

Economics 170  
**International Macroeconomics**  
Homework 5  
Due 2/25

**An Economy With A Government**

Consider a two-period, small, open, endowment economy. Assume that households' preferences are described by the following utility function

$$\ln(C_1) + \ln(C_2),$$

where  $C_1$  and  $C_2$  denote consumption in periods 1 and 2, respectively. Households are endowed with 10 units of goods in each period and pay proportional taxes on consumption. Let  $\tau_1$  and  $\tau_2$  denote the consumption tax rates in periods 1 and 2, respectively. Finally, households are born with no financial assets ( $B_0^p = 0$ ) and can borrow or lend in the international financial market at the world interest rate  $r^* = 0.1$ .

The government starts period 1 with no outstanding assets or liabilities ( $B_0^g = 0$ ). It taxes consumption at the same rate in both periods ( $\tau_1 = \tau_2$ ) and consumes 1 units of good in each period. That is,  $G_1 = G_2 = 1$ , where  $G_1$  and  $G_2$  denote government consumption in periods 1 and 2, respectively. Like the household, the government has access to the world financial market.

1. Compute the equilibrium tax rate and the equilibrium levels of consumption, the trade balance, private savings, the fiscal deficit, and the current account in periods 1 and 2.
2. Suppose now that the government implements a stimulus package consisting in reducing the tax rate by half in period 1. with government consumption unchanged in both periods. How does this expansionary fiscal policy affect, private consumption, the current account, and the fiscal deficit in period 1 and the tax rate in period 2? Briefly explain your result.