Keynesian Cross and the Multiplier

1. The Keynesian consumption function assumes that 0 < MPC < 1; what is the basis for such assumption?

MPC is the ratio between Δ in consumption to change in income

income increase, consumption will also increase but less than one

2. Assume a CLOSED economy with NO government. Let the autonomous consumption be 200 and MPS be 0.3. Draw and write equations for both saving and consumption functions.

MPC = 1 - MPS
= 1 - 0.3 = 0.7

Consumption function : $C = a + bY$

$C = 200 + 0.7Y$

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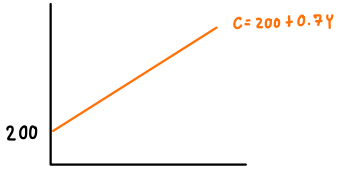
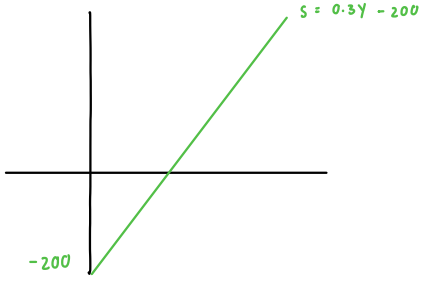


saving consumption

$S = Y - C$

$S = Y - 200 - 0.7Y$

$S = 0.3Y - 200$



3. Let the saving function be S = -150 + 0.35Y. Find and draw the consumption function.

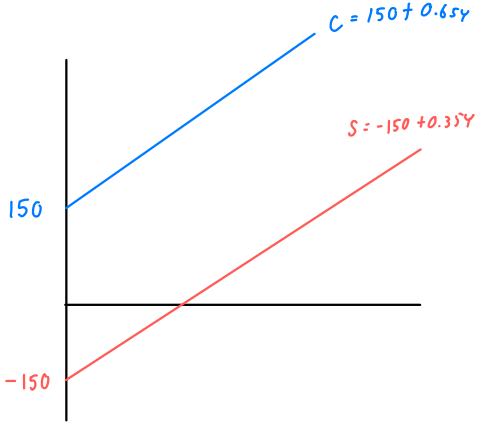
$S = -150 + 0.35Y$

$S = Y - C$

$C = Y - S$

$C = Y + 150 - 0.35Y$

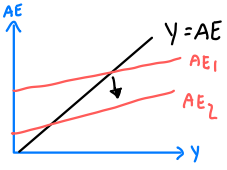
$C = 150 + 0.65Y$



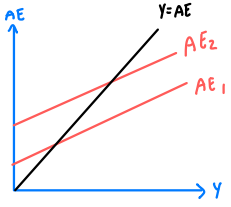
4. How do the followings affect the AE graph (i.e. explain how the graph changes) and the equilibrium output?

- All firm managers decide to buy fewer machines.
- The government decides to build more roads.
- The citizens decide to save more at all income levels.
- The citizens decide to save larger proportion of income.
- The government decides to raise tax.

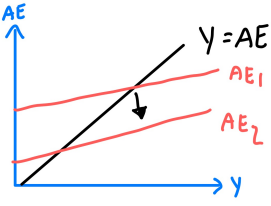
1) investment ↓ AE ↓



2) gov. spending ↑ = Y ↑

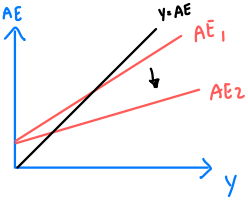


3) C = (A) + by (savings) AE ↓

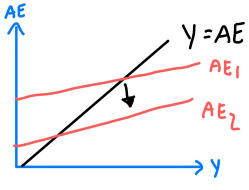


4) C = A + (by) (by: proportion of income)

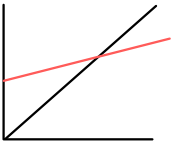
AE ↓



5) TAX ↑ consumption ↓ AE ↓



5. In the Keynesian Cross Model, suppose that aggregate output is greater than aggregate expenditure. Explain the adjustment process towards the equilibrium.



aggregate output > agg. expenditure

firm produce more than the consumption

therefore, firm will reduce the output

6. Let C = 60 + 0.6Y and I = 20. Find the equilibrium output with the saving/investment approach.

S = I ; leakage = injection

$S = Y - C$

$= Y - (60 + 0.6Y)$

$= 0.4Y - 60$

$S = I$

$0.4Y - 60 = 20$

$0.4Y = 80$

$Y = 200$

7. Let S = -60 + 0.4Y and I = 20. Find the equilibrium output with the standard approach. Now, suppose I increases by 20. Find the new equilibrium and the investment multiplier.

$Y = AE = C + I$

$C = Y - S$

$C = Y + 60 - 0.4Y$

$C = 0.6Y + 60$

I ↑ 20 ; $Y = 0.6Y + 60 + 40$

$0.4Y = 100$

$Y = 250$

$\Delta Y = 50$

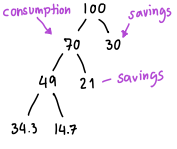
$\Delta I = 20$

$\frac{\Delta Y}{\Delta I} = \frac{50}{20} = 2.5$

8. With the multiplier effect, an injection of money (for example, investment) can lead to a greater proportional increase in output. Explain how this can happen.

Investment ↑ = AE ↑

MPC = 0.7



Investment = MPC + MPS

income pass on one person to another

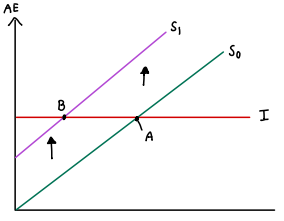
9. How is the investment multiplier related to MPC? Explain the intuition behind such relationship. (Hint: Question 9)

Investment $M = \frac{1}{1 - MPC}$

MPC = 0.5 ; $M = \frac{1}{1 - 0.5} = 2$

MPC = 0.8 ; $M = \frac{1}{1 - 0.8} = 5$

10. What is the Paradox of Thrift? Explain it with diagram.



Savings ↑ → AE ↓ → Y ↓ → S ↓