F4 - SOK1016 - V23

$I > 0 \quad G > 0$
$z_c > 0$
$Y \geq T$

~~(0) $Y = AN$~~

(1) $Y = C + I + G$

(2) $C = z_c + c_1(Y - T)$

$Y \sim$ produksjon

C, I, G etterspørselskomp.

$0 < c_1 < 1$

T er netto skatter

(0) ~ en produktfunksjon.

L være arbeidsstyrken

N være sysselsatte

$u = \frac{L-N}{L} \rightarrow u = \frac{L - \frac{Y}{A}}{L}$ Okuns lov

$Y = AN \rightarrow N = \frac{Y}{A}$

Tilbud: Produksjonen tilpasser seg etterspørselen til konstante priser.
$\rightarrow$ Forutsetter ledig kapasitet.

(1) en likevektsforutsetning (tilbud = etterspørsel) men også en definisjonsmessig sammenheng

(2) z_c ~ inntektsuavhengig konsum

c_1 ~ marginale konsumtilbøyeligheten

$Y - T$ ~ disponibel inntekt

Endogene variabler: Verdi bestemt av modellen

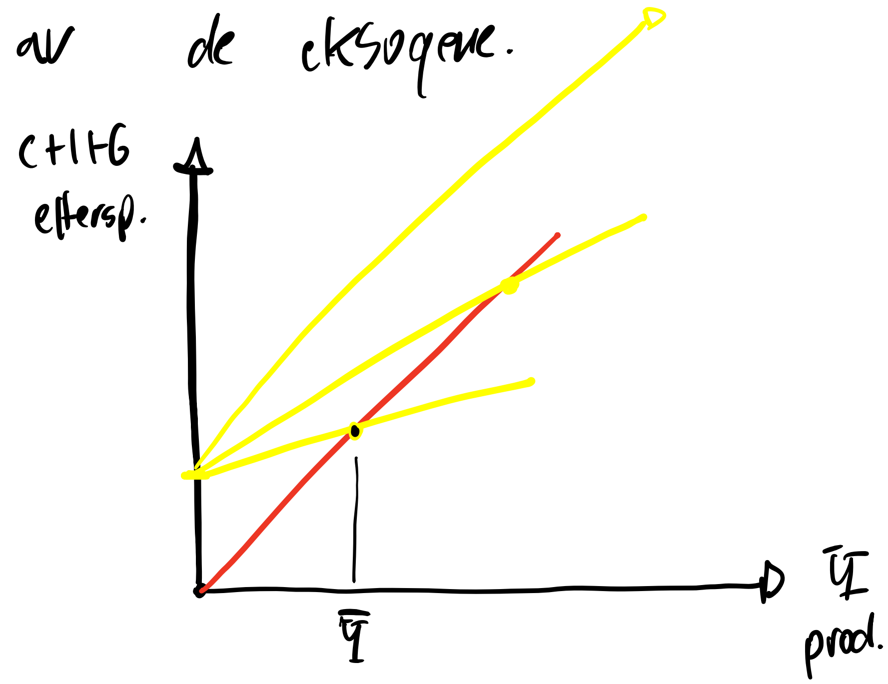
Eksogene variabler: Verdi bestemt utenfor modellen
$\rightarrow$ konstante tall

Telleregelen: Like mange endogene var. som ligninger
$\longrightarrow$ modellen har en løsning.

Løsning: Når alle endogene var. er funksjoner
kun av de eksogene.

(1) $Y = C + I + G$

(2) $C = z_c + c_1(Y - T)$



$Y = 0$

$Y = 5$

Hvis $Y = 0 \longrightarrow C = z_c + c_1(0 - T) = \underbrace{z_c - c_1 T}_{+} + \underbrace{I + G}_{+}$

$\Delta Y = 1$

$\Delta C = \underbrace{\cancel{\Delta z_c}}_{=0} + c_1 \cdot (\Delta Y - \underbrace{\cancel{\Delta T}}_{=0}) = c_1 \Delta Y$

(1) $Y = C + I + G$

(2) $C = z_c + c_1(Y - T)$

i. Sett ligning (2) inn i ligning (1)

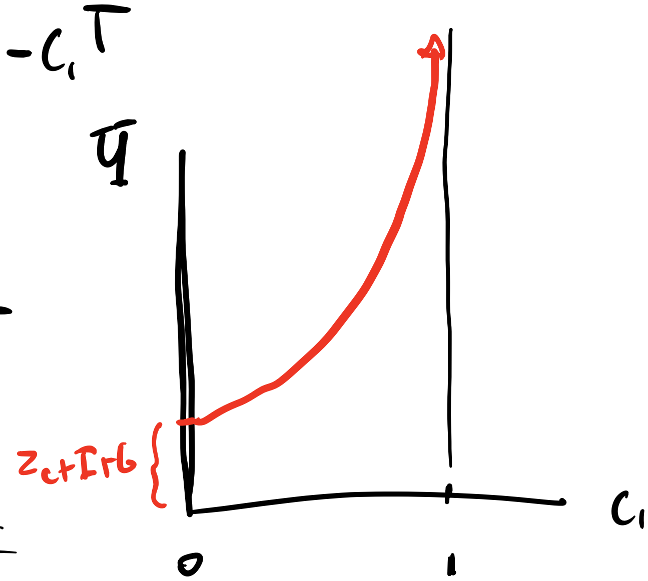
$Y = z_c + c_1(Y - T) + I + G$

ii. Trekke fra $c_1 Y$ fra begge sider

$$\underbrace{Y - c_1 Y} = z_c + c_1(\cancel{Y} - T) - \cancel{c_1 Y} + I + G$$

$$Y(1-c_1) = z_c + I + G - c_1 T$$

iii. Del på $1-c_1$



$$(3) \quad Y = \frac{z_c + I + G - c_1 T}{1-c_1}$$

$$(2) \quad C_1' = z_c + c_1(Y - T)$$

Sett 1.3 inn i 2:

$$C_1' = z_c + c_1\left(\frac{z_c + I + G - c_1 T}{1-c_1} - T\right)$$

$$C_1' = z_c + c_1\left(\frac{z_c + I + G - c_1 T - (1-c_1)T}{1-c_1}\right)$$

$$= z_c + c_1\left(\frac{z_c + I + G - \cancel{c_1} T - T + \cancel{c_1} T}{1-c_1}\right)$$

$$= \frac{(1-c_1)z_c + c_1 z_2 + (I + G - T)c_1}{1-c_1} = \frac{z_c + c_1(I + G - T)}{1-c_1}$$

(1*) $$\bar{Y} = \frac{z_c + \bar{I} + G - c_1 T}{1 - c_1}$$

(2*) $$C = \frac{z_c + c_1(I + G - T)}{1 - c_1}$$

$$\longrightarrow \frac{1}{1 - c_1}$$

Keynes-multiplikatoren eller multiplikatoren

$$\frac{1}{1 - c_1} > 1 \qquad 0 < c_1 < 1$$

$$\in (1, \infty)$$

z_c øker: fra z_c til z_c' $\longrightarrow$ $\Delta z_c = z_c' - z_c$

$$\bar{Y}' = \frac{z_c' + \bar{I} + G - c_1 T}{1 - c_1}$$

$$\bar{Y} = \frac{z_c + \bar{I} + G - c_1 T}{1 - c_1}$$

$$\bar{Y}' - \bar{Y} = \Delta Y = \frac{\Delta z_c}{1 - c_1}$$

$z_c \nearrow \longrightarrow C \nearrow \longrightarrow \bar{Y} \nearrow$ produksjon

c_1

$C \nearrow$ ettersp.

$\Delta z_c = 1$

$$\Delta \bar{Y} = 1 + c_1 + c_1^2 + c_1^3 + c_1^4 + c_1^5 + \ldots = \frac{1}{1 - c_1}$$

(1*) (2*)

Spare paradokset

$Y - C - T := S$ (sparing)

$\updownarrow$

$$\frac{z_c + I + G - c_1 T}{1-c_1} - \left(\frac{z_c + c_1(I + G - T}{1-c_1}\right) - T = S$$

$$\frac{\cancel{z_c} + I + G - \cancel{c_1 T} - \cancel{z_c} - c_1 I - c_1 G + \cancel{c_1 T}}{1-c_1} - T = S$$

$$\frac{\cancel{(1-c_1)}(I+G)}{\cancel{(1-c_1)}} - T = S$$

$$I + \underbrace{G - T} = S$$

anta $\underline{\underline{G = T}}$

$$\boxed{\underline{\underline{I = S}}}$$

$\Delta z_c < 0 \longrightarrow \Delta Y < 0$

$\Delta S = 0$

$\Delta G = \Delta T > 0 \longrightarrow \Delta S = 0$

ΔY

$$Y = \frac{z_c + I + G - c_1 T}{1 - c_1} \rightarrow \Delta Y = \frac{\Delta G - c_1 \Delta T}{1 - c_1}$$

$$\Delta Y = \frac{\Delta G - c_1 \Delta G}{1 - c_1}$$

$$\Delta Y = \frac{\cancel{(1 - c_1)} \Delta G}{\cancel{1 - c_1}} = \Delta G$$

$$> 0$$