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A Large-Scale Mapping of Territorial Development Dynamics in Latin America

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Summary. — This paper summarizes a study of changes in per-capita income, monetary poverty, and income distribution in 9,045 subnational administrative units of nine Latin American countries between the mid-1990s and mid-2000s. The results largely support spatial convergence of mean household incomes, although the estimates indicate it has been slow. Territorial inequality is found to be persistent and reduces the pro-poor effect of local income growth. Although national-context specific, the estimates also indicate that territorial development dynamics are influenced by the structural features of the territories. In view of the evidence, territorial development policies in Latin America seem well warranted.

Key words — territorial development, poverty mapping, Latin America

1. INTRODUCTION

Inequality in Latin America takes multiple forms that reinforce one another. Following Stewart (2001), these include *vertical inequalities* among individuals, in various dimensions of welfare and in assets and capacities that are critical for human development, such as access to health (De Ferranti, Perry, Ferreira, & Walton, 2004), land (Deininger & Squire, 1998), or political participation (Hoffman & Centeno, 2003). The region is also characterized by very large *horizontal inequalities* between culturally constructed groups, such as ethnic groups (Ferreira & Gignoux, 2008), gender groups (Deere & León, 2001), or, as is argued in this special issue of World Development, territories. [1] Both occur because of institutional mechanisms that create segregation from birth and continue to operate throughout the individual's lifetime, perpetuating differences between those who have power and those who lack it or cannot exercise it (de Ferranti *et al.*, 2004).

This paper refers to a particular manifestation of inequality: that which exists between different territories within each country in Latin America. We can easily distinguish the differences between Northern and Southern Mexico (Aroca, Bosch, & Maloney, 2005; González Rivas, 2007), Colombia's Pacific Region and Central Region (Galvis & Meisel Roca, 2010; Galvis & Meisel Roca, 2012), or the Coast and Highlands of Peru (Escobal & Ponce, 2011a, 2011b). Even in countries with rapid growth and/or a sharp reduction in poverty, we still find localized pockets of economic and social stagnation, as in Chile's Araucanía region (Agostini, Brown, & Góngora, 2008) or Northeastern Brazil (Ferreira-Filho & Horridge, 2005).

Over the past 30 years, these territorial inequalities, their causes, and consequences have tended to disappear from the public agenda. Since the 1980s, economic policy has concentrated on large macroeconomic relationships and, consequently, on criteria related to aggregate economic efficiency. To improve a country's development, it was argued, it was enough to create conditions in which the comparative advantages of countries and their regions could be freely expressed.

Based on new theories of location, the World Development Report 2009 argued that spatially inequitable growth will eventually lead to socially inclusive development (World Bank, 2009). Those who hold this view trust two main drivers: the first one is the mobility of labor and capital between regions with productivity and return differentials, which will gradually lead the economy to a situation of spatial equilibrium. And second, the direct effects and the externalities of economic agglomeration. Both forces, when fully operational, should lead to territorial convergence in welfare levels.

Others, however, propose that those forces operate in a world with multiple frictions (economic and \non-economic),\ some of them of a structural nature and deeply rooted in history (Berdegué, Bebbington & Escobal, 2015); because of these frictions, results differ from those predicted by the theory (Puga, 2002). Much empirical evidence challenges the idea of regional convergence in Latin American countries (Aroca *et al.*, 2005; Bosch, Aroca, Fernández, & Azzoni, 2003). Even those studies that support it show that the time frame associated with economic convergence processes is extremely long (Serra, Pazmino, Lindow, Sutton, & Ramirez, 2006; Soto & Torche, 2004) [2] and therefore incompatible with the expectations, tensions, and needs of developing societies. Moreover, at excessive levels of spatial concentration of the population

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and of the economic activity such as those seen in many Latin American countries, diseconomies of agglomeration should begin to operate, undermining the overall efficiency of the economy (Brülhart & Sbergami, 2009; Williamson, 1965).

There are good reasons to pay more attention to territorial inequality. First, evidence indicates that inequality between sub-national units is an important component of overall inequality in these countries, possibly accounting for as much as 40% of total inequality (Elbers, Lanjouw, Mistiaen, Özler, & Simler, 2004), and rapidly growing in some cases (Escobal & Ponce, 2012). Second, place matters for the development of persons, households, and communities, [3] and territorial inequality is related to factors that go beyond differences between individuals or social groups (De Ferranti, Perry, Lederman, Foster, & Valdes, 2005; Kanbur & Venables, 2005). [4] Third, territorial inequalities may be related to social and political conflict, particularly in developing countries with relatively weak institutions (Lessmann, 2011; Tadjoeddin, Suharyo, & Mishra, 2001; Østby, Nordås, & Rød, 2009).

This paper summarizes work done as part of the Rural Territorial Dynamics Program (RTD; http://www.rimisp.org/dtr). The first part of this program had the objective of documenting the extent of territorial inequality and building a typology of territories according to the outcomes of their development dynamics. RTD partners throughout the region documented the *changes* in per-capita income or consumption, monetary poverty, and distribution of per-capita income or consumption in 9,045 subnational administrative units [5] in nine countries: Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, and Peru. [6] Overall, in 2010 these nine countries represented 78% of the total population, 81% of the people living in poverty, and 73% of the GDP of Latin American countries. [7] The characterization of local development dynamics, with such a degree of disaggregation and spatial coverage, is a first step toward understanding the territorial dimension of recent development in the region's countries.

The period we looked at was from the mid-1990s and the mid-2000s, with variations depending on the data available in each country (see Table 7). During those years, Latin America emerged from the morass of the "lost decade," consolidated its democratic processes and began to regain a certain economic and social dynamism. Except for Ecuador, the countries analyzed here registered annual average growth rates during the 1990s ranging from a modest 1.9% yearly for Brazil to 4.6% for El Salvador, and 6.2% for Chile (World Bank, 2013). According to ECLAC (2010), in almost all of them significant progress was also made in reducing extreme monetary poverty, in some cases notably, as in Brazil or Chile, which cut poverty to half or less than half the level of the 1990s. In short, in many ways, compared with the 1980s, this period was positive for nearly all the countries considered. Nevertheless, few countries in the region showed improvements in their high income inequality, and there was even backsliding in countries such as Bolivia, Colombia, Ecuador, and Peru (World Bank, 2013).

In this paper, we examine how these relative advances were distributed among municipalities and other subnational territories. For example, Chile and Brazil showed strong decreases in poverty, but did all of Chile and all of Brazil experience that improvement? Was relative progress concentrated in large regions with comparative advantages, such as northwestern Mexico or the coast of Peru? Were gaps exacerbated between these regions and those that already lagged?

The paper is divided into five sections. After this introduction, Section 2 presents the questions addressed in this paper, and the conceptual framework followed to answer them. Section 3 presents the methods and the data. Section 4 summarizes the key results, and we conclude in Section 5 by presenting some areas for future research and recommendations for public policy.

2. CONCEPTUAL FRAMEWORK

Territorial development is a complex and multidimensional phenomenon, involving the interplay of geographic, institutional, and economic factors, and mechanisms. In the absence of a unified theory that can explain territorial development outcomes, we follow an \open-ended\ approach to gain an understanding of the spatially detailed patterns of income, poverty, and inequality changes in Latin America. Consistently with the conceptual framework of the RTD program (Berdegué *et al.*, 2015), the proposed analytical framework emphasizes three aspects of the dynamics of territorial development:

1. It is a path-dependent process (Boschma & Frenken, 2006; Martin & Sunley, 2006) (Proposition 1).
2. With interrelated outcomes (Bourguignon, 2003; Datt & Ravallion, 1992; Dollar & Kraay, 2002) (Proposition 2), and
3. Conditioned by the structural features of territorial economies and societies (Barro, Sala-I-Martin, Blanchard, & Hall, 1991; Capello, 2007), here referred to as the *local framework conditions* (Proposition 3).

A simple way of summarizing a framework consistent with Propositions 1–3 is as follows. First, there are three outcomes of territorial dynamics that we seek to understand: *changes* in mean household income or consumption, in headcount monetary poverty, and in income or consumption inequality. Those outcomes are influenced by two sets of elements.

The first set of elements captures the *initial conditions* of mean income, headcount poverty, and income inequality. Such initial conditions are aimed at testing for path dependence (Proposition 1), meaning that the evolution of development outcomes is conditioned by the history of the territory (Martin & Sunley, 2006; Ospina & Hollenstein, 2015). There are many conceptual grounds for a \path-dependent\ territorial development process. In the case of regional growth, path dependency may be the result of series of mechanisms creating positive feedbacks of past to current development outcomes, such as technological \lock-in\ effects (David, 1985), dynamic increasing returns (e.g., learning effects, economies arising from agent coordination; Arthur, 1989) and/or institutional reproduction (hysteresis) (North, 1990). Under strong path dependence, divergent income growth trajectories should arise. The alternative hypothesis is that of spatial convergence. It stems from the (neoclassical) assumption of decreasing returns and free mobility of production factors. In such conditions, factors should reallocate from areas of higher stocks and low marginal productivity toward emerging regions where input increases have a higher marginal productivity. The implication is that areas with lower initial levels of development should *ceteris paribus* grow faster (Barro *et al.*, 1991).

In the case of inequality, it is currently widely accepted that inequity is to a large extent the result of institutional mechanisms that affect the relative mobility of social groups (Rao, 2006). But such institutional arrangements (particularly economic institutions) are the result of slowly changing,