Problem Set #4 – ECON 3311, Fall 2024

Due: 11/5, at 11:59pm (via eLearning)

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1. **What is the permanent-income hypothesis? How is diminishing marginal utility related to the theory behind the permanent-income hypothesis? Briefly explain.**

2. **In Chapter 8 on inflation, one of the conclusions was that the marginal product of capital is equal to the real interest rate. When looking at the IS model, we talk about how <u>differences</u> between the real interest rate and the marginal product of capital lead to changes in short-run output. What is the reason for this discrepancy? Briefly explain.**

3. **The following three statements are false. Briefly explain what needs to change in each statement in order to make it correct.**

   1) $\bar{a}$ is equal to 1 and if it drops below 1 then this is considered a macroeconomic shock

   2) When the nominal interest rate is less than the marginal product of capital, then firms will increase their investment spending

   3) If the current output is equal to potential output, then the inflation rate is equal to 0

4. What is the equation representing the IS curve (including the multiplier)? What does the term $\bar{b}$ represent and how is it related to the slope of the IS curve? Briefly explain.

5. What role did changes in interest rates by the Federal Reserve, first the decrease from 2000 to 2004, and then the increase from 2004 to 2007, play in the Great Recession? Briefly explain the impact of the decrease and then the impact of the increase.

6. Suppose that we initially have the following values for the variables that make up the IS curve:

$$\bar{b} = 0.5, \bar{a} = 0, R_t = \bar{r} = 5\%, \bar{x} = 0$$

If $\bar{a}_{im}$ increases by 2% and the real interest rate falls by 4%, what will be the change in short-run output? Show your work.

7. What is the difference between the 'ex ante' real interest rate and the 'ex post' real interest rate? Which one is used for investment decisions? Briefly explain.