

Keynesian cross and the multiplier

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

Consumption Function Equation:

$$C = C_0 + C_1Y$$

Marginal Propensity to Consume

MPC = proportion of income that we use to consume

$$C_1 = MPC$$

$0 < MPC < 1$ = this means that the MPC is in the range of 0 to 1. This indicates that an individual cannot consume more than their income.

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.*

Different version of AE:

Closed economy without government:

$$AE = C + I$$

Autonomous consumption:

$$C = a + bY$$

Income = saving + consumption

$$MPS + MPC = 1 - 0.3$$

$$MPC = 1 - 0.7$$

Consumption

$$C = c_1 + c_0y$$

$$C = 200 + cy$$

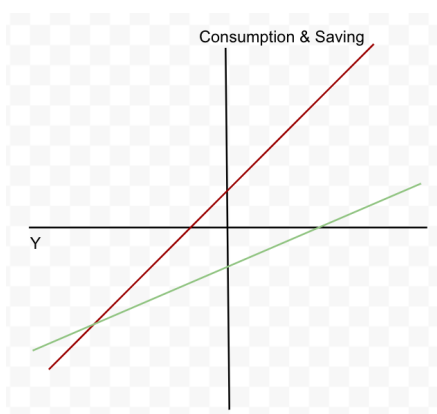
$$C = 200 + 0.7y$$

saving

$$y = s + c - s = y - c$$

$$s = y - (200 + 0.7y)$$

$$s = -200 + 0.3y$$



3. Let the save function be $S = -150 + 0.35Y$. Find the draw the consumption function
 Saving function formula

$$S = Y - (C_0 + C_1Y)$$

$$S = -150 + 0.35Y$$

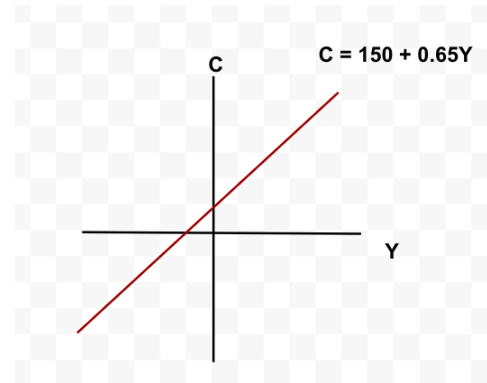
$$-C_0 = -150$$

Autonomous consumption = 150

$$1 - C_1 = 0.35$$

$$C_1 = 0.65$$

$$= 150 + 0.65Y$$



4. How do the following affect the AE graph [i.e. explain how the graph changes and the equilibrium output?]

AE formula:

$$AE = C + I + G + (X - M)$$

a. **All firm managers decide to buy fewer machines**

The I, which is the investment will drop, making the AE drop and the Y^* decreases as the investment has decreased

b. **The government decides to build more roads**

The G, which is the government spending increases, AE will increase and the Y^* will increase

c. **The citizens decide to save more at all income levels**

Savings will increase, as citizens are saving more, the AE will decrease and the Y^* decreases

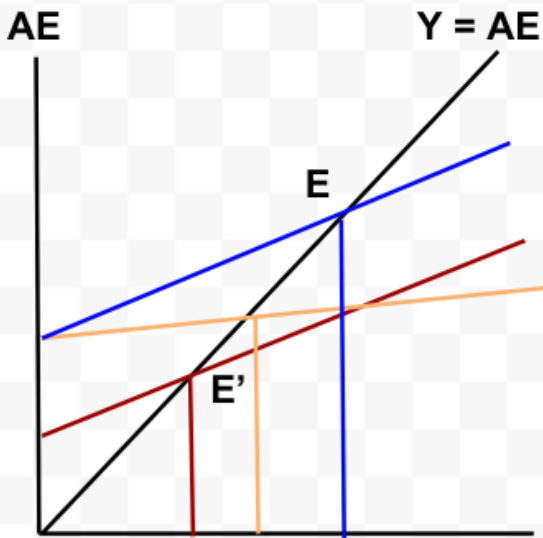
d. **The citizens decide to save larger proportion of income**

Larger proportion of income is the MPS. which means that it'll increase which would make the MPC decrease, and due to that the entire overall consumption will reduce the slope that shows the MPC as that's the slope of AE and it all depends on income

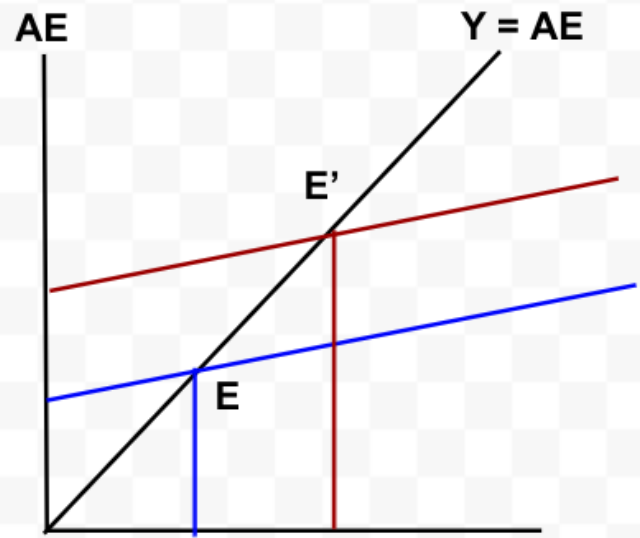
e. **The government decides to raise tax**

Tax will increase, as it's been raised and due to that the AE will drop, and make the Y^* decrease

AE graph when it falls



AE graph when it rise



5. *In the Keynesian cross model, suppose that aggregate output is greater than aggregate expenditure. Explain the adjustment process towards the equilibrium*

When the aggregate output is greater than the aggregate expenditure, the good market is not in equilibrium. When this happens the inventories, which are goods that aren't sold, will build up and accumulate. This means that businesses should cut back on production, so that the economy can then adjust and move towards the equilibrium.

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

Saving equation:

$$Y = c + s$$

$$S = y - c$$

$$S = y - 60 + 0.6y$$

$$S = 0.4y - 60$$

$$S = i$$

$$0.4y - 60 = 20$$

$$0.4y = 80$$

$$0.4 \text{ divided by } 80$$

$$y^* = 200$$

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

$$S = i$$

$$0.4y - 60 = 20$$

$$0.4y = 80$$

$$y^* = 200$$

If I increases by 20

$$0.4y - 60 = 40$$

$$0.4y = 100$$

$y^* = 250$ (new equilibrium output)

multiplier = change income over change in investment

$$= 50 \text{ over } 20$$

$$= 2.5$$

When I increases by q, output will increase by 2.5 units

If I increases by 20, output will increase by 50

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

Money injection is when firms have more to run their business. Firms have the money to buy more machines and tools, and hire employees for labor use. Therefore, there are money in flow of income, as the employees have more income coming in, there will be an increase in the output that's being produced.

9. How is the investment multiplier related to MPC? Explain the intuition behind such relationship [Hint: question 9]

MPC is marginal propensity to consume, when the MPC goes up it'll make the investment multiplier also increase. Firms will be getting more money which will allow them to produce more for the demand, this happens when there's expenditure. When firms have more money they're able to buy new machines, and hire labor. The employees who've been hired also earn money, so their MPC will increase as well. There will be more money in the circular flow, which will make there be an increase in the size of the multiplier change output.

10. What is the paradox of thrift? Explain it with diagram

Paradox of thrift states that increasing in autonomous saving leads to decrease in aggregate demand. Therefore, aggregate output decreases.