Homework #3: Growth Models

Econ 352: Macroeconomics

1 Williamson Ch 6. problem 1: (3 pts)

In the Malthusian model, suppose that the quantity of land increases. Using diagrams, determine what effects this has in the long-run steady state and explain your results.

2 Williamson Ch 6. problem 6: (3 pts)

If total factor productivity decreases, determine using diagrams how this affects the golden rule quantity of capital per worker and the golden rule savings rate. Explain your results.

3 Williamson Ch 7. problem 5: (3 pts)

Suppose there are two countries, A and B, and each is a Solow growth model economy. In each country, a fraction a of the population is rich, and a fraction $1-a$ is poor. Suppose that rich people save a fraction s_r of their income, and poor people save a fraction s_p of their income, no matter what country they live in. In country A, suppose that rich people as a group receive a fraction x_A of total income, while in country B rich people as a group receive x_B fraction of total income. Assume that $x_A > x_B$.

- In steady state, how does country A differ from country B?
- How does income per person of the rich and poor compare across countries?
- If you were a poor person, where would you rather live, in country A or country B? What if you are rich?
- Explain your results.

4 Williamson Ch 7. problem 8: (3 pts)

Suppose that the government makes a one-time investment in new public school buildings, which results in a one-time reduction in consumption. The new public school buildings increase efficiency with which human capital is accumulated. Determine the effects of this on the paths of aggregate consumption and aggregate output over time. Is it clear that this investment in new schools is a good idea? Explain.