Due date: March 9 (Friday), 2007.

Note: you can either submit your homework right after class or put it in the box outside my office (Heady 469) before 5:00pm.

Problem 1
Suppose an economy is described by $Y = 5,000$, $G = 1,000$, $T = 1,000$. $C = 250 + 0.75(Y - T)$, $I(r) = 1,000 - 50r$.
(1) Compute private saving, public saving, and national saving.
(2) Find the equilibrium interest rate and the equilibrium investment.
(3) Suppose now $G$ rises to 1,250. Compute private saving, public saving, and national saving.
(4) Find the new equilibrium interest rate and the equilibrium investment.
(5) Suppose now the government also increases $T$ to 1,250 to balance its budget. What happens to the equilibrium interest rate and the equilibrium investment?

Problem 2
Suppose an economy is described by $Y = 5,000$, $G = 1,000$, $T = 1,000$. $C = 250 + 0.75(Y - T) - 10r$, $I(r) = 1,000 - 50r$.
(1) Find the equilibrium interest rate and the equilibrium investment.
(2) Suppose now the economy’s investment function is $I(r) = I_0 - 50r$, where $I_0 > 0$ is an unknown constant. Find the new equilibrium interest rate and the equilibrium investment. How do the equilibrium interest rate and investment change with $I_0$?
(3) Now treat $Y$, $G$, $T$ as unknown constants as well and solve for the equilibrium interest rate and equilibrium investment as a function of $Y$, $G$, $T$, and $I_0$. What happens to the equilibrium interest rate when $T$ increases?