

## A CENTURY OF REGIONAL INEQUALITIES IN BRAZIL

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This work calculates coefficients of inequalities amongst Brazilian municipalities' per capita gross domestic product (GDP), for each year of the period from 1920 to 2016, amongst the states of the federation's per capita GDP, from 1939 through 2017, and amongst the municipalities' *per capita* GDP for each of the five Brazilians' macro-regions, from 1920 to 2016. The analysis of long-term data series, from a highly disaggregated territorial level, adds important information to the Brazilian literature of regional inequalities.

To account for the intense process of municipalities' creation, that took place in Brazil, which increased the municipalities' number from 1,304 in 1920 to 5,569 municipalities in 2016, the emancipated municipalities had to be regrouped with their original municipalities. This process produced fixed minimum comparable areas (MCAs) for each of the correspondent time series analyzed.

The dynamics of inter-municipalities inequality was calculated by the coefficients of Gini, Theil, variation, and the average log of variation. Despite the differences between the coefficients' scales, all coefficients described similar divergence process from 1920 to 1970, with a huge peak of spatial inequality in 1970, followed by a spatial convergence process, in which the level of regional inequality in 2016 returned to a similar level of 1920.

This dynamic described an inverted U-shaped relationship between regional inequality and national economic growth. The paper summarizes the Williamson (1965) thesis for the occurrence of this U-shaped relationship, in which the national development should begin in a region of the country, but the very process of national development transforms the original motors of inequality to a point where they begin to stimulate economic territorial deconcentration.

Calculi of the Gini coefficient between the per capita GDPs of the MCAs separated for each of the five Brazilian macro-region revealed important differences in dynamics. The dynamics in the southeast, richest macro-region of the country, revealed a worrying return of divergence after 1996. This may be explained by the beginning of the third industrial revolution, taking place in the most technologically developed areas of the country. This work reviews some results presented by Kemeny and Storper (2020), that described the return of the regional divergence in USA.

We additively decomposed the Gini's coefficient into leapfrogging and progressivity effects, by the usage of the Jenkins and van Kerm (2006) method. The decomposition revealed intense movement in municipalities' wealth ranks, from 1920 to 1970, explained by the faster growth of several poorer municipalities, leapfrogging the per capita GDP of richer municipalities. The leapfrog effect raised the Gini coefficient by 61.1 percentage points (p.p.), and was only partially offset by the drop of 39.1 p.p. from the progressivity between municipalities, which describes the reduction in the distance between municipal GDPs per capita. In turn, the drop in inequality from 1970 to 2016 was explained by the persistence of the progressivity effect (31.1%), with the large drop of the leapfrogging effect (9.8%).

It is important to point out that even with the significant regional convergence process that took place in Brazil from 1970 to 2016, it's regional inequalities are still dramatic, and demand deeper understandings of their causes and the implementation of efficient regional development policies.

# SUMEX

## REFERENCES

JENKINS, S. P.; VAN KERM, P. Trends in income inequality, pro-poor income growth, and income mobility. **Oxford Economic Papers**, v. 58, n. 3, p. 531-548, July 2006.

KEMENY, T.; STORPER, M. **Superstar cities and left-behind places**: disruptive innovation, labor demand, and interregional inequality. London: LSE, Feb. 2020. (Working Paper, n. 41).

WILLIAMSON, J. G. (Ed.). **Regional inequality and the process of national development**: a description of the patterns. Madison: The University of Wisconsin, 1965.