

Economics 100b, Fall 2005  
Sample Midterm Questions  
Chapter 5

1. Consider a small *Solow* economy, *country A*, where the investment rate is 0.16, the depreciation rate is 0.04, and TFP level is 25. The economy's number of population is 16,000.

(a) What is the level of capital per person ( $k$ ) and per capita income ( $y$ ) in the steady state in this economy?

(b) Assume the economy starts in the steady state. Suddenly, a hurricane destroys 1/2 of this economy's capital stock. Explain what happens to per capita income immediately after the hurricane and in the long run (Comment on the level and the growth rate of per capita income). What is the steady state level of per capita income?

(c) Explain how your answer in (b) changes if this economy receives a foreign aid of 1/4 of its initial capital stock immediately after the hurricane hits the economy. Assume the foreign aid is in the form of readily usable capital.

(d) Now, assume instead the government receives a fund from international community. Using that fund, the government can now afford a tax benefit policy for investment. That policy encourages investment and the investment rate doubles as a result. Explain long run the effects on per capita income.

2. Consider a neighbor economy, *country B*. This economy has the same depreciation rate, TFP level and the number of population. But the investment rate in this economy is 0.36. The hurricane only slightly hit the economy and the damage is small.

(a) What is the level of per capita income ( $y$ ) in the steady state in this economy?

(b) Assume this economy starts in the steady state. The hurricane destroys only 1/10 of its initial capital stock. Explain the effect on per capita income in this economy after the hurricane.

(c) Compare the growth rates of GDP per capita in two countries after the hurricane. Your answer for country A should be based on the result in 1. (b). Which economy is expected to grow faster? Which economy is richer in the long run?

(d) How does your answer in (c) change if you use the result in 1.(d) for country A?