MIGRATION, VIOLENCE AND WELFARE IN RURAL COLOMBIA.

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Abstract

This paper studies migration decisions of very poor households in a context of high level of violence. Our estimates show that high levels of violence encourage households to leave their municipality of residence and that welfare programmes such as conditional cash transfer programmes may mitigate these flows, provided the incidence of violence is not unduly high. Other important determinants of migration are the type of property rights and social insurance rural households can benefit from.

Key words: migration, welfare programme, violence, displacement, Colombia

JEL classification: D1, J6, Z0, O1, H8

1 Introduction

Colombia's civil conflict over the last 40 years has displaced many families and individuals from their villages of origin. Estimates vary, but it is clear that the problem has become, especially in recent decades, a very important one. At least 1.8 million individuals were involuntary displaced during the last 15 years, which corresponds to 4.3 percent of the country's population and 14 percent of the rural population (Arboleda and Correa, 2003). Casual visits to the main cities in Colombia provide abundant evidence of the problem: displaced individuals are visible in poor neighbourhoods and more generally on the streets. The consequences of such displacement can be dramatic. In addition to the direct act of violence that causes the displacement, individuals often lose their livelihood, productive assets and valuable skills, the human capital they possess is often inadequate in the new environments, children are removed from school, young people leave rural villages and so on and so forth. Evidence has accumulated showing that migrants to the main cities in the 1990's fared worse than the urban poor, in contrast with the traditional migrant profile (see Velez, 2002, Table 7) and that displaced population are as poor as the poorest population of Colombia even if they are from more heterogeneous backgrounds with higher education levels of household heads (Attanasio, Castro, Mesnard, 2005). They are particularly vulnerable to malnutrition and health problems such that their average rate of mortality is 6 times higher than the national average (World Food Program, 2003).

Recently policy makers have shown an increasing interest in building policy interventions to mitigate these flows. Discussions have mainly focused on whether and how to encourage displaced households to return to their origin villages. For example the Colombian government has already considered granting compensation conditional on the return of displaced households. One possible alternative is to discourage displacement in the first place by making everyone better off at home. In this prospect, welfare programmes may contribute to stabilise the socio-economic environment in rural villages by encouraging households to remain in their municipalities of origin. This may also

undermine one systematic strategy used by rebels groups, whose aim is to take control over destabilised areas by terrorising civilians.

In this paper, we leave aside the question as to whether or not migration of very poor households should be encouraged in such a context and adopt, instead, a positive approach. To understand better the decision made by very poor households of leaving small towns affected by violence, we measure the relative contribution of different factors in this decision, including household and community variables, policy measures and violence incidence. Aside from the large set of variables we are able to use given the richness of our survey and the size of our sample, the main originality of this work is to consider how violence and policy interventions interact among them and with other factors traditionally considered in the economic literature on migration.

Importantly, we do not want to focus exclusively on episodes that lead to displacement, but rather put these episodes within the context of a set of different incentives, which include economic incentives. For this reason, throughout the paper, the concept of mobility we use is different from that used in the literature on violence and displacement (see, for example, Engel and Ibanez, 2005). Previous studies focussed on the displaced individuals that arrive in big cities after large shocks and violent experiences. While this is surely important, it is also important to start from the small communities and check what happens to individuals that, while affected by violence and other problems, do not necessarily move to the big cities but to other places or stay in the municipalities. These decisions are not necessarily entirely forced but may still be directly affected by the high levels of violence prevailing in Colombian municipalities.

The first aim of the paper is to assess whether traditional motives for economic migration apply to households living in the particularly unstable and violent environment characterising rural Colombia. This is because migration for economic reasons may have different determinants from forced migration, as developed in the next section. To do so we study how migration determinants change when the incidence of violence varies, using its variation across municipalities we observe in our survey. Moreover, our data

allow us to capture several dimensions of violence, as well as other shocks affecting household income that are interacted with migration determinants.

The second aim of the paper is to assess the impact on migration of policy interventions such as the *Familias en Acción* (hereafter FA). Run by the Colombian government with a loan from the IADB and the World Bank, the programme is modelled after the Mexican PROGRESA and consists of conditional cash transfers that aim at improving the nutrition and education of the poorest Colombians. Although FA has not been designed specifically to affect migration behaviour, there are many ways in which household mobility might respond to it. On one hand, receiving the benefits of the programme makes living in a municipality where the programme operates (hereafter "treated municipality") more attractive than living in a municipality where it does not ("control municipality"). On the other hand, receiving cash transfers may also help relaxing financial constraints of very poor households, and, hence, allow them to finance their migration if migration returns are high relative to its costs. Since these two effects play in opposite direction, the effect of receiving the programme on a household mobility is *a priori* ambiguous. Moreover, in line with our first aim, we allow the FA programme to affect differently migration decisions in municipalities characterised by different levels of violence. The heterogeneous impacts we find suggest that different mechanisms are into playing depending on the level of violence. This is also an indirect way of assessing the costs of violence for household well-being and whether compensatory cash transfers to households affected by violence can be also envisaged as a way of curbing migration from highly unstable areas. In a nutshell, our results will show that it is only the case if violence is not unduly high.

The rest of the paper is organized as follows. Section 2 presents the literature that motivates the model used to explain household migration in highly unstable environments. Section 3 presents the data and Section 4, the main results. Section 5 proposes several tests to assess the extent to which violence modifies household incentives to migrate. Section 6 investigates possible mechanisms explaining why the

impact of welfare programmes depends on violence incidence. Section 7 concludes by establishing policy recommendations based on our main findings.

2 Motivations of the empirical model

There is a large economic literature on the determinants of migration decisions but very few economists have studied the specific problems related to violence in politically unstable economies and the impact of policy interventions such as welfare programmes. In this section we review the determinants of migration identified in the economic literature and discuss how household migration may respond to the high incidence of violence that characterises Colombia and to policy interventions such as the FA programme.

Traditional literature

The main economic framework established by Harris and Todaro (1970) postulates that individuals compare their present wage with that available in a potential destination area, adjusted for the probability of finding a job. Models have since been expanded to take into account more complex determinants of migration decisions. On one hand, they outline that migration benefits and costs vary greatly depending on individual characteristics. For example, earlier models of human capital emphasize that migration returns depend on individuals' education levels and planning horizon, which explains why young and better educated individuals are more likely to migrate (Sjaastad, 1962, Becker, 1964, Mincer, 1974, Greenwood, 1997). On the other hand, they insist on the fact that individuals have different information on destination areas and have different degrees of risk aversion, which are important factors in explaining highly uncertain decisions. This explains for example why individuals may migrate repeatedly or sequentially to different local labour markets (Pessino, 1991) as they accumulate human capital together with information (Da Vanzo, 1983).

More recent studies have investigated the role played by social interactions. First, in line with Stark (1991), the "New economic of migration" considers migration as a household strategy to diversify risk by sending some members to distant areas while keeping others working close by on farm. Then, sociologists and economists have outlined that social networks affect strongly migration costs: they help new immigrants in their job and house search or by proposing them services (Massey, Alarcon, Durand and Gonzalez, 1987, Munshi, 2003) or to cross the borders (Espinosa and Massey, 1997) and so on. As a result migration costs become endogenous to the migration process as modelled by Carrington, Detragiache and Vishwanath (1996).

In line with these models our analysis will take into account a set of economic factors that push households out of their municipality of residence, together with household and community characteristics that determine migration costs and benefits. Note that we do not observe the destinations chosen by most migrant households and therefore cannot control for pull factors in destination areas.[1] Also we do not adopt the approach of the "New economic of migration" (within household) and restrict our study to the household decision to migrate as a whole unit given the limited information we have on the mobility of household members in our sample.

Violence and migration

The economic literature on the impact of violence on migration is not very developed, partly due to the scarcity of available data, partly because this field was left under the domain of political scientists until very recently. However, in a seminal paper, Schultz (1971) finds a positive effect of the incidence of homicides on net internal migration rates from 1951 to 1964 in Colombia. Morrison and May (1994) use an expected utility framework, which postulates that households leave their area of origin when their utility to stay is smaller than their utility to move, taking into account all socio-political and economic benefits and costs attached to different locations. Their estimates show that

[1] The description of our sample below shows that only 114 households have been successfully tracked during the first follow up, which is a too small sample to test for the effects of "pull" factors.

political violence is a key determinant of internal migration rates in Guatemala. Using aggregate data, however, these authors cannot capture easily the microeconomic underpinnings of household migration decisions in violent context, which is the main objective of our study.

However, in the last couple of years there has been a growing attention paid to the consequences of civil war and conflicts on displacement and asylum seekers (see for example Azam and Hoeffler, 2002, or Hatton, 2004). Although we may argue that forced migration and economic migration are of different nature, we cannot exclude that these two decisions have common factors. This may explain why, very often, only part of households from communities targeted by illegal armed groups decides to move. To capture this feature Engel and Ibanez (2005) extend the expected utility framework to explain displacement decisions and show that predictions of such models are sometimes opposite to those of traditional migration models. For example, households with immobile assets like large plots of land that can be easily sized by rebels may feel more threatened by violence and, hence, are encouraged to move first, contrary to what the standard economic literature would predict. Similarly, risk aversion may induce individuals to displace in a violent context, whereas the same individuals would not have migrated in a stable context, because of the uncertainties involved by migration decisions (Fischer et al, 1997). Or individuals with political responsibilities in their municipalities may be the first targeted by rebel or paramilitary forces in their strategies to destabilise rural areas and take control over them. This also outlines the complex role that social capital is likely to play in the migration decision under violence. Then any advantage to belong to a society and may discourage migration like active participation in community activities or high education levels may also turn into a risk factor and encourage displacement.

In line with this literature, our model of migration will embed factors linked to violence into a framework of expected utility. Furthermore, we will allow the level of violence to affect not only directly the well-being of households attached to a given location and, hence, their migration decisions, but also the migration incentives associated to other

factors. This argument, firstly outlined by Morrison and May (1994), has not been fully exploited since.[2] In contrast to these studies, our micro-data on migrant households and local violence allow us to test whether the effects associated to specific migration determinants depend on the level of violence.

Impact of welfare programmes on migration

Another important benefit attached to living in a municipality is whether its inhabitants receive benefits from welfare programmes. However the literature on the impacts of welfare programmes on migration is scant. To our knowledge only one paper by Angelucci (2005) investigates the effect of the PROGRESA conditional cash transfer programme in Mexico on international labour migration. However, the political and economic context of Mexico where communities have experienced large international labour migration flows in the past and formed important migration networks in the US is very different from Colombia.

Welfare programmes, such as FA, the one we analyze, may affect ambiguously household migration decisions in areas receiving them. On one hand they increase the attractiveness of municipalities receiving welfare benefits through many channels. Aside from increasing household income through cash transfers, these welfare programmes may also mitigate aggregate (village) risk by giving poor households a certain source of income. They may also have spillover effects on non beneficiary households, for example if wages on local labour markets increase following decreases in child labour supply due to the programme. All these effects amount to decrease the incentives for household to migrate out of their residence municipality.[3] On the other hand cash transfers may also contribute to relax liquidity constraints of very poor households and increase their

[2] The results of Ibanez and *al* (2005) suggest that the determinants of displacement are different from those of migration. However the two samples they use on displaced households and non migrant households do not allow them to test whether migration determinants are modified by the incidence of violence.
[3] Note that the eligibility criteria for the programme is based on a poverty index established for each household registered in municipalities 1999. This precludes households from eligibility if they lived in a control municipality in 1999 and, since, have moved into a treated municipality.

mobility if migration benefits are higher than migration costs. However, their conditionality may make them harder to channel into savings for migration. [4]

Moreover we expect the programme to affect differently household migration decisions depending on their characteristics and environment. In particular the incidence of violence varies a lot across municipalities and the programme may affect differently migration incentives of households depending on whether they are threatened by violence or not. For example, by relaxing cash constraints, the programme may allow some households threatened by violence to migrate, whereas the same households would not benefit from migrating in a stable environment. Or the programme may discourage household migration only if violence incidence is not unduly high. Moreover the design of the conditional cash transfer programme introduces some interesting variation in who is benefiting most from it. Households with very young children (aged 0 to 6) are eligible for the nutrition component if they comply with visiting health centers regularly, whereas families with children enrolled in school receive the education component that varies depending on the number of children attending primary and secondary school. Accordingly, the programme may affect households with fewer children in schooling age to a lesser degree than others. Its conditionality, should, however, mitigate this effect as it also entails larger costs for families with more children. We will therefore test for possible heterogeneous programme impact on migration along a large set of dimensions, which includes violence levels, other types of risk such as aggregate risks at village level or household exposure to risk, household liquidity constraints and household demographic characteristics.

3 Data

We use the large and high quality data set, whose collection was started in 2002 with the purpose of evaluating the *Familias en Acción* programme. The FA survey collected

[4]The amounts of the subsidy vary by age, being 14,000 pesos (US$6) and 28,000 pesos (US$12) per month for 7-11 and 12-17 year old children respectively, conditionally on school attendance. Nutrition is targeted by a flat-rate monthly monetary supplement of 46,500 pesos (approximatively US$20) to all beneficiary families.

information on 11,612 households living in 122 (relatively small) representative rural municipalities, 57 of which were receiving the programme based on the requisites that they had less than 100,000 inhabitants, at least a bank and a minimum level of health and education infrastructure and 65 of which were not. Within each municipality, all families in the poorest sixtile of the population according to a basic welfare indicator[5] and with children between 0 and 17 years old, were potential beneficiaries of the programme and surveyed for its evaluation.

The first data collection (which we refer to as the baseline data) was done just before the start of the new programme.[6] For the second data collection, which was executed in 2003, we therefore decided to add several modules to the basic and already rich questionnaire. In particular, we invested a considerable amount of resources to track down households that had moved since the baseline survey and, to these households, a newly designed module on mobility was administered. Moreover, we constructed extensive locality questionnaires that were administered to three 'local' authorities (such as the mayor, the programme official and the priest). Finally, it should be mentioned that some basic information dated to 1999 exists for all the households in the survey and a set of other households that were in the village but had left as of the 2002 data collection.[7]

The follow up survey to the *Familias en Acción* database was a success: attrition was relatively low at 6%. This was partly due to the mechanisms we put in place to track households and partly to low mobility rate between 2002 and 2003 that we now turn to describe.

Sample

[5] The "SISBEN" 1-6, is an indicator collected for all families in Colombia, whose level determines welfare entitlements.
[6] The evaluation and the survey were organized by a consortium made of Econometria, IFS and SEI. In some of the 'treatment' towns, the programme was started by the government before the baseline survey. These issues and the baseline data are discussed in detail in Attanasio et al. (2004).
[7] The 2002 sample was obtained by first sampling 21623 households from the 1999 Sisben lists in the relevant municipalities. Of these households, on which we have as set of about 8 variables dated 1999 more than 11600 were still living in the same village and entered the sample.

To assess the determinants of the decision to migrate out of municipality we build an indicator equal to one if a household has moved out of its municipality of residence between the baseline and the follow up surveys, and 0 otherwise. Such information is available since, at follow up, the surveyors report whether they are able to interview again the households interviewed at baseline and if not, the reason why not.

As shown in the table below, the interviewers "lost" 710 households between the baseline and follow up surveys. Among them 435 households are reported as having moved out of the village, while for the remaining 275 interviewers were not able to establish the reason for non-contact in the follow up. In total, therefore, only 435 households or 3.75% of the sample have changed municipality for sure between the baseline and the follow-up surveys. Moreover, among the 435 "migrant" households, 114 households were eventually tracked by the interviewers and administered a special questionnaire on migration.

Total number of	*households*	*11612*		
Migrants out of municipalities	435	Non migrants	11177	
	including:			*including:*
Tracked	Non tracked	Don't know	Changed location within municipality	others
114	321	275	1316	

Concerning the very low mobility rate we observe between the baseline and follow up surveys, a few remarks are important to note. First, if we add the remaining 275 households that were not surveyed again at follow up for unknown reasons and assume they left the village of residence we find migration rates at around 6%. However, Table 1 shows that these 275 households are significantly different from the sample of migrants, which surely reflects that some of these households have not migrated out of their municipality of origin, or other more complex selection issues. Therefore we chose not to add these households to the sample of migrants.

Second, we may suspect the FA sample to be not a fully random sample of very poor households as more than 40 % of the households that were present in the municipalities in 1999 for the SISBEN survey were no longer available in July 2002, when the baseline survey of the FA started. As we are effectively observing a sample of 'stayers' it might be that mobility for them is particularly low. This might explain why the observed 3.75 % mobility between baseline and follow-up was less than past mobility rates. Not controlling for this source of unobserved heterogeneity in our migration model would result in biased estimates, an issue we will address in the next Section.

Third, we have to bear in mind that these migration flows are not representative of all migration flows in Colombia but only of the mobility among the poorest households in Colombia targeted by the programme. They are likely to be liquidity constrained, an issue that will be addressed in Section 6. Migration costs reported by migrants to the interviewers are sizeable: median costs are around 50,000 pesos and mean costs around 103,037 pesos, which represent respectively 21% and 43% of the average monthly household income in treated municipalities at baseline (the whole distribution of migration costs is represented in Figure 1). [8] Moreover, to finance their migration, 2/3 of households used their own funds, 1/3 was helped by friends or relative and, what is remarkable is that none relied on any kind of credit or loan. It is thus not too surprising to observe very low migration rates as these very poor households have no access to credit markets to finance their migration.

We believe, however, that these migration flows are particularly interesting for policy makers since the well-being of the very poor households in our sample is likely to be strongly affected by their migration decisions.

The FA data also allow us to identify 1316 households that have changed location between the baseline and follow up surveys within their municipality of residence. However, we focus only on household decision to leave the municipality of residence for

[8] These estimates are based on answers given by the 114 migrant households successfully tracked for the follow-up survey.

two main reasons. First, our data do not give us information on the levels of violence across different parts of the municipality and the FA programme is administrated homogenously everywhere in each municipality, such that we cannot test the main predictions of the model concerning the effect of violence and of welfare programmes for within municipality mobility decisions. Second, on *a priori* grounds, these two types of migration decisions have different economic determinants since migration costs and benefits involved are not the same. This is in line with what households report on their main motivation to migrate, as described in the table below:

Main reason for having migrated between baseline and follow-up	**Households who migrated within their municipality (1) % of answers**	**Households who migrated out of their municipality (2) % of answers**
Violence	1.9	14.9
For job related reasons	16.9	54.4
To find better accomodation	22.8	2.6
To live closer to relatives	8.3	14.0
To live closer to the centre of the municipality	1.0	0.0
To live closer to college	3.8	3.6
Others	45.3	10.5
Total	100	100

One has to be cautious, however, while interpreting these figures as the 114 successfully tracked households that give an answer in column (2) are only a minority of the 435 households who migrated out of their municipality of origin. It is likely that most of the households who were not successfully tracked are the ones who did not want to leave their address to their neighbours or relatives because they were particularly threatened by violence. Therefore the sizeable proportion of reasons related to violence (14.9%) may still underestimate the proportion of motives related to violence for households who migrated out of their municipality of residence. In the remaining of the paper, we will assess the relative importance of violence in explaining migration decisions of the whole sample.

Therefore, the sample we use in our final analysis comprises 435 households who have clearly moved out of their municipality of residence -hereafter called “migrants”- as well as 11177 households who have not, the “non migrants”. We summarise the characteristics of these two sub-samples and their main differences in Table 2.

4 Determinants of household migration

The model

Our first objective is to assess the relative importance of different determinants in explaining the household *i* decision to leave its municipality of residence *j* between baseline and follow-up, with a particular focus on the effects of violence incidence and of policy interventions like the FA programme. To do so, we estimated equation (1) using a standard Probit model allowing for possible correlated decisions within village as follows:

$$Y_{ij} = 1\left\{\alpha_1 + \alpha_2 Treat_j + \alpha_3' \text{Violence}_j + \alpha_4' \text{X}_{ij} + \varepsilon_{ij} > 0\right\} \qquad (1)$$

where :

$Treat_j$	= 1	if treated municipality
	= 0	otherwise
Violence_j	vector of control variables for violence level in village *j* at baseline	
X_{ij}	vector of control variables for household and village characteristics at baseline	
ε_{ij}	error term, correlated across households within municipalities.	

Note that α_2 and α_3 yield unbiased estimates of, respectively, the programme impact and violence impact under the assumption that, conditional on observed characteristics, X_{ij}, there are no unobserved factors affecting migration that are correlated to these variables. Even though we cannot test for this assumption, we should stress that although the programme was not allocated randomly across municipalities, control municipalities have been chosen so to be as similar as possible to the treated municipalities.[9] Moreover we control for many observable variables, both at the municipality and household level. However, as mentioned above we cannot exclude that households in our sample have

[9] The only "observable" differences are the presence of a bank, and a minimum of education and health infrastructure in treated municipalities that are necessary for the implementation of the programme.

been selected along unobserved characteristics that also explain their subsequent relatively low mobility rate. If selection is systematically related to ε_{ij}, estimating equation (1) on the sample at hand can result in inconsistent estimators of the parameters of interest.

To address this issue we estimate with maximum likelihood a bi-variate Probit model with censored selection by estimating equation (1) simultaneously with the following selection equation:

$$Y_{ij2} = 1\{\gamma' \mathrm{X}_{ij2} + v_{ij} > 0\} \quad (2)$$

where Y_{ij} is observed only when $Y_{ij2} = 1$ and Y_{ij2} is equal to 0 if the household was in the 1999 survey but not in the 2002 survey and equal to 0 if it is still in the FA survey in 2002. Thereby we control for possible correlation between the error terms of equations (1) and (2) by estimating :

$$\rho = \mathrm{corr}(\varepsilon_{ij}, v_{ij}) \quad (3)$$

The variables we use in the selection equation come mainly from the base SISBEN survey that gathers general information on households that were registered in 1999, such as the type of social insurance they have, their size and number of children below 18 years old, the age and education level of the head and whether he is directly affiliated to a social insurance. A summary of these variables is presented below:

Variable	*description*	*Mean*	*St.dev.*	*Max*
	from SISBEN survey:			
affiliated~s	affiliated to social security	5.47%		
urban	lives in urban area	49.35%		
educ2	head has primary education level	60.54%		
educ3	head has secondary education level or more	7.30%		
female	head is female	25.52%		
persfami	household size	5.05	2.12	32
no_under17	number children	2.63	1.55	19
	from the Police:			
displaced	number of displaced people per 10,000 inhabitants	506.64	881.86	4165.85
victims	Victims of massacre per 10,000 inhabitants	0.14	0.49	2.62
sequest	number of kidnapped people per 10,000 inhabitants	1.02	2.45	18.76

Notes number of observations is 19148

In order for the model to be well-identified, the selection equation should have at least one variable that we can exclude from the main probit equation.[10] For this purpose, we use an additional data set from the Department of National Planning that provides us with information on violence levels in each municipality in years prior to the SISBEN survey, based on reports by the Police. We use three "valid" instruments that have explanatory power in the selection equation and can conceivably be omitted from the main equation: the numbers of victims of massacre, of displaced people and of kidnapped people per 10,000 inhabitants in each municipality. Our identifying assumption is that such pre-1999 information does not explain migration decisions between the baseline and follow up surveys once controlling for very detailed data on violence incidence in the two years preceding the survey and many other control variables at baseline survey we have in the FA survey.[11] In the table below we check that high levels of violence have decreased strongly and significantly the probability to remain in the sample of households interviewed in 2002, and that this probability is also positively associated to living in an urban part of the municipality, to being affiliated to the social security, to larger household, larger proportion of children, higher education levels of household head and to having a male household head. The latter may be related to high violence incidence in Colombia that has increased the number of female headed households who are more likely to move out of their municipality of residence.

Determinants of the selection equation

	Coefficients	Std. Err.	z statistic
affiliated~s	0.112	0.041	2.76
urban	0.046	0.019	2.47
educ2	0.031	0.020	1.55
educ3	0.233	0.038	6.07
female	-0.068	0.023	-2.98
persfami	0.143	0.021	6.7
persfami_sq	-0.008	0.002	-4.95
no_under17	0.140	0.025	5.67
no_under17~q	-0.012	0.003	-3.65
displaced	0.000	0.000	-13.29
victims	-0.039	0.019	-2.03
sequest	-0.033	0.004	-8.46
_cons	-0.698	0.055	-12.77

[10] Otherwise the model is identified only by a functional form.
[11] These variables are discussed extensively in the remaining part of the paper

Notes: Coefficients obtained with a Probit model, number of observations 19148

Estimating equations (1) and (2) jointly by maximum likelihood, we find that the coefficient of correlation between the error terms is not significantly different from 0 (with a Wald test of independence rejecting its significance at 31% level), such that we do not need worrying about possible selection problems. Therefore, for the rest of our paper, we estimate equation (1) separately from equation (2).

Main results

All results we discuss below are presented in Table 3.

Apart from household size, few household demographic variables determine significantly migration decision. We find that larger households have a lower probability of migrating out their municipality of residence, which is easy to understand since large households have important migration costs. We also find that households whose head is single are more likely to migrate. This reflects a number of reasons ranging from possible weaker ties in the municipality of residence or lower migration costs in the absence of bargaining problems, to other factors such as the degree of risk aversion for which we could not find better control in our data.[12]

The effects associated to education levels of household heads and spouses are not individually nor jointly significant, as tested in specifications (2) and (3). This remains true when we aggregate the education levels into fewer categories as shown in column (1). The absence of significant effects associated to education is somehow puzzling if migration is determined mainly by job related motives. We cannot estimate a selection model *a la* Borjas (1987) where migrants choose to migrate where the returns to human capital are higher since we do not observe the destination areas of most of migrants and cannot hope to know the returns to human capital. However, one might argue that education levels of the head and the spouse do not capture well enough job related

[12] We also tried adding the proportion of total household consumption spent in lottery to capture heterogeneous degrees of risk aversion across households. But this variable was not significant and suffers from many missing answers. Therefore we preferred not to keep this variable in the main set of control variables.

motives of these very poor households who are mainly working in agriculture. Therefore we added some control variables for occupations of heads and spouses in specification (4). We find that being a self-employed worker, an employer or employed diminishes the probability to migrate, as we can easily explain with job related motives. We cannot, however, over interpret these findings since occupations of heads and spouses just before migrating are surely endogenous to household migration decisions. Therefore we present the results with these additional controls for occupation separately from the others in column (4).

One of the strongest estimated effects is associated to the type of insurance from which households benefit. Having a private health insurance -which is most often attached to a good job in formal sector-, decreases strongly the probability of migrating by around 3.5 percent points (this is to be compared to the observed migration rate around 3.7%). Having a subisidised "second best" type of insurance discourages household mobility but to a lesser extent. These results suggest that insurance plays a large role in migration decisions of the vulnerable housejholds of our sample. However this could also reflect that risk averse households are also less mobile, an issue we will address more in depth in the last Section.

Marginal effect	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
1 if EPS =unsubsidized health insurance, "best" type	-3.553	-3.497	-3.533	-2.844	-3.546
	(1.090)***	(1.235)***	(1.200)***	(1.153)**	(1.202)***
1 if ARS (2nd best type of insurance)	-1.282	-1.056	-1.148	-1.049	-1.178
	(0.575)**	(0.661)	(0.639)*	(0.627)*	(0.630)*
1 if Vinculado (3rd best type)	-0.696	-0.424	-0.565	-0.365	-0.611
	(0.648)	(0.728)	(0.708)	(0.677)	(0.700)

Notes : Marginal effects of a Probit model are reported in percentage points.
Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%.

Moreover, very significant and large effects are associated to the type of property rights households have on their residence. On one hand, paying something for living in a house (either a rent, mortgage or having a house in usufruct) increases household mobility as compared to owning the house, the missing category. This result is quite intuitive as

ownership reflects household intentions to stay, only if migration is not entirely forced. Otherwise we would expect the richest households who own fixed assets to be more at risk from violence. On the other hand, households who occupy a house without legal agreement have a lower probability to migrate, which could be simply explained by the difficulties migrants may face in finding similar informal agreements in new destination areas. Concerning the quality of houses that is captured by the types of wall material or phone, we do not find any effect on household mobility.

Marginal effect	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
1 if house is rented or in mortgage, 0 oth	1.970	2.183	2.012	1.254	2.021
	(0.554)***	(0.614)***	(0.599)***	(0.673)*	(0.600)***
1 if house is occupied without legal agreement, 0 oth	-2.998	-3.378	-3.374	-3.364	-3.363
	(1.681)*	(1.598)**	(1.592)**	(1.363)**	(1.591)**
1 if house is in usufruct, 0 oth	0.865	1.054	1.020	1.092	1.016
	(0.374)**	(0.390)***	(0.383)***	(0.370)***	(0.385)***

Notes : Marginal effects of a Probit model are reported in percentage points.
Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%.

Economic differences across villages are reflected by the negative impact on migration of hourly wages in rural parts of the municipality, in line with Harris and Todaro's predictions. However, its magnitude is rather small since increasing hourly wages in rural parts of municipalities by 1,000 pesos (which represents more than 1.5 standard deviations from the mean hourly wages in our sample) decreases the probability to migrate by less than 0.5 percent point, as shown below.

Marginal effect	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
hourly wage in urban part of municipality	0.007	0.010	0.007	0.006	0.008
	(0.010)	(0.008)	(0.010)	(0.008)	(0.010)
hourly wage in rural part of municipality	-0.005	-0.004	-0.004	-0.003	-0.005
	(0.002)**	(0.002)	(0.002)**	(0.002)	(0.002)**

Notes : Marginal effects of a Probit model are reported per 1,000 pesos.

Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%.

We find that geographic factors make some areas more attractive than others. The altitude of the municipality increases the probability to migrate out of the municipality, as returns to agriculture in the mountains are lower and the access to markets more difficult.. Moreover, to capture better regional imbalances and other unobserved factors that may affect migration and differ across regions we also embed four regional dummy variables into the migration equation, as well as the size of population living in the center and peripheral parts of the municipalities.[13] We find that the size of population in rural part of municipalities decreases the probability to migrate and that households living in the Oriental area and in the Pacific area have a lower probability to migrate out of their municipality as compared to households living in the Atlantic areas, the missing category.

Moreover, we expect the very poor households in our sample to be sensitive to the availability of public infrastructure like schools and hospitals that are entered as additional explanatory variables. We also include the proportion of households with sewage system or piped water in the municipality of residence, as well as the number of pharmacies and health centres as they may reflect the costs of access to these services.[14] We do not find strong impacts associated to public infrastructure. The number of schools in urban parts of municipalities has a very small and, as expected, negative impact of migration, which is only significant at 10% level in some specifications. The number of "public puestos", which, in spite of their number, may indicate a rather low quality of health care in municipalities, increases household mobility. We also tested for the robustness of the other results without these extra variables in column (2), as some effects were difficult to understand such as the positive impact on migration of the number of schools in rural parts of municipalities shown in column (4) only.

[13]As the latter also capture dynamic effects linked to agglomeration in specific areas resulting from past migrations, they are potentially endogenous and we need to be cautious while interpreting their effects.
[14]Note that there are several types of public health centres in Colombia: in general, hospitals are bigger than other health centres called "public centros" or "public puestos". The latter are mostly located in rural areas and, sometimes, comprise only a nurse. However, the quality of hospitals is very heterogeneous across municipalities.

An important determinant of migration emphasized by the recent literature is the presence of networks. Although we do not have a direct measure of household networks in our data, we include proxies for the level of social capital in the village that are likely to affect migration decisions in complex ways. On one hand social capital may be considered as a positive amenity that increases the well-being to live in some municipalities and may be viewed as a social asset that is not easily transferable to another community. On the other hand, social capital may be correlated to the presence of strong networks, which may facilitate migration by decreasing its costs. Results presented in column (5) of Table 3 show that social capital, measured by the proportion of of women in the municipality participating in collective activities, is not significant once we control by all the other municipality characteristics.[15] Moreover, when we added variables measuring the level and evolution of trust in the municipalities in the recent past as reported by three main leaders surveyed in each municipality, they were not significant. This may simply reflect the fact that these variables are strongly correlated to the other village level characteristics, in particular to the different dimensions of violence we control for. This was confirmed when we dropped some municipality level variables and more proxies for social capital became significant. However, household level variables measuring mother's participation in collective activities were never significant and are therefore not reported.

As we mentioned several times, one of the main aims of this paper is to assess the effect of the FA programme on migration. The Table below shows that the programme decreases the probability of migration. However these estimates are statistically different from zero only in the specifications where we add more control for municipality infrastructure and for the education level of the parents, as in columns (3) to (5). The effect of FA is not negligible since receiving the programme decreases by around 1 percentage point the probability to migrate as compared to the observed migration rate

[15]We use a detailed module of the questionnaire applied to household mothers, which describes participation of women in political, religious, sport, neighbourhood or other types of associations. As a proxy for social capital we used the proportion of women involved in each type of collective activity as well as the proportion of women involved in any of these groups.

equal to 3.75%. Interestingly, the magnitude of the programme impact is comparable to the magnitude of the impact of violence due to the presence of illegal armed groups. Hence the FA welfare programme contributes to stabilise the situation in some municipalities by mitigating migration flows due to violence.

Additionally we tested for possible interaction effects of the programme with demographic characteristics of the households, as they determine the maximum amount of benefits they are entitled to. But we could not find any significant effects associated to these interactions, which is, perhaps, not too surprising given the conditionality of the programme.

A further concern was that the lack of significant impact of the programme effect in some specifications like in columns (1) and (2) could be driven by some misspecification of the programme effect. In order to assess the programme's impact on migration as accurately as possible, we also exploited an interesting feature of the implementation of the programme that started at different dates in different municipalities. As a consequence some municipalities have received more payments at follow up. We captured this "intensity" effect of the programme by estimating the following equation (2):

$$Y_{ij} = 1\left\{\alpha_1 + \alpha_2 Number_j + \alpha_3 'V iolence_j + \alpha_4 'X_{ij} + \varepsilon_{ij}\right\}$$

where the variable $Number_j$ measures the number of payments received in municipality j at follow up survey. Table 4 shows that intensity effects of the programme are only weakly significant at 10 % level when we use the full set of control variables at municipality level as in columns (1) and (3)[16], which motivated the choice of the specification presented in equation (1).

To assess the impact of violence on migration decisions, different sources of information from the FA data have been used. The first type of variables comes from the part of the

[16]We also entered the number of payments in a quadratic relationship, but the squared term was not significant. Furthermore, we could not exclude that the effect of the programme on migration might play beyond its intensity effect like a "fixed" effect, for example if it entails positive externalities that discourage households to migrate. Therefore we added a fixed effect "TREAT" among the set of explanatory variables of the equation above, which turned out to be not significant.

FA questionnaire on public infrastructure that gives information on the presence of taskforce desertion and taskforce strike due to violence in any health center (IPS) of the municipality. Secondly we use three variables that describe the perception by the surveyors of some problems linked to violence when they visited the municipalities. These are three dummy variables equal to one if, respectively, there was a curfew, if there were some paramilitaries/FARC/or ELN forces, or if there were some problems related to violence in the municipalities. The last type of variables measuring the levels of violence comes from the special module of the questionnaire applied to the municipality leaders who mention whether some displaced households have left and joined the municipality during the year before the baseline survey. Table 2 shows that migrant households live in more violent municipalities where health centers are more often affected by violence, where curfews, problems of public order and illegal armed groups are more frequently reported, and from where more displaced households have left in the recent past, as represented also in Figure 2.

The Table below shows that significant positive effects associated to the presence of illegal armed groups in the municipality in specifications (2) to (4), as well as associated to the number of displaced households who left the municipalities in the past whatever the specification chosen. Moreoever, when we drop most of the controls for municipalities as in specification (2) we found that problems of violence in municipalities leading to taskforce desertion in health center become weakly significant, whereas presence of curfew is significant in most other specifications. All these results show that violence plays a significant role in explaining household migration and that migration flows are closely linked to displacement process.

Marginal effects	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
1 if lives in treated municipality	-0.648	-0.628	-0.836	-1.124	-1.029
	(0.499)	(0.495)	(0.505)*	(0.402)***	(0.539)*
Number of displaced households	0.034	0.039	0.032	0.024	0.031
	(0.012)***	(0.012)***	(0.012)***	(0.010)**	(0.011)***
curfew	1.110	0.208	0.939	1.143	0.902
	(0.550)**	(0.603)	(0.567)*	(0.527)**	(0.565)
presence of illegal armed groups	0.821	1.282	0.969	1.364	0.774

	(0.512)	(0.526)**	(0.530)*	(0.437)***	(0.514)
1 if suffered taskforce desertion\0	0.732	1.107	0.512	0.013	0.675
	(0.582)	(0.626)*	(0.597)	(0.551)	(0.616)

Notes : Marginal effects of a Probit model are reported in percentage points. * significant at 10%; ** significant at 5%; *** significant at 1%. Robust standard errors in parentheses.

We also tested for possible quadratic effects associated to violence incidence. The negative coefficient associated to the square of number of displaced people turned out to be weakly significant at 10 % level or not significant depending on the set of controls which motivated our choice of a linear specification.

5 Does violence incidence modify migration incentives ?

Does violence incidence interact with the programme effect ?

To test for heterogeneous impact of the programme, we allow the effect associated to the programme measured by α_2 in equation 1 to depend on the level of violence in each municipality as follows:

$$\alpha_2 = \alpha_2(\text{Violence}) = \begin{cases} \alpha_2(\text{low level}) \\ \alpha_2(\text{high level}) \end{cases}$$ by estimating separately equation (1)

for municipalities with high and low incidence of violence.

Then, to gain in efficiency, we parametise the function $\alpha_3(\text{Violence})$ as:

$$\alpha_2 = \alpha_{20} + \alpha_{21}' * \text{Violence}_j$$

Hence the model becomes :

$$Y_{ij} = 1\left\{\beta_1 + \beta_2 \text{Treat}_j + \beta_3' \text{Treat}_j * \text{Violence}_j + \beta_4' \text{Violence}_j + \beta_5' \text{X}_{ij} + \varepsilon_{ij}\right\}$$

where: $\text{Violence}_j * \text{Treat}_j$ $= \text{Violence}_j$ if household lives in village j receiving the programme

$= 0$ otherwise

and the same assumptions as in equation (1) hold for the estimation

The table below shows that the negative effect of the programme is only significant at conventional levels in the villages where the incidence violence is low, as indicated by the absence of illegal armed groups (FARC, ELN or paramilitaries), which correspond to columns (4) to (6).[17] This result is robust whatever the specification chosen. The magnitude of the effect of the programme is large, with estimates lying between –0.5 percent points and -2.2 percent points.

	High level	**of violence**		**Low level**	**of violence**	
	(1)	(2)	(3)	(4)	(5)	(6)
treat	-0.543	-0.460	-0.737	-1.185	-1.382	-1.739
	(0.685)	(0.661)	(0.537)	(0.482)**	(0.816)*	(0.532)***
Obs.	6464	6464	5099	3370	3370	2661

Notes: marginal impacts are reported in percentage points with robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
(2) & (5) with more controls for municipality characteristics
(3) & (6) with more controls for occupation of household heads and spouses

In the next table we define low and high levels of violence using the information we have on the number of displaced households who left the village in the past. High levels are defined for municipalities with at least 5 displaced households the year preceding the baseline survey, which corresponds to the highest quartile of the distribution.

	High	**level**		**Low level**		
	(1)	(2)	(3)	(4)	(5)	(6)
treat	0.435	-1.708	0.605	-0.365	-0.707	-1.375
	(1.386)	(2.332)	(1.836)	(0.496)	(0.523)	(0.463)***
Obs	2246	2246	1673	7180	7180	5771

Once we parametise the effect of the programme as a function of this continuous proxy for violence, we obtain a couple of significant effects associated to the interaction of the programme effect, β_3, with violence levels that are displayed below (the marginal effects associated to all explanatory variables are presented in Table 5):

[17]We only present here the main results concerning the effect of the programme but we control for the same variables as specified above.

Probit estimates	*(1)*	*(2)*	*(3)*	*(4)*
Programme effect	-18.323	-26.097	-40.390	-26.264
	(9.906)*	(11.455)**	(10.455)***	(12.071)**
Interaction effect of Programme*violence	0.611	0.780	0.674	0.967
	(0.274)**	(0.260)***	(0.282)**	(0.320)***
Violence effect	0.493	0.382	0.346	0.401
	(0.159)***	(0.152)**	(0.141)**	(0.159)**
observations	8837	8837	7078	8837

Notes : The coefficients multiplied by 100 are displayed with robust standard errors in parentheses. significant at 10%; ** significant at 5%; *** significant at 1%.
Violence incidence is measured by the number of displaced households who left the municipality.
Column (1) is with fewer municipality control variables than in column (2). Column (3) adds the controls for occupations of household heads, column (4) adds controls for social capital

In all specification we find that receiving the programme decreases significantly the probability to migrate and that the degree of violence counteracts this effect (here we present the results from specifications 2 to 5 only since specification 1 is very similar to 2). Moreover, the programme effect is attenuated even further in municipalities where violence incidence is high, as shown by the positive effect associated to the interaction of violence level with the programme effect. We note also that this interaction effect is always strongly significant.

To assess the magnitude of these effects, we used these estimates to compute the change in the probability to migrate due to the programme effect and its interactions with violence at the mean characteristics of the sample. Figure 3 shows that the negative effect of the programme becomes less important the higher the degree of violence, as measured by the number of displaced households in the past. The implied change is between -2 percent points in municipalities with very low levels of violence and + 0.9 with high level of violence. However, positive effects only affect a minority of municipalities with unduly high level of violence. The figure remains similar whatever the set of control variables we choose. We then performed the same computations but adding to the programme impact and its interactions with violence the direct impact of past

displacement on migration. Figure 4 shows that, for the big majority of treated villages, the negative effect of the programme more than offsets the effect of violence. However, the total effect becomes positive when more than 20 households have left the village in the past, which corresponds to violence levels observed in the 10% most violent municipalities of our sample.

Does violence incidence modify other economic incentives to migrate ?

It is also questionable whether violence affects similarly migration incentives of households with different characteristics. This is for example the case when households are displaced by violence, as outlined above following Ibanez and Velez (2005). To address this issue, we interact the proxies for violence discussed above with household characteristics.

We did not find any significant effects associated to the interactions of violence with socio-economic characteristics like education levels of the head and the spouse, living in an isolated rural part of the municipality or working in agriculture, contrary to what we would have expected if these households were more threatened by violence. Nor did we find any significant interaction effects of violence levels with household participation in collective activities, contrary to what we would expect if households with strong social connections were strategically targeted by illegal armed groups. Hence households in our sample seem to behave differently than if their mobility were entirely forced. One possible explanation for these findings is that the households in our sample that are eligible for the FA programme are the most deprived households living in rural areas of Colombia. This is thus maybe not too surprising if illegal armed groups did not particularly target them in their strategy to destabilise rural areas.

Instead, we found that households with larger size, fewer children, and whose head (spouse) is older (younger) respond more strongly to the level of violence by leaving their municipality of residence, as shown in Table 6. This result suggests that large households

who would not, otherwise, have migrated due to high migration costs have been pushed to migrate out of municipalities where violence incidence is very high.

6 Understanding the effect of the welfare programme in a violent context

So far we have shown that welfare programmes such as FA have different impacts on household migration across villages that depend on violence incidence but the reason why it is the case is not clear. We see at least three explanations for this fact, which have different policy implications. First, cash transfers increase household income, which tends to attach beneficiary households to their municipality of residence. If this is the case, this effect should persist as long as the programme is not universally implemented. Second, receiving welfare benefits helps relaxing household liquidity constraints, which may increase migration if liquidity constraints are binding for migration decisions. This is likely to be the case in municipalities with high level of violence where lots of inhabitants wish to migrate. Third, the welfare programme may mitigate different types of risk in the municipalities receiving the programme, thereby, affecting all household decisions coping with risk, including migration. This section tests for the relevancy of such stories by studying how migration responds to other types of risk and to household liquidity constraints.

How do different types of risk affect household migration ?

The main results in Section 3 have shown that households having formal insurance are less mobile than households without and that high levels of violence push households to leave their municipality of residence. In this section we want to examine more generally the link between household migration and their exposition to different types of risks.

We use detailed data on other shocks that affected negatively household income during the year of the survey such as death, illness of a household member, business or crop losses, losses due to fire, flood, other natural disaster, violence, robbery or displacement. We also checked the robustness of our results by using indicators for shocks occurring in

the two years preceding the survey. The table below shows that in the two years preceding the survey households have been more frequently exposed to negative income shocks due to crop losses (27%) or to illnesses of some of their members (17%) than to other negative shocks.

Dummy variable equal to 1 if household income was affected by:	Shocks in 2002			Shocks occurring in 2000/2001/2002	
	Obs	Mean	Std.	Mean	Std.
death	8837	0.025	0.156	0.054	0.226
illness	8837	0.104	0.305	0.169	0.375
Crop loss	8837	0.161	0.368	0.268	0.443
Business loss	8837	0.014	0.119	0.025	0.156
Fire, flood or other natural disaster	8837	0.016	0.126	0.036	0.187
Violence, robbery or displacement	8837	0.013	0.112	0.031	0.173

We also want to assess the relative importance of aggregate shocks at village level in explaining household migration, as insurance mechanisms within villages may also play an important role in mitigating idiosyncratic shocks affecting household income. If such mechanisms exist, household migration may respond more strongly to aggregate negative shocks due to bad weather or violence in municipalities than to idiosyncratic household shocks such as shocks due to illness or death of some household members. However, migrating out of the village may also lead to loosing the benefits of mutual informal insurance within village. To control for aggregate shocks at village level, we build the proportions of households in each village having been exposed to different types of income losses in 2002.

We also use the questions on income expectations of households, in order to measure how household migration responds to exposure to risk (ex-ante). Our measure of risk exposure is constructed as follows. We first construct the variance of expected income as $\sigma_Y^2 = \frac{\left(Y^u - \overline{Y}\right)^2 + \left(Y^l - \overline{Y}\right)^2}{2}$ where Y^u is the household's expectation of next month's maximum income, Y^l is the household's expectation of next month's minimum income, and $\overline{Y}$ is the average of the two. As this measure is unit-dependent, we standardise it and use instead the coefficient of variation of income $cv_Y = \log\left(\frac{\sigma_Y}{\overline{Y}}\right)$

This measure of risk has a number of advantages that distinguishes it from previous measures that have been used. The first is that the household head's expectation of next month's maximum and minimum income levels is not a function of measures taken by the household to mitigate the income risk they face.[18] This is because the expectations relate to two hypothetical extreme situations that the household may face, rather than the situations that the household itself believes it will face. Two extreme scenarios are presented to the household head, on which (s)he reports expected income under both: that the member(s) of the household who want to work obtain a good/bad job (alternatively, there is a good/bad harvest) next month. It is the first question of its kind that tries to elicit individuals' own perception of ex-ante risk in surveys such as these. We also averaged this proxy for each municipality to obtain a proxy for aggregate expectations in each village.

Lastly, we used a proxy for risk attitude measured as the share of household budget devoted to lottery and its average in the village.[19] We summarise the two proxies for risk exposure and attitude below. We note that the number of missing observations for the variable measuring the perceptions of risk is quite high.

Variables	Obs	Mean	St.deviation	Minimum	Maximum
Share of budget in lottery	8836	0.006	0.019	0.000	0.380
Log of coefficient of variation	5986	-0.220	0.243	-3.045	-0.001

Moreover, when added to the set of explanatory variables, we found that household and village level variables capturing risk exposure and attitude are not significant in explaining household migration. Therefore we do not keep them among the final set of control variables for household and village level shocks.

As shown below a shock due to death in 2002 increases the probability to migrate out of the municipality increases by more than 2.1 percentage points, which is a very large impact as compared to the 3.5% migration rate observed between baseline and follow-up.

[18] If it were, one would risk obtaining an under-estimate of the ex-ante risk facing the household.

[19] In the future we hope to be able to enrich this set of proxies for risk, in particular those related to attitude towards risk either at individual or village levels, using the results of experimental risk-sharing games we are implementing in all villages in our sample.

Moreover, a negative shock on household income due to violence increases the probability to migrate by 3 percentage points. The shocks that are the most frequent such as crop losses or illness of a household member do not have significant impacts on household mobility. If we now consider the shocks that have occurred earlier in the past, we find weaker impacts on migration that are significant at less than 10% level, as presented in Table 7. This motivates why we only keep in our final specification the proxies for shocks in the years preceding the survey as presented in column (2) below.

	(1)	*(2)*
household shock: death02	2.137	2.442
	(0.929)**	(0.924)***
household shock: illness02	0.194	
	(0.594)	
household shock: croploss02	-0.508	
	(0.452)	
household shock: busloss02	0.460	
	(1.474)	
household shock: fireflood02	-1.457	
	(1.793)	
household shock: violence02	3.067	3.218
	(1.173)***	(1.160)***
% of households in village with death 02		-0.344
		(0.136)**
%hhs in vill. with income losses due to viol 02		-0.250
		(0.144)*
Observations	8837	8837

Notes : Marginal effects of a Probit model are reported in percentage points.
Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%.

Moreover we find little evidence for a story of full insurance within the village, as when village level shocks have significant impacts, these impacts decrease household migration, as shown in column (2) above. However, in absence of mutual insurance mechanisms within villages it is likely that households would diversify risk by sending

some of their members away rather than moving as a whole, which cannot be tested with our actual data set.[20]

The main results related to the programme and violence impacts and their interaction discussed in Section 5 are remarkably robust when adding additional control variables for past negative shocks affecting household income, as shown in Table 7. We also find that receiving the programme benefits does not fully compensate for the negative shocks on household income due to violence or death in the year preceding the survey.

Lastly we examined whether receiving the programme plays as an insurance mechanism in poor villages which would attenuate the effects of different negative shocks on household migration. To do so, we interacted the programme effect with the variables capturing the different types of risks affecting household income either at the village or household levels. We found little evidence for such insurance mechanisms as heterogeneous impacts of the programme on migration along these other dimensions turned out to be not significant at conventional levels.

How do liquidity constraints affect migration decisions ?

Another mechanism that may explain the impact of the programme on migration could be through relaxing the liquidity constraints of poor households who have to pay for high migration costs, as described in Section 3. The evidence we found in Section 5 on positive interaction effects of the programme in municipalities with high level of violence is consistent with such a story. This would also explain why negative shocks on household income such as crop losses or losses due to flood, fire or natural disaster do not push households out their villages or residence. If liquidity constraints are binding for migration decisions, we would expect wealthier households to be more likely to migrate, which is what we now turn to examine.

[20] We are waiting for a new wave of data that will allow us to identify where household members have migrated between the first and the second follow-up surveys.

The questionnaire includes several proxies for household wealth as it has detailed data on the value of house and land owned by the households, on the amount of their debts they incurred to buy these assets and on other debts as well as on their stock of savings. While interpreting our results we have to keep in mind, however, that the stocks of assets or savings at any given date are likely to be endogenous to other life-cycle decisions such as migration. Therefore we keep these results separate from the main results. We could also consider other variables as proxies for household wealth such as education levels and occupation of household heads. Our previous results have shown that having a job increases the probability to migrate but that education levels of household heads have no significant impacts. However, these variables also capture other job related migration motives that are difficult to disentangle from the effect of liquidity constraints.

Column (1) of the table below shows that the net value of household wealth, which includes assets and savings net debts, does not have a significant effect on household migration, contrary to what we would have expected if households were liquidity constrained. We were worried, however, about possible downwards bias of this estimate if some negative shocks on household income that we are not controlling for, explain both savings desaccumulation during the years preceeding the survey and migration decisions. In order to have an indicator of permanent household wealth we use in column (2) the value of permanent assets (house and land) net of debts and find a positive significant effect associated to household wealth. If we use, instead, the net amount of savings we find a negative effect associated to household wealth that is weakly significant, as presented in column (3). However, as the negative effect of net savings may also reflect the effects of household risk aversion, we prefer the specification shown in column (2) where we only use the net value of house and land property as a proxy for permanent wealth.

	(1)	*(2)*	*(3)*	*(4)*
net wealth	0.033			
	(0.021)			
household shock: violence02	2.978	2.972	2.939	3.727
	(1.208)**	(1.208)**	(1.205)**	(1.286)***
household shock: death02	2.122	2.102	2.248	1.812

	(0.933)**	(0.936)**	(0.932)**	(0.970)*
Net value of property		0.039		0.014
		(0.019)**		(0.027)
Net value of ppty interacted with death02				0.076
				(0.030)**
Net value of ppty interacted with viol02				-0.289
				(0.142)**
Net savings			-0.159	
			(0.097)*	
Observations	8837	8837	8837	8837

Notes: marginal effects are reported in percentage points.
Standard errors in parenthesis : *significant at 10%; ** significant at 5%; *** significant at 1%.
Effects of value of property and wealth are per 10*e8 pesos.

Furthermore we tested whether wealthier households migrate less as a response to income shocks we observe with our data as they can smooth consumption by having more easily access to credit markets or by using their stock of savings or assets. Only two interaction terms between wealth and income shocks turned out to be significant as shown in column (4). But the opposite wealth effects we find for households affected by violence or death are difficult to explain. Moreover, the negative impact of violence on migration of wealthy households stands in contrast to what we would expect if migration was completely forced.

7 Conclusion

We have shown that household migration decisions respond strongly and positively to the level of violence as well as to negative shocks affecting their income. We found that receiving the programme decreases migration only if violence is not unduly high. For the big majority of villages in our sample, our estimates show that the negative impact of the welfare programme on migration more than offsets the positive impact of violence associated to the number of displaced households. However, if violence affects household income, then receiving welfare benefits such as offered by the FA program does not compensate enough for the welfare losses entailed by violence.

Our results have interesting policy implications if a government's aim were to slow down migration flows out of the municipalities destabilised by the civil conflict. Even though welfare programs such as FA may be used as a way of curbing outmigration flows in some areas, they are not effective at mitigating migration flows in municipalities with very high level of violence. This warns us to be careful when extrapolating our results to advocate policy interventions in emergency situations that lead to large flows of displaced population. We also find that migration decisions are strongly determined by household property rights, type of insurance held by households and type of jobs of household heads and spouses. This further suggests that policy measures oriented towards rural development, access to housing market and health insurance would also contribute to stabilise sensitive areas affected by the civil war.

We also found some evidence on the role played by liquidity constraints in migration decisions, as wealthier households are more likely to migrate. Moreover, in presence of shocks on household resources due to the death of some members, wealthier households are more likely to migrate out of their village of residence. Such complex interactions of liquidity constraints and violence levels may also explain why receiving the welfare programme tends to discourage households to migrate, unless violence levels are particularly high.

However, to understand better how a welfare programme such as FA affects household migration decisions of very poor households, we would need to understand the larger picture of risk diversification mechanisms households adopt in order to mitigate the impact of negative shocks on their resources. This would require looking at the household decision to send members away as one of the several intra-household risk diversification mechanisms, a task we leave for further research once we have appropriate information on individual mobility in the next wave of data.

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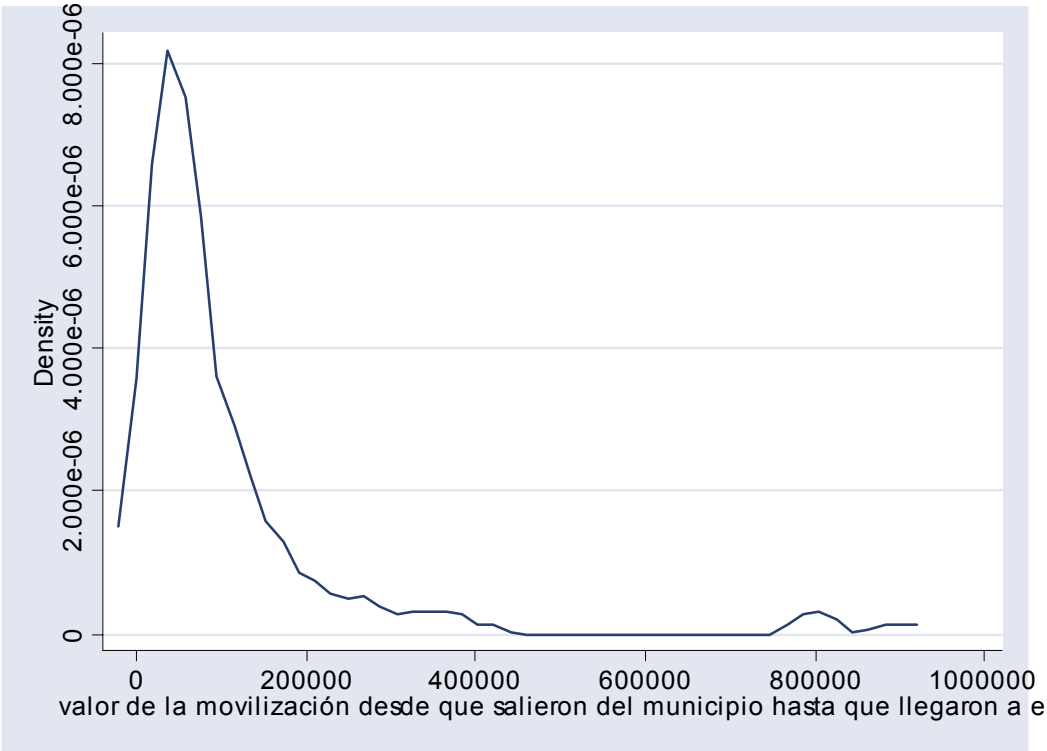

Figure 1 distribution of migration costs

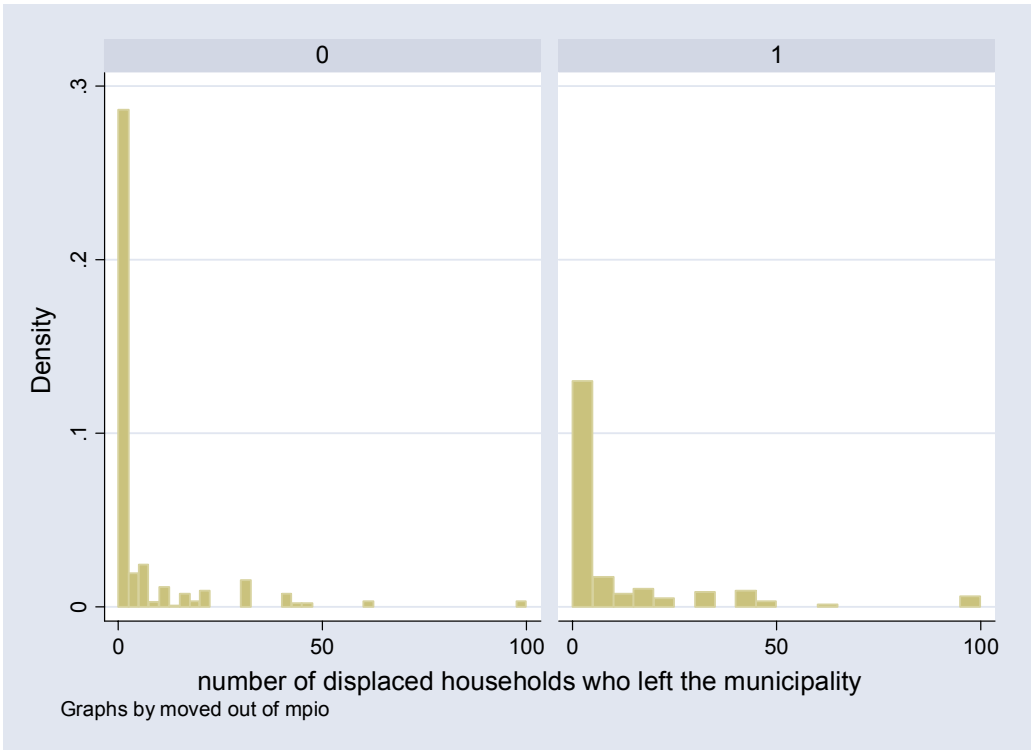

Figure 2
Distribution of number of displaced households who left the municipality of residence in the non migrant sample (on the left) and migrant sample (on the right)

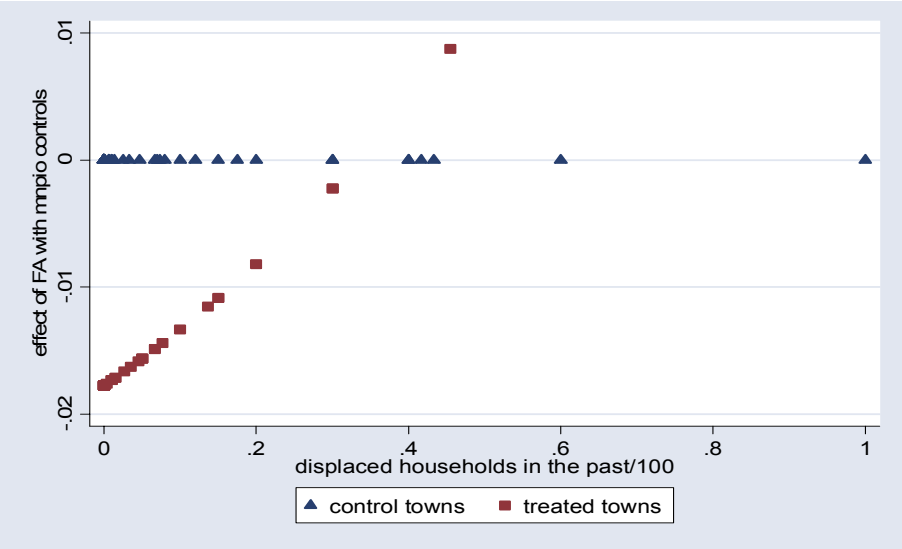

Figure 3 effect of the programme and its interaction with violence incidence

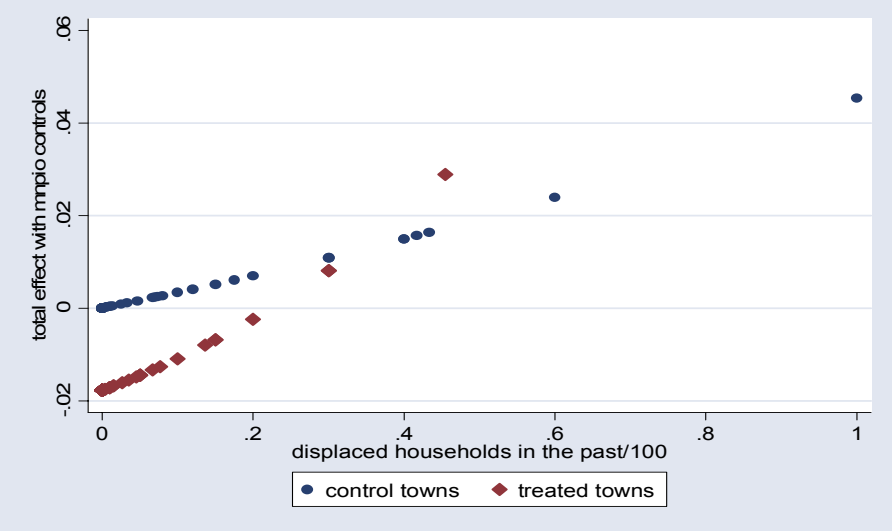

Figure 4 adding the direct effect of violence to the programme effect to its interaction with violence

Table 1 Logit of having moved out of the municipality of origin versus not being reached by interviewer at follow-up for unknown reason.

Explanatory variables	**coefficients (standard errors)**
treat	-0.406
	(0.376)
number of groups	0.232
	(0.103)**
dum_game	1.810
	(1.201)
group	1.450
	(0.889)
n_dispop	0.042
	(0.017)**
n_dispinp	-0.008
	(0.002)***
curfew	1.683
	(0.783)**
presence of eln_farc_pm	0.199
	(0.360)
people in HH	-0.507
	(0.378)
pershogsq	0.029
	(0.021)
kids 0-6	-0.011
	(0.552)
kid 0-6sq	0.056
	(0.121)
kids 7-17	0.516
	(0.403)
kid 7-17sq	-0.032
	(0.061)
1 if EPS	-2.683
	(1.348)**
1 if ARS	-0.460
	(0.521)
1 if Vinculado	0.722
	(0.467)
age_head	0.046
	(0.018)**
age_spouse	-0.013
	(0.021)
head of household primary not completed	0.454
	(0.393)
head of household primary completed	0.918
	(0.522)*
head of household secondary incompleted	1.030
	(0.663)
head of household secondary completed or more	-0.230
	(1.852)
spouse primary not completed	0.679
	(0.365)*
spouse primary completed	0.916
	(0.486)*
spouse secondary incompleted	1.138

	(0.662)*
spouse secondary completed or more	1.413
	(0.874)
work_h	18.491
	(0.759)***
work_s	0.503
	(0.920)
farm_h	-0.572
	(0.425)
farm_s	1.053
	(1.006)
familywork_h	-19.496
	(1.352)***
familywork_s	-1.714
	(1.533)
employer_h	-20.267
	(0.000)
self_employed_h	-18.444
	(0.673)***
self_employed_s	-1.835
	(1.173)
employed_h	-18.110
	(0.634)***
employed_s	-0.773
	(1.075)
1 if lives in a house, O oth	0.391
	(1.093)
1 if walls made of Tapia, Abobe or Bahareque.	-0.501
	(0.416)
1 if walls made of wood	-1.066
	(0.585)*
1 if walls made of bad quality wood.	-0.334
	(0.787)
1 if no phone,0 oth	0.102
	(0.662)
1 if communal or radiotelephone, 0 oth	0.621
	(1.301)
1 if house is rented or anticresis, o oth	0.361
	(0.587)
1 if house is ocupada de hecho	-1.601
	(0.893)*
1 if house is in usufruct	0.308
	(0.339)
dum_death	1.406
	(0.627)**
dum_ill01	0.516
	(0.601)
region==Oriental	-3.472
	(0.638)***
region==Central	-2.176
	(0.518)***
region==Pacifico	-2.196
	(0.699)***
altitud to the sea level in metres	-0.000
	(0.000)
cab2002	-0.000

	(0.000)
res2002	-0.000
	(0.000)***
number of urban public schools	0.018
	(0.043)
number of rural public schools	0.019
	(0.010)*
number of public hospitals	-0.189
	(0.387)
number of public centros	0.333
	(0.173)*
number of public puestos	0.073
	(0.032)**
number of pharmacies	-0.065
	(0.047)
acue01	2.942
	(1.404)**
alca01	2.751
	(0.738)***
1 if taskforce desertion in IPS	-0.490
	(0.620)
1 if taskforce strike in IPS, 0	0.554
	(0.345)
1 if lives in a rural but disperse part, 0 oth	-0.699
	(0.387)*
1 if lives in a rural but populated part, 0 oth	0.040
	(0.547)
Observations	400

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

Table 2: Dictionary of variables of the FA survey and description of the sample

Variables	**(1) Mean (sd)**	**(2) Mean (sd)**	**Variable description**
treat	0.58	0.60	1 if treated municipality, \0
	(0.49)	(0.49)	
expo	3.58	3.56	number of payments received at follow-up in municipality
	(3.47)	(3.35)	
wagem_r	1236.03	1248.15	Average hourly wage in rural part of municipality
	(710.22)	(569.8)	
wagem_u	1174.53	1200.6*	Average hourly wage in urban part of municipality
	(323.94)	(287.72)	
urbr_1	0.49	0.49	1 if lives in urban, 0 otherwise.
	(0.50)	(0.50)	
urbr_2	0.41	0.40	1 if lives in a rural but disperse part of the municipality\0
	(0.49)	(0.49)	
urbr_3	0.10	0.11	1 if lives in a rural but populated part of the municipality\0
	(0.29)	(0.31)	
pershog	6.10	5.55*	Number of people in the household
	(2.44)	(2.55)	
kid 0-6	1.13	1.10	Number of children aged between 0 and 6 years old
	(1.15)	(1.11)	
Kid 7-17	2.13	1.93*	Number of children aged between 7 and 17 years old
	(1.39)	(1.48)	

age_head	45.95	43.10*	Age of the head of household
	(13.13)	(13.27)	
age_spouse	41.94	38.86*	Age of spouse
	(12.75)	(12.66)	
single	0.20	0.26*	1 if the household head is single\0
	(0.40)	(0.44)	
ss_h1	0.04	0.02*	1 if head of household has unsubsidized health insurance\0
	(0.21)	(0.15)	
ss_h2	0.69	0.63*	1 if head of household has subsidized health insurance\0
	(0.46)	(0.48)	
ss_h3	0.17	0.24*	if head of household has a letter from the municipality that is
	(0.38)	(0.43)	similar to subsidized health insurance\0
eduh	0.25	0.26	1 if head of household has at least completed the primary
	(0.43)	(0.44)	school\0
edus	0.24	0.24	1 if the spouse has at least completed the primary school\0
	(0.43)	(0.43)	
edu_h1	0.27	0.24	1 if head of household has not education\0
	(0.44)	(0.43)	
edu_h2	0.46	0.47	1 if the head of household has primary not completed\0
	(0.50)	(0.50)	
edu_h3	0.14	0.14	1 if head of household has completed primary school\0
	(0.35)	(0.34)	
edu_h4	0.09	0.11	1 if head of household secondary not completed\0
	(0.29)	(0.31)	
edu_h5	0.04	0.04	1 if head of household secondary completed or more\0
	(0.19)	(0.19)	
edu_s1	0.23	0.19*	1 if spouse of household has not education\0
	(0.42)	(0.40)	
edu_s2	0.46	0.50	spouse primary not completed
	(0.50)	(0.50)	
edu_s3	0.16	0.15	spouse primary completed
	(0.37)	(0.35)	
edu_s4	0.10	0.12	spouse secondary not completed
	(0.29)	(0.32)	
edu_s5	0.04	0.05	spouse secondary completed or more
	(0.21)	(0.21)	
house	0.97	0.94*	0 if family does not live in a house, 1 if it does.
	(0.16)	(0.24)	
houseown_1	0.69	0.53*	1 if house is owned\0
	(0.46)	(0.50)	
houseown_2	0.06	0.18*	1 if house is rented or in mortgage\0
	(0.24)	(0.38)	
houseown_3	0.05	0.02*	1 if house is occupied without legal agreement\0
	(0.21)	(0.13)	
houseown_4	0.20	0.26*	1 if house is in usufruct \0
	(0.40)	(0.44)	
walls_mate~1	0.44	0.43	1 if walls made of brick \0
	(0.50)	(0.50)	
walls_mate~2	0.37	0.36	1 if walls made of Tapia, Abobe or Bahareque.
	(0.48)	(0.48)	
walls_mate~3	0.14	0.15	1 if walls made of wood
	(0.35)	(0.36)	
walls_mate~4	0.03	0.03	1 if walls made of bad quality wood.
	(0.18)	(0.18)	
walls_mate~5	0.01	0.02	1 if walls made of cardboard or no walls.
	(0.11)	(0.13)	
phone_3	0.90	0.89	1 if no phone\0

	(0.30)	(0.31)	
phone_2	0.02	0.01	1 if communal or radiotelephone\0
	(0.13)	(0.12)	
phone_1	0.08	0.09	1 if traditional phone\0
	(0.28)	(0.29)	
dum_death	0.05	0.06	1 if someone from the household died in 2000,2001 or 2002\0
	(0.21)	(0.23)	
dum_ill01	0.05	0.05	1 if someone from the household was very ill in 2001\0
	(0.23)	(0.22)	
region2	0.21	0.23	1 if lives in region==Oriental\0
	(0.41)	(0.42)	
region3	0.24	0.33	region==Central
	(0.43)	(0.47)	
region4	0.13	0.09	region==Pacifico
	(0.34)	(0.28)	
altitud	595.86	642.15	altitud to the sea level in metres
	(735.94)	(717.26)	
cab2002	15382.85	13677.12	population in the urban part in 2002
	(17921.23)	(15285.00	
res2002	14034.35	13695.38	population in the rural part in 2002
	(11151.83)	(9754.95)	
acue01	0.87	0.88*	proportion of households with piped water in municipality
	(0.13)	(0.13)	
alca01	0.50	0.58*	Proportion of households with sewage system
	(0.37)	(0.34)	
no_colurb_~c	8.41	7.89	number of urban public schools in the municipality
	(8.72)	(7.49)	
no_colrur_~c	35.97	41.94*	number of rural public schools in the municipality
	(27.15)	(30.77)	
no_hos_alc	0.74	0.80*	number of public hospitals in the municipality
	(0.44)	(0.40)	
no_cen_alc	0.89	0.82	number of public centros
	(1.20)	(1.06)	
no_pue_alc	4.88	5.51*	number of public puestos
	(4.61)	(5.46)	
no_far_alc	8.64	8.79	number of pharmacies
	(6.70)	(7.09)	
d_desertion	0.09	0.17*	1 if in any IPS of our sample in the municipality suffered
	(0.29)	(0.38)	taskforce desertion, due to violence\0
d_strike	0.25	0.30*	1 if in any IPS of our sample in the municipality suffered
	(0.43)	(0.46)	taskforce strike\0
curfew	0.12	0.15*	presence of curfew in municipality
	(0.32)	(0.35)	
eln_farc_pm	0.61	0.73*	presence of ELN, FARC or paramilitary groups
	(0.49)	(0.44)	
probl_op	0.65	0.78*	problems in municipality
	(0.48)	(0.42)	
n_dispop	5.42	10.19*	Number of displaced households from the municipality during
	(13.51)	(20.52)	the year before baseline
n_dispinp	49.44	49.33	Number of displaced households joining the municipality
	(100.45)	(89.91)	during the year before baseline
group	0.28	0.31	% of women participating in collective activity in the village
	(0.17)	(0.18)	
ngroup	0.93	1.38	Number of game groups in villages**
	(3.32)	(3.86)	
work_h	0.82	0.77*	1 if head works\0
	(0.38)	(0.42)	

work_s	0.23	0.19*	1 if spouse works\0
	(0.42)	(0.39)	
farm_h	0.46	0.38*	1 if head works in agriculture\0
	(0.49)	(0.48)	
farm_s	0.04	0.03	1 if spouse works in agriculture\0
	(0.20)	(0.17)	
familywork_h	0.01	0.01	1 if head works in family enterprise\0
	(0.10)	(0.09)	
familywork_s	0.02	0.01	1 if spouse works in family enterprise\0
	(0.14)	(0.12)	
employer_h	0.03	0.02	1 if head is an employer\0
	(0.16)	(0.14)	
employer_s	0.003	0.003	1 if spouse is an employer\0
	(0.06)	(0.05)	
self_employed_h	0.40	0.29*	1 if head is self-employed\0
	(0.49)	(0.46)	
self_employed_s	0.10	0.06*	1 if spouse is self-employed\0
	(0.30)	(0.24)	
employed_h	0.35	0.39*	1 if head is employed\0
	(0.48)	(0.49)	
employed_s	0.07	0.06	1 if spouse is employed\0
	(0.26)	(0.24)	
Observations	11177	435	Total number of observations

Column (1) households who have not migrated
Column (2) households who migrated out of their municipality of residence.
* Significantly different as compared to the group of non migrants
** This variable is available for 12 pilot areas only

Table 3 Determinants of household migration

Marginal effect	(1)	(2)	(3)	(4)	(5)
		Dropping some controls for municipality	More education levels	with control for occupations	with controls for social capital
treat	-0.648	-0.628	-0.836	-1.124	-1.029
	(0.499)	(0.495)	(0.505)*	(0.402)***	(0.539)*
n_dispop	0.034	0.039	0.032	0.024	0.031
	(0.012)***	(0.012)***	(0.012)***	(0.010)**	(0.011)***
n_dispinp	-0.003	-0.001	-0.001	-0.000	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
curfew	1.110	0.208	0.939	1.143	0.902
	(0.550)**	(0.603)	(0.567)*	(0.527)**	(0.565)
presence of eln_farc_pm	0.821	1.282	0.969	1.364	0.774
	(0.512)	(0.526)**	(0.530)*	(0.437)***	(0.514)
hourly wage in urban part of municipality*1000	0.007	0.010	0.007	0.006	0.008
	(0.010)	(0.008)	(0.010)	(0.008)	(0.010)
hourly wage in rural part of municipality*1000	-0.005	-0.004	-0.004	-0.003	-0.005
	(0.002)**	(0.002)	(0.002)**	(0.002)	(0.002)**
people in HH	-0.518	-0.708	-0.701	-0.840	-0.708
	(0.278)*	(0.335)**	(0.326)**	(0.343)**	(0.324)**
pershogsq	0.023	0.029	0.028	0.035	0.029

	(0.015)	(0.017)*	(0.016)*	(0.018)**	(0.016)*
kids 0-6	-0.221	-0.150	-0.138	0.394	-0.142
	(0.428)	(0.498)	(0.486)	(0.509)	(0.486)
kid 0-6sq	-0.000	0.028	0.025	-0.105	0.024
	(0.095)	(0.117)	(0.114)	(0.121)	(0.113)
kids 7-17	-0.407	-0.290	-0.290	-0.107	-0.285
	(0.393)	(0.483)	(0.471)	(0.513)	(0.470)
kid 7-17sq	0.088	0.086	0.087	0.050	0.085
	(0.067)	(0.080)	(0.078)	(0.089)	(0.078)
1 if EPS	-3.553	-3.497	-3.533	-2.844	-3.546
	(1.090)***	(1.235)***	(1.200)***	(1.153)**	(1.202)***
1 if ARS	-1.282	-1.056	-1.148	-1.049	-1.178
	(0.575)**	(0.661)	(0.639)*	(0.627)*	(0.630)*
1 if Vinculado	-0.696	-0.424	-0.565	-0.365	-0.611
	(0.648)	(0.728)	(0.708)	(0.677)	(0.700)
age_head	0.034	0.045	0.044	0.050	0.043
	(0.019)*	(0.022)**	(0.022)**	(0.020)**	(0.022)**
age_spouse	-0.076	-0.085	-0.082	-0.052	-0.082
	(0.027)***	(0.030)***	(0.030)***	(0.027)*	(0.030)***
single	0.929	1.074	0.974		0.972
	(0.457)**	(0.516)**	(0.507)*		(0.508)*
edus	-0.915				
	(0.608)				
eduh	-0.028				
	(0.662)				
0 if family does not live in a house(room...), 1 if it does.	1.187	1.274	1.227	1.762	1.241
	(0.893)	(0.910)	(0.868)	(1.185)	(0.869)
1 if walls made of Tapia, Abobe or Bahareque	0.317	0.386	0.308	0.234	0.285
	(0.435)	(0.484)	(0.473)	(0.476)	(0.468)
1 if walls made of wood	0.365	0.367	0.349	0.428	0.424
	(0.610)	(0.594)	(0.612)	(0.598)	(0.601)
1 if walls made of bad quality wood.	0.585	0.296	0.258	0.381	0.221
	(0.944)	(0.922)	(0.909)	(0.858)	(0.908)
1 if walls made of cardboard or no walls.	1.072	1.245	1.241	0.296	1.342
	(1.544)	(1.540)	(1.544)	(1.614)	(1.545)
1 if no phone,0 oth	0.275	0.180	0.290	1.350	0.267
	(0.717)	(0.817)	(0.781)	(0.843)	(0.782)
1 if communal or radiotelephone, 0 oth	-0.574	-0.440	-0.356	0.841	-0.409
	(1.528)	(1.608)	(1.585)	(1.644)	(1.600)
1 if house is rented or anticresis, o oth	1.970	2.183	2.012	1.254	2.021
	(0.554)***	(0.614)***	(0.599)***	(0.673)*	(0.600)***
1 if house is ocupada de hecho	-2.998	-3.378	-3.374	-3.364	-3.363
	(1.681)*	(1.598)**	(1.592)**	(1.363)**	(1.591)**
1 if house is in usufruct	0.865	1.054	1.020	1.092	1.016
	(0.374)**	(0.390)***	(0.383)***	(0.370)***	(0.385)***
dum_death	0.884	0.904	1.003	1.345	1.016
	(0.751)	(0.795)	(0.778)	(0.872)	(0.779)
dum_ill01	0.149	0.506	0.538	0.366	0.496

	(0.674)	(0.703)	(0.689)	(0.690)	(0.691)
region==Oriental	-1.761	-1.361	-2.003	-2.351	-2.301
	(0.805)**	(0.852)	(0.817)**	(0.717)***	(0.827)***
region==Central	-0.017	0.390	-0.390	-0.396	-0.762
	(0.608)	(0.609)	(0.610)	(0.556)	(0.663)
region==Pacifico	-3.305	-2.513	-3.739	-3.642	-3.814
	(0.921)***	(1.020)**	(0.963)***	(0.902)***	(0.933)***
altitud to the sea level in metres	0.001	0.001	0.001	0.001	0.001
	(0.000)	(0.000)*	(0.000)*	(0.000)	(0.000)*
cab2002	0.000	-0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
res2002	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)**	(0.000)	(0.000)*	(0.000)	(0.000)**
number of urban public schools	-0.089		-0.094	-0.083	-0.071
	(0.052)*		(0.054)*	(0.059)	(0.057)
number of rural public schools	0.012		0.012	0.019	0.014
	(0.010)		(0.010)	(0.009)**	(0.010)
number of public hospitals	0.441		0.509	-0.337	0.470
	(0.774)		(0.814)	(0.645)	(0.801)
number of public centros	0.005		-0.027	-0.086	-0.027
	(0.231)		(0.238)	(0.199)	(0.234)
number of public puestos	0.099		0.120	0.090	0.114
	(0.054)*		(0.057)**	(0.051)*	(0.056)**
number of pharmacies	0.046		0.046	0.041	0.043
	(0.063)		(0.067)	(0.056)	(0.068)
acue01	-0.460		-0.577	0.744	-1.065
	(1.527)		(1.522)	(1.333)	(1.569)
alca01	1.355		1.325	1.468	1.466
	(0.924)		(0.953)	(0.883)*	(0.930)
1 if taskforce desertion in IPS	0.732	1.107	0.512	0.013	0.675
	(0.582)	(0.626)*	(0.597)	(0.551)	(0.616)
1 if taskforce strike in IPS, 0	0.168	0.534	0.246	0.304	0.328
	(0.497)	(0.493)	(0.516)	(0.453)	(0.504)
1 if lives in a rural but disperse part, 0 oth	-0.104	0.029	-0.037	0.467	-0.036
	(0.552)	(0.579)	(0.579)	(0.636)	(0.579)
1 if lives in a rural but populated part, 0 oth	0.738	1.043	0.935	1.374	1.016
	(0.606)	(0.640)	(0.637)	(0.639)**	(0.643)
head of household primary not completed		0.129	0.137	0.156	0.129
		(0.488)	(0.485)	(0.481)	(0.481)
head of household primary completed		-0.750	-0.708	-0.340	-0.736
		(0.645)	(0.641)	(0.570)	(0.639)
head of household secondary incompleted		-0.088	-0.075	0.138	-0.070
		(0.896)	(0.890)	(0.776)	(0.883)
head of household secondary completed or more		-0.688	-0.568	-1.019	-0.546

		(1.239)	(1.224)	(1.244)	(1.218)
spouse primary not completed		0.435	0.485	0.442	0.494
		(0.519)	(0.509)	(0.530)	(0.509)
spouse primary completed		0.197	0.208	0.554	0.207
		(0.624)	(0.615)	(0.598)	(0.614)
spouse secondary incompleted		0.369	0.408	0.745	0.394
		(0.748)	(0.743)	(0.673)	(0.740)
spouse secondary completed or more		-0.060	0.002	0.084	-0.038
		(0.954)	(0.935)	(0.972)	(0.941)
group					0.018
					(0.012)
dumwork_h				0.020	
				(0.030)	
dumwork_s				-0.005	
				(0.004)	
farm_h				-0.890	
				(0.456)*	
farm_s				0.131	
				(1.281)	
work_h				3.669	
				(1.292)***	
work_s				1.666	
				(3.588)	
familywork_s				-0.841	
				(3.875)	
employer_h				-5.266	
				(1.481)***	
employer_s				-0.955	
				(4.656)	
self_employed_h				-4.542	
				(1.209)***	
self_employed_s				-2.987	
				(3.696)	
domestic_h				-1.134	
				(1.787)	
domestic_s				-0.789	
				(3.839)	
employed_h				-3.475	
				(1.237)***	
employed_s				-2.926	
				(3.749)	
Observations	9630	8837	8837	7078	8837

Notes : Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
All parameters and standard errors(in brackets) have been multiplied by 100.

Table 4: migration determinants with intensity effects of the programme

Marginal effects	(1)	(2)	(3)
	Full set of control variables	Dropping some municipilaty level	Adding more controls for education levels

		variables	
number of payments	-0.095	-0.085	-0.118
	(0.058)*	(0.061)	(0.068)*
n_dispop	0.027	0.030	0.030
	(0.012)**	(0.013)**	(0.012)**
n_dispinp	-0.003	-0.001	-0.000
	(0.002)	(0.002)	(0.002)
curfew	0.528	0.028	-0.126
	(0.497)	(0.557)	(0.554)
presence of eln_farc_pm	0.333	1.055	1.182
	(0.600)	(0.394)***	(0.437)***
problems in mpio	0.588		
	(0.704)		
people in HH	-0.617	-0.614	-0.819
	(0.307)**	(0.317)*	(0.347)**
pershogsq	0.030	0.030	0.037
	(0.018)*	(0.019)	(0.020)*
kids 0-6	-0.163	-0.167	-0.076
	(0.430)	(0.441)	(0.485)
kid 0-6sq	-0.019	-0.017	0.006
	(0.095)	(0.098)	(0.121)
kids 7-17	-0.343	-0.362	-0.244
	(0.504)	(0.522)	(0.597)
kid 7-17sq	0.081	0.084	0.083
	(0.084)	(0.087)	(0.102)
1 if EPS	-3.587	-3.558	-3.541
	(0.916)***	(0.918)***	(1.022)***
1 if ARS	-1.118	-1.048	-0.954
	(0.597)*	(0.606)*	(0.716)
1 if Vinculado	-0.504	-0.384	-0.241
	(0.631)	(0.643)	(0.729)
age_head	0.030	0.032	0.041
	(0.021)	(0.022)	(0.024)*
age_spouse	-0.072	-0.073	-0.080
	(0.028)**	(0.029)**	(0.032)**
single	0.770	0.843	0.890
	(0.420)*	(0.419)**	(0.497)*
edus	-0.834	-0.846	
	(0.504)*	(0.517)	
eduh	0.021	0.020	
	(0.519)	(0.518)	
1 if lives in a house, O oth	0.644	0.702	0.789
	(0.840)	(0.870)	(0.845)
1 if walls made of Tapia, Abobe or Bahareque.	0.231	0.310	0.293
	(0.418)	(0.426)	(0.451)
1 if walls made of wood	0.398	0.360	0.298
	(0.654)	(0.651)	(0.621)
1 if walls made of bad quality wood.	0.432	0.487	0.129
	(0.944)	(0.908)	(0.838)
1 if walls made of cardboard or no walls.	0.932	0.874	1.045
	(1.724)	(1.708)	(1.693)
1 if no phone,0 oth	0.014	-0.067	-0.113
	(0.515)	(0.517)	(0.663)
1 if communal or radiotelephone, 0	-0.939	-1.046	-0.852

oth			
	(1.414)	(1.420)	(1.492)
1 if house is rented or mortgage, o oth	2.123	2.259	2.336
	(0.422)***	(0.430)***	(0.469)***
1 if house is squatted	-2.924	-2.973	-3.377
	(1.303)**	(1.298)**	(1.107)***
1 if house is in usufruct	0.903	0.929	1.098
	(0.326)***	(0.328)***	(0.324)***
Dum_death	0.765	0.702	0.784
	(0.953)	(0.972)	(0.935)
Dum_ill01	0.046	0.051	0.430
	(0.534)	(0.526)	(0.551)
region==Oriental	-1.715	-1.180	-1.466
	(0.766)**	(0.600)**	(0.612)**
region==Central	-0.011	0.720	0.294
	(0.594)	(0.536)	(0.510)
region==Pacifico	-3.212	-2.498	-2.801
	(0.650)***	(0.758)***	(0.837)***
altitud to the sea level in metres	0.001	0.001	0.001
	(0.000)	(0.000)**	(0.000)***
Cab2002	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Res2002	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
number of urban public schools	-0.032		
	(0.044)		
number of rural public schools	0.008		
	(0.010)		
number of public hospitals	0.320		
	(0.778)		
number of public centros	0.041		
	(0.207)		
number of public puestos	0.075		
	(0.048)		
number of pharmacies	0.023		
	(0.051)		
acue01	-0.580		
	(1.184)		
alca01	1.428		
	(0.854)*		
1 if in any IPS of our sample in the municipality suffered taskforce desertion,	1.044	1.670	1.458
	(0.595)*	(0.640)***	(0.680)**
1 if in any IPS of our sample in the municipality suffered taskforce strike, 0	0.250	0.354	0.507
	(0.510)	(0.467)	(0.509)
1 if lives in a rural but disperse part, 0 oth	0.062	0.135	0.157
	(0.574)	(0.574)	(0.598)
1 if lives in a rural but populated part, 0 oth	0.894	0.997	1.148
	(0.457)*	(0.468)**	(0.490)**
head of household primary not			0.099

completed			
			(0.502)
head of household primary completed			-0.544
			(0.603)
head of household secondary incompleted			-0.109
			(0.647)
head of household secondary completed or more			-0.583
			(0.992)
spouse primary not completed			0.513
			(0.589)
spouse primary completed			0.187
			(0.681)
spouse secondary incompleted			0.381
			(0.688)
spouse secondary completed or more			0.010
			(0.751)
Observations	10123	10123	9288

Notes : Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
All parameters and standard errors(in brackets) have been multiplied by 100.

Table 5 Effects of the programme interacted with violence as defined by the number of displaced households in the village

Marginal effects (dP/dX)	(1)	(2)	(3)	(4)
	Dropping some municipality var	With more municipality var.	With controls for occupations	With control for social capital
treat	-1.240	-1.725	-2.326	-1.869
	(0.666)*	(0.751)**	(0.601)***	(0.758)**
Pgm*eln_farc_pm	0.538	0.731	1.306	0.643
	(0.864)	(0.852)	(0.674)*	(0.826)
Pgm* n_dispop	0.041	0.052	0.039	0.053
	(0.019)**	(0.018)***	(0.017)**	(0.017)***
n_dispop	0.033	0.025	0.020	0.024
	(0.011)***	(0.010)**	(0.008)**	(0.010)**
n_dispinp	-0.000	-0.000	0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)
curfew	0.126	0.868	1.100	0.834
	(0.559)	(0.526)*	(0.491)**	(0.523)
presence of eln_farc_pm	0.888	0.455	0.546	0.309
	(0.719)	(0.750)	(0.583)	(0.728)
hourly wage in rural part of municipality*1000	-0.307	-0.422	-0.325	-0.433
	(0.217)	(0.196)**	(0.192)*	(0.201)**
hourly wage in urban part of municipality*1000	0.859	0.763	0.740	0.840

	(0.797)	(1.002)	(0.815)	(1.000)
people in HH	-0.704	-0.686	-0.820	-0.693
	(0.333)**	(0.322)**	(0.338)**	(0.321)**
pershogsq	0.029	0.028	0.035	0.029
	(0.016)*	(0.016)*	(0.018)**	(0.016)*
kids 0-6	-0.150	-0.144	0.389	-0.149
	(0.497)	(0.484)	(0.506)	(0.485)
kid 0-6sq	0.029	0.027	-0.103	0.026
	(0.117)	(0.113)	(0.121)	(0.113)
kids 7-17	-0.278	-0.283	-0.092	-0.279
	(0.481)	(0.468)	(0.507)	(0.468)
kid 7-17sq	0.083	0.084	0.046	0.083
	(0.079)	(0.077)	(0.089)	(0.077)
1 if EPS	-3.592	-3.615	-2.940	-3.624
	(1.230)***	(1.202)***	(1.163)**	(1.201)***
1 if ARS	-1.117	-1.212	-1.148	-1.237
	(0.656)*	(0.636)*	(0.627)*	(0.626)**
1 if Vinculado	-0.434	-0.576	-0.434	-0.619
	(0.719)	(0.701)	(0.670)	(0.692)
age_head	0.046	0.044	0.049	0.043
	(0.022)**	(0.022)**	(0.020)**	(0.022)**
age_spouse	-0.085	-0.082	-0.052	-0.081
	(0.030)***	(0.030)***	(0.026)*	(0.030)***
single	1.082	0.978		0.976
	(0.516)**	(0.506)*		(0.506)*
head of household primary not completed	0.144	0.154	0.186	0.145
	(0.490)	(0.485)	(0.478)	(0.482)
head of household primary completed	-0.717	-0.679	-0.313	-0.708
	(0.643)	(0.637)	(0.563)	(0.634)
head of household secondary incompleted	-0.078	-0.072	0.134	-0.065
	(0.892)	(0.887)	(0.771)	(0.880)
head of household secondary completed or more	-0.641	-0.499	-0.928	-0.476
	(1.240)	(1.221)	(1.246)	(1.213)
spouse primary not completed	0.412	0.451	0.402	0.463
	(0.516)	(0.508)	(0.527)	(0.508)
spouse primary completed	0.206	0.208	0.536	0.210
	(0.619)	(0.610)	(0.593)	(0.608)
spouse secondary incompleted	0.349	0.361	0.689	0.349
	(0.745)	(0.740)	(0.669)	(0.737)
spouse secondary completed or more	-0.100	-0.079	-0.008	-0.119
	(0.953)	(0.933)	(0.962)	(0.937)
1 if lives in a house, O oth	1.285	1.229	1.760	1.244
	(0.901)	(0.861)	(1.178)	(0.862)
1 if walls made of Tapia, Abobe or Bahareque.	0.391	0.312	0.213	0.294

	(0.478)	(0.461)	(0.463)	(0.456)
1 if walls made of wood	0.402	0.376	0.441	0.448
	(0.590)	(0.608)	(0.591)	(0.597)
1 if walls made of bad quality wood.	0.335	0.267	0.373	0.233
	(0.921)	(0.898)	(0.838)	(0.897)
1 if no phone,0 oth	0.169	0.277	1.329	0.255
	(0.820)	(0.784)	(0.836)	(0.784)
1 if communal or radiotelephone, 0 oth	-0.484	-0.440	0.719	-0.491
	(1.607)	(1.599)	(1.650)	(1.612)
1 if house is rented or anticresis, o oth	2.201	2.035	1.249	2.045
	(0.615)***	(0.598)***	(0.661)*	(0.598)***
1 if house is ocupada de hecho	-3.368	-3.346	-3.352	-3.331
	(1.591)**	(1.581)**	(1.341)**	(1.580)**
1 if house is in usufruct	1.046	1.016	1.076	1.014
	(0.388)***	(0.381)***	(0.364)***	(0.382)***
dum_death	0.874	0.996	1.306	1.008
	(0.789)	(0.771)	(0.862)	(0.773)
dum_ill01	0.501	0.539	0.376	0.500
	(0.700)	(0.687)	(0.686)	(0.687)
region==Oriental	-1.298	-1.918	-2.288	-2.219
	(0.828)	(0.790)**	(0.681)***	(0.799)***
region==Central	0.485	-0.231	-0.252	-0.596
	(0.605)	(0.576)	(0.505)	(0.625)
region==Pacifico	-2.419	-3.701	-3.617	-3.777
	(1.009)**	(0.962)***	(0.882)***	(0.935)***
altitud to the sea level in metres	0.001	0.001	0.001	0.001
	(0.000)*	(0.000)**	(0.000)*	(0.000)**
cab2002	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
res2002	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)**	(0.000)*	(0.000)**
1 if taskforce desertion in IPS	1.102	0.345	-0.113	0.521
	(0.566)*	(0.544)	(0.572)	(0.564)
1 if taskforce strike in IPS, 0	0.473	0.138	0.201	0.217
	(0.476)	(0.511)	(0.429)	(0.497)
1 if lives in a rural but disperse part, 0 oth	0.089	0.020	0.521	0.021
	(0.585)	(0.584)	(0.637)	(0.583)
1 if lives in a rural but populated part, 0 oth	1.101	0.985	1.412	1.066
	(0.646)*	(0.644)	(0.639)**	(0.650)
number of urban public schools		-0.056	-0.040	-0.035
		(0.057)	(0.058)	(0.059)
number of rural public schools		0.017	0.024	0.019
		(0.010)	(0.009)**	(0.010)*

number of public hospitals		0.392	-0.443	0.357
		(0.790)	(0.605)	(0.782)
number of public centros		-0.063	-0.136	-0.064
		(0.241)	(0.201)	(0.236)
number of public puestos		0.118	0.091	0.111
		(0.053)**	(0.049)*	(0.052)**
number of pharmacies		0.062	0.052	0.059
		(0.065)	(0.053)	(0.067)
acue01		-0.075	0.971	-0.543
		(1.497)	(1.260)	(1.539)
alca01		1.134	1.260	1.283
		(0.903)	(0.836)	(0.874)
group				1.824
				(1.078)*
number of groups				
dum_game				
dumwork_h			1.545	
			(1.835)	
dumwork_s			-0.522	
			(0.395)	
farm_h			-0.899	
			(0.456)**	
farm_s			0.170	
			(1.273)	
work_h			3.736	
			(1.253)***	
work_s			1.496	
			(3.554)	
familywork_s			-0.720	
			(3.852)	
employer_h			-5.332	
			(1.437)***	
employer_s			-0.947	
			(4.630)	
self_employed_h			-4.551	
			(1.170)***	
self_employed_s			-2.879	
			(3.662)	
domestic_h			-1.317	
			(1.754)	
domestic_s			-0.677	
			(3.811)	
employed_h			-3.545	
			(1.206)***	
employed_s			-2.786	
			(3.711)	
Observations	8837	8837	7078	8837

Notes : Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
All parameters and standard errors(in brackets) have been multiplied by 100.

Table 6 Effects of violence interacted with household characteristics

	(1)	*(2)*	*(3)*	*(4)*
people in HH	-12.960	-19.725	-14.919	-20.154
	(6.084)**	(6.704)***	(5.377)***	(6.354)***
people squared	0.611	0.813	0.657	0.826
	(0.308)**	(0.334)**	(0.271)**	(0.332)**
kids 0-6	9.119	16.018	10.057	16.150
	(8.807)	(9.630)*	(8.661)	(9.695)*
Kids squared	-2.285	-2.889	-2.296	-2.976
	(2.017)	(2.248)	(2.006)	(2.305)
kids 7-17	0.259	6.151	2.289	6.351
	(8.019)	(8.992)	(8.520)	(10.455)
kids 7-17 squ	0.036	-0.298	-0.047	-0.237
	(1.308)	(1.479)	(1.458)	(1.852)
age_head	0.354	0.542	0.395	0.618
	(0.417)	(0.445)	(0.325)	(0.401)
age_spouse	-0.452	-0.521	-0.708	-0.704
	(0.485)	(0.528)	(0.472)	(0.518)
Violpershog	0.471	0.590	0.514	0.648
	(0.294)	(0.303)*	(0.191)***	(0.192)***
Violpershogsq	-0.022	-0.028	-0.022	-0.028
	(0.015)	(0.016)*	(0.015)	(0.014)**
Violkids0-6	-0.909	-1.082	-0.982	-1.156
	(0.456)**	(0.475)**	(0.362)***	(0.373)***
Violkids0-6sq	0.130	0.183	0.140	0.187
	(0.108)	(0.114)	(0.119)	(0.102)*
Viol kids 7-17	-0.602	-0.749	-0.691	-0.891
	(0.418)	(0.436)*	(0.344)**	(0.337)***
Violkids7-17sq	0.091	0.104	0.094	0.111
	(0.063)	(0.067)	(0.052)*	(0.055)**
Violage_head	0.029	0.032	0.023	0.024
	(0.020)	(0.021)	(0.012)*	(0.014)*
Violage_spou	-0.037	-0.031	-0.030	-0.023
	(0.024)	(0.025)	(0.016)*	(0.019)
Observations	7623	7078	7614	7069

Notes : Probit model. Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%
All parameters and standard errors(in brackets) have been multiplied by 100.
Only the coefficients associated to a selection of control variable are displayed (ViolVariable means interaction term of violence incidence with Variable).
The other control variables (not shown) are the same as in Table 5.
Specification (1) is without occupation levels of the parents and controls for high education levels of the parents, specification (2) uses more controls for education levels of parents, specifications (3) and (4) control for occupations of the parents, with more education levels in specification in (4) than in (3)

Table 7 Effects of different types of risks

	(1)	*(2)*	*(3)*	*(4)*
treat	-1.273	-1.230	-1.202	-1.119
	(0.536)**	(0.535)**	(0.499)**	(0.516)**
Programme *violence	0.057	0.057	0.038	0.039
	(0.017)***	(0.017)***	(0.019)**	(0.017)**
Number of displaced hhds	0.023	0.023	0.025	0.025
	(0.010)**	(0.010)**	(0.009)***	(0.009)***
presence of eln_farc_pm	0.911	0.863	1.043	1.028
	(0.515)*	(0.512)*	(0.454)**	(0.458)**
hh shock: death02	2.137		2.421	2.442
	(0.929)**		(0.929)***	(0.924)***
hh shock: illness02	0.194		0.119	
	(0.594)		(0.582)	
hh shock: croploss02	-0.508		-0.441	
	(0.452)		(0.454)	
hh shock: busloss02	0.460		0.399	
	(1.474)		(1.476)	
hh shock: fireflood02	-1.457		-1.346	
	(1.793)		(1.793)	
hh shock: violence02	3.067		3.272	3.218
	(1.173)***		(1.162)***	(1.160)***
hh shock: death012		0.942		
		(0.708)		
hh shock: illness012		0.724		
		(0.439)*		
hh shock: croploss012		0.197		
		(0.340)		
hh shock: busloss012		-0.159		
		(1.136)		
hh shock: fireflood012		-1.710		
		(0.962)*		
hh shock: violence012		1.347		
		(0.886)		
%hhs in vill with death 02			-0.349	-0.344
			(0.130)***	(0.136)**
%hhs in vill with income losses due to viol 02			-0.300	-0.250
			(0.152)**	(0.144)*
%hhs in vill with illness 02			0.071	
			(0.047)	
%hhs in vill with bus.losses/fireflood/crop 02			-0.010	
			(0.023)	
Observations	8837	8837	8837	8837

Notes : Marginal effects of a Probit model are reported in percentage points.
Robust standard errors in parentheses (clustered at municipality level). * significant at 10%; ** significant at 5%; *** significant at 1%.

Only the coefficients associated to a selection of control variable are displayed. Other control variables (not shown) include all family and municipality variables excluding proxies for occupation of household heads and for social capital. Results are stable when adding or not the latter variables.
In column (1) we control for household schocks occuring in 2002 only, while in column (2) we control for the occurence of schocks during one of the three years preceeding the survey. Results in column (3) are obtained after controlling for household and village level shocks, and column (4) keeps only the negative schocks that have significant impacts at conventional levels.