Problem Set 8

UCLA - Econ 102 - Fall 2018

François Geerolf

Optimal Taxation: The "Supply Side" (Neoclassical) View

Let us go back to the labor market model of lecture 6. Denoting the (hourly) wage by w, the price of consumption by p, and the number of hours (per year) by l, assume that moreover $\alpha = 0$ so that:

$$U(c, l) = c - B\frac{l^{1+\epsilon}}{1 + \epsilon}, \qquad f(l) = Al^{1-\alpha} = Al.$$

1. Derive the Labor Demand curve.

2. For labor supply, assume that the tax and transfer system is such that τ is the marginal tax rate, and c_0 is a real subsistence level of income given by the government:

$$pc = (1 - \tau)wl + pc_0$$

   Derive the Labor Supply curve.

3. Calculate the numbers of hours worked per year $\underline{l}$, as well real annual pre-tax income $y = (w/p) \cdot l$, as a function of the parameters of the model.

4. Compute the number of hours worked per year $\underline{l}$, as well as real pre-tax income $\underline{y}$ if $\epsilon = 2$, $\underline{\tau} = 1/4$, $\underline{A} = 1000000/28188 \approx 35.5$, $\underline{B} = 3000000/491569855488 \approx 6.1 \cdot 10^{-6}$.

5. Compute the number of hours worked per year $\bar{l}$, as well as real pre-tax income $\bar{y}$ if $\epsilon = 2$, $\bar{\tau} = 1/2$, $\bar{A} = 1000000/6264 \approx 159.6$, $\bar{B} = 1000000/218475491328 \approx 4.6 \cdot 10^{-6}$.

6. Assume that the population has $N = 150$ million people, with a fraction $\lambda = 0.9$ of the type described in question 4, and a fraction $1 - \lambda = 0.1$ of the type described in question 5. What is total output in the economy?

7. Assume that the tax system has two marginal tax rates: one 25% marginal tax rate above 70K, one 50% marginal tax rate above 200K. In other words, if income is y then taxes are:

$$T(y) = -5K + 0.25 \cdot \max\{y - 70K, 0\} + 0.5 \cdot \max\{y - 200K, 0\}.$$

   Note that $c_0 = 5K$ here. In other words, if income is zero, the government gives a transfer equal to 5 thousand dollars per year.

8. Assume a deficit financed tax reform that increases c_0 from 5K to 6K. What is the impact on output in this supply side model?

9. Assume a deficit financed tax reform that lowers the marginal tax rate on the richest by 5%. What is the total tax cut? What is the impact on GDP?

10. Assume a deficit financed tax reform that lowers the marginal tax rate on the poorest by 5%. What is the total tax cut? What is the impact on GDP?

Paul Krugman VS Robert Barro on the Bush tax cuts

Watch this debate between Paul Krugman and Robert Barro, moderated by Charlie Rose.

[1] "Sorry I don't know how to embed videos in PDF"
[1] "Use the html version, or the link: https://www.youtube.com/embed/O77GOSaJv5M"

1. Explain Robert Barro's view on taxes, using the previous exercise.

2. What is Paul Krugman's take on taxes?

3. What is the discussion on public debt, and the deficit ? Explain.

4. From 11:26 Robert Barro suggests to move from pay-as-you-go to "personal accounts". Explain their discussion in terms of problem set 7.