Public debt versus Environmental debt: What are the relevant Tradeoffs?

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ABSTRACT

The article explores the relationship between public debt and environmental debt. The latter is defined as the difference between the "virgin state" which is the maximum stock of environmental quality that can be kept intact with natural regenerations and the current quality of the environment. A theoretical model of endogenous growth is built. We show that there is a unique well-determined balanced-growth path. The public debt and the environmental debt are substitute in the short-run but complementary in the long-run. Indeed, budget deficit provides additional resources to finance pollution abatement spending, but generate also unproductive expenditures (the debt burden). This hypothesis is tested on a sample of 22 countries for the period 1990-2011. The environmental debt is measured by the cumulative CO2 emissions per capita. We use panel time-series estimators which allow for heterogeneity in the slope coefficients between countries. It appears mainly that, in the long term, an increase of 100% in public debt ratio leads to an increase of 74% in cumulative CO2 per capita. In addition, this positive long-run relationship is still present at the country and the sub-sample level, despite some differences in the short-term dynamics.