ECON 200A
Spring 2008

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Review Question for Final Exam
Final Exam Date: Monday, May 19th (5:15pm)

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These review questions cover applications, focusing on IS/MP/IA analysis (see the additional problems I handed out in class for more technical IS/MP/IA problems). Please review the readings and problems in the homework to insure that you are familiar with the models studied in class, especially for material from the homework.

Sources of Business Cycles

1. Use the IS/MP/IA Model to answer the following questions.

   (a) 2001 recession: Low interest rates and low inflation. What are the possible sources of this recession (name at least three)? Explain and illustrate.

   (b) 1990-91 recession: High interest rates and low inflation. What are the possible sources of this recession (name two)? Explain and illustrate.

   (c) 1974-75 recession: High interest rates and high inflation. What are the possible sources of this recession (name two)? Explain and illustrate.

The Great Depression

2. Use the IS/MP/IA Model to answer the following questions. The Great Depression (1929-1933) marks the beginning of short-run macroeconomic analysis. Business cycles occurred (and were more severe in the pre-WWII economy) prior to this, but this recession was exceptionally severe. The different theories studied in class have different approaches to identifying the sources of the Great Depression. During the Great Depression, the economy experienced deflation, low nominal interest rates, contraction in real GDP, and decrease in employment.

   (a) Keynes claimed the Great Depression was caused by "animal spirits". That is, a change in business (and consumer) confidence. Explain and illustrate the short-run effects of a reduction in consumer and business confidence.

   (b) Friedman and others claimed the Great Depression was caused by a reduction in the money supply/increase in interest rates. Both Fed policy and the widespread failure in the banking system led to a severe contraction in deposits and the money supply. Explain and illustrate the short-run and long-run effects of a reduction in the money supply.

   (c) Suppose that you are a real business cycle theorist. How would you explain the Great Depression? Explain and illustrate.

   (d) How would you identify which of these theories is correct using empirical analysis? Explain.

   (e) Economists have long debated the sources of the Great Depression. All but two of the schools of thought point the finger at policy makers, either for acting poorly, or for failing to act. Explain how the following theories would address the role of policy makers (if at all): (i) Keynes and New Keynesians, (ii) Lucas (new Classical), and (iii) Real business cycle.

Fighting Inflation

3. Use the expectations-augmented Phillips Curve to answer the following questions. Suppose that the economy is currently producing at the natural rate of output. The Fed wants to reduce the economy's long-run inflation rate.

   (a) Illustrate how the Fed can achieve this policy objective. Be sure to clearly indicate the short-run and long-run effects of this policy.

   (b) Using the following three theories, explain how the economy transitions from its short-run to long-run equilibrium: (i) New Keynesian, (ii) Lucas signal extraction

   (c) How long do the short-run effects of this policy last? Compare in terms of the theories mentioned above. How would this depend on the Fed's committment to low inflation and whether or not it announces the policy in advance.

   (d) For a long time, the Fed fought off pressure to announce its policy to the public. Prior to 1998, the Fed did not publically announce its policy, meaning that people, businesses, and banks had to guess what the Fed was doing and why. If the Fed's primary objective is to maintain low inflation, was it a good idea to "go public"? How might your position depend on the three theories mentioned above?

   (e) Paul Volcker and the FOMC implemented this policy in 1979. When Volcker came up for reappointment by Reagan in 1987, the President opted not to reappoint him, fearing Volcker was too hawkish on inflation. As an economist, how would you address the President's concerns? As a political advisor, what would you say?

Quiz of Aggregate Supply Theories

4. Evaluate the following statements and determine which model(s) is(are) being described. Most of these statements are taken from Romer and undergraduate textbooks - I've made some modifications in brackets where appropriate. In some cases, the statement may be consistent with more than one model. You should explain why you've identified the model(s) with a particular statement.

   (a) This model provides an example of an economy where real shocks drive output movements. Because the economy is [perfectly competitive], the movements are optimal responses to shocks. Thus, contrary to convential wisdom about macroeconomic fluctuations, here fluctuations do not reflect any market failures, and government interventions to mitigate them can only reduce welfare.

   (b) If there are some longer-term nominal contracts, then even fully anticipated monetary policy affects the behavior of output and there is room for a stabilizing monetary policy.

   (c) The [model] shows that the adjustment of some prices can have a disproportionate effect: a small fraction of price-setters making large price changes can be enough to generate [money] neutrality in the aggregate.

   (d) An increase in employment can only occur to the accompaniment of a decline in the rate of real wages.

   (e) If the real wage is cyclical at all, it is slightly procyclical: the real wage tends to rise when output rises. Abnormally high labor costs cannot explain the low unemployment and output observed in recessions.

   (f) Changes in aggregate demand have the biggest effect on output in those countries where aggregate demand and prices are most stable.

(g) In countries with low average inflation, the short-run aggregate supply curve is relatively flat: fluctuations in aggregate demand have large effects on output and are slowly reflected in prices.

(h) If the price level is higher than the expected price level, output exceeds its full employment level.

(i) Private incentives produce too much price adjustment following an expansion in aggregate demand and too little price adjustment following a contraction in demand [in terms of welfare].

(j) Policy can systemmatically exploit the inflation-unemployment tradeoff.

A Stochastic Real Business Cycle Model

5. Assume households live for two periods and earn wage w_t in each period, earn a constant interest rate r on savings, and have the following lifetime utility function with discount factor β:
$$U_t = \log(C_1) + b\ln(1 - l_1) + E\{\beta[\log(C_2) + b\ln(1 - l_2)]\}$$

(a) Write out the household's lifetime budget constraint.

(b) Set up the Lagrangian and find the first order conditions for the household maximization problem.

(c) Combine the appropriate FOCs to explain the household's labor-leisure choice (you can focus on the choice for period 1).

(d) Show that a positive technology shock will cause households to work more. Explain why this is the case, referring to your answer to question 3.

(e) Derive the Euler equation for this economy. Explain the household's consumption-savings decision in terms of marginal cost and marginal benefit.

(f) Does the permanent income hypothesis hold in this model? Explain why or why not.

(g) Does consumption follow a random walk (with or without a drift) in this model? Explain why or why not.

Unemployment and the Phillips Curve

6. Suppose that effort is a function of the preveiling wage w, the unemployment rate u, and the average wage paid w_a :

$$e = \begin{cases} \left(\frac{w-x}{x}\right)^{\beta} & \text{if } w > x \\ 1 & \text{otherwise} \end{cases}$$
$$x = (1 - bu)w_a$$

where $0 < \beta < 1$ and $b > 0$. There are <u>perfectly-competitive</u> firms with profits defined as:

$$\pi = Y - wL$$

where the production function is
$$Y = F(e(w)L)$$

(a) Find the first-order conditions for the firm's maximization problem.

(b) Find the equilibrium (profit-maximizing) real wage w^* and unemployment rate in terms of the parameters β and b.

(c) Explain the intuition for how this model implies there is an equilibrium with unemployment. That is, why is the equilibrium real wage different from the market-clearing real wage w^m?

(d) The efficiency wage model above is a relatively general. Discuss one specific model (tell a story) for why worker effort depends on the real wage and why it is profit-maximizing for firms to set the wage at w^* instead of w^m.

(e) Is the efficiency wage model consistent with real business cycle theory? Explain why or why not in terms of the assumptions and implications of the real business cycle model.

(f) Are the rigidities in the efficiency-wage model real or nominal? Will an decrease in aggregate demand cause an increase in unemployment in this model? Explain briefly.

(g) Compute the natural rate of unemployment for the following expectations-augmented Phillips Curve:
$$\pi_t = \pi_t^e + \theta - \gamma u_t$$

(h) What does the parameter θ depend upon? Note carefully the assumptions above.

(i) How would your answers to (f) and (h) differ if the firms were monopolistic competitors? Explain and clearly state any assumptions you are making in your answer.

Consumption Theory

7. Consider the following consumption function:
$$C = \alpha + \beta Y$$

where α is a positive constant and β is between 0 and 1.

(a) Is this consumption function consistent with Keyes' assumptions? Explain (you should mention his assumptions in your explanation) and show that this is the case.

(b) What is the consumption puzzle? Explain.

(c) Is this consumption function consistent with permanent income hypothesis (PIH)? Explain and show that this is the case.

(d) How does the PIH explain the consumption puzzle?

(e) In the data, it appears that the elderly do not dissave much. How would the permanent income hypothesis (PIH) explain this?