

Econ 3334 – Intermediate Macroeconomics

Problem Set #1

Due Feb 5<sup>th</sup>

All problems are from Mankiw's *Macroeconomics* (6<sup>th</sup> Ed.)

1. (Chap 2, Prob 4) Place each of the following transactions in one of the four components of expenditure: consumption, investment, government purchases, and net exports
  - a. Boeing sells an airplane to the Air Force
  - b. Boeing sells an airplane to American Airlines
  - c. Boeing sells an airplane to Air France
  - d. Boeing sells an airplane to Amelia Earhart
  - e. Boeing sells an airplane to be sold next year
2. (Chap 2, prob 7) Abby consumes only apples. In year 1, red apples cost \$1 each, green apples cost \$2 each, and Abby buys 10 red apples. In year 2, red apples cost \$2, green apples cost \$1, and Abby buys 10 green apples.
  - a. Compute a consumer price index for apples in each year. Assume that Abby's basket of goods in year 1 is the fixed consumer basket. How does the index change from year 1 to year 2?
  - b. Compute Abby's nominal spending on apples in each year. How does it change from year 1 to year 2?
  - c. Using year 1 as the base year for prices, compute Abby's real spending on apples in each year. How does it change from year 1 to year 2?
  - d. The price deflator is nominal spending divided by real spending. Compute the deflator for each year. How does the deflator change from year 1 to year 2?
  - e. Suppose Abby is equally happy eating red or green apples. Discuss whether her true "cost of living" has increased from year 1 to year 2.
3. (Chap 3, prob 7) The government raises taxes (T) by \$100 billion. If the marginal propensity to consume is 0.6, what happens to the following? Do they rise or fall? By what amounts?
  - a. Public saving
  - b. Private saving
  - c. National saving
  - d. Investment
4. (Chap 3, prob 10) Suppose the government increases taxes and government purchases by equal amounts. What happens to the interest rate and investment in response to this balanced budget change? Does your answer depend on the MPC? (Note: this might be easier to see if you solve it out with numbers, like the problem we did in class)

5. (Chap 5, prob 2) Consider an economy described by the following equations:

$$Y = C + I + G + NX$$

$$Y = 5,000$$

$$G = 1,000$$

$$T = 1,000$$

$$C = 250 + 0.75(Y - T)$$

$$I = 1,000 - 50r$$

$$NX = 500 - 500\epsilon$$

$$r = r^* = 5 \text{ (the world interest rate is equal to 5\%)}$$

- a. In this economy, solve for national saving, investment, the trade balance, and the equilibrium exchange rate.
- b. Suppose now that  $G$  rises to 1,250. Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you find.
- c. Now suppose the world interest rate rises from 5 to 10 percent ( $G$  remains at 1,000). Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you find.