

Homework 4

Show all your work. Graphs should be clearly labeled. The total for the homework is 5 points. Start early. Homework is due in class on Wednesday, March 24 (or if you cannot make it to class, drop it off in the main office, Buchanan Tower 997, by the end of the class). No late homeworks are excepted.

Problem 1 (2.5 points)

This is Example 8.2 from Champ-Freeman (page 160).

- a. Suppose that each of the economy's 600 young agents has deposits worth 100 goods with a bank no matter what the rate of return. Assume that the reserve requirement is 10 percent and the monetary base is \$3,000. Let $x > n$.
 - a. What is the total nominal money stock?
 - b. What is the value of a unit of fiat money?
 - c. What is the price of a good in units of fiat money?
 - d. How many goods would the government acquire if it increased the monetary base by 50 percent? (HINT: use equation (8.3) in text for seignorage revenue)
 - e. What is the real value of investment by banks?
- b. How would your answer to each question in part a change if the reserve requirement doubled to 20 percent? Explain each of these changes in your own words.
- c. Suppose the reserve requirement stays at 10 percent but banks voluntarily hold an extra 10 percent of deposits as fiat money reserves. Would answers to part b change?

Problem 2 (2.5 points)

This is Exercise 9.1 from Champ-Freeman (page 180).

Suppose there is an unanticipated permanent decrease in transaction costs as represented by ϕ . Find its effect on s^* , the price level, the deposit-to-currency ratio, the money multiplier, the total nominal money stock, capital, and output. Explain each of these effects. Verify that the model economy displays a correlation between the nominal money stock and real output. Will a one-time increase in the monetary base (e.g., from a once-and-for-all increase in the stock of fiat money owned by the initial old) cause an increase in real output?