Exam #1: Part I

Business Cycles & Forecasting
Economics 392

Date: 10/15/2015
Instructor: Dr. I-Ming Chiu

Instructions:

1. Please answer **any Two Question** (15 points/each) from part I (A) and **any other TWO questions** (20 points/each) from part I (B) in the provided **blue book**.
2. **Detailed explanations are essential for earning more points**. Please present all the required graphs, calculation processes and explanations in your work.
3. I'll collect the following: **exam questions (this one)**, **blue book** and **exam part II (R part),** after you finish.

Part I (A) (30%)

Q1. a) What is the most commonly used monetary policy tool by the Fed when it wants to reduce the money supply (5 pts)?
b) Please use an IS-LM diagram to explain how the Fed's action in (a) affects the interest rate (r) and real GDP (Y). (10 pts) (Hint: you have to consider the impacts of monetary policy in both goods and money market)

Q2. Please analyze how each of the following event affect real GDP (Y), aggregate price (P) and interest rate (r) by using both the IS-LM and AD-AS diagrams. In your diagrams, you only need to show the required shifts and the effects on Y, P, and r.
a) A domestic currency appreciation. (5 pts)
b) A tax cut. (5 pts)
c) An increase in the global oil price. (5 pts)

Q3. a) What's the most volatile one among the four spending components? Can you explain why it fluctuates so much/often and thus can be regarded as a possible cause of the business cycles? (9 pts)
b) Please provide two reasons why the aggregate demand has a negative slope. (6 pts)

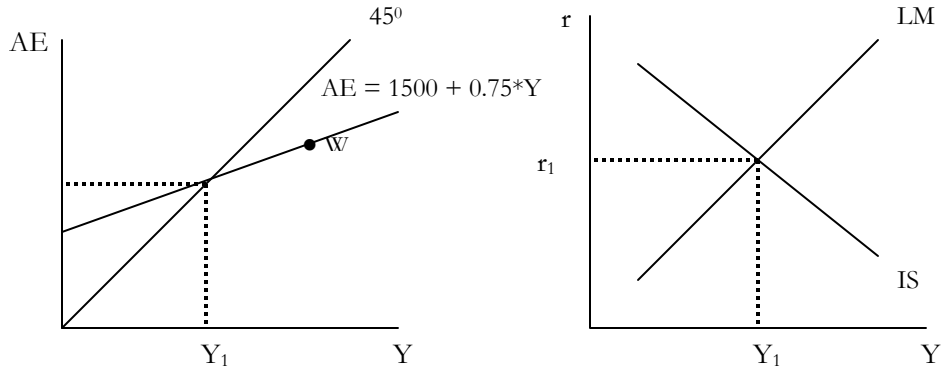
Part I (B) (40%)

Q4. The following three difference equations are the mathematical representation of Samuelson's famous Accelerator-Multiplier model. Please (a) explain the economic meaning of alpha and beta, respectively, in the model, (b) compute the magnitude of Y, I and C for the first three periods (i.e. t = 1, 2 and 3) and present them using a table.

$\alpha = 0.75$ and $\beta = 2$

$Y_t = C_t + I_t + G_t$ (t is the time index and it begins at the first period; t = 1)
$C_t = \alpha * Y_{t-1}$
$I_t = \beta * (C_t - C_{t-1})$
G_t = \$1 (government spending is \$1 for every period; $G_1 = G_2 = \ldots =$ \$1)
$C_1 = I_1 =$ \$0

Q5. Use the following 45°-expenditure line diagram and the corresponding IS-LM diagram to answer the following questions.



Use the 45°-expenditure line diagram
a) Suppose real GDP is \$6800 at point W, what does W represent? How the equilibrium can be restored at Y_1?
[b) Find the equilibrium GDP at Y_1.
c) If government spending increases by \$100, please find and show the new equilibrium GDP by reproducing the diagram in your bluebook.

Use the IS-LM diagram
d) According to (c), please show the change in the IS-LM diagram and indicate where the new GDP is. Is this an equilibrium point in both goods and money market?

Q6. A simple Keynesian model (IS-LM) is shown as follows:

Goods market:
$Y = C + I + G + NX$
$C = 600 + 0.8*DI$ (DI: disposable income = Y - T)
$I = 800 - 2000*r$ (r: inerest rate)
$G = 1100$
$NX = 600 - 0.1*Y$
$T = 0.25*Y$ (a proportional income tax system)

Money market:

Real money supply: $(\frac{M}{P})^S = 1000$

Real money demand: $(\frac{M}{P})^d = 1500 - 10000*r$ (r: inerest rate)

a) How large is the equilibrium GDP?
b) Is the govenemnt running a budget surplus or deficit when Y is in equilibrium? How large is it?
c) What does potentail GDP mean? Suppose the potential GDP equals 6200, what kind of economic problem may occur in the economy?
d) To solve the economic problem in part (c), what kind of monetary policy action would you recommend? What's the size of money injection/withdraw needed to help the economy return to its potential GDP level?