The Persistence of Regional Inequality in Brazil: An Interregional Inputâ€“Output Approach

Topic: Input-Output Analysis: Regional policies (1)
Author: Lucio OtÃ¡vio Seixas Barbosa
Co-Authors: Andre Carrascal-Incera, Carla C A Souza, Geoffrey J.D. HEWINGS

In the last decade, territorial imbalances have attracted growing attention from the research community. The rise of anti-democratic leaders in several countries, along with increasing secessionist movements and territorial tensions, has been partly associated with persistent spatial income disparities (Rodriguez-Pose, 2018).
Blanchard and Rodrik (2021) attribute the rise in income inequality to the combined effects of globalization, technological change, and institutional transformations, which have reinforced centripetal forces favoring urban and more prosperous regions. Complementing this perspective, Carrascal-Incera and Hewings (2022, 2026) show that income earned and spent in one region induces asymmetric interregional spillovers in European economies, disproportionately benefiting wealthier and more densely populated regions and reinforcing spatial income imbalances. However, it remains unclear whether similar spillover mechanisms operate in large developing economies characterized by structural heterogeneity and simultaneously high interpersonal and regional inequality such as Latin American countries (Lessmann and Seidel, 2017; Ramos et al., 2018).
Brazil ranks among the most unequal countries in the world (WID, 2026). In 2024, the richest 10% accounts for 59.1% of pre-tax national income, and substantial interstate disparities persist despite a modest decline in inequality over the last two decades (Azzoni and Castro, 2025; Silveira Neto and Azzoni, 2011).
This paper examines whether asymmetric interregional income spillovers reinforce interstate inequality in Brazil and whether similar patterns emerge at a smaller spatial scale. Specifically, we ask whether the circular flow of income induced by household demand systematically benefits wealthier and more densely urbanized regions, thereby constraining deeper reductions in interregional inequality.
The analysis employs extended multi-regional inputâ€“output (MRIO) models (Type II), in which households are endogenized within the production system. We focus on the interregional income multiplier matrix, which captures how income generated in one household group induces additional income in others through successive rounds of production and expenditure. This framework allows us to distinguish between domestic effects â€“ income retained within the region where it is generated â€“ and interregional spillovers â€“ income transmitted to or received from other regions. Since total income generated within the system must be absorbed somewhere, the approach enables the computation of net interregional income balances and the identification of each regionâ€™s structural position within the national economy. Some regions generate more income for other regions than they receive, while others are net beneficiaries, reflecting differences in productive structure, trade linkages, consumption patterns, and factor income flows.
The empirical application relies on the Brazilian Interstate Inputâ€“Output Tables for 2011 and 2019 (Haddad et al., 2017, Haddad et al., 2025) and on the regional inputâ€“output system for the intermediate regions of Minas Gerais (FJP, 2015). Together, these datasets allow us to assess spillover patterns at both national and sub-state scales within a highly unequal and spatially heterogeneous economy.
The results indicate that induced income effects generate persistent asymmetric interregional spillovers that systematically favor wealthier and more densely populated regions. More specifically, in Brazil, the state of SÃ£o Paulo exhibits the largest positive net interregional income balances in both years analyzed. At the sub-state level, within Minas Gerais, the intermediate region of Belo Horizonte records the highest positive balance in 2019. These patterns suggest that economically central regions act as net beneficiaries of the circular flow of income, thereby contributing to the

persistence of spatial income imbalances. By extending the framework of Carrascal-Incera and Hewings (2022, 2026) to a large developing economy, this paper provides new empirical evidence on the structural mechanisms through which induced household demand shapes regional income inequality in the Global South.

These findings also suggest that a region's structural positioning within national value chains significantly determines its capacity for income appropriation. Specialization in high-value-added sectors appears to enhance a region's ability to act as a net absorber of income generated elsewhere in the system. Consequently, these results provide a rationale for regional development policies that transcend traditional income transfers, emphasizing instead productive diversification and the spatial decentralization of high-complexity activities to mitigate persistent interregional imbalances in Brazil.