

Homework 3

1

Consider a closed economy characterized by the following equilibrium condition and specifications:

$$\begin{aligned}Y &= C(Y - T) + I(r) + G, \\Y &= 8000, G = 1000, T = 800, \\C(Y - T) &= 1000 + 3/4(Y - T), \\I(r) &= 1200 - 100r.\end{aligned}$$

- Calculate private saving, public saving, and national saving.
- Calculate the equilibrium real interest rate.
- Suppose that the government reduces its expenditure to achieve a balanced budget. Calculate private saving, public saving, and national saving. And calculate the new equilibrium real interest rate.

2

Consider the following equilibrium condition in the financial market:

$$\begin{aligned}Y - C(Y - T, r) - G &= I(r), \\C_1 \equiv \frac{\partial C}{\partial Y} > 0, C_2 \equiv \frac{\partial C}{\partial r} < 0, I'(r) < 0.\end{aligned}$$

- Apply the implicit function theorem and obtain $\frac{\partial r}{\partial G}$. Is it positive or negative?
- If the government increases spending, what would happen to the real interest rate? What would happen to national saving, government saving, and private saving?