

14.02 Principles of Macroeconomics

Posted: September 12, 2001

Due: September 21, 2001

PROBLEM SET 1

Part I. EXPLAIN TRUE OR FALSE (40 points)

1. (4 points) In the goods market the multiplier will always be greater than 1.
2. (4 points) Capital and output can be measured in dollars per unit of time.
3. (4 points) GDP is greater than true output.
4. (4 points) If real output increases then nominal output also increases.
5. (4 points) Oil is a final good.
6. (4 points) Oil is an intermediate good.
7. (4 points) When measuring GDP you have to add the wage the government pays to a police officer.
8. (4 points) When measuring GDP you have to add the pension the government pays to a veteran.
9. (4 points) The strength of the dollar will help the American industry.
10. (4 points) Japan is worried because of a low 3 % annual growth per year during the last decade.

Part II. INFLATION AND REAL GROWTH (30 points)

Utopia produces only two goods: Coke and oil. In 2001 production reached 200 cans of Coke and 170 barrels of oil. With prices equal to 1 and 2 dollars respectively. The forecast for next year is 300 cans of coke and 130 barrels of oil with an estimated price of 0.5 and 3 dollars respectively. Last but not least, in order to produce 10 cans of coke one needs 1 barrel of oil.

1. (5 points) What is the expected change in nominal GDP (%).
2. What is the expected change in real GDP (%)
 - (5 points) Taking 2001 as your basis year,
 - (5 points) Taking 2002 as your basis year.
3. (10 points) Calculate the GDP deflator and expected inflation for each case of the question above.

Part III. THE GOODS MARKET (30 points)

You find the following economic data for Utopia:

Marginal propensity to consume = 0.6, Investment = 30, Government spending = 20 Government revenues = 20 (Tax collection) People will consume a minimum of 10, no matter what their income is.

1. (5 points) What is the equilibrium output for this economy?
2. (5 points) What's the value for the multiplier and autonomous spending?
3. (5 points) In how much will output increase if the government decides to increase spending in 1 more unit?
4. (5 points) In how much will output increase if the government increases spending, but keeping a balanced budget?
5. (10 points) The government decides to increase total savings in the economy. In order to do that it implements a program that reduces the marginal propensity to consume to 0.5. In how much will total savings increase? Explain.