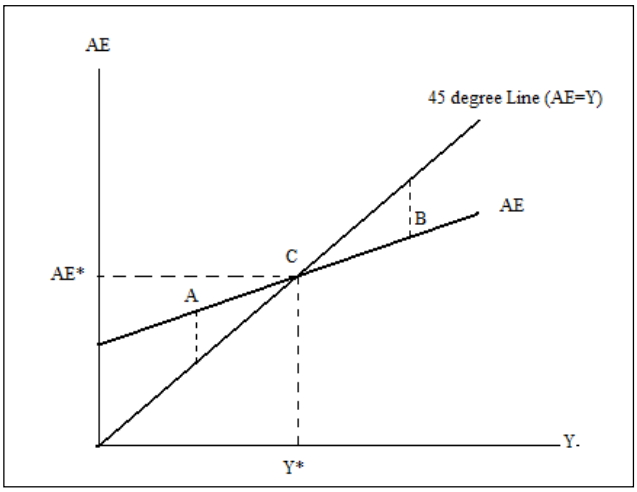
Week 15 - Spring 2014

1- Aggregate expenditure model

The model focuses on the short run relationship between total spending and real GDP holding the aggregate price level constant. *Macroeconomic Equilibrium* occurs when total expenditure is equal to total production –point (C) in the graph below-



Disequilibrium points:

AE>GDP ➔ Spending>Production ➔ Inventories decrease ➔ GDP and employment increase
AE<GDP ➔ Spending<Production ➔ Inventories increase ➔ GDP and employment decrease

Multiplier:

$$Y = C_0 + c[Y - T + TR] + I + G + X - M$$

Then,

$$Y = \left(\frac{1}{1-c}\right)[C_0 + I + G + X - M] - \left(\frac{c}{1-c}\right)[T - TR]$$

Exercise 1 .1

Suppose some particular economy is described by the following variables and parameters: $c = 0.75;\ C_0 = 200;\ I = 200;\ X - M = -100;\ G = 300; T - TR = 200$

a) Find the equilibrium level of *Y, Sp,* and *C.*
b) Suppose the full employment level of output is $Y_{FE} = 2000$. What are the necessary changes in government spending and net taxes in order to achieve full employment and a balance government budget?

Exercise 1.2

The economy in a certain country is defined by the following equations:

$C = C_0 + c\,[Y - T + TR] = 200 + 0.8\,[Y - T + TR]$
$I = I_0 + iY = 300 + 0.1\,Y$
$G = 600$

$X = 480$
$M = M_0 + mY = 250 + 0.24\,Y$
$T = T_0 + tY = 100 + 0.2\,Y$

Notice the differences with respect to the original and simpler model introduced before. Now imports, taxes, and investment expenditure all of them have an autonomous part plus an induced part that depends on gross income. (How do you interpret *m* in the imports equation?)
Questions:

a) How much does Y* increase if the policy-maker decides to increase autonomous government spending by $100? (Hint: find the new multiplier first)
b) Suppose marginal propensity to import changes to m=0.3. What happens to the GDP in the new equilibrium? Show your results.
c) Now assume that the government reacts to the higher marginal propensity to import by imposing a 20% tax on imports and then transfer that money directly to households. What is the effect of this policy? Does it increase the GDP level?

2- Money, banking and Central Banks

Exercise 2.1

a) Assume that total reserves are equal to $200 and total checkable deposits are $1000. Also assume that the public does not hold any currency. Now suppose that the required reserve ratio falls from 20% to 10%. Trace out how this leads to an expansion in bank deposits.
b) Assume now that each time someone receives a bank loan, he or she keeps half of the loan in cash. Trace out the resulting expansion in money supply when the reserve ratio falls from 20% to 10%.

Exercise 2.2

Assume that any money lent by a bank is always deposited back in the banking system as a checkable deposit and the reserve ratio is 10%. What is the effect of a $100 million open market purchase of US Treasury bills by the Fed on the value of checkable bank deposits? What is the size of the money multiplier?

Exercise 2.3

Show the changes to the T-accounts for the Fed and for commercial banks when the Fed sells $100 million in US Treasury bills. If the public keeps a fixed amount of currency (so that all new loans create an equal amount of checkable bank deposits in the banking system) and the minimum reserve ratio is 20%, by how much will checkable bank deposits in the commercial banks change? Show the final changes to the T-account for the commercial banks when the money supply changes by this amount.

Federal Reserve		Banks	
Assets	Liabilities	Assets	Liabilities