

The Gender Impact of Crime on Time Use and Children Development in the Colombian rural areas

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Abstract*

This paper studies the impact of violent shocks on households of rural areas in Colombia. The paper examines the coping strategies households adopt when confronting a violent shock, the heterogeneity of the responses to the shocks depending on the gender, and the impact the shocks have on the nutritional development of children. Our results, although preliminary, suggest that households first turn to collective strategies to mitigate the impact of violent shocks. We find there is heterogeneity in the responses to the shocks: while men increase the participation on the formal labor markets, women partially substitute men in agricultural activities in their land plot and as seasonal agricultural workers. Finally, the results show that families are unable to protect their children from the impact of violent shocks since their anthropometric measures are affected, especially for boys.

Key Words: Conflict, labor markets, child development, developing economies

JEL Codes: J13, J16, J22, J40

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1. Introduction

The dynamics of internal conflicts impose shocks on the civil population. Armed confrontations, looting and aggressions against civilians harm particular groups of the population, while other may benefit. The transmissions channels of violent shocks are manifold: asset depletion, drops in agricultural production, human capital losses, deterioration of labor markets, and weakening of insurance mechanisms, among others (Stewart and Fitzgerald 2001; Brück 2004; Justino and Verwimp 2006; Shemyakina 2006; Camacho 2008).

Households living in conflict regions are not defenseless. People devise resourceful strategies to prevent victimization and alleviate the impact of violent shocks. The range covers from traditional strategies to mitigate shocks, to forced migration, participation in illegal activities and supporting armed groups (Engel and Ibáñez 2007; Justino 2009). Despite the proven resilience of households, most coping strategies are effective to compensate present income, yet reduce future income by depleting productive assets and human capital (Justino and Verwimp 2006; Ibáñez and Moya 2010).

Evidence on the transmission channels of conflict shocks and the coping strategies households adopt is scarce. However, research on the coping strategies to mitigate war-induced shocks is required to devise effective post-conflict policies to reduce or eliminate the costs of conflict, and prevent vicious cycles of war and poverty. The purpose of this paper is twofold. First, we examine the coping strategies households adopt when confronting a violent shock. In particular, we study the heterogeneous responses to violent shocks by gender and whether this heterogeneity leads to changes in bargaining power within the household. Second, we evaluate the impact of violent shocks on child development, and the differentiated impact of shocks on boys and girls.

We use data for Colombia, a country that has faced a long-standing conflict for over 50 years. The data collected is the baseline of a longitudinal survey of 4,000 rural households, which is the first household survey applied in the country to households living in conflict regions as most research has concentrated on forcefully displaced population. Forced displacement, an extreme coping strategy used in times of war fare, is widespread in Colombia. Today more than 3.3 million persons have fled their hometown to save their lives. Research shows forcefully displaced face large asset

losses, and a severe disruption of risk-sharing mechanisms (Ibáñez and Moya 2010). Sharp drops in income push displaced women to increase labor participation and their contribution to households' earnings rise significantly, yet bargaining power remains intact and domestic violence escalates (Calderón and Ibáñez 2010). Evidence on the coping strategies for households deciding to stay in conflict zones is scarce in Colombia. This paper contributes to understanding the strategies households use to prevent direct attacks from armed groups, thus avoiding forced displacement, and to mitigate the impacts of conflict in conflict regions. By comparing the heterogeneous responses to violent shocks, the paper studies whether the violent shocks changes bargaining power within the household. Furthermore, we provide evidence for Colombia on the impacts of violent shocks on child development. This is vital because extensive research has shown that children's early achievements are strong predictors of a variety of outcomes later in life, such as educational attainment and earnings. A word of caution is in order. Results for the paper are preliminary. We are using preliminary data as the enumerators continue in the field applying the survey.

The structure of the paper is as follows. Section two briefly discusses the impact of war-induced shocks, the coping strategies employed by households, and the long-term consequences. The Colombian context is described in Section three. In Section four, the data and descriptive statistics are present. Section five discusses the results, while section six concludes.

2. Economic impacts of violent shocks

Conflicts impose shocks on the population. Confrontations and purposive attacks on the civil population kill and maim people, destroy productive assets, and impose severe obstacles on economic transactions. Besides massive deaths during confrontations, warfare depletes human capital by generating incentives to reduce investment in education and deteriorating health, in particular of children (Shemyakina 2006; Camacho 2008; Bundervoet, Verwimp et al. 2009; Akresh, Verwimp et al. 2011). Destruction and illegal seizure of productive assets, a common strategy employed by combatants, restrict the ability of households to generate income (André and Platteau 1998; Brück 2004; Ibáñez and Moya 2010). Access to financial markets and to informal

risk-insurance mechanisms become more difficult in conflict regions, or is severely depleted when populations are forced to migrate (Brück 2004; Ibáñez and Moya 2010).

Nevertheless, the impact of conflict is not restricted to negative outcomes. War may also generate positive outcomes for particular groups of the population. Empirical evidence shows some particular groups of the population connected with armed groups may improve their economic conditions after the conflict ends, strong institutions may emerge, and collective action may be strengthened, among others (Tilly 1992; Verwimp 2005; Bellows and Edward 2009).

The extent of the negative impact of conflict on households depends on its magnitude and the coping mechanisms adopted by households. If conflicts are long-standing, households adapt their behavior to insure against war-induced shocks and mitigate their impact. On the other hand, unexpected outbreaks of violence cannot be anticipated and households must rely on *ex-post* coping mechanisms. Informal institutional arrangements, credit markets, formal insurance markets and depletion of savings are strategies used to insure against shocks (Deaton 1991; Paxson 1992; Townsend 1995). However, people living in poor areas or conflict regions have limited alternatives to mitigate shocks. Households rely often in sales of assets, remittances, informal credits, reciprocal transfers, adjustments in labor participation, reductions in consumption levels and dropping children out of school (Jacoby and Skoufias 1997; Fafchamps, Udry et al. 1998; Rosenzweig and Stark 1998; Jalan and Ravallion 2001; Fafchamps and Lund 2003). Research on the behavior of households to cope with war-induced shocks is scarce. Dropping children out of school, sales of assets below real values, cutting consumption to subsistence levels, limiting agricultural production to subsistence farming, supporting armed groups, and participating in illegal activities are some of the strategies used by families living in conflict-torn regions (Brück 2004; Justino 2009; Ibáñez and Moya 2010).

The inability to completely insure against shocks pushes households to adopt costly mitigating strategies. Although these strategies compensate income drops in the short-term, their long-term implications may perpetuate poverty. The inability to insure efficiently against shocks decreases human capital accumulation, generates malnutrition, health deterioration, child labor, depletion of productive assets and falling into poverty traps (Behrman 1988; Jacoby and Skoufias 1997; Jensen 2000; Barret and

Carter 2006). Evidence for violent shocks suggests similar impacts, but the effects are much larger (Justino and Verwimp 2006; Bundervoet, Verwimp et al. 2009; Akresh, Verwimp et al. 2011).

More research is needed to understand the impact of violent shocks, their transmission channels, the strategies adopted by households, and the long-term consequences. This paper contributes to understand how conflict affects economic outcomes, the strategies adopted by households to minimize the impact, and the effects on child development.

In addition, the paper estimates whether the strategies adopted and the effects on child development differs by gender. This is because the diverse effects of violence on household are potentially borne differently by male and female members. For example, the heavier workload burden to increase income following a violent shock may be relatively harder on women. Also, the inability of households to fully insure against shocks may imply that they can effectively protect the human capital of only some of their children, for example girls.

3. Colombia: 50 years of internal conflict

Since the 20th century, Colombia has faced two major internal conflicts. The first conflict, known as *La Violencia*, started in the middle of the 1940s and intensified with the assassination of the populist leader Jose Eliécer Gaitán in 1948. The conflict emerged from the political struggles between the two traditional and major political parties in Colombia, the Liberals and Conservatives. Regional land disputes and power struggles that had been latent for decades interacted with political disputes fueling the conflict in rural areas as well (Oquist 1980). Homicides, forced displacement, and land seizures soared during this period. Oquist (1980) estimates the number of deaths between 1948 and 1953 was 144,548, which corresponds to 1.2 percent of the Colombian population in 1951; 393.468 land plots were illegally seized during *La Violencia*. In 1958, Liberals and Conservatives negotiated a power sharing agreement that paved the way for a peace deal and halted armed confrontations.

The power sharing agreement eliminated political violence effectively, yet land disputes and regional power struggles remained dormant. By the end of the 1960s', a guerrilla movement – FARC - promoting agrarian land reform emerged in the rural areas of the

country. Later, new guerrilla movements (ELN, EPL and M19) emerged with the aim of overthrowing the State. The presence of rebel groups was confined to isolated rural regions of the countries, and actions were occasional and limited to attacking government forces.

The dynamics of the conflict changed dramatically with the appearance of illegal drug trade at the end of the 1980s. Resources from the illicit drug trade provided massive resources for rebel groups to operate, which started launching attacks on large land-owners and drug barons in order to extract additional resources. Kidnapping, extortions, taxation of cocaine production, mining, and cattle ranching provided additional sources of finance. These attacks and the flow of resources from illegal drug trade contributed to the creation of right winged paramilitary groups with the aim of contesting the power of guerrilla movements in most regions (TIMING? Meter acá el párrafo de paramilitarismo del que hablamos). Graph 1 depicts the evolution of attacks of illegal armed groups on government forces and infrastructure. In 1998, near 660 attacks of illegal armed groups were officially registered. Attacks reached the highest peak in 2003 (2,840), declining in 2009 to 759, which is still above the 1998 levels. Besides escalating the conflict in rural areas, drug trade congested the law enforcement system, lowered the probability of punishment, diffused criminal knowledge and technology, and eroded morals, thus promoting the emergence of criminal and illegal activities (Gaviria 2000).

[Graph 1 goes about here]

The strengthening of drug cartels in Colombia and the expansion of illicit crop cultivation caused sharp increments in government expenditures allocated to defense activities. International cooperation from the United States provided additional financial resources and support to strengthen the Colombian institutions, in particular the Police and Military forces. While in 1990 defense expenditure reached 2.08 percent of GDP, this figure rose to 4.5 percent of GDP in 2007 (MinDefensa 2009). The expansion of government expenditures proved successful to reduce violence, weaken guerrilla groups, and pressure a peace agreement with paramilitary groups in 2006 in which more than 30,000 combatants demobilized. However, two guerrilla groups are contesting government forces in rural regions of the country, and aggressions against the civil population, although lower, are still prevalent.

Graph 2 illustrates the evolution of homicide rates per 100,000 inhabitants during the period ranging from 1946 and 2009. In 1946, before *La Violencia* intensified, the homicide rate was 9.68 and, after the assassination of Gaitán, homicide rates increased to 49.02 in 1958. The power sharing agreement was relatively successful to ease violence, decreasing homicide rates in 1970 to 22, a level much higher than before *La Violencia*. The emergence of illicit drug trade heightened violence and homicide rates reached epidemic proportions in 1991 (79.23). After 1991, homicide rates declined, with a sudden peak in 2000 of 62.72. In 2009, homicide rates were 35.52.

[Graph 2 goes about here]

Intensification of the conflict by the end of the 1990 caused an escalating trend of attacks against the civil population. Aggressions against the civil population are a deliberate war strategy of armed groups to consolidate and expand their territorial strongholds, weaken support to the opponent, and seize assets to augment the war boot (Azam and Hoeffler 2002; Engel and Ibáñez 2007). In Colombia, selective homicides, massacres, sexual assaults, landmines, forced recruitment, and death threats heightened as the conflict escalated. Graphs 3 and 4 show respectively the number of massacres from 1993 till 2009, and the number of persons killed or wounded by landmines from 1990 till 2009. Massacres¹, a strategy mostly employed by paramilitary groups to weaken support for guerrilla groups, increased to its highest level in 2000 with 236 massacres. For the year 2009, despite a sharp decline, 29 massacres were reported. Landmines, which are mostly activated by guerrilla groups, show a different trend. The highest number of persons wounded by landmines since 1990 was reported in 2007 (953). In the year 2009, the explosion of landmines wounded 560 and killed 117 persons. The escalating aggressions against the civil population produce massive outflows of forcefully displaced population. During the period ranging from 1999 till 2009, 3'303,979² persons have been forcefully displaced after being the victim of an attack or to prevent victimization. This figure, which is equivalent to 7.9 percent of the Colombian population, is the second highest magnitude worldwide after Sudan³.

[Graph 3 goes about here]

¹ Massacres are defined as the killing of four or more people (Colombian Police Department).

² www.accionsocial.gov.co, retrieved 1st of June 2010.

³ www.internal-displacement.org, retrieved 19th of May 2010.

[Graph 4 goes about here]

Attacks of illegal armed groups to the civil population were not confined to isolated regions of the country. Resources from drug trade and illicit drug cultivation contributed also to a geographical expansion of the conflict along the Colombian territory. Map 1 and Map 2 depict the aggregate number of victims from massacres for each municipality and the number of persons forcefully displaced, respectively. Massacres have taken place in more than half of the Colombian municipalities, while the expulsion of civil population is widespread all over the territory as it occurred in more than 90 percent of the municipalities.

During the last 20 years, the dynamics of the Colombian conflict has changed substantially. In the beginning of the nineties, illegal drug trade fueled the conflict and aggressions against the civil population heightened significantly. From 2000 onwards, figures for violent events and criminal activities started gradually to decline due to an expansion in military spending, and an effort to strengthen military and police forces which initiated in the 1990s. Despite the declining trends, violence persists at high levels, attacks against the civil population have not eased in some regions, and guerrilla groups operate in isolated areas of the country.

4. The data

The Colombian Longitudinal Survey of Wealth, Income, Labor and Land (CLS-WILL) aims at further our understanding of social and economic change at the individual and household level in Colombia. The sample consists of 10,000 households: 6,000 urban and 4,000 rural. The urban sample is representative of the Colombian urban population for the four lower strata⁴, six urbanization structures and four Colombian regions⁵.

⁴ The Colombian State classifies residential dwellings by socio-economic strata. Socio-economic strata are defined based on income levels of home-owners, coverage of public services, and whether the household is located in urban or rural areas among others. Legally, six socio-economic strata exists; the first stratum is the lowest and the sixth stratum is the highest. The urban sample only covers households from economics strata one to four.

⁵ The regions are: Atlantic, Bogotá, Central and East. The sample covers 55 Colombian municipalities and 21 Departments. Municipalities are the smallest administrative units and Departments are similar to States in the United States.

The rural sample⁶ covers (mostly) small agricultural producers of stratum one and is representative of four micro-regions which were selected based on conflict dynamics, size of land plots in the region, land ownership arrangements (formal vs. informal), per capita income growth, and whether the natural markets for the agricultural produce are located in the urban sample. For each micro-region, four municipalities are selected such that (i) two have positive economic growth and two negative; (ii) two have a high prevalence of informal markets; and (iii) land plots are on average small. The size of the rural sample is 4,000 households and each micro-region's sample covers 1,000 households. The first wave was collected between April and July 2010. The preliminary results contained in this paper were calculated using observations from the 2,501 rural households available in mid-May. See Appendix D for the rural sample distribution.

The survey collects standard information about changes in household behavior over time – individuals and their families – including employment, income, education, health, and family formation. In addition, we collect data on time use in the rural areas, land tenure and property rights, consumption, expenditure, agricultural production, asset ownership, child development (nutrition, health and cognitive development) and social capital.

This paper studies whether violent shocks impose differentiated effects to women (girls) with respect to men (boys) within the household. We first study the economic impacts households suffer after being the victim of a violent shock, as well as the gender-specific ways the households adjust to these shocks. Because for most households the labor-related income is the only source of income, we study the labor adjustments within the household victims of a violent shock and the heterogeneous adjustment by gender. In addition, we explore whether children are affected by the violent shocks using anthropometric measures and data on cognitive tests. Again, we test whether the impact is different for girls and boys within the households. This draft will concentrate on labor adjustments and outcome variables for children; subsequent versions will contain a more complete comprehensive view of the impacts of violent shocks on households, including consumption, agricultural production and asset ownership. In addition we will explore the transmission channels of the effects of violent shocks, and the strategies adopted by households, especially collective actions.

⁶ Nearly 25 percent of the Colombian population lives in rural areas.

The survey captures the occurrence of shocks and the ways households cope with them. In this paper we build two types of violence-related shocks. The first are deliberate aggressions to particular households, which are idiosyncratic shocks, such as the destruction or theft of household goods or direct victimization. The second are covariate risks, such as attacks from armed groups, gang-related violence, rustling, extortions and massacres, among others. Incidence of violent shocks during the last 12 months is reported in Table 1. Nearly 12.5 percent of households faced a violent shock last year. However, shocks are mostly covariate (11.24%), while idiosyncratic shocks are less frequent (1.32%). Attacks from armed groups, cattle theft, extortions and massacres are the covariate shocks identified by respondents. Idiosyncratic shocks reported are destruction or theft of assets, and direct victimization. The apprehension of households to being identified as victims of purposive targeting by armed groups may drive the lower reporting of idiosyncratic shocks in contrast to covariate shocks. On the other hand, it might well be the case that idiosyncratic shocks affect only a one percent of the population in rural areas. In the remainder of the paper, results are presented for the case of the household being affected by a violent shock, regardless of whether it was covariate or idiosyncratic.

[Table 1 goes about here]

Since the standard set of labor market questions do not capture the evolution of the rural labor market, we included a time-use module in the rural survey to understand the division of roles within the household and the labor choices of its integrants. We divide the potential answers into four groups of activities: (i) work inside the household's farm (agricultural and non-agricultural work); (ii) work in other households' farms (agricultural and non-agricultural work); (iii) leisure time and other activities, namely leisure and recreation, personal care, helping other households, social community activities, education, looking for a job, travelling to the workplace; and (iv) domestic chores and taking care of children and other members of the household.

The traditional division of gender roles is sharp in these areas. While men are the main breadwinners of the household, women's responsibility is concentrated on domestic activities and taking care of children. The percentage of time use for the household head and the spouse within the household is presented in Table 2. Males commit the greatest bulk of time to working in their land plot or in other household's land plot. Although

females also spend some time working in agricultural activities, the difference is large in contrast to their male counterparts. Women devote almost half of their day to domestic chores and taking care of children in the house, with little support from their husbands. Leisure time is similar for men and women. The time use distribution is the same for men in households who were affected by a violent shock and those who were not. The same is not true for women. Females in affected households tend to work more in their own plot of land, cutting down the time devoted to domestic chores and childcare.

[Table 2 goes about here]

We complement the analysis of time-use with more traditional labor-markets questions such as whether the individual worked for a salary, looked for a job or worked as a seasonal worker in the last 12 months. Participation in labor markets is mostly lead by male members of the household. As Table 3 reports, employment outside the farm is larger for males than females; actively seeking a job is more frequent among men than women and working as seasonal workers is more prevalent among men. Men and women in households affected by violent shocks are more likely to have worked for a salary; women also tend to actively look for jobs or work as seasonal workers.

[Table 3 goes about here]

We now turn to children's outcomes. The relevant outcome variables regarding nutritional status are standardized measures of height and weight. We build the Z-score of height for age, that is, $z = \frac{\text{height} - \text{median}_{\text{age,gender}}}{\text{standard deviation}_{\text{age,gender}}}$. The child's height measured in centimeters is standardized by subtracting the median height of children of the same age and gender, and dividing by the standard deviation of the same group. We do the same for weight. Therefore, the respective Z-scores are interpreted as the number of standard deviations that the child is above or below the mean of the relevant group. Height for age is a good indicator of long-run nutrition since it reflects accumulated past outcomes. Weight for age, on the other hand, is more volatile because it can be affected by short run fluctuations in children's weight, due for example to episodes of diarrhea, not uncommon in children in developing countries.

Anthropometric information is available for children between 0 and 5 years of age. In our sample, there are 734 children in that age group, in 583 households. As shown in

Table 4, even though boys and girls are below the mean of the relevant group in both measures, girls' outcomes are relatively better especially in height for age. Boys in households affected by violent shocks have lower weight for age and height for age outcomes when compared to boys unaffected by shocks. For the case of girls, those subject to violent shocks have (marginally) lower weight for age indicators than girls who did not confront a shock.

[Table 4 goes about here]

We also measured the cognitive development of children between 3 and 9 years of age. In our sample, there are 1.133 children in that age group in 799 households. We use the Peabody Picture Vocabulary Test (PPVT in what follows), which is a screening test of verbal ability. The test is individually administered and it takes about 11 to 12 minutes. The examiner presents a series of pictures to each person, states a word describing one of the pictures and asks the individual to point to or say the number of the picture that the word describes (there are four numbered pictures to a page); no reading is required by the individual. PPVT's reference points are a mean of 100 and a standard deviation of 15. The test results for the children in our sample, displayed in Table 5, are on average lower and more volatile than the reference in language development: a mean of 94 and a standard deviation of 17. There are no statistically significant differences between boys and girls in this regard. There are no differences between children in households affected by violent shock and children from unaffected households. To enable a better interpretation of results, the test scores in our sample are standardized to have a mean of 100, and a standard deviation of 15.

[Table 5 goes about here]

The descriptive statistics of the set of control variables used in the estimation of the effect of violent shocks on time used and labor markets for the sample are presented in Table 6. The composition of households that are affected by shocks is different to the composition of unaffected ones. Households affected by violent shocks have younger heads, are more frequently headed by women and are less likely to have both the head of household and spouse living in the household (this last difference is only marginally significant). We proxy the income generating potential of the household by the maximum number of years of education attained by a member of the household. Households who suffered violent shocks are on average more educated, since the

maximum number of years of education level reached by a member is higher than that of households not affected by violence (5,18). We define extended family as any family member other than the head of household, spouse, and the couple's offspring: households that were the object of a violent shock have less members of the extended family living in the household. Finally, households with a violent shock in the last 12 months had fewer children between 5 and 18 years of age, but this difference is only marginally significant.

[Table 6 goes about here]

In Table 7 we present the descriptive statistics of the set of control variables used in the estimation of the effect of violent shocks on child development, for the relevant subsamples. In the subsample of 583 households with children between 0 and 5 years of age, who were subject to anthropometric measures, 14% (82 households) were affected by violent shocks; 106 out of the total 734 children in this subsample were affected by shocks. Table 7 presents the descriptive statistics for this subsample. Some differences between households with and without a shock are that the former are more often headed by a female (although the difference is marginally significant) and more educated.

Household wealth is measured using an index of durable goods ownership. The included durable goods are refrigerator, laundry machine, blender, microwave oven, oven, water heater, air conditioner, television, radio, internet access, computer, bicycle, car and other properties (including housing). The index was calculated using the methodology of principal components. One caveat is that this measure can be affected by violent shocks, which are the subject of study in this paper. Therefore, in future versions of the paper, we will also use other proxies of household wealth that are not affected by violent shocks such as the size of the land plot when the household was formed. Households affected by violent shocks are (marginally) wealthier.

[Table 7 goes about here]

As shown in Table 8, of the 799 households with children between 3 and 9 years of age, who were administered the cognitive development test, 14% (108 households) had suffered a violent shock in the last 12 months; 150 out of 1.133 children in this subsample were affected by shocks. We find marginally significant evidence that households who faced a shock are headed by younger individuals, and more often by

females. Households affected by violent shocks have a maximum number of years of education of 6,38 on average, while unaffected households have only 5,44 years of education. They also have fewer members of the extended family living in the household.

[Table 8 goes about here]

5. Results

This paper examines whether conflict and violence impose differentiated shocks to women (girls) in comparison to men (boys) within the household. We focus on two dimensions. First, we study the economic impacts households suffer after being the victim of a violent shock, and the heterogeneous responses the shock causes within the household. In order to gauge the economic consequences, we estimate the impact of a violent shock on economic outcomes such as consumption, agricultural production, and asset ownership. If violence deteriorates economic conditions, labor adjustments within the household are presumably an immediate response to mitigate the impact. We examine adjustments in labor markets for households that faced a violent shock and the heterogeneous adjustment by gender. Second, we identify if the violent shock is transmitted to children in the household using anthropometric measures and data on cognitive tests and whether the impact is different for girls and boys within the households. As we are still collecting the data, the first draft will concentrate on labor adjustments and outcome variables for children. Data on consumption, agricultural production, and asset ownership, as well as a deeper exploration of the coping strategies households adopt, will be examined in the final draft.

To study whether violence affects outcome variables differently for women (girls) compared to men (boys), we use a Difference-in-Differences estimate (DD). Labor adjustments as a response to a violent shock are captured by time allocated to different activities – working inside/outside the farm, leisure and other activities, and household chores and taking care of children – seeking employment in formal labor markets, and employment during the last 12 months. We also have several outcome variables (anthropometric measures and cognitive development) on young girls and boys that are used to determine whether the Colombian conflict had gender-differential effects.

Households adopt diverse strategies to mitigate the impact of shocks. We aggregate strategies in seven groups, and report results separately for female and male household heads. Results for Table 9 show female and male household heads use similar strategies to mitigate the impact of shocks, yet more than half of households respond nothing was done. In general, collective actions are more frequent than individual actions. Reliance on collective action, cooperation with the government authorities, and seeking support from formal organizations or other community members are the strategies most frequently employed. Female-headed households rely more frequently on cooperation with authorities or organizing groups with other households to defend themselves (23.7% vs. 18.7%), while seeking support from other community members is more common amongst male-headed households (20.87% vs 13.41%). The difference is not statistically significant. Individual strategies such as changes in labor market participation, depleting savings or selling assets are less frequent.

[Table 9 goes about here]

Armed groups may target particular individuals of the community in order to achieve their war objectives. For Colombia, empirical evidence shows illegal armed groups attack more frequently land owners, and community leaders (Engel and Ibáñez 2007). To identify whether this pattern is also present in the regions we study, we estimate the probability of being victim of a violent shock. Marginal effects are reported in Table 10. Municipal fixed effects seem to be explaining most of the variation. This confirms armed groups are presumably directing attacks against municipalities with particular characteristics which may further their war strategy. Once municipal fixed effects are included, the pseudo r-square increases considerably and the statistical significance of all variables, but age and wealth index quintiles. Households with older heads are less likely to report being victims of war-induced shocks. All wealth index quintiles dummies are statistically significant, showing the probability of being the victim of an attack increases as households are better-off. In fact, marginal effects show the richest households are eight percent more likely to be victim of war-induced shocks than the poorest households. Similarly to previous research on the victimization of civil population in Colombia, we find violence is not randomly target, but purposively directed to certain groups of the population and to certain municipalities. In the final draft, we will instrument the violent shock in order to correct any endogeneity bias.

Controlling for municipal fixed effects reduces somehow any omitted variable bias of the coefficient estimate for violent shocks in the difference-in-difference estimations.

[Table 10 goes about here]

Violent shocks may push households to modify their labor participation, and increase the participation of females in income generation activities. We estimate difference-in-difference regressions to identify the differentiated impact of the shock for men and women regarding time use (Table 11). Because many households report not dedicating time to some activities, we use Tobit estimations which take into account possible corner solutions. We conduct two robustness checks. First, we estimate the regression including a gender dummy, whether the household face a violent shock, and the interaction between gender and facing a violent shock. We gradually include other control variables in order to test the stability of the coefficient estimates. Since results are robust to the different specifications, we do not report all estimations. Second, we estimate regressions with and without municipal fixed effects.

Violent shocks induce adjustments to time use. Women from households that confront a violent shock increase work in their own land plot. The violent shock induces women in the household to increase time working in their own land plot by 7.7 percent. Thus, women from households that faced a violent shock devote 8.6 percent of their time to agricultural activities in their land plot. The difference-in-difference estimate shows that, compared to men in their household, women increase working in their own land plot by 10.4 percent and in others' land plot by 11.2 percent, while reducing leisure time by 2.9 percent. The differentiated impact of a violent shock for other activities is not statistically significant.

[Table 11 goes about here]

The need to generate additional income seems to be pushing males to participate in formal labor markets. Table 12 shows the impact of the violent shock on labor outcomes. The coefficient estimate for the overall impact of the violent shock reveals that households that faced a shock are less likely to be actively seeking for a job during the last 12 months. This might be driven by an increase in the probability of employment by 5.6 percentage points. The impact on working as a seasonal worker is not statistically significant. However, women from households that faced a violent

shock are 8.5 percent more likely to have been actively seeking for a job in contrast to their husbands, and 7.8 percent more likely to have worked as seasonal workers during the last 12 months.

[Table 12 goes about here]

Results for time use and participation in labor markets suggest that drops in income due to the violent shock push males to work in labor markets. Women partially substitute male in agricultural activities in their land plot and as seasonal agricultural workers, which implies reductions in their leisure time. Similarly to Brück (2004), households may rely on agricultural production, mainly subsistence agriculture, to mitigate drops in income and guarantee a minimal consumption. However, the effect of the violent shock on time use and participation in labor markets is not substantial. Two potential explanations, which will be examined in the final draft, might be driving these results. First, households are able to adopt effective strategies to reduce the impact of the violent shock. As shown by Table 9, these strategies rely mostly on collective activities than individual behaviors, such as labor adjustments, sales of assets and depletion of savings. Second, the impact of the violent shock might not be large because mitigation strategies were indeed effective or the covariate nature of the shock implies much less losses than an idiosyncratic shock.

Violent shocks suffered by the household, depending on the size of the shock and the mitigation strategies undergone by the household, can affect child development. As mentioned earlier, height for age is a better indicator of long-run nutrition than weight for age.

Recall that 106 children out of 734 in the subsample of households with children between 0 and 5 (with anthropometric measures) were affected by violent shocks. Table 13 shows that the violent shock has a very negative impact of around 0,43 standard deviations on the height for age measure of children. This indicates that families are unable to protect their children from the impact of violent shocks.

One standard deviation in height for age in children between 0 and 5 years of age ranges between 3 and 5 centimeters, depending on the exact age. This implies that the violent shock decreases between 1,3 and 2,2 centimeters the height of affected children. This effect is sizeable. For comparison purposes, Meisel and Vega (2007) find that one

decade of economic growth during the last century in Colombia has roughly translated into almost one additional centimeter in the height of the average Colombian. The Colombian conditional cash transfer program, called Familias en Acción, was found to have no statistically significant effect on this measure for urban and rural areas (Attanasio and Gómez 2004). Verwimp et al (2010) find for the cases of Burundi and Rwanda, the channels through which conflict affects the health status of children is forced displacement and theft and burning of crops. At this stage, it is unclear what the relevant channels for the Colombian case are.

Violent shocks have a (marginally significant) differential effect on girls and boys: girls' height is affected less severely by the shock. However, the total effect on girls (calculated as the sum of the coefficients on the gender dummy and the interaction coefficient between gender and shock) is not statistically significant. Thus, violent shocks seem to affect boy's height mostly. When dividing the children by age groups, the effect is only (marginally) significant for the youngest children, that is, those between 0 and 20 months of age. This is an interesting finding; that needs to be further understood in future versions of the research, especially the channels through which the effect takes place. One possibility is that families are unable to protect all of their children and prioritize the protection of girls.

[Table 13 goes about here]

In the case of weight for age, Table 14 suggests that the violent shock also has a very sizeable effect of 0,49 standard deviations. However, in this case there are no differential effects between boys and girls. The estimated total effect on girls is a decrease of 0,18 standard deviations; this effect is only marginally significant. Again for comparison purposes, Attanasio and Gómez (2004) find that Familias en Acción slightly increased the weight for age only in rural areas (and not in urban ones). When looking at different age groups, the effect is concentrated in children between 0 and 40 months of age.

[Table 14 goes about here]

For the subsample for which the cognitive development test is available, 13 percent of children between 3 and 9 years of age were affected by shocks. Our results displayed in Table 15 suggest that performance in the PPVT is determined by variables that have

been proven in the relevant literature to be strong predictors of cognitive development: the parental education (proxied here by the maximum education) and household wealth. In addition, a higher number of children in the household negatively affects performance, which is in line with Becker and Lewis's (1973) idea about the trade-off in the quantity and quality of children. However, cognitive development seems unaffected by the violent shock (not even when looking at age groups), nor is there a differential effects between boys and girls. The psychological literature suggests that being exposed to violence rather affects social behavior. However, there is no measure of social behavior in our survey.

[Table 15 goes about here]

6. Conclusions and Future Work

This paper studies the impact of a violent shock to rural households on time use, labor market participation and child development, and whether these shocks affect men (boys) and women (girls) differently. First, violence is not randomly targeted, but purposively directed to relatively better-off groups of the population and to certain municipalities. The results of this paper show that households first turn to collective strategies, such as reliance on collective action, cooperation with the government authorities, and seeking support from formal organizations or other community members, rather than individual strategies to mitigate the impact of the shocks.

The need of households affected by a violent shock to generate additional income seems to be pushing males to participate in formal labor markets. Women partially substitute men in agricultural activities in their land plot and as seasonal agricultural workers, which implies reductions in their leisure time. Families are unable to protect their children from the impact of violent shocks, since children's anthropometric measures are affected, especially for boys. However, there is no evidence of a negative effect on cognitive development.

More research is needed to understand the transmission channels of the effects of violent shocks, the strategies adopted by households, and the gender-differentiated consequences. In the final draft, we will further study the collective actions undertaken by families to cope with shocks, since they are more frequent than individual actions

such as the ones studied in the present draft. Since the strengthening of collective action is one of the possible positive effects of conflict, this is a promising area for further analysis. In addition, we will focus on establishing the mechanisms through which the estimated effects take place, especially gender-differential effects.

Finally, these results are preliminary and should be interpreted as such. We are only using a fraction of the total rural sample in the survey, and enumerators continue in the field applying the survey. The regions still to be covered have been more severely affected by violent shocks than the ones covered in the available information. Therefore, results with the full sample may change.

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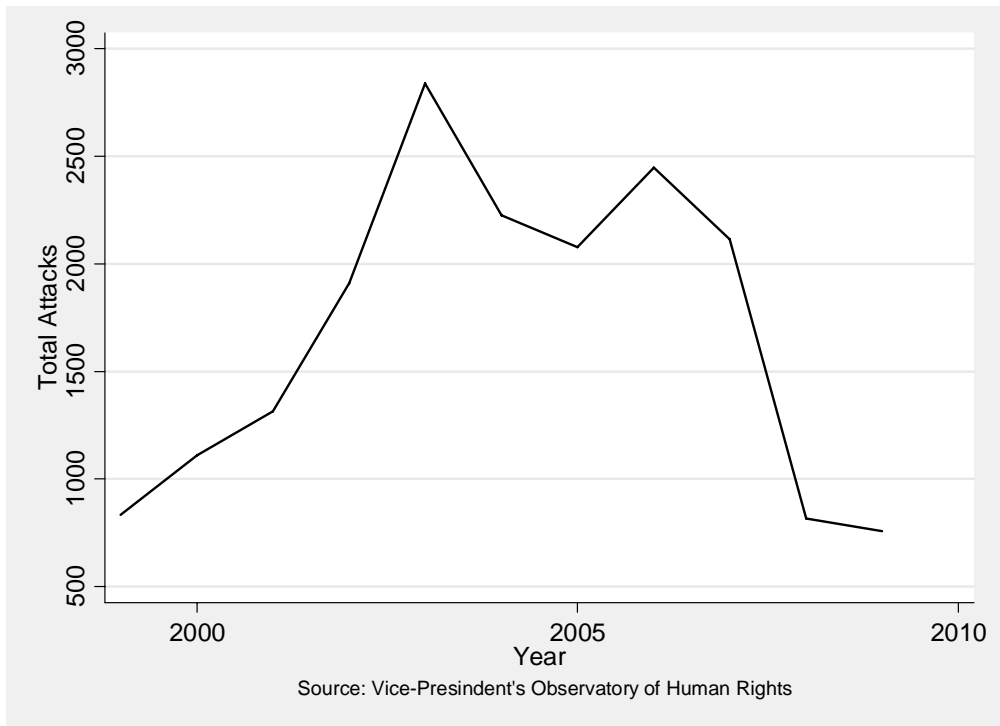
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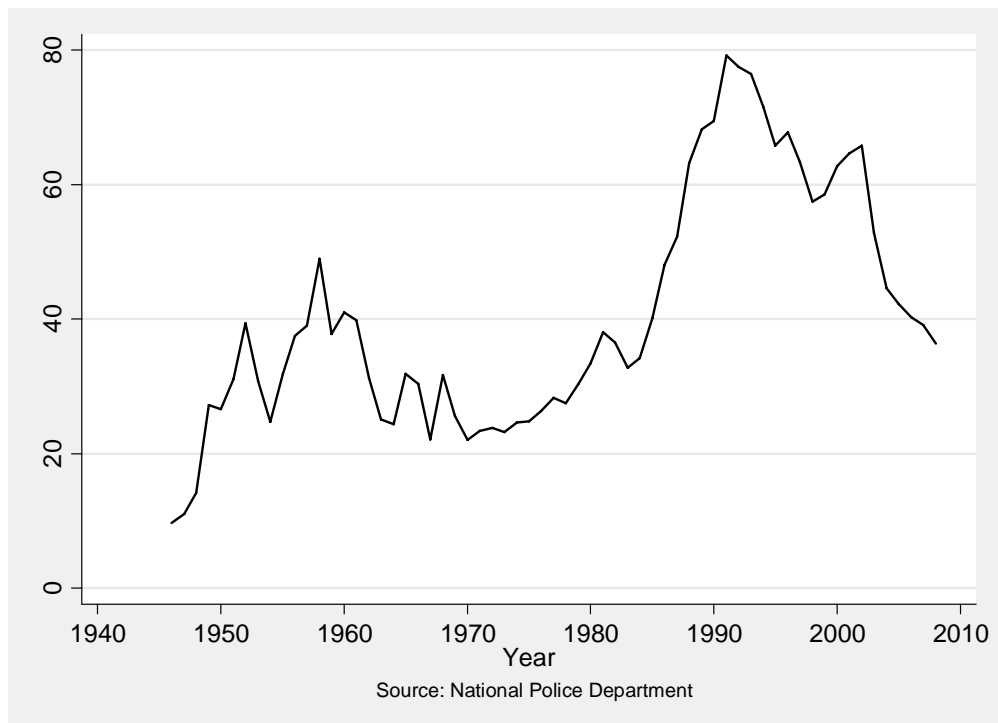
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Appendix A. Graphs

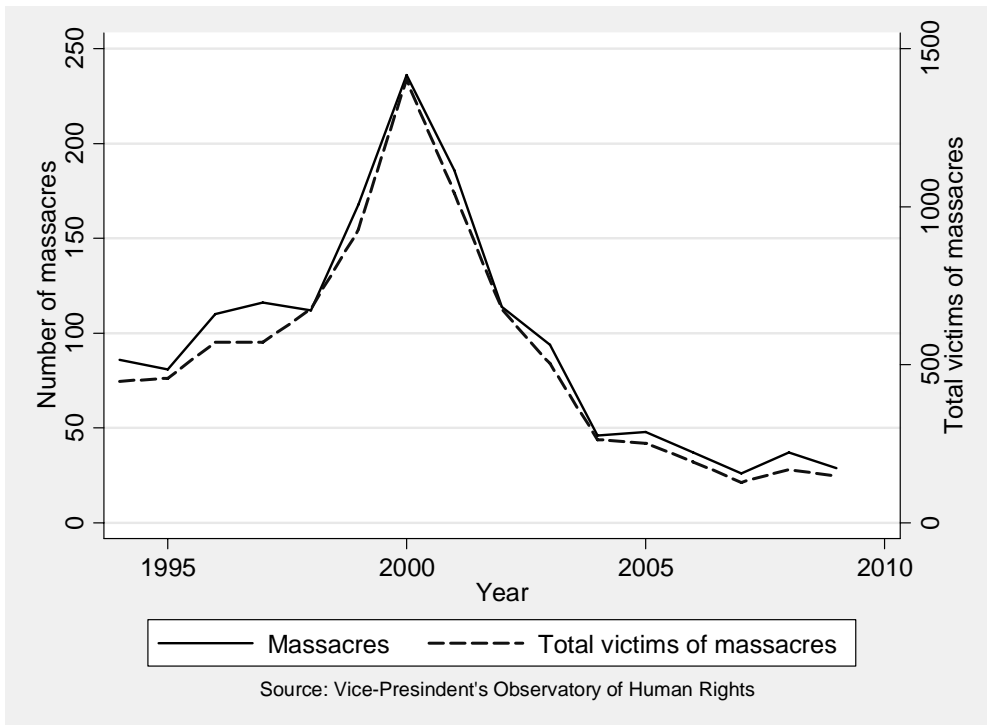
Graph 1. Attacks on Armed Forces and Infrastructure 1998-2009.



Graph 2. Homicide Rates per 100,000 Inhabitants 1946-2009.



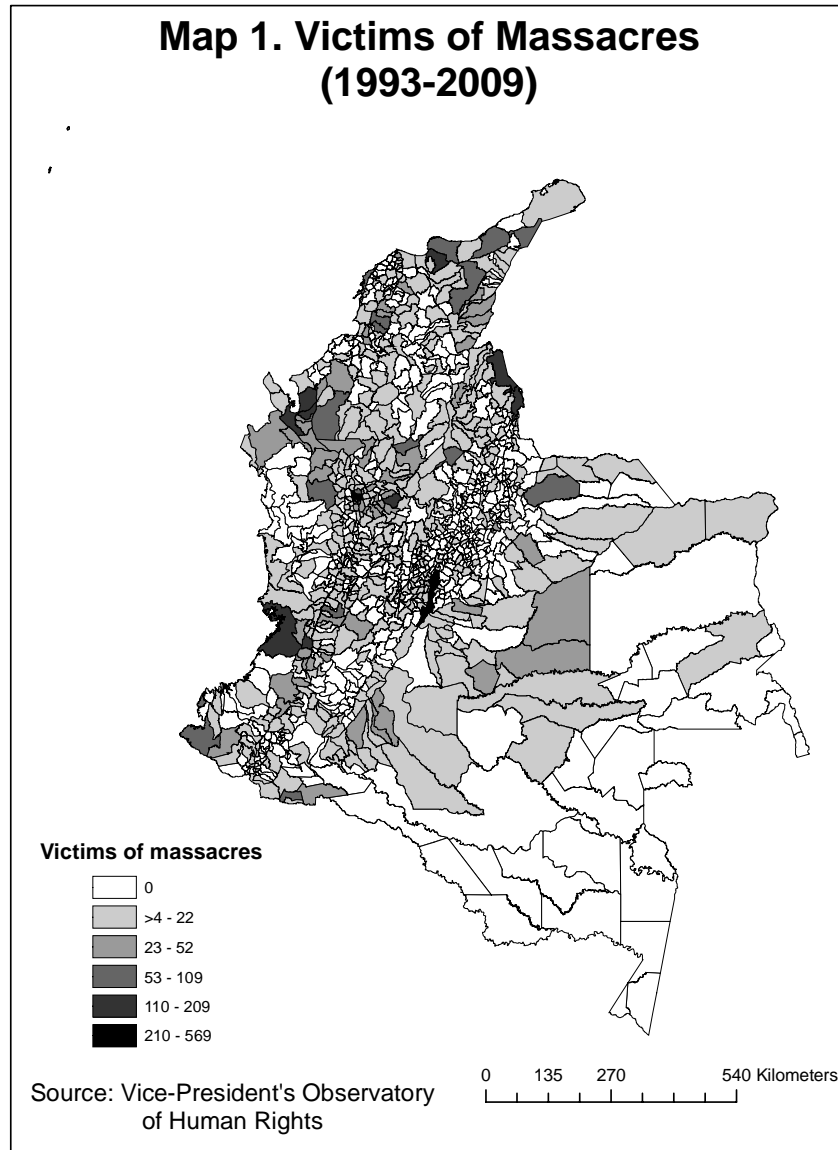
Graph 3. Number and Victims of Massacres 1993-2009.



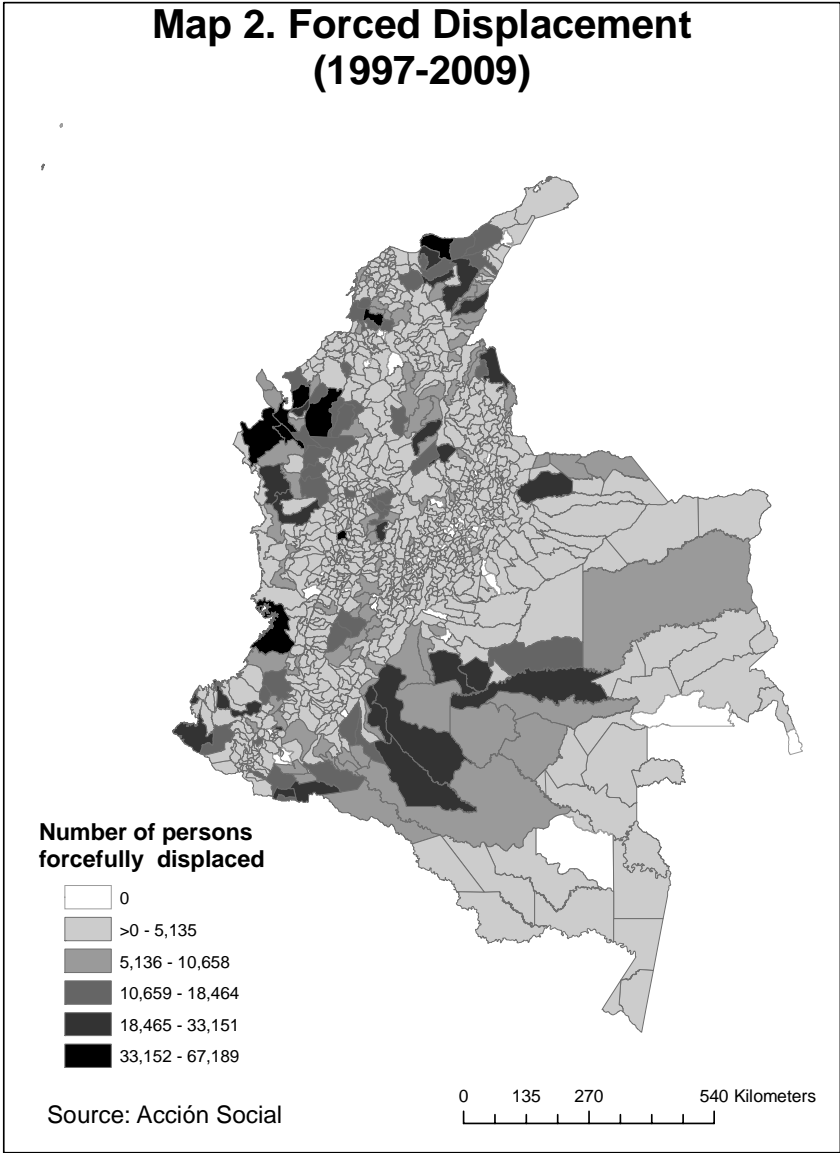
Graph 4. Persons Wounded and Killed by Landmines 1990-2009.



Appendix B. Maps



Map 2. Forced Displacement (1997-2009)



Appendix C. Tables

Table 1. Households Affected by Violent Shocks

	Shocks by household	% of households affected
Idiosyncratic shock	33	1.32%
Covariate shock	281	11.24%
General Shocks	312	12.48%

Table 2. Distribution of Time Use by Gender and Violent Shocks

Variable	Female				Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	Male				Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	All					
	No Violent shocks		Violent shocks				No Violent shocks		Violent shocks				Female		Male			
	Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean		
% of time working inside the household farm	2,004	0.07 (0.14)	251	0.11 (0.16)	***	***	1,890	0.23 (0.27)	236	0.25 (0.28)			2,255	0.08 (0.14)	2,126	0.23 (0.27)	***	***
% of time working in other households farms	2,004	0.04 (0.12)	251	0.04 (0.13)			1,890	0.26 (0.29)	236	0.23 (0.27)			2,255	0.04 (0.12)	2,126	0.25 (0.28)	***	***
% of leisure time and other activities	2,004	0.40 (0.18)	251	0.38 (0.17)			1,890	0.43 (0.18)	236	0.44 (0.17)			2,255	0.39 (0.18)	2,126	0.43 (0.18)	***	***
% of time spend in domestic chores and taking care of children and other members of the house	2,004	0.50 (0.21)	251	0.47 (0.20)	*	**	1,890	0.08 (0.13)	236	0.07 (0.12)			2,255	0.49 (0.21)	2,126	0.08 (0.13)	***	***

Standar errors in parentheses
 (*)*** p<0.01, ** p<0.05, * p<0.1

Table 3. Participation in Labor Markets

Variable	Female					Difference Between Means*	Male					Difference Between Means*	All				Difference Between Means*
	No Violent shocks		Violent shocks		Number of Observations		No Violent shocks		Violent shocks		Number of Observations		Female		Male		
	Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean	
Worked for a salary in the past 12 months	1,898	0.14 (0.34)	234	0.18 (0.38)	*	1,794	0.36 (0.48)	223	0.43	*	2,132	0.14 (0.35)	2,017	0.36 (0.48)	***		
Tried to find a job in the past 12 months	1,898	0.09 (0.28)	234	0.15 (0.36)	**	1,794	0.28 (0.45)	223	0.26		2,132	0.09 (0.29)	2,017	0.28 (0.45)	***		
Worked as a seasonal worker in the past 12 months	1,898	0.09 (0.29)	234	0.15 (0.36)	**	1,794	0.49 (0.50)	223	0.48		2,132	0.10 (0.29)	2,017	0.49 (0.50)	***		

Standar errors in parentheses
 (***)*** p<0.01, ** p<0.05, * p<0.1

Table 4. Nutritional Status of Children by Gender and Violent Shocks

Variable	Female					Equality of Distribution Functions (Kolmogorov Smirnov)*	Male					Equality of Distribution Functions (Kolmogorov Smirnov)*	All				Equality of Distribution Functions (Kolmogorov Smirnov)*
	No Violent shocks		Violent shocks		Difference Between Means (t-test)*		No Violent shocks		Violent shocks		Difference Between Means (t-test)*		Female		Male		
	Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean	
Z-Score weight for age	307	-0.24 (1.70)	58	-0.52 (1.03)	*	321	-0.40 (1.47)	48	-1.02 (1.76)	**	**	365	-0.28 (1.61)	369	-0.48 (1.53)	*	
Z-Score weight for age (standardized)	307	0.09 (1.08)	58	-0.09 (0.65)	*	321	-0.01 (0.94)	48	-0.41 (1.12)	**	**	365	0.06 (1.03)	369	-0.06 (0.97)	*	
Z-Score height for age	307	-0.78 (1.99)	58	-0.93 (1.14)		321	-1.03 (1.66)	48	-1.72 (2.16)	**		365	-0.80 (1.88)	369	-1.12 (1.74)	**	
Z-Score height for age (standardized)	307	0.10 (1.09)	58	0.02 (0.63)		321	-0.04 (0.91)	48	-0.42 (1.19)	**		365	0.09 (1.03)	369	-0.09 (0.96)	**	

Standar errors in parentheses
 (***)*** p<0.01, ** p<0.05, * p<0.1

Table 5. Peabody Picture Vocabulary Test Results

Variable	Female				Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	Male				Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	All				Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*
	No Violent shocks		Violent shocks				No Violent shocks		Violent shocks				Female		Male			
	Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean	Number of Observations	Sample Mean		
Test Results	488	93.68 (16.85)	76	94.86 (15.87)			495	94.45 (18.06)	74	95.57 (16.99)			564	93.87 (16.71)	569	94.57 (17.99)		
Test results (standardized)	488	99.54 (14.59)	76	100.55 (13.75)			495	100.20 (15.64)	74	101.17 (14.71)			564	99.71 (14.44)	569	100.29 (15.55)		

Standar errors in parentheses

(*)*** p<0.01, ** p<0.05, * p<0.1

Table 6. Descriptive Statistics Control Variables for Time Used

Variable	No Violent shocks		Violent shocks		Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	All	
	Number of Observations	Sample Mean	Number of Observations	Sample Mean			Number of Observations	Sample Mean
Age household head	2,216	47.24 (13.69)	285	43.88 (13.83)	***	***	2,501	46.85 (13.75)
Female household head	2,216	0.19 (0.39)	285	0.24 (0.43)	**		2,501	0.19 (0.39)
Households with both head and spouse	2,216	0.76 (0.43)	285	0.71 (0.46)	*		2,501	0.76 (0.43)
Higher level of education in household	2,216	5.18 (3.52)	285	6.03 (3.70)	***	***	2,501	5.27 (3.55)
Number of members from extended family	2,216	1.05 (1.59)	285	0.81 (1.35)	***		2,501	1.02 (1.56)
Number of children under 5 years of age	2,216	0.44 (0.69)	285	0.43 (0.69)			2,501	0.44 (0.69)
Number of children between 5 and 18	2,216	1.49 (1.39)	285	1.35 (1.28)	*		2,501	1.47 (1.38)
Number of members 65 or older	2,216	0.31 (0.59)	285	0.30 (0.57)			2,501	0.31 (0.59)

Standar errors in parentheses

(*)*** p<0.01, ** p<0.05, * p<0.1

Table 7. Descriptive Statistics Control Variables for Children Nutritional Status

Variable	No Violent shocks		Violent shocks		Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	All	
	Obs	Mean	Obs	Mean			Obs	Mean
Age of the child in months	501	30.98 (17.27)	82	28.24 (18.06)			583	30.59 (17.40)
Female household head	501	0.17 (0.38)	82	0.27 (0.45)	*		583	0.18 (0.39)
Higher level of education in household	501	5.68 (3.41)	82	6.78 (3.55)	**	**	583	5.83 (3.44)
Both parents live with the child	501	0.70 (0.46)	82	0.63 (0.48)			583	0.69 (0.46)
Wealth Index Standardized	501	0.00 (1.05)	82	0.02 (0.57)		*	583	0.00 (1.00)
Number of members from extended family	501	1.59 (1.80)	82	1.33 (1.62)			583	1.55 (1.78)
Number of children under 5 years of age	501	1.27 (0.49)	82	1.32 (0.56)			583	1.27 (0.50)
Number of children between 5 and 18	501	1.45 (1.37)	82	1.23 (1.35)			583	1.42 (1.37)
Number of members 65 or older	501	0.20 (0.50)	82	0.16 (0.43)			583	0.20 (0.49)

Standar errors in parentheses

(*)*** p<0.01, ** p<0.05, * p<0.1

Table 8. Descriptive Statistics Control Variables Peabody Picture Vocabulary Test Results

Variable	No Violent shocks		Violent shocks		Difference Between Means (t-test)*	Equality of Distribution Functions (Kolmogorov Smirnov)*	All	
	Obs	Mean	Obs	Mean			Obs	Mean
Age of the child in months	691	79.04 (25.84)	108	75.48 (23.46)			78.56 (25.54)	
Age household head	691	42.44 (12.22)	108	40.07 (12.01)	*		799 42.12 (12.21)	
Female household head	691	0.17 (0.37)	108	0.24 (0.43)	*		799 0.18 (0.38)	
Higher level of education in household	691	5.44 (3.29)	108	6.38 (3.59)	**		799 5.57 (3.35)	
Both parents live with the child	691	0.67 (0.47)	108	0.69 (0.47)			799 0.67 (0.47)	
Wealth Index standardized	691	-0.01 (1.02)	108	0.04 (0.84)			779 0.00 (1.00)	
Number of members from extended family	691	1.60 (1.77)	108	1.20 (1.47)	**		799 1.55 (1.73)	
Number of children under 5 years of age	691	0.72 (0.78)	108	0.69 (0.83)			799 0.72 (0.79)	
Number of children between 5 and 18	691	2.12 (1.42)	108	1.93 (1.36)			799 2.09 (1.41)	
Number of members 65 or older	691	0.22 (0.51)	108	0.19 (0.46)			799 0.21 (0.50)	

Standar errors in parentheses
 (***)** p<0.01, ** p<0.05, * p<0.1

Table 9. Reaction to Violent Shocks by Gender of the Households Head

Variable	Male household head		Female Household head		Difference Between Means*	All	
	Obs	Mean	Obs	Mean		Obs	Mean
Households increased cooperation with authorities and/or got together with other households to defend themselves	230	18.70% (0.39)	82	23.17% (0.42)		312	19.87% (0.40)
Seek help from national and international institutions	230	13.48% (0.34)	82	10.98% (0.31)		312	12.82% (0.33)
Seek help from other members of the family or the community	230	20.87% (0.41)	82	13.41% (0.34)		312	18.91% (0.39)
Some member of the family raised the hours worked or went looking for a job	230	0.43% (0.07)	82	2.44% (0.16)		312	0.96% (0.10)
Spend their savings or sold/rent the assets of the household	230	4.78% (0.21)	82	3.66% (0.19)		312	4.49% (0.21)
Other	230	12.61% (0.33)	82	12.20% (0.33)		312	12.50% (0.33)
Nothing was done	230	53.48% (0.50)	82	56.10% (0.50)		312	54.17% (0.50)

Standar errors in parentheses
 (***)** p<0.01, ** p<0.05, * p<0.1

Table 10. Probability of Receiving a Violent Shock in the Household in the Past 12 Months (marginal effects after probit)

	(1)	(2)	(3)
Age household head	-0.005*	-0.004*	-0.004*
	(0.003)	(0.002)	(0.003)
Age household head squared	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Female household head	0.024	0.007	0.007
	(0.021)	(0.018)	(0.018)
Households with both head and spouse	-0.021	-0.011	-0.012
	(0.019)	(0.017)	(0.018)
Higher level of education in household	0.003	0.002	0.002
	(0.002)	(0.002)	(0.002)
Wealth Quantile 2	0.064**	0.045*	0.046*
	(0.026)	(0.024)	(0.024)
Wealth Quantile 3	0.073***	0.051**	0.052**
	(0.027)	(0.024)	(0.025)
Wealth Quantile 4	0.099***	0.079***	0.080***
	(0.028)	(0.027)	(0.027)
Wealth Quantile 5	0.096***	0.077***	0.079***
	(0.029)	(0.028)	(0.028)
Number of members from extended family			-0.005
			(0.007)
Number of children under 5 years of age			0.001
			(0.011)
Number of children between 5 and 18			0.001
			(0.007)
Number of members 65 or older			-0.008
			(0.012)
Observations	2501	2501	2501
Log-Likelihood	-859.2	-766	-765.0
Pseudo-R2	0.0279	0.133	0.134
Municipal Fix Effects	No	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11. Effect of Violent Shocks on Time Use

Variables	% of time working inside the household farm			% of time working in other households farms			% of leisure time and other activities			% of time spend in domestic chores and taking care of children and other members of the house		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Sex (1 if Female)	-0.291*** (0.013)	-0.312*** (0.013)	-0.324*** (0.013)	-0.694*** (0.021)	-0.680*** (0.021)	-0.702*** (0.021)	-0.037*** (0.005)	-0.036*** (0.005)	-0.037*** (0.005)	0.515*** (0.007)	0.517*** (0.007)	0.530*** (0.007)
Violent shock (1 if recieved a violent shock)	0.048 (0.030)	-0.029 (0.029)	-0.027 (0.028)	-0.039 (0.039)	-0.045 (0.039)	-0.081** (0.037)	0.009 (0.012)	0.020* (0.012)	0.027** (0.012)	-0.011 (0.017)	0.004 (0.017)	0.005 (0.017)
Sex x Violent schock	0.098*** (0.032)	0.106*** -0.032 (0.032)	0.104*** (0.032)	0.094 (0.065)	0.086 (0.065)	0.112* (0.064)	-0.027* (0.015)	-0.027* (0.015)	-0.029** (0.015)	-0.014 (0.022)	-0.014 (0.022)	-0.012 (0.022)
Constant	0.101*** (0.011)	0.324*** (0.019)	0.190*** (0.044)	0.053*** (0.016)	0.008 -0.037 (0.070)	0.414*** (0.070)	0.433*** (0.004)	0.374*** (0.009)	0.305*** (0.020)	-0.021*** (0.006)	-0.040*** (0.011)	-0.019 (0.025)
Observations	4381	4381	4381	4381	4381	4381	4381	4381	4381	4381	4381	4381
Left-Censored	2421	2421	2421	3076	3076	3076	3	3	3	1226	1226	1226
Log-Likelihood	-2460	-2185	-2110	-2329	-2258	-2082	1231	1357	1483	-572.3	-540.2	-477.6
Pseudo-R2	0.0816	0.184	0.212	0.175	0.200	0.263	-0.0225	-0.127	-0.232	0.760	0.773	0.800
Total number of violent shocks	487	487	487	487	487	487	487	487	487	487	487	487
Municipal Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household controls	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Estmated total effect on women	0.145	0.078	0.077	0.055	0.041	0.031	-0.018	-0.007	-0.002	-0.025	-0.011	-0.007
t-stat	5.962	3.176	3.238	0.968	0.717	0.520	-1.567	-0.620	-0.201	-1.769	-0.736	-0.534
p-val	0	0	0	0.333	0.474	0.603	0.117	0.535	0.841	0.077	0.462	0.593

Robust standard errors in parentheses

(cluster by household)

*** p<0.01, ** p<0.05, * p<0.1

Table 12. Effects of Violent Shocks on Labor Outcomes

	Tried to find a job in the past 12 months (1 if he/she tried to find a job)			Worked for a salary in the past 12 months (1 if he/she worked for a salary)			Worked as a seasonal worker in the past 12 months (1 if he/she worked as a seasonal worker)		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Sex (1 if Female)	-0.191*** (0.012)	-0.193*** (0.012)	-0.231*** (0.012)	-0.222*** (0.013)	-0.221*** (0.013)	-0.267*** (0.013)	-0.405*** (0.013)	-0.405*** (0.013)	-0.450*** (0.013)
Violent shock (1 if received a violent shock)	-0.023 (0.031)	-0.052 (0.032)	-0.061** (0.031)	0.069** (0.035)	0.075** (0.034)	0.056* (0.033)	-0.019 (0.035)	-0.042 (0.035)	-0.042 (0.034)
Sex x Violent shock	0.085** (0.035)	0.085** (0.035)	0.085** (0.035)	-0.025 (0.041)	-0.024 (0.041)	-0.024 (0.040)	0.080* (0.041)	0.079* (0.041)	0.078* (0.040)
Constant	0.278*** (0.011)	0.282*** (0.011)	0.576*** (0.040)	0.357*** (0.011)	0.356*** (0.011)	0.465*** (0.044)	0.494*** (0.01)	0.497*** (0.01)	0.497*** (0.01)
Observations	4149	4149	4149	4149	4149	4149	4149	4149	4149
R-squared	0.057	0.080	0.118	0.069	0.112	0.160	0.192	0.218	0.262
Total number of violent shocks	457	457	457	457	457	457	457	457	457
Municipal Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Household controls	No	No	Yes	No	No	Yes	No	No	Yes
Estimated total effect on women	0.063	0.033	0.024	0.045	0.050	0.032	0.061	0.038	0.037
t-stat	2.584	1.301	0.968	1.696	1.837	1.174	2.497	1.498	1.464
p-val	0.010	0.193	0.333	0.090	0.066	0.241	0.013	0.134	0.143

Robust standard errors in parentheses (cluster by household)

*** p<0.01, ** p<0.05, * p<0.1

Table 13. Effects of Violent Shocks on Child's Nutritional Status as Measured by Height for Age z-score

	(1)	(2)	(3)
Sex (1 if Female)	0.135* (0.080)	0.129 (0.079)	0.107 (0.077)
Violent shock (1 if recieved a violent shock)	-0.384** (0.182)	-0.364** (0.182)	-0.403** (0.175)
Sex x Violent schock	0.303 (0.205)	0.297 (0.204)	0.351* (0.194)
Age of the child in months			-0.007*** (0.002)
Female household head			-0.004 (0.104)
Higher level of education in household			0.007 (0.013)
Both parents live with the child			0.000 (0.086)
Wealth Quantile 2			0.059 (0.116)
Wealth Quantile 3			0.186 (0.117)
Wealth Quantile 4			0.231** (0.097)
Wealth Quantile 5			-0.082 (0.140)
Number of members from extended family			-0.042 (0.047)
Number of children under 5 years of age			-0.007 (0.072)
Number of children between 5 and 18			-0.001 (0.046)
Number of members 65 or older			0.101 (0.078)
Constant	-0.036 (0.053)	-0.035 (0.054)	0.137 (0.181)
Observations	734	734	734
R-squared	0.016	0.038	0.068
Total number of violent shocks	106	106	106
Regional Fixed Effects	No	Yes	Yes
Estimated total effect on girls	-0.0806	-0.0671	-0.0514
t-stat	-0.764	-0.619	-0.486
p-val	0.445	0.536	0.627

Robust standard errors in parentheses (Cluster by household)

*** p<0.01, ** p<0.05, * p<0.1

Table 14. Effects of Violent Shocks on on Child's Nutritional Status as Measured by Weight for Age z-score

	(1)	(2)	(3)
Sex (1 if Female)	0.104 (0.080)	0.098 (0.080)	0.075 (0.078)
Violent shock (1 if recieved a violent shock)	-0.394** (0.184)	-0.409** (0.186)	-0.466*** (0.179)
Sex x Violent schock	0.213 (0.202)	0.222 (0.203)	0.309 (0.193)
Age of the child in months			-0.007*** (0.003)
Female household head			0.040 (0.117)
Higher level of education in household			0.012 (0.014)
Both parents live with the child			-0.034 (0.088)
Wealth Quantile 2			0.189 (0.129)
Wealth Quantile 3			0.234** (0.109)
Wealth Quantile 4			0.233** (0.103)
Wealth Quantile 5			-0.053 (0.134)
Number of members from extended family			-0.020 (0.038)
Number of children under 5 years of age			-0.068 (0.073)
Number of children between 5 and 18			0.006 (0.042)
Number of members 65 or older			0.085 (0.073)
Constant	-0.012 (0.053)	-0.007 (0.055)	0.161 (0.196)
Observations	734	734	734
R-squared	0.015	0.026	0.059
Total number of violent shocks	106	106	106
Regional Fixed Effects	No	Yes	Yes
Estimated total effect on girls	-0.181	-0.188	-0.158
t-stat	-1.624	-1.689	-1.557
p-val	0.105	0.0918	0.120

Robust standard errors in parentheses (Cluster by household)

*** p<0.01, ** p<0.05, * p<0.1

Table 15. Effects of Violent Shocks on Child's Peabody Picture Vocabulary Test Results

	(1)	(2)	(3)
Sex (1 if Female)	-0.663 (0.992)	-0.898 (0.962)	-1.213 (0.912)
Violent shock (1 if recieved a violent shock)	0.972 (1.843)	0.436 (1.927)	-1.169 (1.742)
Sex x Violent schock	0.046 (2.561)	-0.285 (2.600)	2.358 (2.212)
Age household head			0.028 (0.045)
Age of the child in months			0.176*** (0.017)
Female household head			-0.274 (1.398)
Higher level of education in household			0.617*** (0.154)
Both parents live with the child			0.394 (1.152)
Wealth Quantile 2			2.259* (1.362)
Wealth Quantile 3			5.471*** (1.385)
Wealth Quantile 4			3.751*** (1.401)
Wealth Quantile 5			4.720*** (1.622)
Number of members from extended family			0.621 (0.580)
Number of children under 5 years of age			-3.016*** (0.847)
Number of children between 5 and 18			-1.377** (0.621)
Number of members 65 or older			1.109 (1.024)
Constant	100.198*** (0.752)	100.409*** (0.726)	83.251*** (3.572)
Observations	1133	1133	1133
R-squared	0.001	0.066	0.236
Total number of violent shocks	150	150	150
Regional Fixed Effects	No	Yes	Yes
Estimated total effect on women	1.018	0.151	1.189
t-stat	0.516	0.0750	0.734
p-val	0.606	0.940	0.463

Robust standard errors in parentheses (Cluster by household)

*** p<0.01, ** p<0.05, * p<0.1

Appendix D.

Rural Sample Distribution

Region	Department	Municipality	Number of households	%
Central	Boyacá	Saboya	307	12,28%
Central	Cundinamarca	Simijaca	159	6,36%
Central	Cundinamarca	Susa	214	8,56%
Central	Santander	Puente nacional	336	13,43%
Athlantic	Córdoba	Cereté	266	10,64%
Athlantic	Córdoba	Chinú	180	7,20%
Athlantic	Córdoba	Sahagún	196	7,84%
Coffee-Growing	Quindío	Circasia	208	8,32%
Coffee-Growing	Quindío	Córdoba	99	3,96%
Coffee-Growing	Risaralda	Belén de Umbría	161	6,44%
South	Tolima	Natagaima	92	3,68%
South	Tolima	Ortega	283	11,32%
Total			2501	100,00%