           household characteristics, measured in October 1998         (2.46)*         (2.12)*         (2.06)*           Logarithm, per capita consumption         -0.014         -0.016         -0.017           household seperienced free         (0.97)         (0.26)*         (2.12)*           Household experienced free         -0.014         -0.018         -0.033           Household experienced free         0.033			(335)**	(323)**	(319)**	(325)**	(313)**
Logarithm, age of household head         0.027         0.027         0.026         0.025           Head is female         0.025         0.022         0.015         0.015           (1 = yes)         (1.53)         (1.29)         (0.90)         (0.94)           Head is iterate         0.012         0.017         0.007         0.007           10.01         (1.02)         (1.22)         (1.33)         (0.22)         (0.90)           Head is indigenous         0.007         0.007         0.007         0.007         0.007           Spouse of head is indigenous         0.025         0.025         0.025         0.025         0.021           Spouse of head is indigenous         0.026         0.025         0.021         0.020         0.025           Spouse of head is literate         (0.97)         (0.99)         (0.91)         (0.64)         0.025           Household characteristics, measured in October 1998         -0.014         -0.014         -0.017           Logarithm, acteristics, including shocks         -0.028         -0.031         -0.034           Household experienced drought         -0.014         -0.014         -0.014           Household experienced free         -0.033         -0.034         -0.038 <td>Parental characteristics</td> <td></td> <td>(5,55)</td> <td>(3.23)</td> <td>(5115)</td> <td>(0120)</td> <td>(3113)</td>	Parental characteristics		(5,55)	(3.23)	(5115)	(0120)	(3113)
Instant         (1.33)         (1.32)         (1.21)         (1.33)           Head is female         (0.025         0.0022         0.015         0.014           (1 = yes)         (1.53)         (1.29)         0.004         0.014           Head is female         (0.012         0.012         0.014         0.015           (1 = yes)         (1.01)         (1.02)         (1.22)         (1.33)           Head is indigenous         0.007         0.007         0.007         0.007           Head is indigenous         0.016         0.016         0.015         0.011           Spouse of head is indigenous         0.016         0.016         0.017         0.007           Spouse of head is literate         0.0025         0.025         0.021         0.021           Household characteristics, measured in October 1998         -0.014         -0.016         -0.017           Logarithm, per capita consumption         (1.51)         (1.98)*         (2.13)*           household experienced drought         -0.008         -0.005         -0.008           Household experienced free         (0.63)         (0.63)         -0.033         -0.034           Household experienced free         (0.011         (0.658)         -0.008	Logarithm age of household head			0.027	0.027	0.026	0.026
Head is female         0.0075         0.0017         0.0017           (1 = yes)         (1.33)         (1.29)         0.000         0.044)           Head is literate         0.012         0.012         0.012         0.012           Head is literate         0.007         0.007         0.007         0.007           Head is indigenous         0.03         0.029         0.025         0.027           Spouse of head is indigenous         (0.62)         (0.62)         0.015         0.011           Spouse of head is indigenous         (0.37)         (0.72)         0.025         0.027         0.021         0.026           Spouse of head is indigenous         (0.37)         (0.26)*         (0.21)         0.021         0.026           Spouse of head is indigenous         (2.23)*         (2.26)*         (1.51)         (0.26)*         0.021         0.022           Household characteristics, measured in October 1998         (2.46)*         (2.46)*         (2.12)*         (2.03)*           Logarithm, per capita consumption         -0.014         -0.016         -0.017         (1.51)         (1.98)*         (2.13)*           Household experienced free         (0.03)         0.034         -0.0018         -0.008         (0.043)	Logariani, age of nousenora field			(1.33)	(1 32)	(121)	(1 32)
I = yes interime         I = 53         I = 29         I = 00         I = 00           Head is literate         0.012         0.012         0.012         0.014         0.015           Head is gr. laborer         0.007         0.007         0.007         0.007         0.008           Head is indigenous         0.03         0.029         0.025         0.027           Head is indigenous         0.016         0.016         0.017         (2.20)*         (2.21)*         (2.20)*         (2.20)*         (2.20)*         (2.21)*         (2.20)*         (2.21)*         (2.20)* </td <td>Head is female</td> <td></td> <td></td> <td>0.025</td> <td>0.022</td> <td>0.015</td> <td>0.015</td>	Head is female			0.025	0.022	0.015	0.015
Head is literate         (1.01)         (1.02)         (1.02)         (1.02)           Head is literate         (1.01)         (1.02)         (1.12)         (1.13)           Head is indigenous         (0.62)         (0.62)         (0.57)         (0.72)           Spouse of head is indigenous         (0.03)         0.029         0.027         (2.23)*         (2.26)*         (1.97)*         (2.20)*           Spouse of head is indigenous         (0.06)         0.016         0.016         0.015         0.011           Spouse of head is literate         (0.27)         (2.26)*         (2.12)*         (2.20)*           Logarithm, per capita consumption         -0.014         -0.016         -0.017           Logarithm, per capita consumption         -0.014         -0.013         -0.033           Household size         -0.014         -0.016         -0.014           Household experienced frood         -0.014         -0.018         -0.005           Household experienced frood         -0.014         -0.018         -0.008           Household experienced free         (0.43)         (0.58)         (0.33)           Household experienced free         (0.33)         0.033         0.033           Household experienced free         0.03<	(1 = ves)			(1.53)	(129)	(0.90)	(0.94)
Instant         Constraint         Constraint         Constraint         Constraint           Head is agr. laborer         (101)         (102)         (1.39)           Head is agr. laborer         (0.62)         (0.62)         (0.67)         (0.77)           Head is indigenous         0.03         0.029         0.025         0.027           Spouse of head is indigenous         0.016         0.016         0.015         0.011           Spouse of head is literate         0.025         0.022         0.027         0.029         0.027           Household characteristics, measured in October 1998         (2.46)*         (2.12)*         (2.06)*           Logarithm, per capita consumption         -0.014         -0.016         -0.017           Inserbold experienced drought         (1.68)         (1.68)         (2.10)*           Household experienced flood         -0.014         -0.016         -0.017           Household experienced flood         (1.68)         (1.68)         (2.10)*           Household experienced flood         -0.018         -0.008         -0.0029           Household experienced flood         -0.018         -0.008         -0.0014           Household experienced flood         -0.018         -0.008         -0.018	Head is literate			0.012	0.012	0.014	0.015
Head is agr. laborer         (100)         (100)         (100)         (100)         (100)         (100)           Head is agr. laborer         (0.62)         (0.62)         (0.62)         (0.57)         (0.72)           Head is indigenous         (0.62)         (0.62)         (0.57)         (0.72)           Spouse of head is indigenous         (0.97)         (0.99)         (0.91)         (0.64)           Spouse of head is indigenous         (0.97)         (0.99)         (0.91)         (0.64)           Spouse of head is indigenous         (0.97)         (0.99)         (0.91)         (0.64)           Spouse of head is indigenous         (0.26)*         (0.21)*         (0.67)           Household characteristics, measured in October 1998         -         -         -         0.014         -         0.017           Logarithm,         -         -         -         -         -         0.034         -         0.034           household size         -         -         -         -         -         -         -         0.014         -         0.017           Household experienced flood         -         -         -         -         -         0.014         -         0.033         0.033 </td <td>ficture is inclute</td> <td></td> <td></td> <td>(1.01)</td> <td>(1.02)</td> <td>(1.22)</td> <td>(1 39)</td>	ficture is inclute			(1.01)	(1.02)	(1.22)	(1 39)
Intering a product         0.001         0.003         0.003         0.003         0.003           Head is indigenous         0.03         0.029         0.025         0.027           Spouse of head is indigenous         0.016         0.016         0.015         0.011           Spouse of head is indigenous         0.016         0.016         0.015         0.011           Spouse of head is literate         0.025         0.027         0.026         0.025         0.027           Household characteristics, measured in October 1998         (2.46)*         (2.56)*         (2.12)*         (2.13)*           Logarithm, per capita consumption         -0.014         -0.016         -0.013         -0.034           household size         (1.51)         (1.98)*         (2.13)*           Additional household characteristics, including shocks         -0.029         -0.033         -0.034           Household experienced flood         -0.014         -0.018         -0.008         -0.008           Household experienced freezing crops         -0.014         -0.018         -0.008         -0.008           Household experienced fire         -0.014         -0.018         -0.008         -0.008         -0.008           Household experienced fire         -0.013	Head is agr. Jaborer			0.007	0.007	0.007	0.008
Head is indigenous         (0.02/)         (0.01/)         (0.06/)         (0.01/)         (0.06/)         (0.11/)         (0.06/)         (0.11/)         (0.02/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)         (0.01/)         (0.02/)	ficau is agi. laborei			(0.62)	(0.62)	(0.57)	(0.72)
Trad is infugeneds         0.003         0.002,         0.002,         0.002,         0.002,           Spouse of head is indigenous         0.016         0.016         0.016         0.011         0.064           Spouse of head is literate         0.025         0.025         0.021         0.02           Logarithm, per capita consumption         -0.014         -0.016         -0.017           Logarithm, per capita consumption         -0.029         -0.033         -0.034           household characteristics, including shocks         (1.68)         (1.96)*         (2.10)*           Household experienced flood         -0.008         -0.008         -0.005           Household experienced flood         -0.014         -0.018         -0.008           Household experienced fire         0.033         0.033         0.033           Household experienced fire         0.033         0.033         0.033           Household experienced crop epidemics         (0.21)         0.58)	Head is indigenous			0.02)	0.02)	0.025	0.027
Spouse of head is indigenous         (LLD)         (LLD) <th< td=""><td>ficad is mulgenous</td><td></td><td></td><td>(2.03)*</td><td>(2.26)*</td><td>(1.07)*</td><td>(2.20)*</td></th<>	ficad is mulgenous			(2.03)*	(2.26)*	(1.07)*	(2.20)*
Spouse of near is intigenous         0.010         0.013         0.011           (0.97)         (0.99)         (0.91)         (0.64)           Spouse of head is literate         0.025         0.025         0.021         0.02           Household characteristics, measured in October 1998         (2.46)*         (2.26)*         (2.12)*         (2.06)*           Logarithm, per capita consumption         -0.014         -0.016         -0.017           household size         -0.029         -0.033         -0.034           household size         (1.68)         (1.96)*         (2.10)*           Additional household characteristics, including shocks         -0.008         -0.008         -0.005           Household experienced flood         -0.014         -0.018         -0.008         -0.005           Household experienced freezing crops         -0.018         -0.008         -0.0018           Household experienced free         0.033         0.033         0.033           Household experienced crop epidemics         0.033         0.033         0.033           Household experienced crop epidemics         0.033         0.033         0.032           Household experienced crop epidemics         0.03         0.022         (1.80)         (1.36)	Spouse of boad is indigonous			(2.23)	(2.20)	0.015	(2.20)
Spouse of head is literate         (0.57)         (0.59)         (0.51)         (0.59)         (0.51)         (0.59)         (0.51)         (0.59)         (0.51)         (0.57)         (0.59)         (0.51)         (0.51)         (0.52)         (0.22)         (0.26)         (0.21)         (0.50)           Household characteristics, measured in October 1998         -0.014         -0.016         -0.017         (1.51)         (1.98)*         (2.13)*           Logarithm,         -0.029         -0.033         -0.034         -0.034         -0.034           Household size         (1.68)         (1.96)*         (2.10)*         (0.67)         (0.64)           Household experienced drought         -0.014         -0.018         -0.008         -0.008           Household experienced freezing crops         -0.018         -0.008         -0.008         -0.008           Household experienced free         0.033         0.033         0.033         0.033         0.033           Household experienced crop epidemics         0.033         0.033         0.022         (1.80)         (1.51)           Household experienced earthquake tremors         0.03         0.022         (1.80)         (1.51)           Received PROCRESA book         -0.019         -0.018         <	Spouse of near is indigenous			(0.07)	(0.00)	(0.01)	(0.64)
Spouse of near is interate $0.023$ $0.021$ <td>Spouse of boad is literate</td> <td></td> <td></td> <td>0.025</td> <td>(0.99)</td> <td>0.021</td> <td>(0.04)</td>	Spouse of boad is literate			0.025	(0.99)	0.021	(0.04)
Household characteristics, measured in October 1998         (2.10)         (2.10)         (2.10)           Logarithm, per capita consumption         -0.014         -0.016         -0.017           (1.51)         (1.98)*         (2.13)*           Logarithm,         -0.029         -0.033         -0.034           household size         (1.68)         (1.96)*         (2.10)*           Additional household characteristics, including shocks         -0.008         -0.008         -0.005           Household experienced drought         -0.014         -0.018         -0.008           Household experienced freezing crops         -0.018         -0.008         -0.018           Household experienced fire         0.033         0.033         0.033         0.033           Household experienced fire         0.003         0.003         0.008         (0.21)         (0.58)           Household experienced fire         0.033         0.033         0.032         (0.21)         (0.58)         (0.21)           Household experienced corp epidemics         0.033         0.022         (1.80)         (1.36)         (1.51)           Household experienced earthquake tremors         (0.58)         (0.51)         (0.55)         (0.55)           Household experienced earthquake tr	Spouse of field is filefale			(2.46)*	0.025	(2.12)*	(2.06)*
Household trainaction to cooler 1998         -0.014         -0.015         -0.017           Logarithm, per capita consumption         (1.51)         (1.98)*         (2.13)*           Logarithm, per capita consumption         (1.51)         (1.98)*         (2.13)*           household size         -0.029         -0.033         -0.034           Additional household characteristics, including shocks         -0.008         -0.005         (0.97)         (0.64)           Household experienced flood         -0.018         -0.018         -0.008         (0.58)           Household experienced freezing crops         -0.018         -0.008         (0.93)         (0.58)           Household experienced fire         0.003         0.003         0.008         (0.21)         (0.58)           Household experienced fire         0.03         0.022         (1.50)         (0.51)         (0.51)           Household experienced corp epidemics         0.03         0.022         (1.50)         (0.51)         (0.51)           Household experienced earthquake tremors         0.03         0.022         (1.51)         (1.51)           Received PROGRESA book         -0.019         -0.018         (1.51)         (1.51)           Received health register         0.024         0.023	Household sharacteristics, measured in Ostober 1009			(2.40)	(2.50)	(2.12)	(2.00)
Logarithm, per capital consumption $-0.014$ $-0.019$ $-0.019$ $-0.019$ $-0.019$ Logarithm, household size $-0.029$ $-0.033$ $-0.034$ Additional household characteristics, including shocks(1.68) $(1.96)^*$ $(2.10)^*$ Household experienced drought $-0.008$ $-0.008$ $-0.005$ Household experienced flood $-0.014$ $-0.014$ $-0.018$ Household experienced freezing crops $-0.018$ $-0.008$ $-0.008$ Household experienced fire $0.033$ $0.033$ $0.033$ Household experienced fire $0.033$ $0.033$ $0.033$ Household experienced fire $0.033$ $0.033$ $0.022$ Household experienced errep epidemics $0.03$ $0.022$ Household experienced earthquake tremors $0.021$ $(0.58)$ Household experienced hook $-0.019$ $-0.018$ Keceived PROGRESA book $-0.019$ $-0.018$ Was a PROGRESA promoter $0.024$ $0.023$ Was a PROGRESA promoter $0.011$ $0.012$ Was a PROGRESA promoter $0.011$ $0.012$ Household experience $0.011$ $0.012$ Household experience $0.011$ $0.012$ Household experience $0.024$ $0.023$ Household experience $0.011$ $0.012$ Household experience $0.011$ $0.012$ Household experience $0.024$ $0.023$ Household experience $0.024$ $0.023$ Household experience $0.011$ $0.012$ <td>Logarithm, per capita concumption</td> <td></td> <td></td> <td></td> <td>0.014</td> <td>0.016</td> <td>0.017</td>	Logarithm, per capita concumption				0.014	0.016	0.017
Logarithm, household size $(1.51)$ $(1.53)$ $(2.13)$ $-0.033$ Additional household characteristics, including shocks $(1.68)$ $(1.96)^*$ $(2.10)^*$ Additional household experienced drought $-0.008$ $-0.008$ $-0.008$ Household experienced flood $-0.014$ $-0.018$ $(0.43)$ $(0.58)$ Household experienced freezing crops $-0.018$ $-0.008$ $-0.008$ $-0.008$ Household experienced free $0.033$ $0.033$ $0.033$ $0.033$ Household experienced free $0.033$ $0.033$ $0.033$ $0.033$ Household experienced free $0.033$ $0.033$ $0.033$ $0.033$ Household experienced crop epidemics $(0.21)$ $(0.58)$ $(0.21)$ $(0.58)$ Household experienced earthquake tremors $0.03$ $0.022$ $(1.80)$ $(1.36)$ Received PROGRESA book $-0.019$ $-0.018$ $(1.61)$ $(1.51)$ Received health register $0.024$ $0.023$ $0.023$ Was a PROGRESA promoter $(0.66)$ $(0.72)$					-0.014	-0.010	-0.017
Logarthin,         -0.029         -0.033         -0.034           household size         (1.68)         (1.96)*         (2.10)*           Additional household characteristics, including shocks         -0.008         -0.005           Household experienced drought         -0.008         -0.005           Household experienced flood         -0.018         -0.018           Household experienced freezing crops         -0.018         -0.008           Household experienced fire         0.033         0.033           Household experienced crop epidemics         0.033         0.033           Household experienced crop epidemics         0.033         0.008           Household experienced earthquake tremors         0.03         0.002           Received PROGRESA book         -0.019         -0.018           Received health register         0.024         0.023           Was a PROGRESA promoter         0.011         0.012	I a manishim				(1.51)	(1.96)	(2.15)
Industriou         (1.08)         (1.96)         (2.10)           Household experienced fought         -0.008         -0.005           Household experienced flood         (0.97)         (0.64)           Household experienced flood         -0.014         -0.018           Household experienced freezing crops         (0.43)         (0.58)           Household experienced fire         0.033         0.033           Household experienced fire         (0.85)         (0.93)           Household experienced crop epidemics         (0.21)         (0.58)           Household experienced earthquake tremors         (0.21)         (0.58)           Household experienced earthquake tremors         (1.61)         (1.36)           Received PROGRESA book         -0.019         -0.018           Was a PROGRESA promoter         (0.05)         (0.55)           Was a PROGRESA promoter         (0.011         0.012	LOgaritinn,				-0.029	-0.033	-0.034
Additional nousehold characteristics, including shocks         -0.008         -0.005           Household experienced drought         (0.97)         (0.64)           Household experienced flood         -0.014         -0.018           Household experienced freezing crops         -0.018         -0.008           Household experienced fire         0.033         0.033           Household experienced fire         0.003         0.008           Household experienced crop epidemics         0.003         0.008           Household experienced earthquake tremors         0.03         0.022           Received PROGRESA book         -0.019         -0.018           Received health register         0.024         0.023           Was a PROGRESA promoter         0.011         0.012	nousenou size				(1.68)	(1.96)	(2.10)
Household experienced drought $-0.008$ $-0.005$ (0.97)(0.64)Household experienced flood $-0.014$ (0.43)(0.58)Household experienced freezing crops $-0.018$ Household experienced fire $0.033$ Household experienced fire $0.033$ Household experienced crop epidemics $0.003$ Household experienced earthquake tremors $0.03$ Received PROGRESA book $-0.019$ Received health register $0.024$ Was a PROGRESA promoter $0.011$ Was a PROGRESA promoter $0.011$ $0.012$ $0.055$ $0.051$ $0.011$ $0.011$ $0.012$ $0.024$ $0.023$ $0.011$ $0.012$ $0.024$ $0.023$ $0.011$ $0.012$ $0.026$ $0.072$	Auditional household characteristics, including shocks					0.000	0.005
Household experienced flood         -0.014         -0.018           Household experienced freezing crops         (0.43)         (0.58)           Household experienced freezing crops         -0.018         -0.008           Household experienced fire         0.033         0.033           Household experienced fire         0.033         0.033           Household experienced crop epidemics         0.003         0.003           Household experienced earthquake tremors         0.03         0.022           Household experienced earthquake tremors         0.03         0.022           Received PROGRESA book         -0.019         -0.018           (1.61)         (1.51)         (1.51)           Received health register         0.024         0.023           Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)         (0.66)         (0.72)	Household experienced arought					-0.008	-0.005
Household experienced freezing crops $-0.014$ $-0.018$ Household experienced freezing crops $-0.018$ $-0.008$ Household experienced free $0.033$ $0.033$ Household experienced free $0.033$ $0.033$ Household experienced crop epidemics $0.003$ $0.008$ Household experienced earthquake tremors $0.01$ $0.058$ Household experienced earthquake tremors $0.03$ $0.022$ Received PROGRESA book $-0.019$ $-0.018$ Received health register $0.024$ $0.023$ Was a PROGRESA promoter $0.011$ $0.012$ (0.66) $(0.72)$ $(0.55)$	Hausehold augeniegend flood					(0.97)	(0.64)
Household experienced freezing crops         -0.018         -0.008           Household experienced fire         0.033         0.033           Household experienced fire         0.003         0.008           Household experienced crop epidemics         0.003         0.008           Household experienced earthquake tremors         0.03         0.002           Received PROGRESA book         -0.019         -0.018           Received health register         0.024         0.023           Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)         0.024	Household experienced hood					-0.014	-0.018
Household experienced freezing crops       -0.018       -0.008         Household experienced fire       (1.11)       (0.56)         Household experienced fire       (0.85)       (0.93)         Household experienced crop epidemics       (0.03)       0.008         Household experienced earthquake tremors       (0.21)       (0.58)         Household experienced earthquake tremors       0.03       0.022         Received PROGRESA book       -0.019       -0.018         Received health register       0.024       0.023         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)       (0.66)	The second state of the se					(0.43)	(0.58)
Household experienced fire       (1.11)       (0.56)         Household experienced crop epidemics       (0.033)       (0.033)         Household experienced crop epidemics       (0.05)       (0.03)         Household experienced earthquake tremors       (0.21)       (0.58)         Received PROGRESA book       -0.019       -0.018         Received health register       (0.05)       (0.50)         Was a PROGRESA promoter       (0.55)       (0.50)         (0.55)       (0.50)       (0.51)	Household experienced freezing crops					-0.018	-0.008
Household experienced nre       0.033       0.033         Household experienced crop epidemics       0.033       0.008         Household experienced earthquake tremors       0.03       0.002         Household experienced earthquake tremors       0.03       0.022         Received PROGRESA book       -0.019       -0.018         (1.61)       (1.51)         Received health register       0.024       0.023         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)       0.012						(1.11)	(0.56)
Household experienced crop epidemics       (0.85)       (0.93)         Household experienced crop epidemics       0.003       0.008         (0.21)       (0.58)       (0.21)         Household experienced earthquake tremors       0.03       0.022         Received PROGRESA book       -0.019       -0.018         (1.61)       (1.51)         Received health register       0.024       0.023         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)	Household experienced fire					0.033	0.033
Household experienced crop epidemics       0.003       0.008         (0.21)       (0.58)         Household experienced earthquake tremors       0.03       0.022         (1.80)       (1.36)         Received PROGRESA book       -0.019       -0.013         Received health register       0.024       0.023         (0.55)       (0.50)         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)						(0.85)	(0.93)
(0.21)       (0.58)         Household experienced earthquake tremors       0.03       0.022         (1.80)       (1.36)       (1.36)         Received PROGRESA book       -0.019       -0.019         Received health register       (0.55)       (0.50)         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)	Household experienced crop epidemics					0.003	0.008
Household experienced earthquake tremors       0.03       0.022         (1.80)       (1.36)         Received PROGRESA book       -0.019       -0.018         (1.61)       (1.51)         Received health register       0.024       0.023         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)						(0.21)	(0.58)
Received PROGRESA book       (1.36)         Received PROGRESA book       -0.019       -0.018         (1.51)       (1.61)       (1.51)         Received health register       0.024       0.023         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)	Household experienced earthquake tremors					0.03	0.022
Received PROGRESA book         -0.019         -0.018           (1.61)         (1.51)         (1.51)           Received health register         0.024         0.023           (0.55)         (0.50)         (0.50)           Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)         (0.57)						(1.80)	(1.36)
(1.61)       (1.51)         Received health register       0.024       0.023         (0.55)       (0.50)       (0.50)         Was a PROGRESA promoter       0.011       0.012         (0.66)       (0.72)	Received PROGRESA book					-0.019	-0.018
Received health register         0.024         0.023           (0.55)         (0.50)         (0.50)           Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)						(1.61)	(1.51)
(0.55)         (0.50)           Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)	Received health register					0.024	0.023
Was a PROGRESA promoter         0.011         0.012           (0.66)         (0.72)						(0.55)	(0.50)
(0.66) (0.72)	Was a PROGRESA promoter					0.011	0.012
						(0.66)	(0.72)

(continued on next page)

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## Table A2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Additional household characteristics, including shocks					0.002	0.004
Platicas hela					- 0.003	-0.004
Platicas missed					0.005	0.006
					(0.82)	(0.98)
Community characteristics						
Community has electricity						0.022
						(1.85)
Community has pre-school						-0.016
						(0.78)
Community has lower secondary school						0.033
						(2.98)**
Community has secondary school						-0.048
						(3.04)**
State dummies?	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	3131	3131	3121	3121	3071	3071

Notes: Group 1 refers to households that did not receive the E1 form. Results of these regressions are the full results corresponding to Table 4, Panel B; standard errors are clustered at the locality. \*-indicates significance at the 5% level; \*\*-indicates significance at the 1% level.

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