Brazil: Deforestation and CO2 Emissions Drivers
- An Amazonian Focus –

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**Abstract**

Among the larger GreenHouse Gases emitters in the world, Brazil has committed to reduce, as a voluntarily pledge, its annual emissions to near 40 % below the business as usual trend by 2020 (Copenhagen Conference, 2009). The pledge includes an 80 % reduction of deforestation in Amazonia relative to the 1996-2005 period. As the negotiations to conclude a new binding climate agreement (Paris Conference, 2015) applicable to most countries are going to start, this paper examines some of the determinants of Brazilian emissions.

We use aggregate time series of Brazilian and Amazonian data in a system of equations describing CO2 emissions and Amazonian deforestation. After testing and discussing the properties of these series, we show that the primary driver for Brazilian CO2 emissions in the long run appears to be population size while the effect of GDP per capita is not robust to elements of the analysis. However, in the short run, the income per inhabitant is clearly the dominant force, while population size does not play a significant role. Amazonian deforestation does not play a role in explaining non-LULUCF (Land Use, Land-Use Change and Forestry) CO2 emissions.

Amazonian deforestation is unrelated to demographics, at the national level at least, but there is a clear and robust Kuznets effect, while the Action Plan effect does not appears to play a significant role. Although, it is not the first time that such a Kuznets effect is detected, this may be the first time series evidence; we argue that time-series long run “super-consistency” obviates the need for instruments in classical STIRPAT-like models, that are therefore difficult to estimate consistently in cross-section and panel studies.