Intergovernmental transfers and regional income inequalities: an empirical analysis of Uruguay

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1. Summary

In this article we analyze the bidirectional relationship between intergovernmental transfers and regional income inequalities in Uruguay over the period 1990-2012.

The analysis of the relationship between these two variables is an important matter which has engaged scholars over the years. Intergovernmental transfers are a powerful tool to promote territorial cohesion in developed countries in which the design of the normative scheme governing transfers considers income inequities between regions. The European Union model of territorial cohesion involves a range of fiscal instruments and is a clear example of this (Böheme 2009 and Böheme et al. 2011). However, a regional transfers scheme that does not clearly and explicitly provide normative territorial convergence criteria probably does not contribute to territorial convergence and could even reinforce existing disparities (Martinez-Vazquez and Sepulveda 2011; Alm and Martinez-Vazquez 2015).

Although in recent years the majority of Latin American Countries (LAC) have implemented major reforms in their public finances at the region or province level,[1] almost none have implemented successful intergovernmental transfer systems that explicitly pursue the objective of territorial cohesion. Most of these countries have implemented *revenue sharing* systems, but these have serious design problems since they simultaneously pursue multiple objectives such as, for example, efficiency on the one hand and national standards of utility and equity on the other. These systems have also made the revenue levels of sub-national governments rather volatile because they introduce disincentives for them to collect their own resources, and ignore the differences between sub-central governments' fiscal capacities and their expenditure needs (Martinez-Vazquez and Sepulveda, 2012).

In a fiscally-centralized country like Uruguay, it is very important to analyze the role of intergovernmental transfers as this is one of the most effective fiscal tools to foster regional convergence. These transfers account for a sizeable percentage of Uruguayan regional government (RG) revenues, and the relative amounts involved have been increasing in recent decades. Even though Uruguay is a small country there are big differences in per capita income levels between its regions.[2]

An important feature of the country is how important the capital, Montevideo, is in the national economy. According to data from the Continuous Household Survey of the National Institute of Statistics of Uruguay, over the period 1990 to 2012 household per capita income in Montevideo was between 120% and 130% of the national average. Moreover, income per capita levels in the other departments of the country were (and are) not homogeneous. The departments in the north and northeast have lower relative incomes while the departments on the south coast (from Colonia to Maldonado) have higher relative levels.

During the last two decades the country has had five national administrations and the same number of regional administrations in all the departments, and the political parties in power have alternated at both the central and regional levels. In this context, our analysis of the period 1990-2012 enables

us to identify regularities and structural relationships between intergovernmental transfers and regional income inequalities.

2. Methodology and Results

In this paper we propose to reconsider the relationship between regional inequalities and intergovernmental transfers based on a panel of departments (regions/provinces) in Uruguay over the period 1990 to 2012, and using appropriate estimation techniques to deal with the potential interdependencies in the main variables. Specifically, we consider a simultaneous equation model which enables us to analyze the factors that jointly determine these endogenous variables. This approach allows us to obtain more appropriate estimates of the relevant parameters, and ultimately helps us identify the causal relationships between the two variables that we focus on.

Given the potential interdependence between our key variables, it is necessary to apply an empirical method that considers their mutual influence in order to avoid severe specification errors. Consequently we propose to estimate a full system for the joint determination of these important endogenous variables. Specifically, we propose to estimate a simultaneous equation model (SEM) which consists of a series of two equations describing regional inequalities and central government transfers.

We estimate our model with annual data and in addition with three-year averages of all variables that have been considered. Taking three-year averages will reduce short-run fluctuations and therefore the influence of the economic cycle, thus permitting a focus on the structural relationships.

Our empirical results show that the central government transfers to regional governments do not have a significant impact on regional income inequality levels. In fact, our estimates support the idea that regional inequalities have a significant and negative impact on intergovernmental transfers. That is to say, the richest departments receive higher transfers per capita. The intergovernmental transfers are also positively determined by the past public expenditure executed by regional governments, and negatively affected by the population size of the departments. The former result could reflect the impact of RGs' fiscal needs, but it could also reflect the negotiating capacity of these RGs when they demand resources from the central government through regional transfers. The negative effect of department population might be a response to the perceived presence of scale economies in the delivery of sub-national public services, or due to the potentially disproportionate lobbying power of smaller sub-national jurisdictions. Note that these empirical results are consistent with the fact that Uruguay's current normative system lacks clear criteria, and sets no clear priorities, when it comes to fostering territorial cohesion. Given this context, our analysis has obvious policy implications: if the objective is to make the Uruguay more territorially cohesive then the country's regional transfer regulatory scheme has to be revised.

[1] For a detailed analysis of these reforms see Brosio and Jiménez (2012).

[2] Uruguay is divided in 19 departments which are the second level of government, after central government. For details of the administrative composition of Uruguay see Table A.1 in the Appendix.