

Final Exam

Econ. 116

December 22, 2015

180 MINUTES (one point per minute)

Part I.

(45 minutes)

Answer each of the following questions in the time allowed.

1. (6 minutes) Explain why the Laffer curve is consistent with the standard microeconomic theory of labor supply. What are the quantitative issues involved in analyzing whether the Laffer curve is a realistic description of reality?
2. (6 minutes) How does a stock market boom affect the current account deficit and the government budget deficit, other things being equal? Explain the mechanisms.
3. (6 minutes) In the AS/AD model the export (EX) multiplier is the same as the government spending (G) multiplier. A balanced budget amendment makes G endogenous, but we can still talk about the export multiplier. How is the export multiplier changed under a balanced budget amendment and why?
4. (5 minutes) Say that an economy has a Cobb-Douglas production function in capital and labor with a coefficient of 0.3 on capital and 0.7 on labor. Say that the growth rate of capital increases by 2 percent. What effect will this have on the growth rate of output? Say instead that the growth rate of human capital increases by 2 percent. What effect will this have on the growth rate of output? What does it mean to say that human capital is growing?
5. (6 minutes) What is the definition of a discouraged worker? If the number of discouraged workers increases, what does this do to the unemployment rate, other things being equal? Some argue that the unemployment rate as measured by the government is too high. What is this argument?

6. (6 minutes) Random experiments are an important part of development economics. Why is randomization so important? Give an example of a random experiment in development. If you don't know of any specific experiment, make one up that seems plausible.
7. (5 minutes) Last Friday the Bank of Japan said that it was going to begin buying Japanese corporate stocks in hope of stimulating the economy. If Japanese output does increase, how will this happen?
8. (5 minutes) Explain why the transfer payment multiplier is smaller than the multiplier for government purchases of goods.

Part II.

(45 minutes—9 minutes each)

Answer each of the following questions in the time allowed.

1. The standard story about the effects of a currency depreciation on a country's economy is that a depreciation is expansionary and inflationary. There are many examples, however, some reported by students in class, where a depreciation is contractionary (but still inflationary). Why in practice might a depreciation be contractionary, i.e., why might a depreciation lower output? Give at least two reasons.
2. It is commonly said that production is smoothed relative to sales and that employment is smoothed relative to production. What are the theories of firm behavior that lead this to be true?
3. As should be obvious from this course, expectations play a large role in macroeconomics. Discuss two examples (there are many) where ignoring expectations would lead to a misleading view of how the economy works. Expectations do not have to be rational, but some may be. What is the definition of rational expectations?
4. It is sometimes the case that a large increase in inventory investment in a quarter is bad news for future output. Why might this be the case? How does this relate to the adjustment-to-equilibrium story that was explained in the early part of the course?

5. Explain the three “leakages” behind Okun’s law. Since 2009 there has been a fairly fast recovery regarding the unemployment rate, but not regarding output. What is the explanation for this?

Part III.

(45 minutes)

Answer each of the following questions in the time allowed.

1. (10 minutes) If a country’s inflation rate relative to other countries’ inflation rates was high for a number of years and the country was not letting its exchange rate depreciate, what would likely happen? Why can’t a situation like this go on forever? In other words, why can’t a country continue to keep its exchange rate from depreciating for as long as it wants?
2. (10 minutes) Why if there is a surprisingly positive employment announcement, long term bond prices will immediately fall? The effect on stock prices, on the other hand, is ambiguous. Why? Say instead that the employment announcement is as expected, but that the Fed surprisingly announces an increase in its interest rate target? What will stock prices do in this case and why?
3. (10 minutes) Before 2008 banks held no excess reserves. Explain in this case how through open market operations the Fed can increase the interest rate. Be specific on what causes the interest rate to rise. Don’t just shift curves without explaining the theory behind them—although you don’t have to use curves.
4. (10 minutes) It was explained in class and in the text a possible way the Fed might increase the interest rate in the current regime where banks hold huge quantities of excess reserves. Last Wednesday the Fed announced an increase in the interest rate of 25 basis points. The way in which the Fed said it would do this (since traditional open market operations don’t work) is exactly the way explained in class and in the text! Explain what this way is and exactly how this way will lead to an increase in, say, the three-month Treasury bill rate.
5. (5 minutes) The increase in the interest rate by the Fed on Wednesday was not a surprise. The wording that went with it, however, was a little more cautious about future interest rate increases than expected. Long term interest rates have gone down since the announcement. How can this be explained?

Part IV.

(45 minutes)

Answer each of the following questions in the time allowed.

1. At the end of this exam is a list of the equations of the standard AS/AD model. The first page is for the closed economy model, where variables EX and IM are exogenous. The coefficients, which would be estimated by the econometrician, are $a, b, d, h, \delta, \epsilon, \zeta, \alpha, \beta$, and γ . All these coefficients are assumed to be positive.
 - (a) (9 minutes) What other variables affect consumption, C , aside from current disposable income, Y_d . In other words, give a more realistic description of how current consumption is determined in the economy than is implicit in the consumption function in the AS/AD model.
 - (b) (9 minutes) What other variables need to be added to the investment equation to make it more realistic?
 - (c) (9 minutes) The AS curve is specified that P is a linear function of Y . In practice the AS curve is probably nonlinear—curving upward as Y increases. Why is the AS curve likely to be curved upward? Explain carefully. If the coefficient ϵ is zero, as some argue, then the AS curve is vertical. What is the argument for a vertical AS curve?
2. The second page below adds the equations for the two-country open-economy model. Note that the stars on the variables are for the other country and that the other country has the same equations as the first country (with stars added), with the Fed rule being instead the rule of the other country's monetary authority. Country 1 is the United States. Assume that the other country is the U.K. The coefficients, which would be estimated by the econometrician, are $\theta, m, \psi, k_0, k_1$, and k_2 . All these coefficients are assumed to be positive.
 - (a) (9 minutes) Say that G^* increases. Drop the exchange rate equation, and assume that the exchange rate does not change after the G^* increase. Assume that the interest rate is not at the zero lower bound. Both r^* and r increase. Why? Both P^* and P increase. Why? What happens to I^* and I and why? Be specific about the steps in your answer.

- (b) (9 minutes) Say that PM^* increases (but PM doesn't). Assume that the exchange rate equation is in (not dropped). Assume that the interest rate is not at the zero lower bound. What effect does the PM^* increase have on P^* , r^* , Y^* , and C^* ? Is it likely that the dollar will appreciate or depreciate relative to the U.K. pound? Explain.

AS/AD MODEL WITH FLEXIBLE EXCHANGE RATES

- $Y_d \equiv Y - T$ Definition
- $C = a + bY_d$ Behavioral (households)
- $I = d - h \cdot r$ Behavioral (firms)
- $Y = C + I + G + EX - IM$ Equilibrium condition
- $TAX = tY$ Behavioral (government)
- $T \equiv TAX - TR$ Definition
- $P = \delta + \epsilon Y + \zeta PM$ Behavioral (AS curve, firms)
- $r = \alpha Y + \beta P + \gamma Z$ Behavioral (Fed rule)

Definition of e

- $e = lc/\$$ —how much local currency one U.S. dollar can buy. (The United States is country 1—the country with no * on its variables.)
- e increasing is a depreciation of lc, appreciation of \$.
- e decreasing is an appreciation of lc, depreciation of \$.

Equations

- $IM = \theta + mY + \psi \frac{P}{PM}$ Import demand (households, firms, government)
- $PM \equiv \frac{1}{e} P^*$ Definition
- $EX \equiv \frac{1}{e} IM^*$ Definition
- $e = k_0 + k_1 \frac{r}{r^*} + k_2 \frac{P^*}{P}$ Behavioral (market determined exchange rate)

Exogenous variables are $G, TR, t, Z, G^*, TR^*, t^*, Z^*$.