University of Connecticut
College of Arts and Sciences
Department of Economics
Christian Zimmermann

Fall 2002, Intermediate Macroeconomics, section 3

ECON 219 Mid-term exam II

General recommendations:

- Read questions thoroughly and answer each.

- Work individually.

- There are four pages.

- No documentation, cell phones, pagers, calculators and bathroom breaks.

- You have until 12:15 and can leave early, if you wish.

1. **[30%]** Take the Solow growth model and assume the economy is at the steady state ("stable equilibrium"). A natural disaster hits and some of the economy's capital is destroyed.

    (a) Determine graphically the impact on the long-run quantity of capital per capita and output per capita.

    (b) In the short run, does aggregate output grow faster or slower than the labor force? Explain

(c) Are the predictions above replicated by some historical episodes?

2. **[20%]** In July 2001, the Federal Governement decided to reimburse part of the current government surplus to taxpayers. This prompted the following cartoon:

Discuss it in the light of what we covered in class.

3. **[20%]** Take the real intertemporal model with investment. Assume the economy is at the equilibrium. Unexpectedly, the level of current capital decreases.

   (a) Show graphically how the new equilibrium is determined.

   (b) How do the main aggregates change?

   (c) Is this consistent with the answers to 1.(c) (compare only what is comparable)? Explain.

4. **[30%]** Circle the correct answer to each of the following questions:

   (a) When drawn against the real interest rate, the optimal investment schedule I^d shifts to the right if:

      i. the current capital stock K increases.
      ii. the current capital stock K decreases.
     iii. the future capital stock K' increases.
     iv. the future capital stock K' decreases.

(b) Of the following business cycles stylized facts, how many are replicated by the real intertemporal model with investment with shocks to z: procyclical consumption, procyclical investment, procyclical employment, and procyclical real wages?

   i. One.

   ii. Two.

   iii. Three.

   iv. Four.

(c) In the Malthusian model, improvements in health care lead to:

   i. higher population and higher standard of living.

   ii. lower population and higher standard of living.

   iii. higher population and lower standard of living.

   iv. lower population and lower standard of living.

(d) Which of the following stylized facts of growth is **not** true:

   i. Capital per capita growths faster than output per capita.

   ii. Growth rates of output are very diverse across countries.

   iii. Labor and capital have constant shares of total income.

   iv. The rate of growth of factor inputs is not sufficient to explain the rate of growth of output.

(e) The slope of the output per worker function is equal to:

   i. the marginal product of labor.

   ii. the marginal product of capital.

   iii. the savings rate.

   iv. the growth rate of population.

(f) What characteristic of human capital is crucial in giving the possibility of sustained growth?

   i. It is embodied in people.

   ii. It has constant retruns to scale in production.

   iii. It takes time to accumulate human capital.

   iv. It grows at the same rate as consumption.