Due date: To be collected at the beginning of class on Tuesday, November 10.

Note: The usual policy on cheating and plagiarism applies for this exercise.

1. Consider a two-period overlapping generations model with constant population, where a representative individual receives $y_t, y_{t+1}$ endowments and consumes $C_{1,t}, C_{2,t+1}$ over his/her lifetime. There is also a government who collects taxes and spends a fixed $g$ (per capita) every period. Consider three different financing scenarios:

   a. Collect taxes equal to $g$ from the young every period.

   b. Collect no taxes from the population when young, but issue debt equal to $g$ and collect taxes from the population when old to retire the debt with interest.

   c. Collect only one-half of $g$ in taxes from the population when young, finance the other half by debt, and retire the debt with interest by collecting taxes from the population when old.

Which of the three financing methods would provide the highest level of utility to the individuals?

2. (This is problem 2 on page 401 in the 3/e, which may not be in the 2/e.) Suppose the nominal interest rate is zero, that is $R = 0$.

   a. What will be the consumer’s and the firm’s optimal choice of banking services?

   b. How much resources will be used up by the banking sector of the economy?

   c. Explain your results in parts (a) and (b). Discuss the realism of these predictions.