

Macroeconomics, Module 4: "Working with the Solow Growth Model" (Chapter 4)

Homework Assignment: Convergence

(The attached PDF file has better formatting.)

Updated: November 14, 2007

Absolute convergence among countries does not occur for many reasons, two of which are discussed in this homework assignment. Equation 4.1 says that

$$(\partial k)/k = s \times (y/k) - s \times \delta - n$$

- A. The savings rate in poor countries is low, because people need all their income to buy food and clothing and pay for shelter. In rich countries, the savings rate is high, since the average income covers more than needed for basic necessities. If the savings rate s is positively correlated with output per capita, will convergence be more or less rapid than if the savings rate is uncorrelated with output per capita?
- B. The population growth rate in rich countries is often low. The reasons are debated (more access to contraception, secular cultures, no need for children to contribute to household work, desires by young adults for other goals besides building families. If the population growth rate n is negatively correlated with output per capita, will convergence be more or less rapid than if the population growth rate is uncorrelated with output per capita?

For each part of this homework assignment, give a one sentence intuitive explanation of

- What savings pays for.
- The capital costs of population growth.

Barro states the intuitive argument in the textbook. See the last paragraph on page 85 (savings rate) and last paragraph on page 86 (population growth rate).