

# **LOOKING FOR EVIDENCE ON INEQUALITY TRAPS IN LATIN AMERICA AND THE CARIBBEAN**

## **Persistent lack of Opportunities and Social Immobility**

REVISED RESEARCH PROPOSAL

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## 1. Abstract (100 to 250 words)

Inequality is far more controversial than poverty, both with respect to its measurement and reduction. However its implications to promote growth and upward social mobility are vast, as is the relevance of academic and empirical research that aims to grasp a better understanding of this topic. Inequality can be decomposed into many and heterogeneous components each of which explains its level, behavior and trends over time for a particular region. Latin America and the Caribbean (LAC) has been said to be *persistently* one of the most unequal regions in the world (Gasparini *et al.*, 2009). Given the high level of inequality in LAC countries and the impossibility of governments in the region to overcome this problem through the years, a question arises regarding whether or not an inequality trap is what drives this stylized fact.

This project aims to obtain proof on the (in)existence of inequality traps in the LAC region. In order to do this, we first need to define what will be understood as an inequality trap. Then, we will provide indicators to evaluate the presence of these traps for LAC countries. For this purpose, we will operationalize and integrate different methodologies to measure structural inequality. The expected evidence will provide baseline estimates of persistent states and vicious circles. We seek to bring the inequality debate to the forefront, based on current normative discussions about equality, fairness and justice, and provide policy makers with useful results and tools to trace out policies for reducing inequality in LAC countries.

**Please note:** all references throughout this document are listed in Section 8 below.

## 2. Main research questions and core research objectives

LAC is one of the most unequal regions in the world. In terms of income inequality, the regional Gini coefficient is 52.9, a value only surpassed by the mean Gini of a few African countries. Compared to LAC, inequality in Asia is 8 points lower, 18 points in Eastern Europe and Central Asia and 20 in developed countries (Gasparini *et al.*, 2009).<sup>2</sup> A similar picture is observed when computing inequality measures from consumption or expenditure data (World Bank, 2006). Additionally, the countries in the LAC region are not only characterized by high levels of income or expenditure inequality, but also by large disparities in access to education, land, basic services, and other socioeconomic variables. This situation has been persistent for decades, even during times of economic growth.

This high level of inequality in LAC countries has been accompanied by a relative low level of growth.<sup>3</sup> In fact, literature that links inequality to economic development has usually highlighted “*excess inequality*” as a persistent characteristic of the region (Londoño and Székely, 2000).

In summary, there is a consensus in the literature that LAC is composed of highly unequal countries, and has been so for decades and maybe even centuries (Edwards, 2007), despite significant changes in the demographic, economic, social and political environment.

Although such evidence is informative, it relates primarily to inequality in outcomes, usually measured via income or expenditure. Unfortunately, inequality in outcomes is not sufficient to analyze the *persistence* of disparities in LAC countries for several reasons.

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<sup>2</sup> The data is compelling in the UNU/WIDER World Income Inequality Database (WIDER, 2007).

<sup>3</sup> This stylized fact has been pointed out by the literature. For instance, see Persson and Tabellini (1994), and Alesina and Rodrik (1994).

Firstly, it does not reflect the current normative and social debate which has shifted its attention towards equality of opportunities (or equity<sup>4</sup>) instead of outcome inequality.<sup>5</sup> Secondly, the outcome approach is less appropriate for capturing a phenomenon which may be considered a byproduct of historical inequality of opportunities, transmitted across generations by parental outcomes, ethnicity, social class or place of birth (World Bank, 2006). Finally, as has been emphasized by the literature, the slow growth in underdeveloped countries could be a consequence of more relevant inequalities (e.g. in endowments). As noted by Bourguignon and Dessus (2006) who say, ‘*inequality traps*’ may generate slow economic development and high inequality of outcomes, both of which contribute to the persistence of inequity.

Focusing on the perspective of equality in terms of opportunities, this research project proposes the notion of *inequality traps* as a ‘lens’ through which to view the structural inequalities in LAC countries. This concept refers to persistent differences in power, wealth and status between socioeconomic groups, which are perpetuated across time by political, economic, and socio-cultural mechanisms and institutions (Rao, 2006; World Bank, 2006; Bourguignon *et al.*, 2007a).

Motivated by the importance of distributional considerations for the process of development, the main research question of this project is whether or not there is empirical evidence that large segments of the population may be caught in traps due (at least in part) to the lack of opportunities. In this sense, is important to know to what extent inequality is explained by persistent differences in opportunities between population groups and not by other factors. Moreover, it is interesting to know to what

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<sup>4</sup> We use the same distinction as Bourguignon and Dessus (2006), who use the terms (in)equality of opportunities and (in)equity interchangeably.

<sup>5</sup> See for instance Dworkin (1981), Arneson (1989) or Cohen (1989).

extent these groups can move, downwards or upwards on the outcome distribution, and whether or not there is convergence in their mobility patterns.

The core research objectives of the project are related to the methodological and empirical definition of the points raised above, and to the discussion of the ensuing results. The first research objective is methodological: our aim is to empirically operationalize the notion of inequality traps by integrating recent theoretical advances for inequality traps with mobility models. The second objective is to provide empirical evidence on the existence or not of inequality traps in LAC countries. Finally, the third objective is policy-related: having obtained a series of empirical results (second objective) based on the most suitable methodology (first objective), we aim to analyze the implications of these results for the design of equity-based development policies for both policymakers and potential beneficiaries, focusing not only on the policy tools, but also on the role of institutions, donors and the civil society. We will extensively discuss the meaning and the policy options that emerge from our findings. Furthermore, we expect that both possible results from this work (either the presence or absence of inequality traps) will motivate a lively discussion and, most importantly, further research on this topic in LAC countries.

Ultimately, the proposed research aims to be a contribution towards a better understanding of the persistence of inequality in developing countries, and more generally to the debate of equity and its role in the development agenda. The framework proposed to assess the existence of inequality traps in the LAC region and the results that will be derived from it have a clear relevance from the policy and methodological perspectives. The findings also constitute a stepping stone for future extensions of this

project in other areas. These include studying the causes of inequality traps and the channels through which they impact economic growth.

### **3. Scientific contribution of the research**

**Note:** the references in this Section are listed in Section 8 below.

As noted in the previous Section, the magnitude and persistence of inequality in the LAC region have motivated a series of studies on this observable fact. The bulk of the applied literature has traditionally observed inequality in outcomes, such as income (Londoño and Székely, 2000; Morley, 2001; Gasparini, 2003; World Bank, 2004; Anand, 2008; Gasparini *et al.*, 2009). Following the recent normative proposals on equality of opportunities, some authors have developed and applied different methodological approaches to measure it (Betts and Roemer, 1999; Roemer *et al.*, 2003; Pistolesi, *et al.*, 2005; Checchi and Peragine, 2005; Bourguignon *et al.*, 2007b, for instance). These studies have drawn primarily on data for developed countries, and recently some (yet scarce) applications have been made for LAC countries (Cogneau and Gignoux, 2005; Bourguignon *et al.*, 2007b; Barros *et al.*, 2008; Ferreira and Gignoux, 2008; World Bank, 2009). The measurement of inequality of opportunities is a necessary starting point but it is not enough to account for the prolonged inequity. For that purpose, we would require assessing socioeconomic mobility for diverse segments of the population. However, most of the applied literature has measured mobility from approaches which do not account for (in)equity (see Fields and Ok, 1996 and 1999b, among others). Therefore both approaches are “blind” to the other, and to fully comprehend the level of inequity and how to overcome it, they need to be considered jointly.

The main contribution of this project lies then in operationalizing the notion of an inequality trap in order to evaluate its existence, by coupling recently introduced measures of inequality of opportunities with measures of mobility, as suggested by Bourguignon *et al.* (2007a).

Within this context, the project presents three specific scientific contributions. The first is operationalizing a methodology to empirically account for the inequality trap phenomenon, based on recent normative and empirical advances in mobility studies (Bénabou and Ok, 2000; Van de Gaer *et al.*, 2001; Silber and Spadaro, 2007).<sup>6</sup> The second contribution is the empirical evidence that will be presented for the LAC countries, which will establish a series of new stylized facts. Finally, the third contribution will be the presentation of this empirical evidence as a case study of inequality traps operationalization, which will help devise the optimal tools for the presentation and the analysis of the issues under study. The final product will yield useful policy recommendations for strategic actors and cover the informational gap with respect to the issues at hand.

These contributions are motivated by what the team perceives as factual and methodological knowledge gaps in ascertaining whether or not, as was highlighted by the current literature, inequality in developing countries is mainly explained by permanent non-convergence in the opportunities of some particular groups. We have almost no

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<sup>6</sup> Cogneau and Gignoux (2005) integrate both dimensions (inequality of opportunities and mobility) to some extent. Their study analyzed the effects of changes in distributional education levels and educational mobility on the earnings distribution for the Brazilian case.

evidence on empirical implementation of the inequality trap notion, especially not with the approach proposed in this project.<sup>7</sup>

#### **4. Policy relevance**

Inequality traps are linked to a series of processes which impair economic mobility and perpetuate poverty, and once the existence of these phenomena is asserted, steps must be taken to deal with this issue. As noted in Bourguignon and Dessus (2006), the existence of inequality traps leads to a vicious circle between inequity and low development. Elite groups with high concentration of income and resources limit the level of development of a country (resulting in efficiency losses) due to the resistance to renounce to some of their benefits without costs. Therefore, the slow growth in a country contributes to maintain the status quo by keeping the same distribution of income over time. Policies must be directed to enhance economic reforms in the sense that groups in power realize that the short-run losses are compensated by the long-run efficiency gains for all society.

As an illustration, just five years away from the deadline for the Millennium Development Goals (MDGs), the LAC region trails significantly behind in the first objective of halving poverty (ECLAC, 2008). The main reason listed for this poor performance is sluggish and unequal growth. This topic is addressed directly in this proposal and is also a pivotal dimension for both the upcoming MDGs deadline and poverty alleviation efforts beyond these.

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<sup>7</sup> Guerrero *et al.* (2006) discuss the presence of inequality traps in Mexico focusing on the relationship between structures of inequality (i.e. business sector and unions in protected sectors) and economic policies and institutions. Even though, it is an interesting approach to finding evidence for inequality traps, we will use another lens to explore this phenomenon (see section 5).



The main policy contribution of this study is to fill the informational gap on the persistence of structural inequality and provide quantification of the level of rigidities and social immobility for each country in the sample. Certainly, widening public knowledge is highly desirable, since it involves giving policy makers, civil society groups, academics and the general public information which may provide a solid basis for discussion, especially relevant in participatory decision making processes.

The results from this proposal have direct implications over other policy relevant aspects. For instance, previous work established that unequal opportunities may be related to market failures (mainly those observed in credit and education markets) which reduce economic efficiency and might be a root of social conflict. In this sense, if inequality traps are found, then a series of implications arise.

On the one hand, welfare economics dictates that policies must be oriented to promote equity among citizens, i.e. equalizing access to education, credit, justice and infrastructure. In other words, equal opportunity policies are a policy alternative for compensating excluded groups by improving the social networks to which they have access. The identification of such groups is then a matter of utmost importance and the first step for the design of targeted distributive policies. On the other hand, the findings may also bring to the forefront discussions on the role of institutions and their efficiency or inefficiency to address equity issues. For example, as noted in Bourguignon and Dessus (2006), persistent differences in political and economic power between social groups could pose a significant problem to adopt equalizing policies especially if political power is concentrated on those groups which also have economic power. Knowledge of

persistent inequities may help these institutions reach a consensus on distributive policies which improve welfare for the entire population at low political costs.

The results from this research could contribute to focus policies more accurately, and direct their role towards equalizing outcomes caused by factors outside individual control and ensuring basic opportunities for the most vulnerable groups. A series of equality of opportunity studies for LAC countries (Ferreira and Gignoux, 2008; World Bank, 2009) have had some impact on the public debate, both for government and public institutions. The policy recommendations will focus on improving the conditions of less advantaged social groups, and will be recommended to appease structural inequities, although implementation is subject to political economy considerations in every country.

As the relevance of equity has been acquiring increased interest in the region, several public policies have begun to promote equalizing opportunities (e.g.: some poverty alleviation programs go beyond their main goal of reducing poverty, and promote investment in human capital to prevent future deprivation and persistent poverty). Thus, further evidence may serve as an added incentive for the expansion of such initiatives.

The relevance and implications of the potential policy lessons from this proposal are especially important for government officials, legislators, advocacy groups and development institutions. Its potential findings could be an important input for many policymakers and NGOs, especially those working with disadvantaged groups. Our Center maintains regular contact with LAC governments, The World Bank, the Inter-American Development Bank, and many other development organizations which focus their efforts in achieving a better standard of living of LAC countries. For example, our results could be a useful tool for Luis Felipe López-Calva, Chief Economist at the

Regional Bureau of Latin America and the Caribbean of the United Nations Development Programme (UNDP), a specialist in poverty and public policy, to identify the causes of inequality traps and could be a valuable asset to shape the policies that may reduce them in the region.

## 5. Methodology

In order to measure whether or not inequality traps actually exist, we first need to introduce a notion of what we understand them to be. As mentioned in the introduction, and following Rao (2006) who first coined the term, inequality traps “*describe situations where the entire distribution is stable because the various dimensions of inequality (in wealth, power, and social status) interact to protect the rich from downward mobility, and to prevent the poor from being upwardly mobile*”.

The concept of the inequality trap has risen as an attractive notion, from which to promote equity as a pillar of economic and social policies and to improve the understanding of the relationship between inequality and underdevelopment.

A key point in this analysis is the distinction (in a Roemerian sense) between the *circumstances* that individuals face and are independent of their own choices, and the *efforts* that they exert. Differences in outcomes or *advantages* that are driven by differences in the level of effort can be morally justified, while those explained by differences in circumstances are argued to be ungrounded (Roemer, 1998). The concept of inequality of opportunities arises from this distinction, since it deals with the disparities between individuals or groups that are determined by those circumstances which are not directly controllable. In this way, analysts who use this concept argue that

its main premise is to level-the-playing-field and so, differences in achievement will be due solely to differing efforts, which are considered more *morally acceptable*.

According to Bourguignon *et al.* (2006) inequality traps can be formally defined within the following dynamic framework that captures the persistence over time of this phenomenon. Let's identify individual variables by the subscript  $i$ , and the group they belong to (i.e. women, ethnic groups, etc.) by  $j$ . Let's assume that  $u_t^{ij}$  represents a "certain kind of success or advantage" (Roemer, 1998) that individual  $i$  from group  $j$  enjoys at a given moment in time,  $t$ . This advantage can be defined as:

$$u_t^{ij} = u(c_t^j, e_t^{ij}, \phi_t) \quad (1)$$

where  $c_t^j$  are the circumstances of group  $j$  at period  $t$  (i.e. race),  $e_t^{ij}$  are the efforts that individual  $i$  from group  $j$  undertakes at time  $t$  (i.e. hours of work), and  $\phi_t$  is a society's chosen policy at moment  $t$ . To define the concept of inequality trap two assumptions are needed: i) there needs to be persistence in the relative positions in a distribution across time, and ii) this has to be caused by the relations between groups.

From (1), we have that the channels of causation can be seen working through three paths: circumstances (e.g., wealth or power), the endogenous component of policy choice, and cultural patterns that influence the individual efforts. As regards circumstances, an example of inequality trap arises through the interaction between unequal distribution of wealth or status and capital market failures, which limits the convergence of deprived groups towards a higher level of advantages.<sup>8</sup> Other channel is related with the policy choice for example, through the capturing of political and judicial

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<sup>8</sup> The WDR 2006 cited several studies that offer evidence of how the lack of assets combines with imperfect capital markets to limit the investment opportunities of poor people.

institutions by the powerful groups. Theoretical literature has suggested several channels through which political decisions favor powerful groups, like different voting power due to unequal distribution of wealth or the predatory political institutions by influential groups.<sup>9</sup> Finally, the persistence of socio-cultural inequalities could have as a consequence the internalization of self-depreciating belief by disadvantages groups that impact on their actions and outcomes, thus contributing to the persistence of inequality “culturally-driven” inequality trap.<sup>10</sup>

In sum, the search for causal channels “*involves theoretical and empirical exploration of the nature of the economic, political, social or cultural interaction between dominant and subordinate groups which sustains an inequality trap in one dynamic process*” (Bourguignon *et al.*, 2006, pp. 20). However, the identification of causal relationships is a severe concern, because is hard to think in conducted randomized experiments in order to attribute impact. In any case, ascertaining the existence of non-convergent dynamic across society’s groups, as our project is proposed, is a fundamental first step in a research agenda on inequality trap.

Resuming the analytical framework, the structure of the model arises from the fact that circumstances enjoyed by group  $j$  at present (i.e. indigenous groups in the 2000s) depend on the advantage levels faced by the preceding generation (i.e. indigenous in the 1980s). Therefore, circumstances can be re-expressed as  $c_t^j = c_t^j(u_{t-1}^j, \zeta_t)$ , where  $\zeta_t$  represents an innovation at time  $t$ . In the same way, the level of individual effort today may also depend both on past advantages (own or of a previous generation) and on the

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<sup>9</sup> Some examples of this literature are Bénabou (2000), Ferreira (2001), Beasley and Coate (2001), Bourguignon and Verdier (2000), Acemoglu and Robinson (2005), Bardhan and Mookherjee (2000, 2005).

<sup>10</sup> An interesting empirical study about this issue can be seen in Appaduari (2004).

distribution of past advantages ( $F_{t-1}(u)$ ). Therefore,  $e_t^{ij} = e_t^{ij}(u_{t-1}^{ij}, F_{t-1}(u), \xi_t)$ , where  $\xi_t$  denotes another innovation at time  $t$ .<sup>11</sup> Similarly, the policy at time  $t$  may also depend on the prevailing distribution of advantages at  $t-1$  and on the innovations at time  $t$ . Thus,  $\phi_t = \phi_t(F_{t-1}(u), \varepsilon_t)$ .

In sum, the dynamic process that generates the advantages of individual  $i$  from group  $j$  may be written in a reduced form, such as:

$$u_t^{ij} = \Phi(u_{t-1}^{ij}, F_{t-1}(u), \omega_t) \quad (2)$$

where  $\omega_t$  represents a vector of innovations at  $t$ .

Following these authors, inequality traps can then be defined as “*a long-run distribution of advantages in which a particular social group does persistently worse than some other social group, even though an alternative equilibrium exists where no two social groups can be similarly ranked*”. Social groups are defined by exogenous circumstances.

Therefore, in order to operationalize the notion of inequality trap we have to implement an analytical framework that allows us to incorporate its main characteristic, i.e. the permanent non-convergence in the opportunities of some groups.

The notion of inequality trap goes beyond the traditional measures of inequality based on income variables, because for these traps to actually exist inequality must persist over time and this persistence can only be explained by inequality of opportunities, which prevents new generations from breaking the intergenerational circle of poverty and inequality. Therefore, before studying the traps themselves, we must start by proving the

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<sup>11</sup> A personal election component that distinguishes effort from circumstances should be included in that innovation.

actual existence of inequality of opportunities in the selected countries. That is, to prove that part of the inequality in those countries is explained by disparities between individuals or groups, which are determined by exogenous circumstances. It is worth noticing that the aim of this first approach is mainly descriptive and should be taken as a starting point (i.e., it is a necessary but not sufficient condition) in the inequality traps analysis.<sup>12</sup>

Once we have established that there are groups with differential access to opportunities due to their (exogenous) circumstances, we need to evaluate if the inequality traps actually exist. Even if we actually observe inequality of opportunities in a country, and it persists over time, this is still not enough to infer the existence of an inequality trap. In other words, not every situation of inequality of opportunity results from an inequality trap, which are characterized by a particular form of inequality of opportunity that is derived (in a reduced form) from the dynamic process described in equation (2). In this process, outcomes from previous generations (i.e. schooling) partially determine the advantages of present dominant and dominated groups (i.e. men and women, respectively), thus perpetuating the disparities between them.

In order to test this notion, we have to study mobility patterns by group to see whether or not these traps are really there and if there is some convergence between these groups. This step is the core of the present project and will concentrate most of the methodological and empirical efforts.

The relationship between circumstances and outcomes from a mobility perspective can be described in terms of *intergenerational* mobility. Here, the most difficult task is to select the most suitable measure of intergenerational mobility. In other words, while

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<sup>12</sup> The actual techniques that will be implemented will be discussed later in this Section.

some of the measures proposed by literature are useful to measure movement, not all of them give a good indication about the degree of (in)equality of opportunities, because many of them have an underlying income-based approach.

The main objective in this step is to analyze whether or not family background plays a crucial role in an individual's outcomes and so, whether there is an intergenerational link between achievements of each group. Thus, we must first analyze intergenerational mobility for each group and then assess whether or not there is convergence between groups. Therefore, we have to define some notion of distance between groups and evaluate if this distance has reduced over time (i.e. if the groups have converged). The non-convergence is necessary to prove the existence of an inequality trap.<sup>13</sup>

As mentioned in Bourguignon *et al.* (2007a), *“ascertaining differential mobility patterns by groups, including a lack of convergence, is not a sufficient condition for the existence of an inequality trap, but it is necessary”*. The last requirement is to prove the existence of an alternative (and superior) equilibrium.

Thus, an additional step consists in finding a feasible alternative equilibrium in which mobility patterns are such that there is no inequality trap. According to Bourguignon *et al.* (2007a), *“given its counterfactual and dynamic nature, such a test may prove impossible to implement empirically in a fully satisfactory manner. But suggestive evidence may be obtained from two sources: comparisons across countries (or geographic regions within countries) in terms of mobility patterns for advantaged and disadvantaged groups; and model-based simulation of the dynamics of advantage (of education, income or other dimensions) under alternative assumptions”*.

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<sup>13</sup> The techniques that will be implemented to measure mobility will be address later in this Section.



Complex model-based simulations are beyond the scope of this paper. However, we will address this alternative by implementing basic simulations.<sup>14</sup> Once we have established the existence (or not) of inequality traps, country-level results will be used to assess, in a preliminary way, which policies would be necessary to counteract the negative impacts of these traps and to try to overcome them.

As can be derived from the preceding explanations, the time dimension has a fundamental role in the theoretical definition of inequality traps. Additionally, it is not a trivial matter in empirical research, in which the availability of data often determines the time span that will be considered. In this project we will address the issue of time and generations by dividing the sample of each survey in 10-year-long cohorts with respect to the individual's age (i.e. generation 1 could include individuals with 25 to 34 years old, generation 2 individuals with 35 to 44 years old, and so on). In this way, we will have many 10 years generations for each survey. In the case of Chile, we have a long panel that will allow us to conduct an additional exercise, following an individual on a 20-years-long period. More information on this will be given in Section 6.

a) *Measures of inequality of opportunities in selected LAC countries*

Literature on how to measure inequality of opportunities is scarce and recent (Betts and Roemer, 1999; Roemer *et al.*, 2003, Pistoiesi, *et al.*, 2005, Checchi and Peragine, 2005, Cogneau and Gignoux, 2005, Bourguignon *et al.*, 2007b, Ferreira and Gignoux, 2008, Barros *et al.*, 2008).

Each of these papers has a different approach to the topic, some with theoretical contributions and others providing empirical evidence. In this project, inequality of

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<sup>14</sup> More information on this is given later in this Section.

opportunity will be first measured by a series of indicators, such as the Bourguignon *et al.* (2007b) index, which decomposes observed earnings inequality into a component due to opportunities (determined by exogenous circumstance variables and a residual component). Their “inequality of opportunity index” is given by

$$\Theta_I := \frac{I(w) - I(w | C_i = \bar{C}, \forall_i)}{I(w)} = \frac{I(w) - I(\tilde{w})}{I(w)}$$

which measures the share of earnings ( $w$ ) inequality (as measured by some standard inequality measure  $I(w)$ ), which is eliminated when the circumstance variables are counterfactually held constant across all individuals - an attempt at generating a counterfactual distribution in which there was a single type of individual (with circumstances  $\bar{C}$ ).

Checchi and Peragine (2005) develop a non-parametric approach to obtain the same basic decomposition as Bourguignon *et al.* (2007b) that will also be computed in this project. A ‘types approach’ consists basically on scaling up or down the within-type distributions until they all have the same mean. The difference between the level of inequality in this counterfactual distribution and actual inequality is one measure of inequality of opportunity. Conversely, a ‘tranches approach’ consists of replacing the incomes of all individuals in homogenous effort groups (which are called ‘tranches’ by the authors and within which all differences are due to circumstances) with their mean incomes. The inequality in this latter counterfactual distribution is another measure of inequality of opportunities.

Finally, following Barros *et al.* (2008), we will estimate their Human Opportunity Index (HOI), which can be thought as an opportunity-sensitive coverage rate, which takes into account inequality in the access to a given good or service. The HOI captures both the level of coverage ( $\bar{p}$ ), and whether those opportunities are allocated without any

systematic pattern related to circumstances ( $D$ ) that is due to personal characteristics such as gender or ethnicity that should not influence an individual's access to opportunities. The proposed index is given by  $HOI = \bar{p}(1-D)$  where  $0 \leq \bar{p} \leq 1$  and  $0 \leq D \leq 1 - \bar{p}$ . The HOI takes the level of access to a basic opportunity ( $\bar{p}$ ) and “discounts” it if those opportunities are allocated according to any systematic pattern related to circumstances by multiplying it by  $1 - D$ , where  $D$  is a measure of Inequality of Opportunities based on the dissimilarity index (Barros *et al.*, 2008). Two forces drive the HOI. On the one hand, for a given level of  $D$ , an increase in the prevalence of opportunities (i.e. a higher  $\bar{p}$ ) increases the HOI. An improvement of how existing opportunities are allocated at any point in time (a reduction in  $D$ ), will also improve the index. The HOI is Pareto-consistent but also distribution-sensitive. In fact, an increase in the number of opportunities available to any group would always increase the index. Its distributive sensitiveness, however, implies that the impact would be greater if the increase benefits groups with below-average access to opportunities.

After presenting these indicators another approach will be taken to evaluate the robustness of our results (probably the most “natural” way to evaluate persistent differences in opportunities). In this case, we will measure inequality of opportunities following Pistoiesi *et al.* (2005). We will compare conditional distributions so that a failure to reject the null that two distribution functions (conditional on type) are identical ( $F^j(u) = F^k(u), \forall j, k$ ) would be a failure to reject equality of opportunity. These authors also present a weaker test, in which a rejection of second order dominance between two distributions (in both directions) is taken as a failure to reject equality of opportunity. They also propose a scalar index to measure inequality of opportunity, which is

essentially a Gini aggregator of the areas under the Generalized Lorenz Curves for each type.

b) Measures of mobility to evaluate the existence of inequality traps

As was pointed out by Bourguignon *et al.* (2007a), “... *the (inequality) trap arises through the persistence of social, economic and political inequalities that link a person’s circumstances and efforts to those of previous generations, and make policy choices themselves reflect unequal distributions of power*”. As mentioned previously, to test this notion we have to study mobility patterns by group to test the existence of inequality traps and see whether or not there is convergence between these groups

In order to accomplish this task transition matrices (of the level of advantage) will be constructed between generations for each group and mobility indices from these matrices will be computed, in order to estimate the influence of one generation’s outcome over the following one. The table below provides a scheme of how these matrices would be like, where  $g_t$  refers to generation from group  $j$  at time  $t$  and  $g_{t-1}$  to the previous generation.

		Level of advantage $g_t$ of group $j$		
		Low	Medium	High
Level of advantage $g_{t-1}$ of group $j$	Low	20%	50%	30%
	Medium	10%	60%	30%
	High	5%	30%	65%

In this example, 20% of individuals from generation  $t$  that belong to group  $j$  whose parents had a low level of advantage also have a low level, but 70% have *move* to higher levels. In the case of those individual whose parents had a medium level of advantage, there has been both a downward and upward mobility (10% and 30%, respectively). Mobility seems to diminish in this example with the level of advantage of the previous

generation. The shaded cells represent those individuals that have not move in comparison to the generation  $t-1$ .

In the actual project, there will be one matrix for each group, as well as mobility indicators that synthesize this information, such as the Social Mobility Index (Andersen, 2001), the sibling correlation index (Dahan and Gaviria, 1999) and the Opportunity Index (Van der Gaer *et al.*, 2001). This will allow for comparisons between groups for generations  $t$  and  $t-1$ . We will also construct analogous matrices to contrast groups for generations  $t-1$  and  $t-2$ ,  $t-2$  and  $t-3$ , and so on. This, in turn, will provide evidence on the persistence of the differences between groups over time.

As mentioned previously, we need to test the convergence or non-convergence of these groups. This can be easily addressed measuring the distance between each group for each generation. Suppose that  $M(A)_t$  is a mobility index for group  $A$  at time  $t$  and  $M(B)_t$  is the analogous for group  $B$ . Then, if  $M(A)_t/M(B)_t < M(A)_{t-1}/M(B)_{t-1} < \dots < M(A)_{t-n}/M(B)_{t-n}$ , this means that there has been a progressive convergence between groups  $A$  and  $B$ . In fact these two groups could have completely converged ( $M(A)_t = M(B)_t$ ) or the relation between  $M(A)_t$  and  $M(B)_t$  could have been reversed. We will implement statistical tests to verify these tendencies (Andersen, 2001). If we prove non-convergence, we will have started proving the existence of an inequality trap.

c) Looking for a contrafactual superior equilibrium by simulations

As already mentioned, simulations will be conducted to find a superior contrafactual equilibrium, giving prove of the existence of inequality traps. For example, one counterfactual exercise could be assuming that parents of the dominated group have the

same level of advantages than the better-off group and then estimating mobility again. To carry out this exercise we will need a technique to construct marginal and conditional counterfactual distributions. The literature has taken two alternative paths, using parametric or non-parametric approaches. Examples of those approaches are Bourguignon *et al.* (2003) and Di Nardo *et al.* (1996), respectively, using income as outcome variable. These kinds of techniques are less widespread for other outcomes, such as education, although similar treatment can be used in this case. For example, Daouli, Demoussis and Giannakopoulos (2009) specify a parametric model to account for educational intergenerational mobility and then use an ordered probit estimation to obtain conditional probabilities of educational achievements.

In sum, part of the research project will be searching the adequate technique to perform this point.

## **6. Data requirements and sources**

The methodology presented in the previous Section will be applied to 8 countries in LAC: Brazil, Chile, Colombia, Ecuador, Guatemala, México, Panama and Peru. It is worth noticing that the purpose of this project is not to compare results between countries, but rather to obtain information of each of these countries separately to assess a major structural characteristic of the region. Therefore, the disparities in coverage or period covered by each specific survey will not be a problem for the implementation of our methodology.

### *a. Data sources*

This work will rely on eight nationally representative household surveys in LAC. The countries (and surveys) were selected primarily because they contained complete and reliable information on circumstances and advantages of individuals and their parents. All together, these surveys are representative of approximately 70% of the total LAC population.

Latin America has been characterized by the wide availability of continuous household surveys since the early 1990s. These surveys have a wide set of socioeconomic variables, but information on family background is not always available. However, the following household surveys contain this information and will be therefore included in the research project: Brazilian *Pesquisa Nacional por Amostra de Domicílios* (PNAD) 1996, the Chilean *Encuesta de Caracterización Socioeconómica Nacional* (CASEN) 2006, the Peruvian *Encuesta Nacional de Hogares* (ENAHO) 2001, the Colombian *Encuesta de Calidad de Vida* (ECV) 2003; the Ecuadorian *Encuesta Condiciones de Vida* (ECV) 2006; the Guatemalan *Encuesta Nacional sobre Condiciones de Vida* (ENCOVI) 2006; and the Panamanian *Encuesta de Niveles de Vida* (ENV) 2003. These are all cross-section surveys.

In the case of Mexico, the most widely used household survey (the *Encuesta Nacional de Ingresos y Gastos de los Hogares*) does not include information on family background. However, the *Encuesta Nacional sobre Niveles de Vida de los Hogares* (MxFLS), a multi-thematic longitudinal-type survey, collects this information and can be included in our analysis. The baseline (MxFLS-1) was conducted in 2002. The second wave (MxFLS-2) was carried out between 2005 and 2006 with a re-contact rate of 90 percent

of households. We will not exploit the longitudinal characteristic of this survey, but rather used pooled data from every wave as a unique survey.

As already mentioned, the Chilean CASEN panel survey will be used as an alternative source to perform a specific application of our methodology, which will be explained shortly. This longitudinal survey covers the period 1996-2009.<sup>15</sup> As is evident, the main advantage of the CASEN panel is the length of its timeframe (almost 15 years including the 2009 survey), which provides information on long-term outcomes.<sup>16</sup> This includes data on different socioeconomic dimensions and individual family background.

The mentioned surveys are already available for the team involved in this project (with the exception of the 2009 follow-up of the CASEN panel survey) because it constitutes part of the SEDLAC database maintained at the research Centre where the team members are based (see Section 10 below).<sup>17</sup> The main characteristic of this database is the effort exerted to ensure the greatest degree of comparability across countries in every variable constructed from household surveys. Nonetheless, a natural step of the progress of this project will be to work on these databases to achieve the highest possible level of standardization.

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<sup>15</sup> The last follow-up was actually carried out in 2009. This data is not yet available, but is expected to be released during 2010. For technical details of the CASEN panel see Bendezú *et al.* (2007a).

<sup>16</sup> In spite of the advantage of having a long panel, in this survey attrition seems to be a significant problem: 25% percent of individuals from the initial wave dropped out in the first follow-up, and by the 2006 follow-up 50% of them had left the sample. Additionally, a detailed study of individuals which drop out concludes that this loss of information was non-random (Bendezú Denis and Zubizarreta, 2007b). To deal with the potential bias from attrition, longitudinal expansion factors are available in the data, which will be used in this study.

<sup>17</sup> The Socio-Economic Database for Latin America and the Caribbean (SEDLAC) is a joint project of CEDLAS (Universidad Nacional de La Plata) and the World Bank's LAC poverty group (LCSP). SEDLAC includes more than 200 household surveys in 25 LAC countries. See Gasparini (2007) for a full description of the dataset. For detailed information see the SEDLAC website [www.depeco.econo.unlp.edu.ar/sedlac/eng/](http://www.depeco.econo.unlp.edu.ar/sedlac/eng/)



b. Time Dimension

The aim of the empirical work lies in testing whether there is permanent non-convergence in the opportunities of a given group. Given that a long time span survey is not available (spanning at least 70-80 years), we must transform the current data set in some way that reflects the required time dimension of the problem.

To carry out this task, individual's date of birth will be exploited to construct successive birth-cohorts using the cross-sectional surveys specified above (as mentioned previously, the Mexican survey will be used as pooled data).

We will define five cohorts born in ten-year spans for our analysis. The youngest will be the cohort of 25-34 years of age at the beginning of our timeframe. Successively, birth-cohorts will be defined until they comprise those individuals aged 65 or more. This strategy relaxes the constraint of using long time span data to compare inequities in successive generations by group. Therefore, the measurement of inequality of opportunities and intergenerational mobility by groups will be performed on each birth-cohort.

c. Definition of Variables

Prior to implementing the methods to measure inequality of opportunities and intergenerational mobility in each LAC country we must first select the variables that will be considered. This involves selecting the particular circumstances and advantages or outcomes that will be included. As was noted above, the datasets to be used contain reliable information on a common set of circumstances and advantages. This is the main

information required to address the proposed methods and operationalize our analysis of inequality traps.

### *Individual Circumstances*

In the inequality trap framework, the main objective is testing whether there are permanent disparities in opportunities between individuals or groups that are defined by exogenous circumstances. As pointed out above, the circumstances are factors beyond the scope of individual responsibility (“exogenous”), e.g., one cannot change one’s gender or race, or the family one born into.

Of course, circumstances may influence individual advantages through a variety of channels such as initial wealth, genetic talent or the transmission of preferences (see Section 5). Nonetheless, identifying these different channels is not the topic of this research proposal. Therefore, in our empirical work the circumstance solely helps to define the groups in order to measure inequality of opportunities and (especially), mobility between future generations.

Determining the exact set of individual circumstances is a debatable question. Since the study will be mainly empirical, a restricted set of circumstances relating to individual social origin will be examined. Specifically, we will include as circumstances *race or ethnicity, gender and birthplace*. The selection is tied to the information available, to allow comparability between surveys and to remain in line with the literature which studies inequity. These variables are standardized in our database (see point a, above).

### *Individual Advantages*

Income is the most widely used variable of advantage in most socio-economic papers. Labor income, wealth and family consumption could also be used. Other empirical papers as Barros *et al.* (2008) focus on the level of access to certain basic services (i.e. water, sanitation, electricity) and education as advantage variables.

When analyzing this topic in an empirical way, some limitations in using income as an advantage become evident. Data on individual income is not always reliable due to non-response or underreporting, or is not available for a multi-period analysis. The latter is a key concern, because if we were to use income data to perform the empirical work, we will need several surveys to follow each generation over time, which is not available in our data set.

Income information could be replaced by the individual's level of education which is an intrinsically important advantage, and also a good proxy of income. Choosing education as the output variable has some advantages: (i) education modules are available in every household survey in the region; (ii) there is little non-response or underreporting in educational data; (iii) education is a stock variable, which means that once acquired it will remain the same over time. This allows us to take only one survey for each country and compare the advantages by cohorts (i.e., generations), which constitutes a major informational advantage.

The educational variable is standardized in our database taking into account the respective countries educational systems. It can be used for both years and level of education.

Therefore, the educational dimension will be used as our main individual advantage in the research. Additionally, the data sets have information on parental level of education which is highly relevant for the discussion on intergenerational mobility.

In the case of Chile, the CASEN panel covers the period 1996-2009. This panel provides income information for each individual during this timeframe, and allows us to alternatively implement the methodology described in Section 5 using income as advantage variable. But given that Chile has the only available panel with this information and that even the length of time covered is relatively short, it will be included in a separate section of the project or an Appendix as an additional exercise, and not in the main empirical section.<sup>18</sup>

## **7. Consultation and Dissemination Strategy**

The expected output from the research project is a report, which will lead to one long or two short articles to be sent to specialized refereed publications. These could include, among others, the *Journal of Economic Inequality*, the *Journal of Development Studies* or *World Development*, as well as local or LAC journals such as *Economica* (published by UNLP) or *Economia* (published by LACEA).

The project report (and its derived articles, as they become available) will be posted on the CEDLAS website, and will be freely accessible as a working paper. Moreover, brief accounts of this research will appear in the CEDLAS-UNLP annual report and in its regular bulletin. It is also likely that a non technical summary of the research will appear as a short article in the CEDLAS Annual Review, a project under consideration.

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<sup>18</sup> The actual implementation of this exercise is tied to acquiring the 2009 follow-up of the CASEN panel. If this were not the case, the period covered by this panel will be too short, and this exercise would not provide significant results.

We will place great care in writing a short, standalone, non technical policy brief to be distributed to the press, and among policy makers, legislators, and advocacy groups, such as women or ethnic rights. The purpose of this dissemination will be to engage these stakeholders in a debate on equity and its role in the development story in LAC, particularly from an equal opportunity perspective. The ultimate goal in terms of the policy relevance of the project is to include distributional concerns as one of the main considerations (like an objective, as well as, an instrument) of development strategy in LAC countries.

The project also has an implicit “methodological advocacy” objective, in terms of promoting the opportunity dimension in mainstream inequality analysis. Moreover, the evidence about possible inequality traps may be an incentive for future methodological and empirical studies, for instance, on the channels through which inequality affects development. In this sense, other consultation and dissemination aspects will include the presentation of the research in seminars at universities, ministries (of Labor, and of Social Development, for instance), NGOs and other institutions in LAC and North America. At the international level, we will seek to present this work in annual events such as the Latin American and Caribbean Economic Association (LACEA) meeting and the Latin American Meeting of the Econometric Society (LAMES).

This “methodological advocacy” will also extend to what we consider a key aspect of our dissemination strategy. CEDLAS researchers participate extensively in a training network for Latin American government officials in ministries of Finance, of Economics, of Labor, of Social Development, and related areas. The usual setup is that CEDLAS is asked to send a researcher and provide training on site, for one or two weeks, on policy

evaluation and income distribution issues. The topics covered also often include basic notions and applications of different approaches of inequality and mobility. The development of this project would allow us to include this new research within our training activities, thus helping to disseminate the report and the methodology (on this subject, see also “capacity building” in Section 10 below).

Finally, there will be a specific effort to disseminate the methodology and the results to policy makers and international organization’s circles. This implies presentations at institutions and network meetings, such as the United Nations Development Program (UNDP), the United Nation’s Economic Commission for Latin America and the Caribbean (ECLAC), the Inter-American Development Bank (IADB), the World Bank, the Network of Inequality and Poverty (WB/IADB/LACEA) and the Corporación Andina de Fomento (CAF), among others.

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## **9. List of team members**

**Note:** all members of the team have a graduate background in econometric analysis, and have varying degrees of prior experience with the data sources mentioned in Section 6.

Please see CVs uploaded to the PEP network website for details on publications, projects, and academic and professional experience.

**Guillermo Cruces (male, 34 years old).** Mr. Cruces obtained a PhD in Economics from the London School of Economics and Political Science. His research covers dynamic poverty measures (Cruces and Wodon, 2006) and the income distribution in Argentina in the period 1991-2002. He has worked extensively with Census and household surveys, and is currently engaged in research on income distribution, multidimensional measurement of well-being, social protection systems, poverty reduction policies and impact evaluation, mainly in Latin America and the Caribbean. His post-doctoral research and his major recent work have dealt explicitly with inequality and Human Development issues in Latin America and the Caribbean (see in the bibliography above). He has been Sub-Director of CEDLAS since 2008, as well as, researcher for the National Council of Scientific and Technical Research (Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET). Before joining CEDLAS, his professional experience included working for institutions such as the World Bank, the United Kingdom's Department for Work and Pensions, and the United Nation's Economic Commission for Latin America and the Caribbean.

**Adriana Conconi (female, 25 years old).** Ms. Conconi finished her undergraduate studies in Economics at the Universidad Nacional de La Plata (UNLP), Argentina, in December 2005, and completed the University's MSc. program in Economics in 2009. She is enrolled in the PhD. program from this University. She has been a junior researcher at CEDLAS since March 2006, and a researcher since March 2008. Since 2004, she has been a teaching assistant at UNLP for various undergraduate courses, and

since 2008 she has also been a professor in the UNLP's MSc. in Public Affairs. She also holds a fellowship from the National Council of Scientific and Technical Research (Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET). She has participated in many CEDLAS' projects regarding poverty, inequality, social mobility and inequality of opportunities. She has been an international consultant for The World Bank, the Inter-American Development Bank, UNDP and LAC governments in topics related to poverty and inequality measures, as well as inequality of opportunities, public policies, mobility and other socioeconomic variables. Ms. Conconi has written (jointly with Martín Cicowiez) the article "*Linking Trade and Pro-Poor Growth: A survey*", which was published in J. Cockburn y Giordano, P. (eds.), *Trade and Poverty in the Developing World*, Poverty and Economic Policy (PEP) Research Network, 2008.

**Fedora Carbajal** (female, 30 years old). Ms. Carbajal finished her undergraduate studies in Economics in 2006 at the Universidad de la República (UDELAR), Uruguay, and she is finishing her dissertation for her MSc. degree in Economics at the UNLP. She is in process of application for the PhD. program from this University. She has been a junior researcher at CEDLAS since December 2007 and researcher since March 2009. She is also an associate researcher at the National Agency of Research and Innovation (Agencia Nacional de Investigación e Innovación, ANII, Uruguay) since July 2009. She has been Researcher at the Center of Economics Research (Centro de Investigaciones Económicas, CINVE) in Uruguay since 2005. She has been an associate professor at UDELAR for undergraduate courses since 2004. She actually holds a fellowship from the National Council of Scientific and Technical Research from Argentina (Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET). She participated in several projects

regarding poverty, inequality, measurement of multidimensional poverty and labor market.

**Andres Ham** (male, 27 years old). Mr. Ham finished his undergraduate studies in Economics in Honduras and successfully completed his dissertation for the title of MSc. (also in Economics) during 2009 at the Universidad de La Plata, where he is currently enrolled in the PhD program. He began as a junior researcher at CEDLAS in June 2006 and became a researcher in March 2009. Academically, he has been involved in teaching activities for both undergraduate and graduate courses since 2008. He holds a fellowship from the National Council of Scientific and Technical Research (Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET). The specific work carried out in the center deals with development economics, primarily: multidimensional measurement of well-being, inequality of opportunities, quality of life and impact evaluation.

**Marcelo Bérgholo** (male, 30 years old). Mr. Bérgholo finished his undergraduate studies in Economics in 2006 at the Universidad de la República (UDELAR), Uruguay, and he is finishing his dissertation for his MSc. degree in Economics at the UNLP. He is in process of application for the PhD. program from this University. He has been a junior researcher at CEDLAS since December 2007 and a researcher since March 2009. He is also an associated researcher at the National Agency of Research and Innovation (Agencia Nacional de Investigación e Innovación, ANII, Uruguay) since July 2009. He has been an associate professor at UDELAR for undergraduate courses since 2005. He actually holds a fellowship from the National Council of Scientific and Technical Research (Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET). He

participated in several projects regarding poverty, inequality, measurement of multidimensional poverty and labor markets.

## **10. Expected capacity building**

This project's capacity building covers the team members and the research Center where they are based (CEDLAS). However, it is the team's objective to extend the project's scope beyond the research Center and the academic community, bringing innovation and building capacity within government officials and policy maker's circles in LAC.

Firstly, all team members will deepen their knowledge of the theory and empirical application on distributional issues and mainly on recent advances in inequality of opportunities, as well as socio-economic mobility.

However, it should be stressed that the main innovation and learning experience emanating from this project originates in trying to operationalize an empirical methodology in order to evaluate the existence of inequality traps (Bourguignon *et al.*, 2007a). This implies the coupling the measurement of inequality of opportunities and mobility. Moreover, all team members are expected to develop the capacity to extend this mainly descriptive methodology and extract policy conclusions to aid in the design of development strategies (Bourguignon, 2007a, Rao, 2006). Given the interaction and the close collaboration within CEDLAS' research community, these developments are expected to reach all of the Center's members.

Secondly, all team members will benefit from the inequality trap perspective to widely acknowledge distributive concerns in LAC countries. This approach will help the

team members to acquire a deeper understanding of complex situations and processes (i.e. interaction between culture, power and economic structures), such as in the interaction with government and policymakers. The policy recommendations (e.g. aid programs) will be more effective in improving the conditions of less advantaged social groups, and will be recommended to appease structural inequities, although implementation is subject to political economy considerations in every country.

Thirdly, the dissemination strategy outlined in Section 7 places great importance in the interaction with NGOs, legislators, government officials and policymakers in LAC. The capacity building in this case is threefold. Firstly, senior members of the team will further perfect their skills in presenting and discussing complex economic and statistic results to legislators, politicians and civil society representatives. Secondly, while this will also benefit junior members of the team, their main capacity building will come through their involvement in less technically oriented training activities for government officials, and in the preparation of short and concise policy briefs. Finally, we expect that these training activities will benefit from the incorporation of the new results derived from this project, and thus help strengthen the recognition, within government and policy makers, that permanent inequalities of opportunities are integral part of the underdevelopment. This would also strengthen the case for a more informed and evidence-based public policy debate about this issue in LAC countries.

With respect to the tasks expected from the team's members, Dr. Cruces will supervise the entire project. He will be mainly responsible for adapting and developing the methodological tools in order to operationalize the inequality traps. After discussions and feedback about the methodology with the rest of the team, a second phase implies the

analysis of the different sources of information to be used in the study. The selected LAC countries will be divided in groups and allocated for detailed analysis to Ms. Conconi, Ms. Carbajal, Mr. Ham and Mr. Bérigolo. The main objective of this preliminary instance is to select the relevant circumstances (to construct social groups), and outcomes relevant to carry out the empirical estimation. The aim in this phase is to adequately resolve the trade-off between comparability and specificity. In a third phase, team supervisors and members will devise an empirical strategy for implementation the inequality traps notion, mainly with the statistical package Stata, and the members of the team will carry out the estimations for the countries originally assigned to them (see section 5).

The team members will submit a short report on their findings, which will form the basis of the main project document to be written by the supervisor. Comments and feedback from team members will be encouraged, as well as their active participation in the preparation of policy briefs, and in the presentation and dissemination of the project's results.

It should be noted, however, that CEDLAS' work dynamic implies an important amount of interaction between project supervisors and researchers, and between researchers. The paragraph above describes the main guidelines for the team's work, but this does not preclude a fair amount of flexibility in terms of sharing the workload and helping fellow team members with difficulties that might be encountered.

#### **11. Any ethical, social, gender or environmental issues or risks that should be noted.**

The proposed research has no ethical, social, or environmental issues or risks. However, it intends to raise awareness about the persistent lack of opportunities to invest

and grow of disadvantaged segments of the population, which have too often neglected by mainstream inequality analysis.

## **12. List of past, current or pending projects in related areas involving team members**

**Note:** Please see CVs uploaded to the PEP network website for details on publications, projects, and academic and professional experience.

*Projects related to mobility and multidimensional well-being or opportunity approaches in*

*Latin America involving this team's members:*

- “Los Determinantes de la Cohesión Social en América Latina”, (2007). CEDLAS provided technical assistance for a project carried out by CIEPLAN (Chile), with the support of the European Union and the UNDP. Team members involved: Cruces and Conconi.
- “Medición de la movilidad social en América Latina”, (2007). Project CIEPLAN-IFHC. Team members involved: Cruces and Conconi.
- Inequality and Human Development in Latin America and the Caribbean, (2008/2009). Chapter for the Regional Report UNDP-LAC. Team members involved: Cruces
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