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The Impact of Intra-State Conflict on Economic Welfare and Consumption Smoothing: Empirical Evidence for the Displaced Population in Colombia

Ana María Ibáñez[*] and Andrés Moya[**]

aibanez@uniandes.edu.co an-moya@uniandes.edu.co

HiCN Working Paper 23

2006

Abstract: Intra-state conflicts and forced displacement impose a heavy burden upon the civil population, and produce severe welfare losses. Using a household level data administered to 2.322 Colombian displaced households, we estimate welfare losses for displaced households, as well as the determinants of labor income and aggregate consumption in reception sites. We also asses whether households are able to smooth consumption, and analyze the strategies they are compelled to adopt. Our results indicate that forced displacement entails a significant asset loss, limits the ability of household to generate income, disrupts risk-sharing mechanisms, and obliges households to rely on costly strategies in order to smooth consumption. Thus, the short and long-term consequences of forced displacement are large, and the need to design and implement specific policies for victims of internal conflict is evident. These policies, in particular, should provide mechanisms to prevent substantial welfare losses and to create conditions for sustainable income generation processes.

Acknowledgements: Support from GDN and USAID is gratefully acknowledged. We express our gratitude to the Colombian Bishop's Conference, Klaus Deininger, Pablo Querubin and Andrea Velásquez, our partners in this research project.

[*] Associate Professor. Department of Economics, Universidad de los Andes. aibanez@uniandes.edu.co

[**] Instructor Professor. Department of Economics. Universidad de los Andes. an-moya@uniandes.edu.co

I. Introduction

Intra-state conflicts impose a heavy burden upon the civil population. Armed groups attack the civil population to expand their territorial control, weaken their opponents' popular support, and increase their war loot. This results in a large number of the population facing forced displacement, selective homicides, extortions and kidnappings, among others. World wide forced displacement, in particular, has increased significantly during the last two decades; while in 1990 the total number of displaced persons was near 20 million, in 2004 this number rose to 25 million (UNCHR, 2006)[1].

By limiting the ability to generate income, forced displacement causes significant welfare losses to affected households. Households are forced to migrate hastily, and are rarely able to sell their assets, which are seized by armed groups, or abandoned. Families cease deriving economic returns from productive assets (e.g. land) and, since assets are not sold, capital to invest in productive activities in destination communities is not often available. In addition, finding employment is difficult because displaced households often come from rural areas and their agricultural abilities are not valued in urban areas. Displacement also causes the disintegration of households as some members are assassinated while others stay in their hometown to protect assets. Women are sometimes obliged to become the main breadwinners of the household and older children must abandon schools to contribute generating income.

Moreover, forced displacement disrupts formal and informal mechanisms to smooth consumption, obliging households to adopt costly strategies. Assets are lost, access to financial markets is limited, and social networks are disrupted, constraining informal risk sharing mechanisms. As a consequence, the need to rely on strategies to smooth consumption is frequent, and the risks of falling into chronic poverty are substantial.

The long-term consequences of a sharp drop in consumption may transcend the direct welfare costs stemming from income losses (Morduch, 1995). Children from households that are unable to smooth consumption may face health deterioration (Behrman, 1988) and lesser body size (Foster, 1995). Households also adopt costly strategies to smooth consumption such as selling assets (Rosenzweig and Wolpin, 1993), adjusting labor supply (Kochar, 1988), foregoing risky but profitable activities to smooth income instead of consumption (Morduch, 1994), and dropping children out of

[1] On the other hand, the number of refugees shows a steady decline to more than nine million in 2004 from near 15 million in 1990 (UNCHR, 2006)

schools (Jacoby and Skoufias, 1992; Baez and Santos, 2006). For displaced households, the limited set of available strategies may force families to rely further on costly strategies, deepening the negative impact of drops in consumption.

The purpose of this paper is to examine welfare losses of households victims of forced displacement in Colombia and thereby provide evidence on the economic costs for households victims of internal conflict. We rely on household level data administered to 2.322 Colombian displaced households. First, we analyze drops in consumption and labor income as a consequence of forced migration and examine their evolution as they settle in destination sites. To understand which households are better able to cope with the displacement shock, we estimate the determinants of consumption and income levels in destination sites. Second, we investigate whether the disruption of informal and formal risk-sharing mechanisms, as a consequence of displacement, restricts their capacity to smooth consumption. Third, we analyze the strategies used by households to mitigate the displacement shock and avoid such sharp declines in consumption. Lastly, we evaluate if income generation programs are effective to increase income and consumption levels in reception municipalities, to improve the ability to smooth consumption, and to reduce the need to rely on costly strategies to compensate for income drops.

The contributions of the paper are twofold. On the one hand, the paper provides empirical evidence to understand the welfare consequences of internal conflicts. The welfare impact of conflict-induced shocks at the household level is rarely researched due to the difficulties to collect micro-level data. Some noteworthy examples are the papers by Justino and Verwimp (2006) and Brück (2004a and 2004b), which explore the economic consequences of war for households in Rwanda and Mozambique. Understanding the consequences of war is critical to craft policy programs aimed to mitigate the short and the long-term costs of conflict. In particular, the long term consequences of internal conflicts may hinder economic development on a significant basis by reducing human capital investments, destroying assets, and creating pockets of the population trapped in poverty vicious cycles. On the other hand, the paper evaluates the effectiveness of income generation programs purposively designed to mitigate the impact of civil conflict upon a particular group of the population: forced displaced persons.

Results indicate that displaced households confront sizeable welfare losses. Declines in labor income and consumption, as a consequence of displacement, are substantial. Because forced displacement disrupts formal and informal mechanisms to share risk, a considerable proportion of the income shock is translated into household consumption. Furthermore, the impact of income generation programs is limited to a short period of time. Beneficiaries are able to expand income for a few months, but aggregate consumption is unaffected, reliance on costly strategies is not prevented, and the impact of the program vanishes rapidly upon its completion. Thus, the short and long-term costs of forced displacement are large; assets losses, school interruption, and pronounced drops in consumption may push households into a poverty trap.

The structure of the paper is as follows. Section Two reviews the economic literature regarding formal and informal mechanisms to smooth consumption, the consequences for households unable to smooth consumption, and the welfare implications of conflict-induced shocks. The data, empirical strategy, and the results of the paper are described in Section Three. Finally, Section Four concludes.

II. Consumption smoothing: informal and formal mechanisms

According to the permanent income hypothesis, assets, financial markets and insurance mechanisms contribute to isolate consumption decisions from income variations. By relying on capital income, economic agents are able to mitigate anticipated shocks and to spread out consumption across periods. On the other hand, credits, insurance and informal risk-sharing mechanisms contribute to cope with unanticipated shocks. Since income variations are not translated into consumption decisions, need and preferences determine the consumption path, implying that consumption does not necessarily track income over the consumption cycle (Deaton, 1992).

However, smoothing consumption is difficult when shocks are unanticipated (Jacoby and Skoufias, 1997). Many households are borrowing constrained (Kohora and Horioka, 2006) and access to formal insurance-mechanisms is not widespread, in particular in developing countries. Moreover, exclusion from financial markets and insurance mechanism in developing countries induce some households to resort to informal risk sharing mechanisms (Morduch, 1999; Fafchamps and Glubert, 2006). Despite the lesser alternatives and larger income variations in developing countries, empirical evidence indicates consumption is remarkably smooth (Fafchamps and Lund, 2003).

Informal risk-sharing mechanisms are the main vehicle to mitigate shocks in developing countries. Income drops are sometimes compensated by sale of assets, remittances, or informal credits (Rosenzweig and Stark, 1989; Fafchamps et al, 1998). Reciprocal transfers, like gifts and loans, are also common instruments used by households in rural areas of developing countries to smooth consumption (Morduch, 2002; Fafchamps and Lund, 2003). Lastly, intrahouseholds decisions such as reorganization of household units, increasing labor market participation, and cutting meals are also strategies adopted by households (Fafchamps et al, 1998; Jalan and Ravallion, 2001).

Informal risk-sharing mechanisms, however, are not completely efficient to reduce income risk (Townsend, 1994; Ligon et al, 2001; Foster and Rosenzweig, 2001; Fafchamps and Gulbert, 2006). The reciprocally-based mechanisms described above need closely connected individuals to consolidate because altruism emerges by intimate personal contact, repeated interaction increases the likelihood of reciprocity, and monitoring and enforcement is facilitated (Townsend, 1995; Fafchamps and Lund, 2003; Fafchamps and Gulbert). Because these mechanisms arise within closely connected networks, income levels are similar and income fluctuations are highly correlated; thus, income-pooling is not complete.

Unanticipated shocks, when households are not properly insured *ex*-ante, oblige households to adopt costly strategies. The ability to spread resources across periods breaks down for uninsured households, forcing them to trade-off wealth for smoothing consumption as shocks arise. (Jacoby and Skoufias, 1997). The costs from adopting such strategies transcend the short term and may perpetuate poverty. Evidence suggests that income shocks and the inability to smooth consumption have large effects on human capital accumulation because school attendance becomes erratic (Jacoby and Skoufias, 1997; Baez and Santos, 2006). Children from households unable to smooth consumption, in addition, face lesser body size, health deterioration, increased child labor participation, and drops in nutritional outcomes (Behrman, 1988; Foster, 1995; Jensen, 2000; Baez and Santos, 2006)

Risks, and therefore unanticipated shocks, are wider in developing countries. Households confront health shocks, extreme weather variations, pests, job shortages, violence and civil conflicts. In particular, the impact of violence and civil conflict upon the civil population may be large, and the likelihood of perpetuating poverty after the

end of conflicts is significant. Nevertheless, the effects of conflicts on income and the ability to smooth consumption are largely under researched.

Conflict is a severe covariate shock, yet the impact of conflicts usually affects certain regions within a country and particular groups of the population. By attacking particular groups of the population, armed groups seek to consolidate territorial strongholds, expand territorial control, and appropriate valuable resources (Azam and Hoefler, 2002). Consequently, households with salient characteristics are harshly hit by the conflict (André and Platteau, 1998; Verwimp, 2003; Engel and Ibáñez, 2006; Justino and Verwimp, 2006).

The ability to smooth consumption of these particular groups is badly diminished. Assets losses are substantial, borrowing is extremely restricted, and informal risk-sharing mechanisms are dissolved. During conflicts, assets are destroyed, abandoned or illegally appropriated by armed groups (Matowu and Stewart, 2001; Bruck, 2004a)[2]. If assets fall below a critical level, their insurance role is disrupted and unanticipated income variations translate into consumption (Fafchamps et al, 1998). Furthermore, financial markets may be disrupted by war activities, or access for particular households may become difficult. Although informal risk-sharing mechanisms and non-market activities may substitute disrupted financial markets (Brück, 2004a), these may dissolve in extreme conditions brought up by conflict. Forced displacement, emergence of mistrust in villages, and a widespread drop in village income hampers the minimum conditions necessary for effective informal risk-pooling: geographical proximity, altruism, capacity to enforce and monitor, and sufficient village income to provide support to households in need.

As conflict hinders the ability to smooth consumption, households confronting conflict are forced to resort to costly coping strategies, which reinforce their vulnerability (Brück, 2004a). Selling assets, adopting inefficient agricultural practices, and recurring to subsistence farming, are some of the costly strategies used by households during conflict (Brück et al, 2004b; Donovan et al, 2003). By trading-off large returns for risk diversification, households mitigate income shocks and mildly smooth consumption. Evidence in countries facing conflicts shows the consequences of adopting these costly

[2] The internal war in Mozambique caused a decline in cattle from 1.3 million to 0.25 million, and per capita food production only reached 90 percent of its pre-war levels by 1996. After the conflict ended in Uganda, two thirds of household still reported a significant asset loss (Matowu and Stewart, 2001; Brück, 2004a)

strategies are indeed negative. Malnourishment, poor nutritional status, drops in lifetime earnings, and descents into chronic poverty are among the many negative consequences identified (Justino and Verwimp, 2006; Bundervoet and Verwimp, 2005; Alderman et al, 2004). Because the possibility to resort to productive means is scant, these conditions may push households into poverty and create poverty traps (Justino and Verwimp, 2006).

3. Empirical Analysis

This section analyzes how forced displacement, by reducing income and disrupting available instruments to smooth consumption, imposes heavy losses upon households and forces them to adopt costly strategies. In order to achieve this objective, we estimate: (i) drops in income and consumption due to displacement; (ii) the determinants of income and consumption in reception sites; (iii) the ability of households to smooth consumption after the displacement shock; and (iv) the strategies adopted by displaced households to smooth consumption. Also, we explore whether income generation programs improve the capacity of households to smooth consumption and reduce the need to rely on costly strategies. A brief description of forced displacement in Colombia, the data, the empirical strategy and the econometric results are presented in this section.

3.1. Forced displacement in Colombia

Colombia has confronted several internal conflicts since its independence from Spain in the beginning on the Nineteenth Century. Two conflicts that occurred during the Twentieth Century imposed a particular heavy toll upon the civil population. Political struggles between the two major political Colombian parties, Liberal and Conservative Parties, lead to the first conflict, denominated as *La Violencia*. The conflict began in the 1940's and erupted vigorously in 1948 after the assassination of a political leader from the Liberal Party. Homicide rates soared throughout *La Violencia* and official figures estimate that 30.000 persons lost their lives during this period (Echeverry et al, 2001). A power sharing agreement negotiated in 1958 paved the way for a peace deal and managed to end armed confrontations.

Although violence was moderated in the following two decades, the conflict never subsided. In the middle of the sixties, rebel groups - FARC, ELN and ERP - emerged in isolated regions of the Colombian Territory aiming to overthrow the government. The

actions of these groups, which consolidated in the seventies, comprised sporadic attacks to government forces and occupation of rural towns (Echeverry et al, 2001).

By providing financial resources to rebel groups, appearance of illegal drug cultivation and trade fueled the conflict from the eighties until today. Paramilitary groups, which seek to restrain expansion of guerrilla groups and protect land owners and drug lords, appeared in some regions of the country. Paired with drug funding, emergence of paramilitary groups intensified and expanded the conflict along the Colombian territory (Gaviria, 2000; Thoumi, 2002).

Intensification of the conflict caused an escalating trend of attacks against the civil population. These aggressions were not a causal sub-product of the war, but a deliberate strategy of illegal armed groups to consolidate territorial strongholds, spread territorial control and diversify funding sources. Forced displacement, a consequence of the heightened attacks of armed groups on the civil population, affects nowadays more than 2.5 million people, corresponding to 5,7 percent of the Colombian population, and one of the highest figures worldwide (Ibáñez et al, 2006). Moreover, as the presence of illegal armed groups extended to most of the Colombian territory, near 90 percent of the municipalities have faced the expulsion of its population.

Illegal armed groups – left-wing guerrilla and right-wing paramilitary groups – are responsible for most displacement events in Colombia. Until December of 2005, guerrilla groups and paramilitary groups were responsible of 47 and 17 percent of the displacement events, respectively. These groups rely on violent aggressions against the civil population like death threats, massacres, selective homicides, kidnapping and forced recruitment, among others, to force the population to migrate. Differently to what happens in other countries, displacement in Colombia usually takes place on an individual basis, and victims rarely migrate massively[3]: near 76.1 percent of the displaced population migrated individually and only 23.7 percent of them migrated massively.[4]

The Colombian government has responded to the humanitarian crisis created by forced displacement, by developing a comprehensive legislation and implementing programs to mitigate the displacement shock. This legislation, recognized as one of the most

[3] According to the Colombian Legislation, massive displacement occurs when more than ten (10) households or eighty (80) persons migrate together.
[4] Accion Social. *Forced Displacement Statistics*. www.red.gov.co Access on the 31st of July 2006.

progressive worldwide (UNHCR, 2006), covers three stages of assistance: prevention, humanitarian emergency assistance, and socioeconomic stabilization. The Humanitarian Emergency Assistance (HEA) provides aid during the first three months of displacement[5]. Once Humanitarian Assistance finishes, policies concentrating on economic stabilization, which aim to support the displaced population to regain their productive life, are implemented[6]. Only when the displaced households recover their capacity to provide acceptable living conditions for themselves, the flow of special aid is halted.

Despite the solid legal framework for the displaced population, and the growing budget allotted to programs for the displacement population, the socioeconomic conditions of the displaced population are still worrisome. Empirical evidence indicates the displaced population fare worst than urban poor and extreme poor in reception municipalities. Moreover, instead of improving with time, socioeconomic conditions appear to worsen after a year of settlement (Ibáñez and Moya, 2006).

3.2. Data and income generation programs

The data

The empirical analysis uses household data from Colombian displaced households surveyed during 2004. The sample comprises 2,322 displaced households located in 48 municipalities and 21 departments[7]. The purpose of the survey is to characterize the migration process, identify welfare losses from displacement, elicit the desire to return, and evaluate income generation programs. To achieve these objectives, we designed a treatment group comprised of 769 displaced household beneficiaries of income generation programs and a control group covering 1,553 displaced households non-beneficiaries of income generation programs.

The control group is representative of the displaced population in Colombia whereas the treatment group is representative for displaced household beneficiaries of income generation programs. The design of the control sample is based on the RUT System. This information system collects information about displaced households and is applied

[5] HEA provides, food, water, housing, medical services, psychological help and nutritional support.
[6] During the socioeconomic stabilization, the government is compelled to provide access to land, credits, technical assistance, labor training, basic infrastructure, health coverage, education, job opportunities and housing.
[7] Municipalities are the smallest administrative units in Colombia and departments are similar to States in the United Status.

and managed by the Catholic Church. The detailed questionnaire is applied to displaced households that request assistance in any of the 3,764 parishes of the Catholic Church. When the sample was defined, the data contained information for 32,093 households and nearly 150,000 people[8]. To correct the RUT bias, the control sample was divided into two sub-samples: (i) 794 RUT households; and (ii) 759 Non-RUT households. A stratified sample was selected from the RUT sample[9]. Enumerators located the RUT household and the survey was administered. For each RUT household surveyed, a Non-RUT household in the close vicinity was located and the survey was administered. Beneficiaries of income generation programs were surveyed in the same municipalities as in the RUT and non-RUT sample. Households were randomly selected from a beneficiary list provided by three organizations implementing these programs.

The survey elicits information regarding the migration process, socioeconomic conditions before and after displacement, land tenure, agricultural production, access to government aid, and the desire to return. The migration process is characterized at length by collecting information about the armed actors who caused displacement, triggers of displacement, and reasons for choosing the reception municipality. Socioeconomic conditions before and after displacement are gathered for household composition, health status, health services, school enrollment, labor markets, labor income, asset ownership, access to formal and informal credits, and participation in formal organizations.

The estimation of consumption aggregates before and after displacement merits a separate description. A problem may arise when eliciting accurate information for consumption aggregates before displacement. Recall error for consumption aggregate before displacement may be large, reducing its accuracy. Thus, consumption information before displacement was not directly collected in the survey. Instead, we estimated the determinants for rural and urban consumption using the Living Standards and Measurement Survey applied in Colombia during 1997. Once the determinants were identified, we included questions in the displaced households' questionnaire to

[8] The survey elicits information to identify the causes and actors responsible of displacement, household characteristics, land tenure, access to labor market and education before and after displacement as well as the different needs of the displaced population. The questionnaire also includes information with respect to participation in organizations and willingness to return of the displaced households.

[9] The variables used to stratify the sample were the desire to return, land tenure, access to government aid, geographical region and number of households on the community.

construct these variables and predict consumption before displacement for each household. Consumption data after displacement is collected directly by the survey.

Income generation programs

The main objective of income generation programs is to help displaced households recover their production path. These programs offer labor training, courses for small enterprises' management, and seed capital to initiate productive activities. In order to apply for income generation programs, households must prove their condition as displaced persons, and that they have received humanitarian aid. Priorities during the selection process are given to households with high dependency ratios, female headed households or younger heads.

During the first stage, a group of potential beneficiaries is selected. This group must attend training programs to sketch labor or small enterprise plans. Labor programs train beneficiaries in occupations required by local markets, and provide support elaborating a labor profile. On the other hand, the objective of small enterprise programs is to strengthen entrepreneurial capacities and to draft a proposal to develop a small enterprise. Plans are submitted to a committee who selects the group of beneficiaries.

Beneficiaries are awarded a maximum sum of US$500. Benefits include labor training, small enterprise courses, or a combination of both. By the end of the program, labor plans are culminated and beneficiaries are hired by private firms for a short term practice. Wages are funded by the implementing organizations and private firms can decide whether to hire the beneficiary after the practice finishes. On the other hand, detailed small enterprise plans include a feasibility analysis, an investment schedule, and a business plan. The beneficiaries of small enterprise trainings receive capital to initiate the economic activity designed during the program.

3.3. Empirical Analysis

The underlying theoretical model assumes agents transfer economic resources across periods to maximize state contingent utilities. The ability to transfer resources from one period to another, and thereby separate the consumption path from earnings, depends on the level of assets as well as access to credit and insurance instruments. In both cases, consumption is therefore determined by needs and preferences and not by income

variations (Deaton, 1992). The empirical approach to test whether households are able to smooth consumption needs to establish if income variations do not translate into consumption variations. The equation that is more commonly used in the literature is defined by

$$\Delta \ln C_i = \beta \Delta \ln y_i + \alpha X_i + \varepsilon_i \quad (1)$$

where $\Delta \ln C_i$ represents the change in the log of consumption between period *t* and period *t*-1 for household *i*, $\Delta \ln y_i$ denotes the change in the log of income, X_i is a vector of household characteristics to control for heterogeneity, and ε_i is a random term capturing unobservable variables. If households are able to fully insure against anticipated and unanticipated risks, $\beta = 0$; implying income fluctuations do not cause changes in the consumption paths because households fully anticipate the shock, or because credit markets and insurance mechanisms completely mitigate the impacts of these unanticipated shocks. On the other hand, when complete consumption smoothing is not possible, $\beta > 0$.

Forced displacement stemming from civil conflicts breaks down all the available mechanisms to smooth consumption. First, migration is triggered often by violent aggressions, which force households to leave hastily their hometown, restricting the alternatives to sell and protect assets. Consequently, capital income, one of the main instruments to smooth consumption, is no longer an option. Furthermore, losses in capital income can not be compensated with earnings in labor markets. Since the majority of displaced persons come from rural areas, many households were previously land tenants, dedicated to agricultural activities, and with low education levels; characteristics that hinder their ability to compete in urban labor markets. Therefore, after a year of displacement, unemployment rates in reception municipalities are above those of extreme poor in urban areas (Ibáñez y Moya, 2006).

Second, access to financial markets is severely disrupted. By moving to an unfamiliar location, traditional channels to apply for financial credits disappear. In addition, creditor profiles of displaced persons is risky for financial markets as loss of assets implies no collateral may be provided and some households are reported in credit information systems due to delayed utility payments.

Lastly, informal-risk sharing mechanisms are also restricted. Contacts with social networks in their hometown are watered down as a consequence of migration. Also, a considerable proportion of households are split up since some members are assassinated or because they abandon the household once in the reception municipality. This hampers informal risk-pooling instruments which, as shown by Fafchamps et al (2006), require geographical proximity and kinship ties to generate altruism, reciprocity and capacity to monitor and enforce.

The inability to smooth consumption imposes heavy costs on displaced households and pushes them to adopt costly strategies. Drops in food consumption are widespread: on average, these households consume two meals a day; meals are rich in carbohydrates, but lack proteins; and priority is given to children, seniors, and sick members. As a result, near 16 percent of children from displaced households are chronically malnourished and four percent face acute malnourishment (Econometria, 2003; WFP, 2005). Older children interrupt school and participate in labor markets to generate income and prevent larger drops in consumption. In addition, families decide to strategically split up: some members return to their hometown to protect assets and derive returns from these assets.

We analyze the impact of forced displacement on welfare levels and on the ability to smooth consumption. We estimate first the determinants of aggregate consumption and labor income levels to identify which households are better off in reception municipalities. Income and aggregate consumption levels for household *i* are determined by household characteristics (Z_i), labor occupation of household head (L_i), social capital variables (S_i), characteristics of the migration process (M_i), and a dummy variable denoting whether the household is beneficiary of income generation programs (G_i). Labor income and aggregate consumption are defined by:

$$W_i = \alpha_0 G_i + \alpha_1 Z_i + \alpha_2 L_i + \alpha_3 S_i + \alpha_4 M_i + \varepsilon_i \qquad (2)$$

where W_i denotes labor income or aggregate consumption. For aggregate consumption, a vector characterizing asset ownership in reception and origin municipalities (A_i) is also included as an additional determinant because assets may contribute to expand aggregate consumption.

Since access to income generation programs is an endogenous variable, we use massive migration as an instrument. In order to target government aid to displaced households, a

registration system, whereby households declare and are registered once the declaration is validated by government officials, was created. When households migrate massively, registration is automatic, granting immediately the condition as a displaced person. Access to the income generation programs evaluated in this paper is conditional on being registered in government records as a displaced person. Thus, massive displacement determines the probability of being a beneficiary of income generation programs, yet massive migration does not influence welfare levels or the ability to smooth consumption.

We also explore whether displacement disrupts the ability to smooth consumption. Changes in consumption are regressed as a function of changes in labor income and household characteristics to control for heterogeneity. Three set of regressions are estimated. First, a regression in which changes in consumption, without controlling for participation in income generation programs, is estimated. Nevertheless, participation in income generation programs, by providing additional income sources, may contribute to mitigate the displacement shock and to smooth consumption. Hence, the second set of regressions interact changes in income with participation in income generation programs. As before, participation in income generation programs is instrumented with massive migration. Lastly, the ability to smooth consumption may change as the time of settlement in the reception municipality is longer. During the first three months, displaced households are entitled to humanitarian aid, which may be instrumental to prevent substantial drops in consumption. After humanitarian aid ends, empirical evidence suggests vulnerability of displaced households increases significantly (Econometria, 2003). Thus, consumption smoothing may vary according to time of settlement in reception municipalities. To control for these changes over time, dummy variables for time of settlement are interacted with changes in labor income and participation in income generation programs. The three sets of regressions estimated are

$$\Delta C_i = \beta \Delta I_i + \gamma Z_i + \varepsilon_i \tag{3}$$

$$\Delta C_i = \beta_j \left[\Delta I_i^j * G_i\right] + \gamma Z_i + \varepsilon_i \tag{4}$$

$$\Delta C_i = \beta_j^1 \left[\Delta I_i^j * d_{0-3}\right] + \beta_j^2 \left[\Delta I_i^j * d_{3-12}\right] + \beta_j^3 \left[\Delta I_i^j * d_{>12}\right] + \gamma Z_i + \varepsilon_i \tag{5}$$

where ΔC_i and ΔI_i represents change in consumption and labor income before and after displacement, Z_i is a vector of household characteristics, j denotes whether the

household is a beneficiary or non-beneficiary of income generation programs, $d_{0\text{-}3}$ is a dummy variable equal to one when time of settlement is less than three months, $d_{3\text{-}12}$ is a dummy variable equal to one when time of settlement is between three months and a year, and $d_{>12}$ is a dummy variable equal to one when time of settlement more than a year. As explained above, aggregate consumption in municipalities of origin is predicted and labor income is elicited using retrospective questions.

Finally, we analyze if income generation programs reduce the likelihood of resorting to costly strategies to smooth consumption. We estimate probit regressions for the probability of adopting strategies such as child labor and household split up, and an OLS regression for the number of days of schooling interruption. Changes in labor income, household characteristics, social capital, asset ownership, migration characteristics, and a dummy variable for beneficiaries of income generation programs are incorporated as determinants of adopting these strategies. The probability for household *i* of adopting strategy *k* is defined by

$$\Pr ob(\text{adopting strategy } k)_i = \mathrm{f}\left(\delta_0 G_i + \delta_1 \Delta I_i + \delta_2 Z_i + \delta_3 S_i + \delta_4 A_i + \delta_5 M_i + \varepsilon_i\right) \quad (6)$$

where *k* is school interruption, child labor or household split up. Estimate results for all the regressions defined in this section are analyzed in next section.

3.4 Summary statistics and econometric results

The analysis of welfare losses, the ability to smooth consumption, and the strategies adopted by the displaced population in Colombia is presented in this section. Our results indicate that the economic impact of displacement is substantial: asset losses are significant, conditions to generate income are extremely difficult, and the ability to mitigate risks is indeed limited. Thus, labor income and aggregate household consumption plummet after displacement, households are unable to smooth consumption, and are compelled to adopt costly strategies in an attempt to ameliorate the impact of displacement.

Table 1 shows the summary statistics for the whole sample as well as for beneficiaries and non-beneficiaries of income generation programs. Forced displacement implies a significant asset loss. Average losses, including durable goods and housing, are around US$4.084 per household, which on aggregate are equivalent to 1.7 percent of the Colombian GDP. In addition, more than half of households had formal or informal land

tenure, and had their land seized by rebel groups or were obliged to abandon their land as a result of displacement. Aggregate figures reveal that 1.2 million hectares have been lost as a consequence of forced migration; a figure equivalent to two times the number of hectares assigned by the Agrarian Reforms in Colombia between 1993 and 2002. Moreover, the abandonment of land by the displaced population implies a significant decline in agricultural production. Idle land, on average, entails annual agricultural losses up to US$979 for households who pursued agricultural activities before displacement. Aggregate figures for this loss in annual agricultural production correspond to 2.1 percent of the agricultural GDP of 2004.

The difficulty for displaced households to derive income from agricultural activities is aggravated by the slow absorption of displaced persons in urban labor markets. First, unemployment rates soar during the first months of settlement: unemployment rates for household heads increase from 1.7 percent in their places of origin to more than 50 percent during the first three months after displacement. Although these rates descend to 16.1 percent after a year of settlement, displaced households fare worse than the urban poor (Ibáñez and Moya, 2006). In fact, after a year of settlement, unemployment rates for displaced household heads are only equivalent to those of urban extreme poor.

Difficulties to find jobs partially stems from the erosion of the displaced population's labor skills, and from their low educational attainment. Forced displacement depreciates the productive skills of its victims; since nearly all households come from rural areas, where the majority was employed in agricultural activities. In fact, near 74 percent of household heads were engaged in agricultural activities before forced migration. In addition, average years of schooling for displaced household heads are lower than those of the urban poor. Consequently, the displaced population faces high unemployment rates, and even when jobs are available, they usually work in the informal sector.

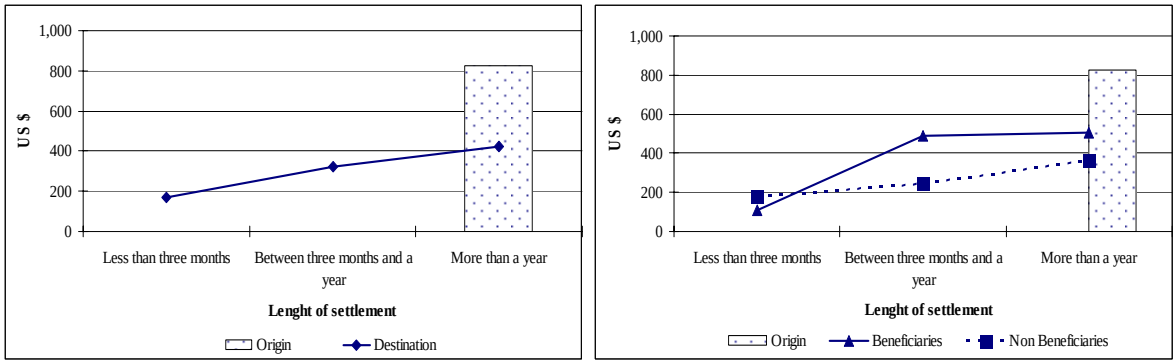
Furthermore, forced migration entails the disruption of formal and informal risk-sharing mechanisms. Potential access to informal credits drops significantly and conditions for formal credits worsen. For example, after displacement only 9.2 percent of the households had the opportunity to ask for loans to relatives, neighbors, and friends, in contrast to 18 percent before displacement. Participation in formal social networks is also disrupted: while 27 percent of the displaced population used to participate in formal organizations before displacement, only ten percent participate during the first three months of settlement. Although involvement in social networks increases as the time of

settlement is longer, involvement in productive organizations decrease while participation in charitable organizations increase. This entails a significant impact on household welfare as the former are instrumental to mitigate risks, gain access to credit programs and technical assistance, generate income, and smooth consumption (Ibáñez and Moya, 2006).

Lastly, the migration process causes the fragmentation of near 30 percent of the households, worsening the conditions to generate income. Nearly nine percent of families loose household members, and in many cases their household head, as a consequence of displacement. Because the main bread-winners are no longer in the household, dependency rates and vulnerability to poverty increases. On the other hand, other households split up to diversify income sources, return to their hometown, and derive return from their assets. This strategy may reduce vulnerability by providing additional income sources.

As a result of the circumstances described above, displaced households face extreme difficulties to generate income in reception sites. Overall, labor income per equivalent adult declines by 50 percent. Household's labor income per equivalent adult plummets from US $826 per year before displacement to US $170 per year during the first three months after displacement and to US $410 after a year of settlement. Beneficiaries of income generation programs recover earlier their ability to produce income than non-beneficiaries, albeit after a year of settlement the difference between both two groups is not significant (Figure 1).

Figure 1. Annual labor income per equivalent adult – before and after displacement. Whole sample, beneficiaries and non beneficiaries.



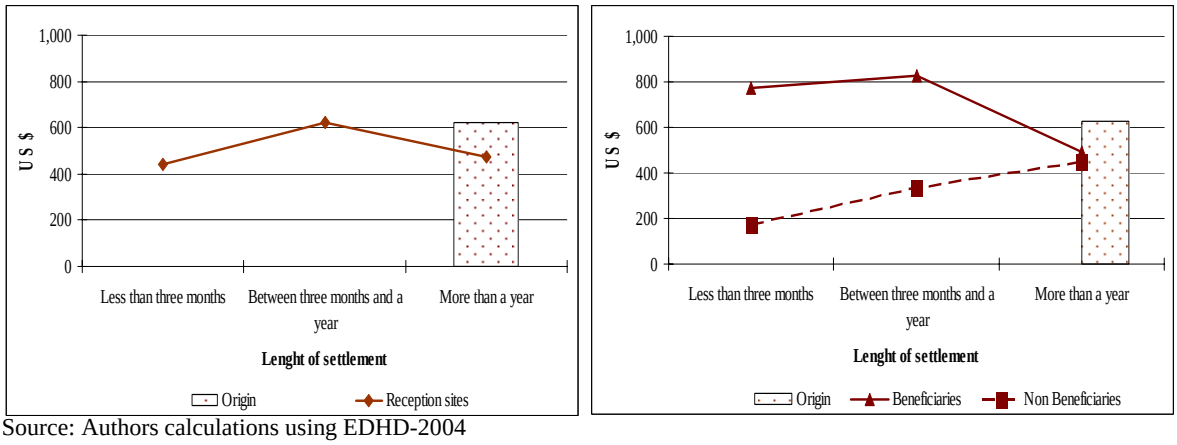
Source: Authors calculations using EDHD-2004.

The limited capacity to generate income implies lower levels of aggregate consumption. Forced displacement entails an overall decline of 22 percent in aggregate consumption per equivalent adult. Moreover, consumption aggregate does not improve overt time:

consumption drops sharply six months after migration and, after a year of settlement, aggregate consumption only recovers to 76 percent of the levels enjoyed before displacement (Figure 2). Besides, almost 65 percent of aggregate consumption is food consumption, indicating the extreme vulnerability of this population.

Although beneficiaries of income generation programs appear to be better able to smooth consumption during the first months of displacement, this ability is not sustained over time. Once these programs conclude, consumption levels for beneficiaries are practically identical to those of non-beneficiaries (Figure 2). Non beneficiaries of income generating programs, on the other hand, fare worse than the treatment group during the first months, yet they are able to catch up after a year of settlement.

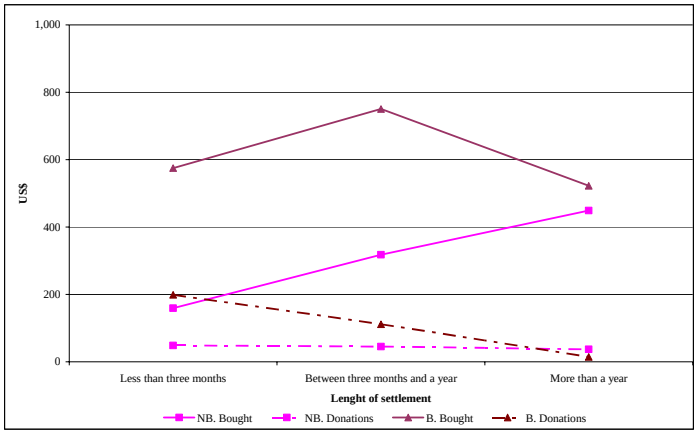
Figure 2. Annual consumption per equivalent adult – before and after displacement. Whole sample, beneficiaries and non beneficiaries.



Source: Authors calculations using EDHD-2004

The sources of consumption vary significantly over time. During the first months, displaced households rely heavily on assistance and after a year some are purchasing most of their consumption items. Beneficiaries purchase most of their consumption items earlier than non beneficiaries, but after six months their purchasing capacity seems to weaken somehow. Nevertheless, after a year, beneficiaries rely more in purchased goods compared to non-beneficiaries (95% of consumptions is purchased vs. 88% for non-beneficiaries).

Figure 3. Sources of aggregate household consumption. Beneficiaries and non beneficiaries.



Source: Authors calculations using EDHD-2004.

We estimate the determinants of consumption and labor income to identify which households are better suited to cope with forced displacement and to provide inputs for designing policy instruments. As mentioned in section 3.3, in addition to an OLS regression, we estimate an instrumental variables regression to deal with the endogeneity of participation in income generation programs. Results from OLS and IV regressions for labor income are shown in Table 2.

Labor markets, social capital, and being a beneficiary of income generation programs are effective to increase household income while vulnerability reduces labor income. We find that labor income is greater for households who had contacts in destination sites, were settled for a longer time, have younger household heads, and are employed. In addition, labor income is higher for beneficiaries of income generation programs. On the other hand, vulnerable households fare worse: ethnic minorities, those in which a woman became the household head as a consequence of displacement, and families employed in agricultural activities before displacement. As it was inferred from Figures 1 and 2, income generation programs appear to be effective in increasing labor income and reduce the dependence on assistance; nonetheless, these increments are not enough to improve aggregate consumption *vis-à-vis* non beneficiaries.

Results for the determinants of aggregate household consumption, presented in Table 3, reinforce the results for labor income. We find that consumption is greater for households that are better suited to generate income, still controlling assets in their hometown, and well-connected with formal organizations. Indeed, households with

more members in working age, younger household heads, better-educated, and participating in formal organizations are better-off. On the other hand, extremely vulnerable households, such as ethnic minorities or families in which the women became household head as a consequence of displacement, are faring worse.

However, three important differences emerge in contrast to labor income determinants. First, time of settlement does not exert any influence on aggregate consumption. Although consumption drops significantly as a consequence of displacement, consumption appears to stabilize in extremely low levels once households settle in the destination site. As shown in Graph 3, displaced households seem to rely heavily on donations during the first months and, after a while, dependence on donations eases, but consumption levels remain similar. Second, participation in income generation programs does not improve households' consumption. To verify this result, we also used propensity score matching to estimate the impact of income generation programs on consumption. Results from the propensity score matching confirm our initial results: income generation programs do not have a positive impact on aggregate household consumption. Thus, income generation programs appear to be effective to increase labor income during a short time; nonetheless, this expansion is temporary and does not contribute to increase consumption. Third, controlling assets in the municipality of origin and being able to extract rents from exploiting it contributes to expand consumption and improve somehow welfare conditions in the destination site.

Because displacement causes the disruption of risk sharing mechanisms, limits access to financial markets, and produces assets losses, the ability to smooth consumption is hindered. In fact, estimates for the determinants of food consumption per equivalent adult show that the coefficients for labor income are 0.18 and 0.17 in the OLS and IV specifications, respectively (Table 4). These results indicate that consumption is responsive to income; hence, displaced households are incapable of smoothing consumption.

In order to establish whether the disruption of risk-sharing mechanisms impinges on the capacity of households to smooth consumption, we estimate regressions in which changes in consumption per equivalent adult are regressed against changes in labor income and household characteristics. In addition, we identify the impact of forced displacement on different groups of the displaced population: households settled in reception sites for different time spans (less than three months, between three months

and a year, and for more than a year); and beneficiaries and non beneficiaries of income generation programs. Participation in income generation programs is again instrumented using massive displacement. Coefficient estimates for OLS and IV estimations for the different specifications are presented in Table 5.

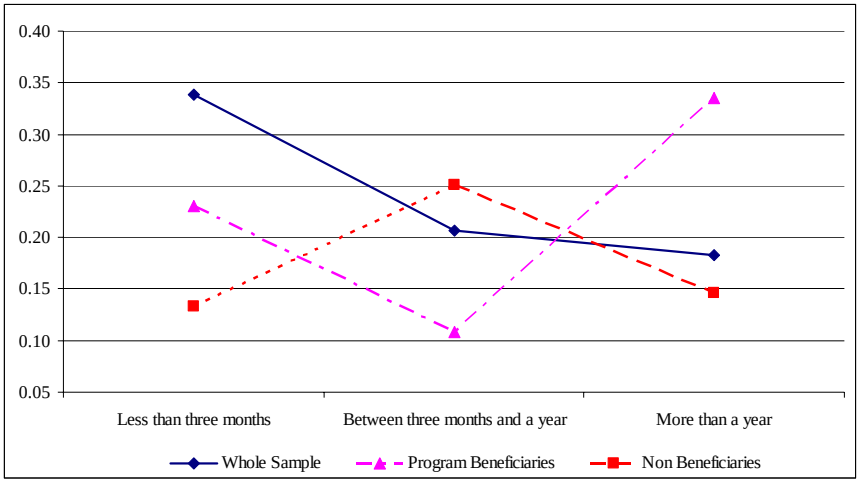
Our results indicate that displaced households are not able to smooth consumption. The coefficient for the change in income is statistically significant and equal to 0.19, revealing that households are not able to cope with the impact of forced displacement and variations in labor income translate into variations in aggregate consumption. The magnitude of this coefficient is significantly high, especially when compared to this coefficient for poor households in Colombia (0.03) and Nicaragua (0.07) (Barrera and Pérez-Calle, 2005). However, our results are similar to those found for rural villages in South India (Morduch, 2002; Ravallion and Chaudhuri, 1997), in which the coefficient denoting consumption smoothing ranges between 0.15 and 0.33. Hence, the vulnerability of forced displaced households is similar to rural households exposed to a wider range of shocks than urban households.

By probably expanding access to financial markets and risk-sharing mechanisms, displaced households recover some of their ability to smooth consumption over time. Coefficients estimates when labor income changes are interacted with dummy variables for time of settlement show a decline from 0.34 for households recently displaced, to 0.18 for households settled for more than year. However, it is striking to note that households settled for longer periods are still unable to fully insure their consumption levels. Indeed, the coefficient of income changes is still significant and higher than the one found by Barrera and Perez-Calle for Colombian urban poor.

Moreover, income generation programs only contribute to smooth consumption during a short time span. Results for beneficiaries and non beneficiaries of income generation programs reveal that these programs are not effective to help households smooth consumption overall. In fact, beneficiaries fare worse than non beneficiaries, as consumption of the former is more responsive to labor income changes, both in the OLS and in the IV specifications (Table 5, Columns 3 and 4). When we compare consumption smoothing for beneficiaries and non beneficiaries by length of settlement, we find that income generation programs have a positive impact on consumption smoothing between three months and a year after forced displacement, but seemingly when these programs come to and end, the capacity of beneficiaries to smooth

consumption fades away (Figure 4 and Table 5, Columns 5 and 6). Non-beneficiaries, on the other hand, face difficulties during the first months to smooth consumption, yet after a year consumption smoothing for non-beneficiaries is better than for beneficiaries. These results, paired with the results describe above, reinforce the hypothesis that income generation programs offer a temporary relief, but their impact vanishes over time when households are forced to rely on their own sources to provide consumption.

Figure 4. Consumption smoothing coefficients for displaced households Whole sample, beneficiaries, and non beneficiaries.



Source: Authors calculations using EDHD-2004.

The consequences of sharp declines in consumption and the difficulty to smooth consumption forces displaced households to adopt costly strategies. Some households distribute their members between their hometown and the destination site as a strategy to diversify income sources and continue exploiting assets: 21 percent of households reported that a member resided nowadays in their hometown. On the other hand, secondary schooling is interrupted frequently and young children are obliged to contribute in income generating activities. Thus, school attendance is lower in destination communities compared to their hometown, despite having a larger supply of educational services in the former. Indeed, school attendance for children in primary school increases significantly after displacement, but falls for those in middle and high school. In addition, in almost 16 percent of the households surveyed children contribute to income generation activities, driving children to interrupt their education for approximately 147 days.

As mentioned in section 3.4, we analyze if income generation programs reduce the likelihood of resorting to costly strategies to smooth consumption. Following equation 6, we estimate probit regressions for the probability of adopting strategies such as child

labor and household split up, and, in addition, we estimate an OLS regression for the determinants of school interruption. Results for these estimations, shown in Tables 6 and 7, reveal that being a beneficiary of income generation programs reduces the likelihood of having to split up the household, but these programs are not an effective mechanism to keep children in schools, and give up on child labor as a strategy to smooth consumption. Furthermore, participation in these programs does not contribute to reduce the time span in which children interrupt school attendance. These results are not surprising and are consistent with the outcomes described in the paragraphs above. Because the effectiveness of income generation programs is limited and its impact vanishes rapidly, beneficiaries still face harsh conditions once the programs ends. Foreseeing these harsh conditions, displaced households may simply diversify income sources by participating in income generation programs and by simultaneously adopting strategies such as interrupting school for older children.

Results indicate welfare losses from displacement are sizeable, the ability to mitigate the displacement shock is limited, and the impact of income generation programs is small, forcing households to adopt costly strategies. Drops in consumption and labor income after displacement are considerable. Consequently, socioeconomic conditions in destination sites are worse than those of urban poor. Nevertheless, households better-suited to generate income, still controlling assets in their hometown, and with larger social networks, face greater welfare levels in destination sites. Income generation programs seem effective to temporarily alleviate conditions for displaced households, but the impact rapidly disappears once the program ends. Thus, these programs are not effective to prevent households from resorting to costly strategies, like school interruption, to smooth consumption.

4. Conclusions

Welfare losses from intra-state conflicts are large. Evidence for forced displaced persons in Colombia reveals significant drops in consumption and labor income, substantial asset losses, harsh conditions in destination sites, and a severe disruption of risk-sharing mechanism. Thus, to avoid further drops in consumption, displaced households rely on costly strategies like distributing members between their hometown and the destination site to diversify income sources, interrupting school assistance for older children, and increasing participation of older children in labor markets.

Moreover, the effectiveness of programs intentionally designed to promote income generation and reduce state dependence among the displaced population is limited. Our results indicate that income generation programs offer a temporary relief for beneficiaries, but the impact is not sufficient to increase consumption and to prevent households from adopting costly strategies. In addition, the impact of the programs rapidly vanishes once the program ends, and welfare levels of beneficiaries end up being similar to those of non-beneficiaries. Over time, both groups are not able to recover the capacity to generate income and their previous welfare levels.

The consequences of internal conflict, therefore, go beyond the short-term adjustment costs analyzed above. Asset loss, the impossibility to generate sufficient income, and the adoption of costly strategies entail long-term costs for displaced households who face a large likelihood of falling into chronic poverty, which also hinders economic development.

The need to design and implement specific policies for victims of internal conflict is conclusive. These policies should provide mechanisms to prevent substantial welfare losses and to create conditions for sustainable income generation process; thus, reducing the risk of relying on costly strategies to smooth consumption. Protection and recuperation of assets, fine-tuning income generation programs, and promoting access to financial markets, are crucial elements to consider while crafting these policies.

Protection and recuperation of assets contributes to mitigate the conflict-induced shock and allow households to ensure acceptable consumption levels. A legal framework to protect land and other assets abandoned as a consequence of forced displacement is necessary as well as building local capacity to apply this legal framework. On the other hand, once assets are lost, mechanisms for identifying victims and estimating the value of assets lost should be designed and implemented. Compensation schemes build upon this information should be discussed during peace talks in order to devise post-conflict reparation programs.

The impact of income generation programs should not end upon completion. In order to guarantee long-term benefits, programs should identify instruments to facilitate access to formal employments, provide micro credits and seed capital, and improve their creditors' profile. By offering job-clearing houses, these programs can reduce search costs which are usually high for the displaced population. Funding wages during the

initial months for individuals working in private firms may help reduce information asymmetries regarding the abilities of displaced persons. However, since this strategy implies high costs and so far its effectiveness has been limited, emphasis should be placed on promoting small enterprises. Provision of micro credits and seed capital is, therefore, essential for this purpose and also will improve the creditors' profile of displaced households enlarging even further access to financial markets. Lastly, income generation programs should be complemented with nutritional programs to prevent households from using seed capital and micro credits for food consumption.

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Tables

Table 1. Summary statistics

Variable	Non Beneficiaries	Program Beneficiaries	Whole Sample
Change in per adult equivalent consumption	-0.23	-0.02	-0.16
Log per adult equivalent consumption - destination sites	13.57	13.76	13.64
Change in per adult equivalent income	-0.75	-0.38	-0.61
Male household head - destination sites	61.75%	64.71%	62.73%
Number of adults - destination sites	2.63	2.64	2.63
Household size - destination sites	5.16	5.17	5.16
Dependency rate	35.1%	31.6%	33.94%
Number of days since arrival to destination site	1,254	1,529	1,345
Age - Household head	43.01	41.65	42.56
Ethnic Minority - Household Head	23.50%	25.65%	24.21%
Household head no longer in the Household	5.15%	7.29%	5.86%
Years of schooling - Household head	5.62	5.78	5.68
Years of schooling - Spouse	5.74	6.02	5.83
Access to land in hometowns	60.5%	59.9%	60.2%
Agricultural activities in origin - Household head	58.92%	55.99%	57.95%
Agriculture activities in destination sites - Household head	14.81%	11.85%	13.83%
Commercial activities in destination sites - Household head	12.11%	24.09%	16.07%
Industrial activities in destination sites - Household head	1.67%	3.39%	2.24%
Construction activities in destination sites - Household head	5.86%	11.59%	7.76%
Transport activities in destination sites - Household head	1.35%	2.34%	1.68%
Services activities in destination sites - Household head	15.07%	19.14%	16.42%
Whether any HH member participates in any local organization - destination sites	31.55%	30.08%	31.06%
Walls of good quality - destination sites	60.98%	56.85%	59.61%
Floors of good quality - destination sites	9.56%	9.82%	9.65%
Has electricity - destination sites	89.60%	94.83%	91.34%
Has aqueduct - destination sites	61.36%	79.46%	67.37%
Owned house - destination sites	26.25%	35.79%	29.42%
Number of household appliances - destination sites	2.32	3.16	2.60
Percentage of land after displacement:	10.89%	8.95%	10.25%
Had contacts in destination sites	71.18%	68.48%	70.28%
Intramunicipal displacement	21.31%	2.97%	15.22%
Massive displacement	15.28%	15.25%	15.27%
Household split up	20.70%	22.50%	21.40%
Had children working	14.80%	16.30%	15.30%
Had children working and studying	14.80%	16.20%	15.30%
Average number of days children had to stop their education	132.81	174.63	147.03

Source: Authors calculations using EDHD-2004

Table 2. Labor income determinants in receiving municipalities

Dependant Variables	OLS	IV
Program Beneficiaries	0.3***	1.38*
	(-5.42)	(-1.73)
Number of Adults in the Household	0.01	0.00
	(-0.48)	(-0.210)
Age - Household Head	-0.03***	-0.04***
	(-2.790)	(-2.780)
Age Squared - Household Head	0.00***	0.00***
	(-3.21)	(-3.01)
Ethnic Minority - Household Head	-0.18**	-0.18**
	(-2.260)	(-2.120)
Household head no longer in the Household	-0.2*	-0.27**
	(-1.930)	(-2.230)
Years of schooling - Household head	0.02	0.02
	(-1.32)	(-0.98)
Years of schooling - Spouse	0.04***	0.01
	(-2.54)	(-0.51)
Agricultural activities in origin - Household head	-0.21***	-0.21***
	(-4.000)	(-3.640)
Agriculture activities in destination sites - Household head	0.43***	0.41***
	(-4.97)	(-4.27)
Commercial activities in destination sites - Household head	0.46***	0.34***
	(-6.6)	(-2.93)
Industrial activities in destination sites - Household head	0.63***	0.59***
	(-4.79)	(-4.2)
Construction activities in destination sites - Household head	0.25***	0.13
	(-2.86)	(-1.01)
Transport activities in destination sites - Household head	0.62***	0.45**
	(-3.7)	(-2.05)
Services activities in destination sites - Household head	0.27***	0.23***
	(-3.42)	(-2.65)
Member participating in local organization - Destination sites	0.00	0.06
	(-0.020)	(-0.8)
Had contacts in destination sites	0.16***	0.2***
	(-2.91)	(-2.8)
Number of days since arrival to destination site	0.00***	0.00
	(-5.25)	(-0.82)
Number of days since arrival to destination site - squared	0.00***	0.00
	(-4.640)	(-1.080)
Intramunicipal displacement	-0.07	0.28
	(-0.810)	(-1.07)
Massive displacement	0.02	-
	(-0.21)	-
Constant	12.69***	13.18) ***
	(-41.42)	(-26.8)
Number of observations	1605	1605
R^2	0.223	-

Source: Authors calculations using EDHD-2004

Includes departmental dummy variables

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 3. Aggregate consumption determinants in receiving municipalities

Dependant Variables	OLS	IV
Program Beneficiaries	0.01	1.20
	(0.100)	(1.180)
Number of Adults in the Household	-0.11***	-0.12***
	(-7.150)	(-5.690)
Age - Household Head	-0.05***	-0.05***
	(-5.750)	(-5.160)
Age Squared - Household Head	0.00***	0.00***
	(5.910)	(5.070)
Ethnic Minority - Household Head	-0.11**	-0.09
	(-2.150)	(-1.440)
Household head no longer in the Household	0.03	-0.03
	(0.410)	(-0.290)
Years of schooling - Household head	0.02	0.02
	(1.310)	(1.390)
Years of schooling - Spouse	0.01	-0.02
	(0.790)	(-0.650)
Agricultural activities in origin - Household head	-0.06	-0.05
	(-1.340)	(-1.090)
Agriculture activities in destination sites - Household head	0.29***	0.24***
	(5.140)	(2.830)
Commercial activities in destination sites - Household head	0.20***	0.02
	(3.350)	(0.100)
Industrial activities in destination sites - Household head	0.25**	0.19
	(2.290)	(1.290)
Construction activities in destination sites - Household head	0.22***	0.05
	(3.230)	(0.330)
Transport activities in destination sites - Household head	0.27**	0.04
	(2.050)	(0.170)
Services activities in destination sites - Household head	0.22***	0.16*
	(3.740)	(1.820)
Member participating in local organization - Destination sites	0.10	0.16*
	(1.910)*	(1.950)
Walls of good quality - destination sites	0.08*	0.11*
	(1.740)	(1.940)
Floors of good quality - destination sites	0.28***	0.16
	(4.140)	(1.310)
Has electricity - destination sites	0.21***	0.22***
	(2.690)	(2.530)
Has aqueduct - destination sites	-0.02	-0.17
	(-0.420)	(-1.250)
Owned house - destination sites	0.19***	0.11
	(4.190)	(1.110)
Number of household appliances - destination sites	0.03***	0.01
	(3.380)	(0.490)
Percentage of land after displacement:	0.14***	0.22**
	(2.620)	(2.350)
Had contacts in destination sites	0.10**	0.14
	(2.360)	(2.230)
Number of days since arrival to destination site	0.00	0.00

	(0.280)	(-1.030)
Number of days since arrival to destination site - squared	0.00	0.00
	(-0.550)	(0.800)
Intramunicipal displacement	0.23***	0.53**
	(3.240)	(2.090)
Massive displacement	0.12**	-
	(2.360)	-
Constant	13.99**	14. 39
	(58.140)	(35.270)
Number of observations	1920	1920
R^2	0.2398	

Source: Authors calculations using EDHD-2004

Includes departmental dummy variables

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 4. Food consumption determinants in receiving municipalities

Dependant Variables	OLS	IV
Program Beneficiaries	-0.01	0.27
	(-0.140)	(0.440)
Labor Income (log)	0.19***	0.18***
	(7.570)	(4.940)
Number of Adults in the Household	-0.11***	-0.11***
	(-6.670)	(-5.800)
Age - Household Head	-0.02***	-0.03***
	(-2.670)	(-2.410)
Age Squared - Household Head	0.00***	0.00***
	(2.860)	(2.430)
Ethnic Minority - Household Head	-0.11**	-0.11**
	(-2.090)	(-2.020)
Household head no longer in the Household	-0.06	-0.08
	(-0.610)	(-0.740)
Years of schooling - Household head	0.00	0.00
	(0.300)	(0.250)
Years of schooling - Spouse	0.01	0.00
	(0.750)	(0.080)
Agricultural activities in origin - Household head	0.04	0.04
	(0.960)	(0.870)
Agriculture activities in destination sites - Household head	0.05	0.05
	(0.870)	(0.780)
Commercial activities in destination sites - Household head	0.07	0.05
	(1.250)	(0.550)
Industrial activities in destination sites - Household head	0.12	0.12
	(1.280)	(1.260)
Construction activities in destination sites - Household head	0.05	0.02
	(0.740)	(0.200)
Transport activities in destination sites - Household head	0.01	-0.04
	(0.080)	(-0.240)
Services activities in destination sites - Household head	0.06	0.05
	(1.010)	(0.820)
Member participating in local organization - Destination sites	0.07*	0.09
	(1.660)	(1.500)
Walls of good quality - destination sites	-0.01	0.00
	(-0.210)	(0.040)
Floors of good quality - destination sites	0.24***	0.22***
	(3.360)	(2.450)
Has electricity - destination sites	-0.06	-0.05
	(-0.580)	(-0.490)
Has aqueduct - destination sites	-0.06	-0.09
	(-0.980)	(-1.050)
Owned house - destination sites	0.10**	0.08
	(2.310)	(1.090)
Number of household appliances - destination sites	0.02*	0.01
	(1.850)	(1.150)
Percentage of land after displacement:	0.04	0.06
	(0.740)	(0.840)
Had contacts in destination sites	0.06	0.07
	(1.300)	(1.170)
Number of days since arrival to destination site	0.00	0.00

	(-0.270)	(-0.530)
Number of days since arrival to destination site - squared	0.00	0.00
	(-0.140)	(0.170)
Intramunicipal displacement	0.20***	0.27
	(2.990)	(1.540)
Massive displacement	0.03	-
	(0.580)	-
Constant	11.16***	11.45 ***
	(25.500)	(15.000)
Number of observations	1424	1424
R^2	0.279	-

Source: Authors calculations using EDHD-2004

Includes departmental dummy variables

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 5. Consumption smoothing coefficients for displaced households

Dependant Variables	(i)	(ii)	(iii)	(iv)	(v)	(vi)
Change in income	0.19***	-	-	-	-	-
	(7.540)	-	-	-	-	-
Change in income * time of settlement below three months	-	0.34***	-	-	-	-
	-	(2.980)	-	-	-	-
Change in income * time of settlement between three months an a year	-	0.21***	-	-	-	-
	-	(3.640)	-	-	-	-
Change in income * time of settlement between above a year	-	0.18***	-	-	-	-
	-	(6.770)	-	-	-	-
Change in income * beneficiaries	-	-	0.23***	0.30***	-	-
	-	-	(7.010)	(3.570)	-	-
Change in income * non beneficiaries	-	-	0.17***	0.16***	-	-
	-	-	(5.350)	(3.020)	-	-
Change in income * beneficiaries * time of settlement below three months	-	-	-	-	0.32***	0.23
	-	-	-	-	(9.660)	(1.330)
Change in income * beneficiaries * time of settlement between three months an a year	-	-	-	-	0.29***	0.11
	-	-	-	-	(2.700)	(0.520)
Change in income * beneficiaries * time of settlement above a year	-	-	-	-	0.23***	0.33***
	-	-	-	-	(6.550)	(3.710)
Change in income * non beneficiaries * time of settlement below three months	-	-	-	-	0.34***	0.13*
	-	-	-	-	(2.510)	(1.680)
Change in income * non beneficiaries * time of settlement between three months an a year	-	-	-	-	0.19***	0.25**
	-	-	-	-	(2.990)	(2.080)
Change in income*non beneficiaries * time of settlement above a year	-	-	-	-	0.16***	0.15***
	-	-	-	-	(4.65)	(2.560)
Number of observations	1495	1495	1495	1342	1495	1342
R^2	0.259	0.262	0.259	-	0.2619	-

Source: Authors calculations using EDHD-2004

Includes household's characteristics and departmental dummy variables

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 6a. Determinants of strategies to smooth consumption

Dependant Variables	Households splitting up		Child labor	
	Probit	IV Probit	Probit	IV Probit
Beneficiaries	-0.17*	-2.13***	0.09	1.92***
	(-1.830)	(-8.940)	(0.870)	(3.250)
Income change	0.36***	0.23***	0.07**	-0.06
	(8.660)	(2.820)	(2.000)	(-0.930)
Male Household Head	-0.07	0.07	-0.29***	-0.25**
	(-0.750)	(0.960)	(-3.130)	(-2.100)
Household size	-0.07	-0.02	0.18***	0.10
	(-3.340) ***	(-1.170)	(8.900)	(1.260)
Age - Household Head	0.00	0.03***	0.02	-0.02
	(-0.030)	(2.300)	(0.940)	(-0.950)
Age Squared - Household Head	0.00	0.00**	0.00	0.00
	(0.430)	(-2.040)	(-0.310)	(1.560)
Ethnic Minority - Household Head	0.13	0.27***	-0.04	-0.21***
	(1.200)	(3.820)	(-0.340)	(-2.620)
Years of schooling - Household head	0.02	0.03	-0.01	-0.02
	(0.880)	(1.630)	(-0.470)	(-1.310)
Years of schooling - Spouse	-0.05	0.04	0.00	-0.05*
	(-1.570)	(1.260)	(-0.040)	(-1.720)
Agricultural activities in origin - Household head	-0.12	-0.04	0.05	0.04
	(-1.390)	(-0.650)	(0.520)	(0.510)
Member participating in local organization - Destination sites	0.13	-0.06	0.02	0.12*
	(1.480)	(-0.730)	(0.180)	(1.650)
Owned house - destination sites	0.00	0.18***	0.08	-0.13
	(-0.030)	(2.880)	(0.810)	(-1.320)
Percentage of land after displacement:	0.11	-0.05	0.00	0.10
	(1.260)	(-0.810)	(-0.050)	(1.570)
Had contacts in destination sites	-0.01	-0.08	0.15*	0.12*
	(-0.070)	(-1.350)	(1.610)	(1.760)
Number of days since arrival to destination site	0.00*	0.00**	0.00*	0.00***
	(-1.800)	(2.370)	(-1.770)	(-4.430)
Number of days since arrival to destination site - squared	0.00***	0.00	0.00*	0.00***
	(2.740)	(-1.070)	(1.640)	(3.430)
Intramunicipal displacement	-0.80***	-1.02***	0.13	0.73***
	(-5.220)	(-9.760)	(1.020)	(3.090)
Massive displacement	0.15	-	0.13	-
	(1.320)	-	(1.070)	-
Constant	-0.43	-0.53 *	-2.27***	-0.86
	(-0.900)	(-1.670)	(-4.200)	(-0.680)
Observations	1600	1605	1598	1605
Pseudo R^2 / R^2	0.1471	-	.1121	-

Source: Authors calculations using EDHD-2004

Includes household's characteristics and departmental dummy variables

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 6b. Determinants of strategies to smooth consumption

Dependant Variables	Days of school interruption			
	OLS	IV	OLS	IV
Beneficiaries	-42.16	-432.54	-	-
	(-1.310)	(-0.550)	-	-
Beneficiaries * Aged between 7 and 12 years	-	-	-28.87	-720.18
	-	-	(-0.740)	(-0.790)
Beneficiaries * Aged between 7 and 12 years	-	-	-49.977	-706.714
	-	-	(-1.310)	(-0.790)
Income change	15.60	45.80	15.494	1.409
	(1.180)	(0.850)	(1.180)	(0.120)
Age	-0.37	-1.18	0.96	-2.10
	(-0.080)	(-0.190)	(0.170)	(-0.280)
Genre	-4.81	-10.37	-4.57	2.78
	(-0.190)	(-0.350)	(-0.180)	(0.110)
Male Household Head	-55.21*	-0.02	-55.07*	-30.11
	(-1.940)	(0.000)	(-1.930)	(-0.900)
Household size	11.25	-6.36	11.46	17.47**
	(1.440)	(-0.180)	(1.470)	(2.100)
Age - Household Head	-12.92	-1.09	-12.87	-14.21
	(-1.340)	(-0.050)	(-1.340)	(-1.440)
Age Squared - Household Head	0.11	-0.01	0.11	0.11
	(1.120)	(-0.030)	(1.120)	(1.120)
Ethnic Minority - Household Head	-85.14***	59.90	-85.78***	-84.57***
	(-2.770)	(0.440)	(-2.790)	(-2.720)
Years of schooling - Household head	-5.65	-6.84	-5.84	-4.29
	(-0.900)	(-1.130)	(-0.920)	(-0.450)
Years of schooling - Spouse	-20.84*	-12.37	-20.60*	-22.95*
	(-1.960)	(-0.580)	(-1.930)	(-1.940)
Agricultural activities in origin - Household head	42.63	29.47	42.64	36.40
	(1.520)	(0.570)	(1.520)	(1.250)
Member participating in local organization - Destination sites	5.02	-24.10	4.77	10.52
	(0.180)	(-0.420)	(0.170)	(0.370)
Owned house - destination sites	-71.56**	-26.08	-70.87**	-64.71*
	(-2.350)	(-0.720)	(-2.340)	(-2.030)
Percentage of land after displacement:	63.80***	111.72***	63.53***	59.85**
	(2.620)	(3.800)	(2.610)	(2.300)
Had contacts in destination sites	-54.18	-56.10	-54.46	-66.21*
	(-1.550)	(-1.430)	(-1.560)	(-1.820)
Number of days since arrival to destination site	0.26***	0.37	0.26***	0.25***
	(4.680)	(1.570)	(4.680)	(4.790)
Number of days since arrival to destination site - squared	0.00*	0.00	0.00*	0.00***
	(-1.920)	(-1.300)	(-1.910)	(-2.260)
Intramunicipal displacement	-20.17	-274.92	-20.20	14.63
	(-0.420)	(0.000)	(-0.420)	(0.270)
Constant	512.84**	399.86	494.53**	617.02**
	(2.240)	(1.190)	(2.160)	(2.160)
Number of observations	789	789	789	715
R2	0.187	-	0.187	-