

## Seminar 5. Exercises with multipliers

### Exercise 1

Consider a closed economy, for which we know the following: government spending  $G = 500$  bil.lei, autonomous taxes  $T_0 = 400$  bil.lei, investments  $I = 200$  bil.lei, autonomous consumption  $C_0 = 100$  bil.lei, transfers  $TR = 0$  and the marginal propensity to consume  $= 0.9$

- Determine the levels of GDP, private consumption, taxes, and budgetary deficit if the government only intends to collect lump-sum taxes (tax rate  $t$  is 0).
- Determine the level of GDP and the budgetary deficit if the tax rate  $t$  is  $1/3$ .

### Exercise 2

Consider a closed economy where the marginal propensity to consume is 0.9 and the tax rate is  $1/3$  (33,3%). Determine the change in government spending ( $\Delta G$ ) that would help reduce the budgetary deficit by 100 mil.lei.

### Exercise 3

Consider a closed economy where  $c = 0.8$ ;  $t = 0.15$ ;  $Y = 3400$  mil. €, private consumption ( $C$ ) = 2000 mil. €,  $G = 500$  mil. €,  $TR = 0$  and  $T_0 = 0$ . In an attempt to raise more money to finance a strategic infrastructure project, the government plans to collect lump-sum taxes that amount to 50 mil. €. Determine the effects of an increase in the autonomous taxes by 50 mil. € ( $\Delta T_0 = 50$  mil. €) on GDP, budget deficit (BD) and private consumption ( $C$ ).

### Exercise 4

Assuming that the level of government spending increases by 1 million € ( $\Delta G = 1$  mil. €), while transfers decrease by exactly 1 mil. € ( $\Delta TR = -1$  mil. €) determine what will happen with:

- The level of GDP ( $\Delta Y = ?$ )
- The level of budget deficit ( $\Delta BD = ?$ )