# Nonlinearity and Spatial Heterogeneity of Poverty Elasticity: a GWR analysis for the Brazilian Municipalities

(paper in progress)

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Bourguignon (2003) founded a relevant relationship among poverty, economic growth and inequality. Other studies have founded evidences on the existence of nonlinear mechanisms in the relationship between poverty and growth which could explain the so-called poverty trap. Mostly of these studies use nonlinear econometric methods applied to cross-country samples and few studies have explored this issue at the subnational level, mainly in developing countries. This paper proposes to use an econometric approach based on Geographically Weighted Regression (GWR) for estimating poverty elasticity among Brazilian municipalities. The advantage of this approach is linking nonlinearity and spatial location, which could provide important information to subsidies public policies at the regional level. The GWR procedure was applied using first-difference equation and a database on poverty, growth and inequality of the Brazilian municipalities for the period 2000-2010. We founded evidence of strong nonlinearity and spatial heterogeneity for poverty elasticities among Brazilian municipalities. Growth elasticity varies between -3.09 to -0.67 while inequality elastic varies between 0.75 to 4.47. The smallest poverty elasticities are concentrated in municipalities located in the North and Northeast of Brazil but even into these regions is observed relevant spatial heterogeneity.