

Economics 500 Macroeconomic Theory and Policy
Fall 2011
Homework 1

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Due date: Friday, September 9, 2011

1. Briefly explain any policy implications associated with the switch from fixed-weighted real GDP calculations to chain-weighted real GDP calculations. One or two paragraphs will suffice. (See the readings on the course web page.)
2. In his paper, “The Stories We Tell...”, David Colander writes,

The problem of the AS/AD presentation of macro to students reflects larger problems in macro. It is not just a pedagogical problem; it is a problem of the way economists think about the macroeconomy and the way we treat textbook models.

What is that problem? What are the implications for the way we do and teach macro? What, if anything, should be done about it? References to the Solow paper might be appropriate. Don't worry if you don't have much of an idea about what should be done. By the final exam, you might!

3. Consider the static model (without government) developed in class. Assume that the representative firm has technology given by $y = zn$. Determine the $\frac{dl}{dz}$ and $\frac{dc}{dz}$ for the following utility functions and determine the sign of these derivatives (positive, negative, or zero).

(a) $u(c, l) = \ln c + \ln l$

(b) $u(c, l) = \frac{c^{1-\gamma}-1}{1-\gamma} + l$ where $\gamma > 0$

(c) $u(c, l) = c^{\frac{1}{2}} + \theta l^{\frac{1}{2}}$ Note: This is also the utility function used in #4 below.

4. Consider the following static model. There is a representative consumer with preferences given by

$$u(c, l) = c^{\frac{1}{2}} + \theta l^{\frac{1}{2}}$$

where c is consumption, l is leisure, and $\theta > 0$. The time endowment is equal to 1. The representative firm has technology given by

$$y = zn$$

where y is output, z is a technology factor, and n is labor. The wage is w .

- (a) Determine the Pareto optimal allocations ($c, l, n,$ and y).
- (b) Determine the competitive equilibrium allocations and prices (for the purposes of this exercise, work it out—don't appeal to the 1st Welfare Theorem).
- (c) Is the competitive equilibrium is Pareto optimal?