

Course in Macroeconomics and Global Economics
University of Rome 'Tor Vergata'
Academic year 2016/2017

Instructor: Prof. Barbara Annicchiarico
Teaching Assistants: Francesca Diluiso, Matilde Giaccherini

12/15/2016

Practice 10

Exercise 1

Assume that a consumer live two periods: period 1 (present) and period 2 (future). Her income in period 1 is $Y_1 = 100$ and she expects to receive the same income also in period 2, namely $Y_2^e = 100$. In period 1, she can decide to do not consume all present income and lend the residual. In this case she will earn in period 2 the amount

$$(1 + r)(Y_1 - C_1).$$

On the contrary, if she decides to consume in period 1 more than her present income, she must borrow and repay, in period 2, the amount

$$(1 + r)(C_1 - Y_1).$$

1. What is the inter-temporal budget constraint of the consumer?
2. Assume that the lifetime utility function of the consumer is:

$$U = \log C_1 + \frac{1}{1 + \rho} \log C_2$$

where ρ is the consumer's inter-temporal discount rate. Using the inter-temporal budget constraint found in point 1, compute the quantity C_1 and C_2 that maximize the consumer's lifetime utility when the real interest rate r is 10% and:

- (a) $\rho = 0$
 - (b) $\rho = 0.1$
3. Repeat point 2. supposing that the consumer changes her expectations so that $Y_2^e = 120$.

Exercise 2

For each of the changes in expectations in 1 through 4, determine whether there is a shift in the IS curve, the LM curve, both curves or neither. In each case, assume that expected current and future inflation are equal to zero and that no other exogenous variable is changing.

1. a decrease in the expected future real interest rate
2. an increase in the current money supply
3. an increase in expected future taxes
4. a decrease in expected future income

Exercise 3

Consider the following statement. “The rational expectations assumption is unrealistic because, essentially, it amounts to the assumption that every consumer has perfect knowledge of the economy”. Discuss.