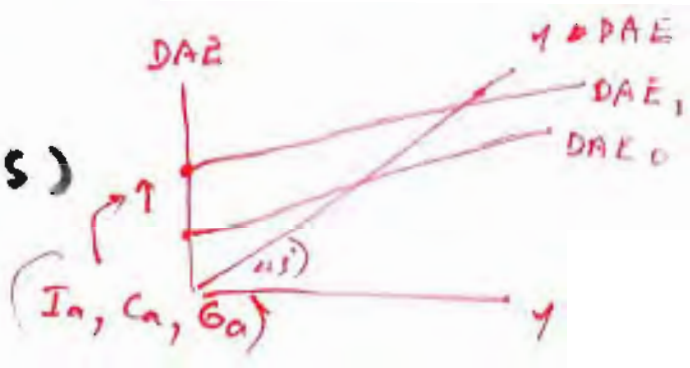
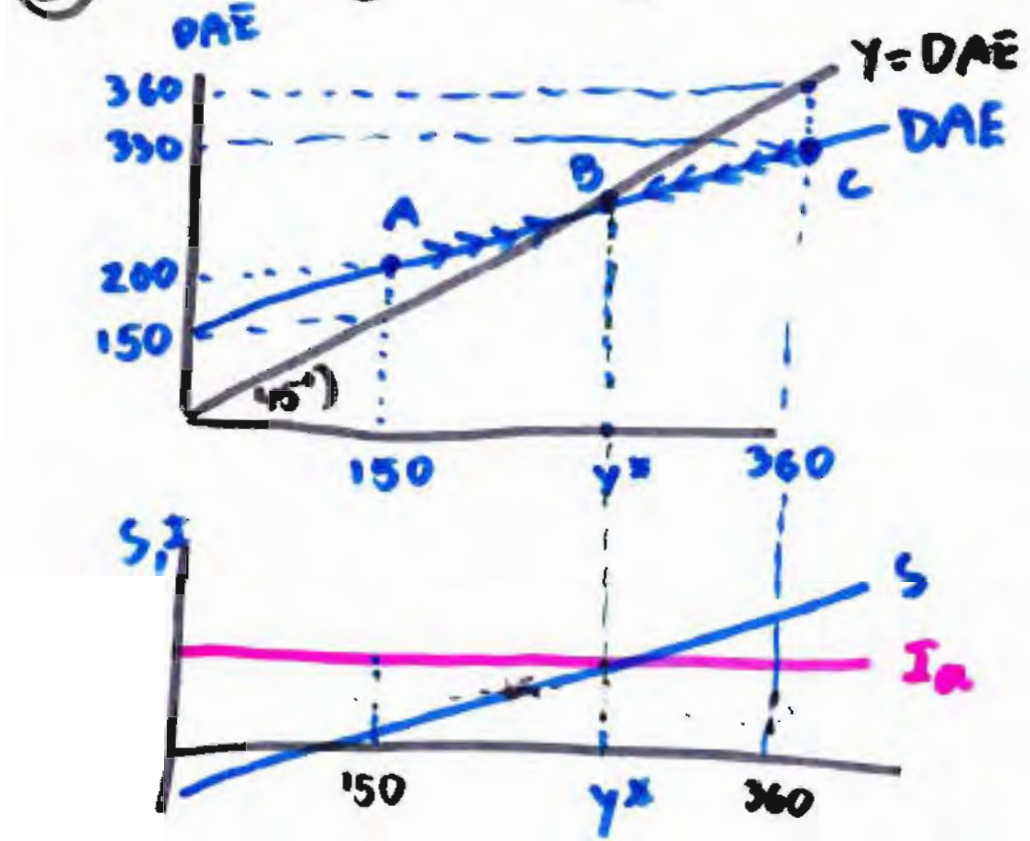
Adjustment Mechanism

① Shifting the curve (last class)



② Moving along the curve



At point A: DAE > Y (200 > 150), I > S

At point C: DAE < Y (330 < 360), S > I

The economy will move along the DAE curve to reach the equilibrium at point b.

At Point A: DAE > Y

Producers sell the stock of goods → Inventory ↓ → Production of goods ↑
(Actual Inventory < Planned Inventory)

Use of factors of production ↑ ← Y ↑ until Y = DAE

At Point C: Y > DAE

Firm can sell goods less than produced → Inventory ↑ → Production ↓
(Actual Inventory > Planned Inventory)

Use of Factors of production ↓ ← Y ↓ Until Y = DAE

Equation Modification

$I = I_a + dY$

$T = T_a + tY$

R (Transfer) → $R = R_a$ → Source of HH income

$R = R_a + rY$

$C = C_a + bY$

$I = I_a + dY$

$G = G_a$

$T = T_a + tY$

$R = R_a$ * → Simple E* of Transfer

$X = X_a$

$M = M_a + mY$

$Y = C + I + G - X - M \quad ; \quad Y^d = (Y - T_a - tY + R)$

$= C_a + bY^d + I_a + dY + G_a + X_a - M_a - mY$

$= C_a + b(Y - T_a - tY + R) + I_a + dY + G_a + X_a - M_a - mY$

$= C_a + bY - bT_a - btY + bR + I_a + dY + G_a + X_a - M_a - mY$

$Y = bY - btY + dY - mY + C_a - bT_a + bR + I_a + G_a + X_a - M_a$

$(1 - b + bt - d + m)Y = C_a - bT_a + bR + I_a + G_a + X_a - M_a$

$$Y^* = \frac{1}{(1 - b + bt - d + m)}(C_a - bT_a + bR + I_a + G_a + X_a - M_a)$$

Multipliers

$C_a, I_a, G_a, X_a = \frac{1}{1 - b + bt - d + m}$

e.g. $\frac{\Delta Y}{\Delta G_a}$

$\frac{\Delta Y}{\Delta T_a} = \frac{-b}{1 - b + bt - d + m} \Rightarrow \Delta Y = k_{ta} \cdot \Delta T_a$

k_{ta} → multiplier of T_a

$\frac{\Delta Y}{\Delta R} = \frac{b}{1 - b + bt - d + m} \Rightarrow k_R$

$\Rightarrow \Delta Y = k_{ta} \cdot \Delta T_a + k_R \cdot \Delta R$

$= \frac{-b \cdot \Delta T_a}{1 - b + bt - d + m} + \frac{b \cdot \Delta R}{1 - b + bt - d + m}$

IF $\Delta T_a = \Delta R$

$\Delta Y = \frac{(-b + b)\Delta R}{1 - b - bt - d + m}$

$= 0$

$C = C_a + bY^d$

$T = T_a + tY$

$R = R_a - rY$

$I = I_a + dY$

$G = G_a$

$X = X_a$

$M = M_a + mY$

$Y^d = Y - T_a - tY + R - rY$

$Y = DAE = C + I + G + X - M$

$= C_a + bY^d + I_a + dY + G_a + X_a - M_a - mY$

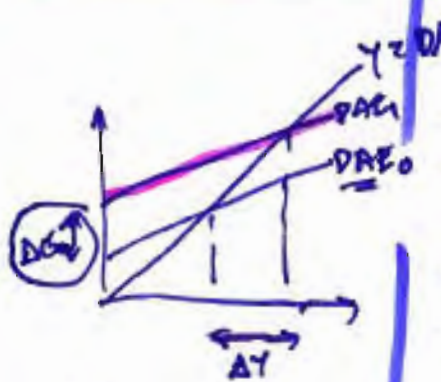
$= C_a + b(Y - T_a - tY + R - rY) + I_a + dY + G_a + X_a - M_a - mY$

$= C_a + bY - bT_a - btY + bR - brY + I_a + dY + G_a + X_a - M_a - mY$

$Y = bY - btY - brY + dY - mY + C_a - bT_a + bR + I_a + G_a + X_a - M_a$

$(1 - b + bt + br - d + m)Y = C_a - bT_a + bR + I_a + G_a + X_a - M_a$

$$Y^* = \left(\frac{1}{1 - b + bt + br - d + m}\right)(C_a - bT_a + bR + I_a + G_a + X_a - M_a)$$



$$\frac{\Delta Y}{\Delta G} = K_{Ga}$$

$$\frac{\Delta Y}{\Delta G_a} = \frac{1}{1 - b + bt + br - d + m} \Rightarrow K_{Ga} \Rightarrow \Delta Y = K_{Ga} \cdot \Delta G_a$$

$$\frac{\Delta Y}{\Delta T_a} = \frac{-b}{1 - b + bt + br - d + m} \Rightarrow K_{Ta} \Rightarrow \Delta Y = K_{Ta} \cdot \Delta T_a$$

(Negative Number)

$$\frac{\Delta Y}{\Delta R_a} = \frac{b}{1 - b + bt + br - d + m} \Rightarrow K_{Ra} \Rightarrow \Delta Y = K_{Ra} \cdot \Delta R_a$$

$$\frac{\Delta Y}{\Delta M_a} = \frac{-1}{1 - b + bt + br - d + m}$$ Negative number

$$\Delta Y = K_{Ga}\Delta G + K_{Ta}\Delta T_a + K_{Ra}\Delta R_a$$

Numerical Example

$C = 5 + 0.8\,Y^d$ (C_a, b)

$I = 2 + 0.1\,Y$ (I_a, d)

$G = 10 \Rightarrow G_a$

$T = 10 \Rightarrow T_a$

$R = 5 - 0.15\,Y$ (R_a, r)

$X = 6 \Rightarrow X_a$

$M = 2 + 0.1\,Y$ (M_a, m)

Compute Y^*: $\Rightarrow Y = DAE$

$$Y = C + I + G + X - M \; ; \; Y^d = Y - T_a + R - rY$$

$$= C_a + bY^d + I_a + dY + G_a + X_a - M_a - mY$$

$$= C_a + b[Y - T_a + R - rY] + I_a + dY + G_a + X_a - M_a - mY$$

$$= 5 + 0.8[Y - 10 + 5 - 0.15Y] + 2 + 0.1Y + 10 + 6 - 2 - 0.1Y$$

$$Y = 5 + 0.8Y - 8 + 4 - (0.8)(0.15)Y + 2 + 0.1Y + 10 + 6 - 2 - 0.1Y$$

$$(1 - 0.8 + (0.8)(0.15) - 0.1 + 0.1)\,Y = 5 - 8 + 4 + 2 + 10 + 6 - 2$$

$$Y^* = \frac{5 - 8 + 4 + 2 + 10 + 6 - 2}{(1 - 0.8 + (0.8)(0.15) - 0.1 + 0.1)}$$