

**180.101 Principles of Macroeconomics, Fall 2011**

*First Term Exam : Practice Problems*

**Question 1.** Suppose you have the following consumption function  $C = \alpha + \beta Y + \gamma Z$  where  $\alpha > 0$  is a constant,  $0 < \beta < 1$ ,  $\gamma < 0$ ,  $Z$  is some variable that affects consumption and  $Y$  is income.

- (a) Explain the economic meaning of  $\alpha$ ,  $\beta$ , and  $\gamma$ .
- (b) Plot  $C$  against  $Y$ . Describe the intercept and the slope.
- (c) Explain what will happen to the consumption curve if  $Y$  increases. Show your answer graphically.
- (d) Explain what will happen to the consumption curve if  $Z$  decreases. Show your answer graphically.
- (e) Suppose by using the above formula we calculated consumption in 2009 to be 100 and 150 in 2011. Calculate the growth rate of consumption between 2009 and 2011.
- (f) Explain what it means for the economy to be in recession. Explain what it means for the economy to be expansion. Do you have enough information to establish whether the economy is in recession or expansion from your answer to part (e)? What other information would you need to figure this out?
- (g) Suppose  $Z = P$ , meaning  $Z$  reflects prices. How do changes in price affect consumption?

**Question 2.** Suppose nominal GDP in 2008 was calculated to be 10 billion dollars using the factor income approach. In addition, in 2010 nominal GDP was calculated to be 5 billion dollars using the value added approach. Finally, in 2011 nominal GDP was calculated to be 15 billion dollars using the expenditure approach.

- (a) Can you calculate the growth rate of nominal GDP between 2008 and 2011 using the given information? If yes, what is it? If not, explain what other information you need.
- (b) If the population of this country is 10 million (in each year), calculate the GDP per capita for each year.
- (c) Is GDP a comprehensive measure of this country's well being? If yes, explain why. If not explain why not.

**Question 3.** Answer the following (very) short questions.

- (a) Describe what it means to be a closed economy.
- (b) Explain what it means to have "completely slack conditions".
- (c) What does it mean that  $Y = Y^{capacity}$ ?
- (d) Why would we want to relax the assumption of completely slack conditions?
- (e) What is a market equilibrium?
- (f) What is a demand shock? Why does it matter?

**Question 4.** Suppose we live in an economy where folks produce just one thing: cheese! In 2009 the nominal GDP of this economy was CHF (Swiss Franc) 90,000. In 2010 the nominal GDP was CHF 120,000, while the price of cheese was CHF 2. If the real GDP in 2009 (taking as a base year 2010) was CHF 100,000, what is the inflation rate between year 2009 and year 2010 in this country?

**Question 5.** During the recent recession (2007-2009) the price level in the US fell. This is the reason why the real GDP also fell during the same period. True, false, uncertain; explain carefully.

**Question 6.** Suppose a closed economy (no imports nor exports), where  $\bar{C} = 100$ ,  $\bar{I} = 20$ , and the marginal propensity to consume (MPC) is 80%. In addition, suppose for simplicity that there are no taxes and transfers and that completely slack conditions apply.

- (a) Draw the consumption function. Be careful to label properly your graph.
- (b) Find the market equilibrium (draw it) and explain it conceptually (how can you tell it is indeed an equilibrium?).
- (c) Now suppose that consumers lose their confidence in the future and the MPC falls to 0.5. Draw this new scenario. Is the new equilibrium level of output lower or higher than before? Why?

**Question 7.** For each of the following activities, state whether it would be included in U.S. GDP. If it is included, explain which component (of the expenditure approach) it would be included in, and how much it contributes to GDP. If it is not included, explain why not.

- (a) Honda manufactures a new Accord at a plant in Indiana, which it sells for \$20,000 at a dealership in Toronto.
- (b) Honda spends \$500,000 to purchase a new RoboRiveter to install in its plant in Indiana.
- (c) Manuel and Sally each purchase \$75 of Brazilian avocados from Safeway.
- (d) Sally uses the avocados to make four gallons of guacamole, which she sells to the public for \$6 per pint at her specialty foods store.
- (e) Manuel uses the avocados to make four gallons of guacamole to stockpile while studying for his final exams.
- (f) Sally's food store goes public, issuing \$10 million dollars worth of new shares.
- (g) The city of Skokie, IL pays Ilya \$50,000 to sculpt a statue of its founder.
- (h) The Social Security Administration pays Ilya \$10,000 in disability insurance after a tragic sculpting accident.
- (i) Stan pays a stranger \$15 an hour to write bawdy limericks for twelve hours.
- (j) Megan's Ming Emporium sells an antique vase for \$12,000.