

# Optimal Fiscal Policy under Debt Constraint

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## Abstract

We consider a stylized model economy in which a social planner chooses the levels of two types of government expenditures: productive (increasing the efficiency of the economy including expenditures for education and R&D, for highways, sewers, etc.) and unproductive (increasing the social utility without direct impact for the macroeconomic activity, e.g. expenditures for defense, international affairs, some social payments or public services) such as to maximize inter-temporal social utility. The new feature of our model is the debt constraint which does not allow for the debt-to-GDP ratio to exceed the given upper bound (e.g. 60%). Using optimal control model with mixed constraint the first part of this work in progress provides qualitative analysis of the impact of the debt constraint for the government expenditures. Due to the complexity of the model (we have two state variables and the mixed inequality constraint) in the second part using OCMat software we solve the model numerically and analyze the impact of important model parameters (tax rate, interest rate, production elasticity coefficients, etc.) for the steady state debt-to-GDP ratio and for the structure of government expenditures.