Problem Set 4 (Related to Ch. 8-11 in Case and Fair)

1) a) Show the effect of an increase in Planned Investment Spending (\(Y_E\) is the Keynesian Equilibrium level). If \(Y_E\) was originally $400 and I increased by $100, would \(Y_E\) change by more or less than $100? Briefly explain why.

2) If \(C = 50 + .8Y\), \(I = 30\) and there is no government (so \(T = G = 0\)), what is Keynesian equilibrium? How would the economy adjust to this equilibrium if it started at a different level of output (= income)?

3) a) If \(C = 50 + .8Y\), \(I = 30\); \(G = 50\), \(T\) (lump sum net tax) = $50, \(EX = 20\) (exports), and \(IM\) (imports) = $20, What is the Keynesian equilibrium? Draw this.
b) Explain the significance of the 45% line.
c) What is on the vertical axis and in what units is it measured?

4) a) Start with the same numbers as in #3. Assume \(G\) increases to 60, what is the new Keynesian equilibrium level of income?
b) Assume \(G\) is $60, and \(T\) increases to $60. What is the new Keynesian equilibrium level of income? How does this compare to your answer in #3? How is your answer related to the Keynesian balanced budget multiplier?
c) Assume initially \(C = 50 + .8Y\), \(I = 30\); \(G = 50\), \(T = 50\), \(EX = 20\), and \(IM\) (imports) = $20. If \(T\) decreases to $40 and all else remains the same, what is the new Keynesian equilibrium level of income?

5) Short answer:
a) What is the slope of the Keynesian consumption function (assume as we do in Chapters 8 and 9, that tax is “lump-sum” and imports are a constant, so the only category of induced expenditure is consumption)?
b) What is the difference between planned and actual investment?
c) What macroeconomic variable would we look at to tell if \(Y_E > Y_C\); or \(Y_E < Y_C\)? (\(Y_E = \) Keynesian equilibrium \(Y_C = \) current output level).
d) What is the formula for the (autonomous spending) multiplier?
e) What does the term \textit{animal spirits} mean in the Keynesian model?
f) How could a change in these animal spirits cause a recession?
g) Which component of aggregate planned expenditures (\(C, I, G\) or \(NX\)) is initially most affected by a change in animal spirits?
h) How does the term “herd mentality” relate to the Keynesian model?
i) What is a (federal fiscal) budget deficit and how is it related to the “national debt?”
j) What are “automatic stabilizers”?
k) What is the difference between structural and cyclical budget deficits? How is your answer related automatic stabilizers?

6) a) What happened to the budget deficit during the late 1990s? How did the expansion affect the deficit?
b) What has recently happened to the budget deficit? How does the current economic condition of the U.S. affect the budget deficit?

7) a) List three things included in the M1 definition of money. Are credit cards generally considered money?
b) Inside prison camps during W.W.II, cigarettes came to be used as money. Describe how each of the three functions of money could be provided by cigarettes and briefly discuss any potential difficulties.
c) Rank the following assets in terms of liquidity, 1 being the most liquid, 4 the least:
   _____ T-Bill _____ Savings Account _____ Seiko watch _____ Gold Tooth Filling

8) What have been the three primary activities of “banks”?
9) How will each of the following effect the money supply?:
   ii) The reserve requirement on deposits is increased.
   iii) The Fed lowers the “discount rate” and increases its amount of “discount loans” to banks.
   iv) People withdraw money from “deposits” (checking accounts) to hold currency instead.

10) True or False?
   a) Alan Greenspan is Chairman of the Board of Governors of the Fed.
   b) The independence of the Fed leaves it completely unaccountable to government for its actions.
   c) There are 7 members of the Fed’s Board of Governors and 12 members of the FOMC.
   d) The Fed earns interest on its most important assets, but pays no interest on its most important liabilities.
   e) The Fed depends on tax revenues for its operating budget.

11. What are the three most powerful tools which the Fed may use to influence the money supply? Which of these does the Fed use most frequently and why?

12. Short Answer:
   a) Can the federal government (including the treasury department but not “the Fed”) decide to finance deficit spending by money creation? Why or why not?
   b) What does it mean to “monetize the debt”?
   c) How is “the Fed” different than the U.S. federal government? Who prints bonds?
   d) What is “money”? Describe the difference between M1, & M2.
   e) What are the three basic functions of money?
   f) Distinguish between the “Federal Reserve System” and the “Commercial Banking System”? What role does each play in money creation?
   g) Describe the money multiplier presented in Chapter 10. How do we assume commercial banks hold their reserves?
   h) What are some of the most important assets and liabilities of typical banks (as presented in the text)?
   i) We assume banks hold no excess reserves. In the real world, why do banks typically try to minimize their holdings of excess reserves. What can they do if they have excess reserves?

13) a) If the required ratio on “deposits” is 10% and banks do not hold excess reserves, what happens to the amount of deposits in commercial banks when the Fed sells $2 million of bonds to J.Q. Public, an individual with an account with a commercial bank (realize result is the same if the bonds were sold to directly to commercial banks or firms).
   b) How would the total amount of deposits change if the Fed made $2 million worth of additional discount loans to commercial banks?
   c) How would the money supply (M1) have changed if the amount of currency held by the public was constant?
   d) Which of the following are assets of the Fed?: i) deposits of commercial banks with the Fed; ii) currency “in circulation,” iii) Treasury Bills, iv) Discount Loans?
   e) Which of the above four items pay interest?

14) a) List and describe 2 motives (or reasons) for holding wealth in the form of money.
   b) What is on the vertical axis when we draw a demand for money curve?
   c) Is the amount on the horizontal axis a flow or stock variable?
   d) List three things that will cause people (the non-banking public”) to want to increase their holding of money. Which of these three shift the demand curve for money? (realize that when we consider an increase in the price level, we don’t assume this will lead to an increase in ongoing inflation).
   e) What happens to the demand for money in our model, if the transactions cost of selling bonds falls?

15) a) If interest rates in the economy rise, what happens to bond prices? What happens to the number of times per month individuals decide to sell some bonds?
   b) If a discount bond will pay $115 in one year, at what interest rate will the price today be $100?
   c) If the interest rate is 5% per year, will the bond price today be above or below $100?
   d) Contrast a discount bond with a coupon bond.