

Homework 2

Neoclassical Growth Model

Due date: October 30th

Your homework must be submitted using the link provided in the lab site.

1 Question I

Consider the neoclassical growth model without population growth and without TFP growth.

1. Write down the equation for the evolution of the capital stock in terms of the parameters of this model.
2. Compute the steady state of capital, k_{ss} , in this model. How does k_{ss} depend on the parameters in the model? Describe the economic intuition in your analysis.
3. Suppose an economy starts at $k_0 = 0.5k_{ss}$ where k_{ss} is the steady state. How long will it take the economy to be 1% away from steady state? You are required to write down a formula in terms of the parameters of the model.
4. How does your previous answer relate to δ and $(1 - \alpha)$?
5. Assume $\delta = 0.05$ and $\alpha = 1/3$ and $A = 1$. What is the actual number?

2 Question II

1. What is the definition of steady state?
2. What is the definition of balanced growth path?
3. What is the difference between a steady state and a balanced growth path?

3 Question III

Suppose you are hired by a hedge fund that wants to invest in the stock market of Haiti. The Republic of Haiti suffered a devastating earthquake in 2008. Do you expect Haiti to grow fast after the earthquake? Use the neoclassical growth model to make that claim.

4 Question IV

1. Describe the Kaldor facts.
2. Verify that the neoclassical growth model with technological change satisfies all six of the Kaldor facts. Please refer to a particular equation in the lecture notes to back up your views.
3. Do you think this is a successful model?