Economics 314 — Spring 2010

Project #4 Assignment — Due: 9am, Wednesday, February 24

Partner assignments

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Problems

1. **Romer's Problem 2.7.**
    - In part (c), you need to go back to the basic dynamics of the model and examine how $\delta > 0$ affects the equations of motion. Hint: There are changes to both curves.
    - **In addition to** drawing the change in the curves and the steady-state equilibrium values of k and c, show the immediate change and the path of convergence on the phase diagram.
    - **For all parts,** explain the economic intuition of the shifts in curve, immediate change, and steady-state change.

2. **Romer's Problem 2.9.**
    - In class (and in Romer's Chapter 2) we analyzed the effects of a lump-sum tax that is fully used up (spent) by the government. In that case, the tax had a (negative) wealth effect on the household budget constraint, but no substitution effect because of the lump-sum nature of the tax. In this problem, we analyze the opposite case: the tax is on capital income so it has incentive (substitution) effects, but all the tax revenues are redistributed with the average taxpayer getting back the same amount that she pays, so there is no wealth effect.
    - **In addition to your basic answers to each part**, explain the economic intuition surrounding the result. How are people changing their behavior and how is that affecting the aggregate output of the model?
    - Hints on part (d): Solve the steady-state condition $\dot{k} = 0$ for $f(k^*) - c^*$. For part (ii), do the investors/savers pay taxes based on the tax rate in their home country or in the country in which the capital is located? (The latter.)
    - Hint on part (e): Use the criterion of Pareto optimality to evaluate the change in welfare.

3. **Romer's Problem 2.10.**
    - This problem is much like the temporary change in government spending in class in that there is an expected future change in taxes. There are two sets of curves and two saddle paths: one when the tax is in force and one when it's not. As we discussed in class, these problems should be solved from end to beginning: to where does the economy converge after t_1, where does it need to be at t_1 in order to converge there, where does it need to be at 0 in order to get to that point at t_1?
    - **Once again, explain the economic intuition of your answers**.
4. **Romer's Problem 2.13.**
    - **Be sure to explain the economic intuition underlying your answers.**