Economics 314 Spring 2006
Final Exam May 10, 2006

Instructions

- This exam is closed-book; no outside materials may be consulted. You may write your answers wherever you wish, but if any errors or ambiguities are discovered, they will be announced only in Vollum 116.
- Please answer the questions on the exam paper itself.
- Answer each question concisely. None requires a long answer. Add a graph or equation if it clarifies your answer, but be sure to label axes and curves and to define variables that might be ambiguous.
- You have until noon to finish the exam. If time seems scarce, use it where its marginal product is highest. Try to get at least a sentence or two written for every question before you elaborate at length on any single answer. If you follow the time guidelines for each problem, you will have 45 additional minutes to refine your answers.
- You are responsible for making sure that you understand each question clearly. In case of any ambiguity, be sure to consult the instructor, who will be in his office.
- Questions marked "TFU" are "true-false-uncertain" questions. Tell which the statement is and explain why. Points will be awarded on the basis of your explanation.
- Please bring your completed exam to my office.
- Have a wonderful summer! (You may work past noon on this part.)

Name:

Instructions for returning exam:

❑ Hold for me to pick up.

❑ Send to Reed box number _____.

❑ I'll bring a stamped, self-addressed, large envelope.

❑ Recycle it.

Part A: Fill in the blank or circle the correct choice, and explain your answer briefly. (5 minutes each)

1. In the Solow growth model, an increase in the saving rate leads to a higher / lower steady-state growth rate / level of per-capita income.

2. The matching function in the labor market expresses _____ as a function of _____ and _____.

3. The only difference in assumptions between the Solow and Ramsey growth models is that in the Solow model _____ is constant and in the Ramsey model it is determined by _____.

4. Wage indexation should be most common in economies that are subject to unpredictable shocks to _____. Greater indexation makes the short-run aggregate supply curve _____.

5. Endogenous growth usually occurs when there are _____ returns to _____ inputs.

6. The Lucas imperfect-information model predicts that _____ changes in monetary policy should be neutral.

Part B: Write a short essay to answer each question.

7. (15 minutes) In the *IS*/*MP* model, the central bank's policy decision is represented by an interest-rate reaction function $r = r(Y, \pi)$. Suppose that the 2006 U.S. economy is in full-employment equilibrium with an inflation rate of 3%. Now suppose that Ben Bernanke, the new chair of the Federal Reserve Board, has a lower tolerance for inflation than his predecessor and decides to tighten monetary policy. In other words, they set a higher r for given levels of Y and π.

(a) Treating the United States as a closed economy, show graphically and explain in words what will happen to output and the equilibrium real interest rate in the short run, with inflation fixed.

(b) Show graphically and explain the long-run effects of this policy change on output, the real interest rate, and inflation.

8. (10 minutes) Explain the intuition behind the following equation from the matching model of unemployment: $rV_F = (A - w - C) - b(V_F - V_V)$.

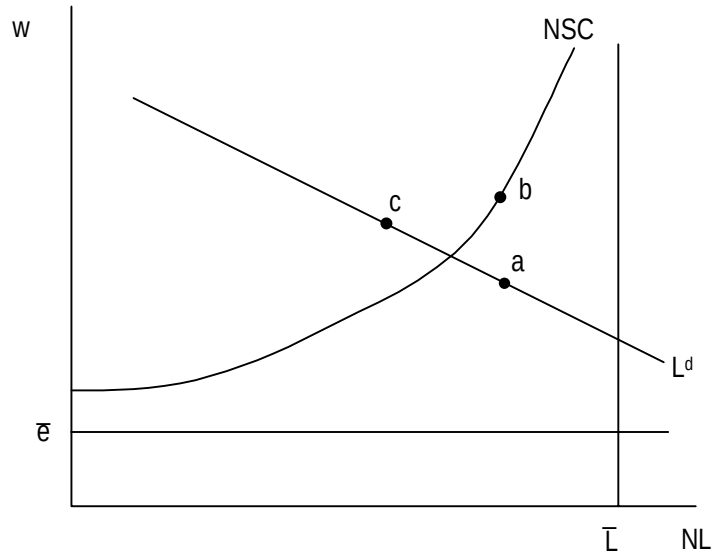
9. (10 minutes) Briefly explain why the following combination of observations is problematic for the real-business-cycle model: Real wages are mildly procyclical; employment is strongly procyclical; and labor supply is inelastic.

10. (15 minutes) One common test of growth models to examine the convergence hypothesis using a regression of the form $g_i = \alpha + \beta y_i + \varepsilon_i$, where g_i is the growth rate in country i over some period, y_i is the log of the country's per-capita income level at the beginning of the period, α and β are parameters to be estimated and ε_i is a random error term.

(a) How would you interpret the estimated parameters of this model to test the hypothesis of absolute convergence?

(b) When econometricians have run this regression using all countries for which data are available (100+) and no additional variables, what result have they found? How is this result interpreted?

11. (15 minutes) The figure below depicts the labor market in the Shapiro-Stiglitz model.



(a) For points *a, b,* and *c*, explain in economic terms why each point is *not* an equilibrium. (Do not just say "it's not on the NSC curve.")

(b) On the graph, identify the equilibrium levels of employment and unemployment.

(c) Show on the graph and explain in words what would happen to employment, unemployment, and real wages if the development of cheap electronic sensors allowed the firm to monitor its workers' activities more easily.

12. (15 minutes) Why are prices sticky?

13. (15 minutes) In their original 2002 paper, Mankiw and Reis assume that price-setters receive information with a random lag.

(a) How do they extend the assumption of sticky information in their 2006 working paper?

(b) What stylized empirical facts about business cycles are they able to explain with these new assumptions that could not be explained with the original model?