

Final Exam

*Directions: Answer all questions. Point totals for each are given in parentheses. Remember, to receive full credit you must provide **complete explanations** for your answers. Relax and Good Luck. And, most important, enjoy your summer — after exams are over.*

1. (20) Contrast Ricardian Equivalence and the Tax Smoothing Hypotheses. In particular, discuss how it is possible for economists to reach such different conclusions in the analysis of fiscal policy? In your answer, be sure to identify the thought experiment associated with both theories.

Answer: The thought experiment in both cases is determining the optimal path of taxes holding the path of government expenditures fixed. This is one reason why empirical testing is so difficult since it requires some method in which, statistically, government expenditures are kept constant...this is not easy to do. The big difference between the analysis is the assumption about the tax options: in Ricardian Equivalence, taxes are assumed to be lump sum while in the Ramsey problem they are distortionary. If lump sum, the only impact that taxes have is through the budget constraint and here it is the PDV of taxes, not the taxes in any particular period. But the PDV of taxes is pinned down by the PDV of govt. expenditures so the timing of taxes does not matter. In contrast, with distortionary taxes the govt. wants to minimize the distortions caused by the taxes. The way to do this is to be consistent with the smoothing behavior of households - i.e. keep the MU of consumption relatively constant over time. Hence the path of distortionary taxes should be relatively smooth.

2. (20) What in God's name is the "intertemporal Euler equation" and what does it have to do with monetary policy?

The intertemporal Euler equation is the necessary condition associated with the consumption/saving decision facing households each period. It is:

$$U'(c_t) = \beta E_t [U'(c_{t+1}) R_{t+1}]$$

This expresses the MC=MB tradeoff associated with the savings decision. Linearizing this expression gives us the modern IS curve which links up real interest rates and the output gap. See the derivation of this on the slides on the web site.

3. (15) In Euroland, businessmen are prone to waves of skepticism and optimism which translates into their investment decisions. Based upon Poole's analysis, should the European Central Bank target the money supply, inflation, nominal GDP, or interest rates? Use graphs to support your answer.

See the graphs in Poole's paper - Figures III and IV.

4. (10) Canada and the United Kingdom have both adopted a policy of inflation targeting. Why in heaven's name would they do such a thing?

See the slides associated with inflation targeting in CGG Part II.

5. (15) In the tax bill that was recently signed into law by President Bush, the tax rate on corporate dividends will be reduced. Many economists, using empirical analysis, have forecast that this policy change will increase the demand for stock and, therefore, result in an increase in stock prices. Do you believe this forecast? (Base your answer **solely** on topics and theories discussed in class.)

This is a question about the Lucas critique. The empirican analysis mentioned in the question would be subject to the same criticism that Lucas leveled at Hall and Jorgenson.

6. (10) Give the dates (roughly) of four recessions since the end of the Korean War.

See C. Romer's paper.

7. (15) In the paper by Clarida, Gali, and Gertler, they derived a simple relationship between inflation and the output gap implied by optimal monetary policy. This relationship is:

$$x_t = -\frac{\lambda}{\alpha} \pi_t$$

What is the intuition behind this rule? What is the implication for monetary policy?

This is the optimal monetary policy rule and expresses the MC=MB tradeoff - see the slides (in Part II) that illustrates this with an example of positive inflation. The implication is that the Fed needs to "lean against the wind" - inflationary periods require a negative output gap - i.e. a recession.

8. (15) Analyze the following quote: “From the context of the Taylor rule, it appears that the Fed did a poor job in conducting monetary policy in the 1970’s.”

This is true. See the slides on the Taylor rule - the problem was that the Fed did not raise the nominal interest rate enough when inflation picked up so that real interest rates fell rather than were increased. This led to increased demand which caused higher inflation ..and lower real interest rates. The consequence is an inflationary spiral.