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Ecological fiscal transfers in Brazil - Incentivizing or refinancing conservation?

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Ecological Fiscal Transfers in Brazil – incentivizing or refinancing conservation?

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In the face of a biodiversity loss that may substantially affect human well-being the functioning of instruments that could help to halt this trend are of great interest for the transition to a Green Economy. Ecological Fiscal Transfers (EFT) are a share of fiscal transfers that redistribute tax revenue in federal systems according to indicators of protected areas. This study analyzes the introduction of EFT in Brazilian states with an econometric panel data approach. The research question is whether EFT represent an incentive to designate protected areas within states or rather function to refinance public functions such as nature conservation. Hypothetically, those municipalities with lower opportunity costs for nature conservation are more inclined to increase their protected area, i.e. if becomes a source of income via EFT.

Ecological Fiscal Transfers have recently gained attention outside of Brazil (Frickmann Young, 2005; Grieg-Gran, 2000; May et al., 2002; Ring, 2008). Portugal has established a municipal EFT scheme in 2007 (Santos et al., 2012). In France, Germany, and Poland EFT schemes have been proposed (Schröter-Schlaack et al., 2014). The studies so far focus on institutional design but employ no econometric analysis[1]. This sets the knowledge base for an empirical approach that statistically analyses the effect of introducing EFT in Brazil. The introduction of EFT in 13 Brazilian states over the last two decades provides a quasi-natural experiment for the study of effects. The econometric panel data model estimates the effect of introducing EFT with fixed and random effect regressions on nature conservation area controlling for socio-economic variables such as GDP, population density, employment, etc. Depending on data gathering success the study will ideally analyze the effect of EFT among all 13 (out of 26) states that have introduced the instrument since 1990. States in which there is no EFT in place function as a control group. Hypotheses are an effect (H1) or respectively no effect (H0) of EFT introduction on the designated protected area among municipalities. Theoretically, those states with lower opportunity costs for conservation measures may have an incentive to enhance protected area coverage (H1) – especially if it becomes a source of income by a shift in tax revenue redistribution. The null-hypothesis (H0) is that an increase in budget due to EFT does not increase protected area coverage.

[1] Saquet et al. (2012) presented a notable exception.

Independent of whether data allows a rejection of H0, are more detailed institutional analysis of differently implemented EFT designs will be conducted to enrich the interpretation of the results. Different government level responsibilities and division of public functions is one institutional feature of interest[2]. Any response to EFT inter alia depends on preferences, relative opportunity costs, and distributional effects on tax revenue. Potentially, municipalities that have to fulfill mandatory public functions such as managing state level protected areas might rather have an incentive to refinance opportunity costs instead of increasing or allowing more protected areas. Public decision-making bodies may or may not be more inclined to increase protected areas if EFT schemes are installed. The results will give insights about the functioning of the instrument.

These results of this study may help to design EFT schemes in other federal states or even globally. Findings are very relevant for the above named countries in which an introduction might be expected (cf. Schröter-Schlaack et al., 2014). Farley et al. 2010 even discuss a potential adoption of the Brazilian EFT schemes to the global level – which might be of interest for the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Some of the lessons learnt at the municipal and state level in Brazil can be of use in these areas and the overall transition towards a Green Economy. Questions that are going to be answered in this study may well result in arising new questions, e.g. about spatial distribution.

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[2] The concept of fiscal equivalence (Olson, 1969) hypothesizes that it is socially optimal that those who gain benefits from a policy also bear the costs of it – basically internalizing external effects of public policy.