

Macroeconomics Honours 2017

Exercise Sheet 1

Question 1

Consider an economy described by the production function:

$$Y = F(K, L) = K^{0.3} L^{0.7}$$

- a) What is the per-worker production function?
- b) Assuming no population growth or technological progress, find the steady-state capital stock per worker, output per-worker and consumption per-worker as function of the saving rate and the depreciation rate.
- c) Assume that the depreciation rate is 10 percent per year. Show how the steady-state capital per-worker, output per-worker and consumption per-worker differs for increasing saving rates (construct a table.) What saving rate maximises output per worker? What saving rate maximises consumption per worker?

Question 2

- a) Provide a diagrammatic exposition of the Golden Rule for the Solow growth model.
- b) Suppose that the depreciation rate increases. Explain using a graph what will happen to the Golden Rule capital stock?