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Spring 2003, Intermediate Macroeconomics, section 3

ECON 219 Final Exam

General recommendations:

- Read questions thoroughly.
- Please respond on this copy.
- You have two hours.
- Work individually.
- There are six pages.
- Good luck!

Your name:

1. **[25 points]** Circle the appropriate answer on each of the following items. Circle multiple items if necessary:

   (a) The Solow residual attempts to measure the amount of output **not** explained by:
   a) technological progress; b) labor; c) capital; d) economic projections.

   (b) The per-worker production function relates output per worker to:
   a) capital per worker; b) the participation rate; c) production per worker; d) hours per worker.

   (c) In the Golden Rule steady state, the marginal product of capital is equal to the:
   a) savings rate plus the population growth rate; b) population growth rate plus the depreciation rate; c) depreciation rate plus the savings rate; d) none of the above.

   (d) The Fisher relationship may be described by the following equation in which R is the nominal rate of interest, r is the real rate of interest, and i is the inflation rate:
   a) $i = r + R$; b) $1 + i = \frac{1+r}{1+R}$; c) $1 + r = \frac{1+i}{1+R}$; d) $1 + r = \frac{1+R}{1+i}$.

   (e) The cash-in-advance constraint says that the nominal quantity of:
   a) credit goods cannot exceed the nominal quantity of money at the beginning of the period; b) cash goods cannot exceed the nominal quantity of money at the beginning of the period; c) credit goods cannot exceed the nominal quantity of money at the end of the period; d) cash goods cannot exceed the nominal quantity of money at the end of the period.

   (f) If an increase in the level of the money supply leads to a proportionate increase in prices with no effect on any real variables, we say that:
   a) the Fisher relationship holds; b) money is neutral; c) money is superneutral; d) money is a medium of exchange.

(g) The velocity of money is defined as:
a) $\frac{PM}{Y}$; b) $\frac{PY}{M}$; c) $\frac{M}{PY}$; d) PYM.

(h) The key element of monetary policy under monetarism is:
a) nominal interest rate target; b) real interest rate target; c) inflation rate target; d) money supply.

(i) In the Friedman-Lucas money surprise model, a surprise increase in the money supply:
a) increases the real wage; b) decreases the real wage; c) increases the real interest rate; d) decreases the real interest rate.

(j) In the United States, money nowadays comprises:
a) commodity-backed paper currency; b) fiat money; c) transaction deposits at private banks; d) private bank notes.

2. **[8 points]** In the intertemporal model with money, the interest rate of the previous period increases. How does the labor supply react? Why?

3. **[12 points]** What is the Friedman Rule? Why does it say that? What would the monetary authority need to set to zero to implement it?

4. **[7 points]** Explain why human capital might generate endogenous, sustained growth.

5. **[8 points]** Why are mint postage stamps not used as money?

6. **[40 points]**

   (a) Take the intertemporal model with money. Show graphically the impact of a positive z shock on r, P, Y, N, w.

(b) Repeat the exercice with a positive M^s shock.

(c) Discuss the cyclical behavior of C, I, P, w, N if the economy were hit by positive z shocks in the intertemporal model with money. Repeat the exercice with M^s shocks.

(d) Now take the Friedman-Lucas money surprise model. Show graphically the impact of a positive z shock.

(e) Discuss the cyclical behavior of C, I, P, w, N if the economy were hit by a positive z shock in the Friedman-Lucas money surprise model.

(f) What would change if there were a positive M^s shock in the Friedman-Lucas model, instead of a positive z shock?

(g) Discuss which model is better able to replicate the observed behavior of the U.S. economy if the shocks assumed above are the only ones occuring, that is which model is more likely to be a true representation of the business cycle and which shock is more likely to explain business cycles.

7. **Bonus question [10 points]** Describe circumstances in which hyperinflation could occur, that is inflation rates that would be in excess on 100% a year and increasing. Explain why the central bank might want to accomodate this inflation with its monetary policy.