Intermediate Macro In-Class Problems

Exploring Unemployment

June 20, 2016

Today we will explore simple frameworks for understanding unemployment:

1 Comparative Statics of Simple "Bathtub" Model

How does the unemployment rate change with respect to each of the parameters ($\bar{L}$, δ, λ) in the simple "bathtub" model of unemployment?

2 Textbook Exercises

7.2

Suppose the government decides to reform the tax system to reduce the marginal income tax rate across the board. Explain the effect on wages, the employment-population ratio, and unemployment.

7.3

Suppose scientists discover a new way ot extract oil from deposits that were previously thought unrecoverable. The extra supply of oil leads oil prices to decline by $5 per barrel. Explain the effect on wages, the employment-population ratio, and unemployment – all for the overall economy.

7.4

Compute the present discounted value of the following income streams. Assume the interest rate is 3%.

1. $50,000, received 1 year from now.
2. $50,000, received 10 years from now.
3. $100 every year, forever, starting immediately
4. $100 every year, forever, starting 1 year from now.
5. $100 every year, for the next 50 years, starting immediately

7.8

[Suppose] a college education [raises] a person's wage by $30,000 per year, from $40,000 to $70,000. Assume the interest rate is 3% and there is no growth in wages, then answer the following.

1. Suppose you are a high school senior deciding whether or not to go to college. What is the present discounted value of your labor income if you forgo college and start work immediately?

2. As an alternative, you could pay $20,000 per year in college tuition, attend for 4 years, and then earn $70,000 per year after you graduate. What is the present discounted value of your labor earnings under this plan/ (Compute this value from the point of view of a high school senior.)

3. Discuss the economic value of a college education.