MAT 1700

Løsnings-forslag

Oppgaveseminar #11

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Oppgave 1

(a) $y = Z = C + I + G$

$= c_0 + c_1(y_d) + \bar{I} + G$

$= c_0 + c_1(y - T) + \bar{I} + G$

$y = 160 + 0,60(y - 100) + 150 + 150$

$y - 0,60y = 160 - 60 + 300 = 400$

$y = 400/0,40 = \underline{1000}$

(b) $y_D \equiv (y - T) = (1000 - 100) = \underline{900}$

(c) $C = c_0 + c_1 y_d = 160 + 0,60(900) = \underline{700}$

Autonomous spending:

$= (c_0 + \bar{I} + G - c_1 T) = 160 + 150 + 150 - 0,60(1000)$

$= 460 - 60 = \underline{400}$

Oppgave 2

(a) Fra oppgave 1; $y = 1000 = Z$, dvs.

tot. etterspørsel (Z) = tot. produksjon (y)

(b) $G = 110 \Rightarrow y = 160 + 0{,}60(y - 100) + 150 + 110$; $y = \underline{900}$

$$Z = c_0 + c_1(y - T) + \bar{I} + G$$

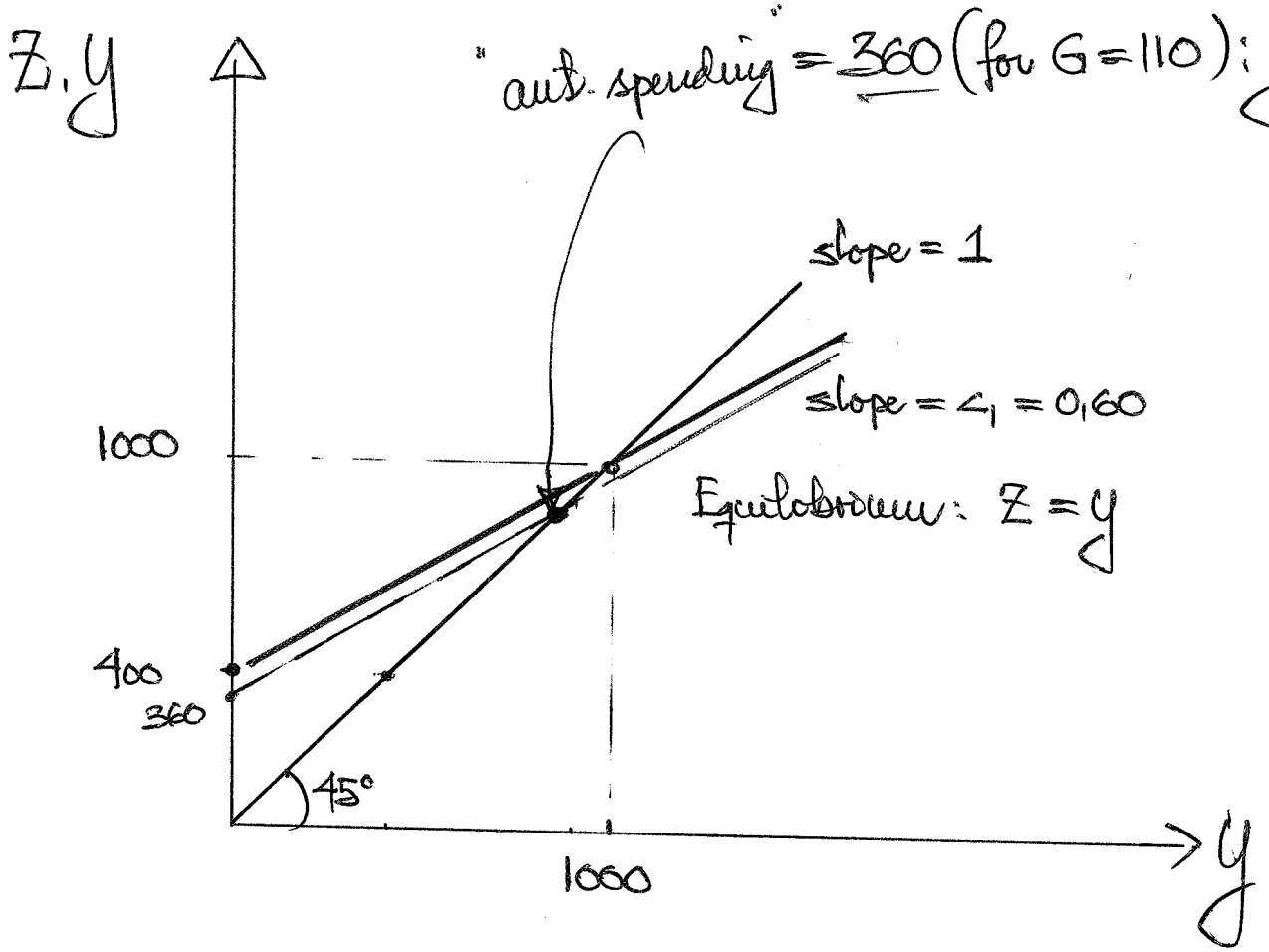
$$= \underbrace{(c_0 + \bar{I} + G - c_1 T)}_{\text{autonomous spending}} + c_1 y$$

$$= [160 + 150 + 110 - 0{,}60(100)] + 0{,}60(900)$$

$$900 = [420 - 60] + 540 = \underline{900}$$

Ja; $Z = y = 900$

Oppgave 2. forts.



For G = 110; autonom. spending = 360

(c) $S = Y_D - C = (Y - T) - C$

$Y = C + I + G$

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

$S = I + G - T \Rightarrow \underbrace{I}_{\text{investment}} = \underbrace{S + (T - G)}_{\text{sum of private } (S) \text{ and public saving } (T-G)}$

Oppg. seminar #11

Oppgave 2, forts.

Invest = Saving
Produksjon = Demand

} IS relasjon (Investm. equals Savings)

Agaw; let $S = y - T - C$

$= y - T - c_0 - c_1(y - T)$

$S = -c_0 + \underbrace{(1-c_1)}_{\text{propensity to save}}[y - T]$

$I = S + (T - G) = -c_0 + (1-c_1)[y - T] + (T - G)$

$\Rightarrow$ solving for produksjon $y = \frac{1}{1-c_1}[c_0 + \bar{I} + G - c_1 T]$

For $G = 110$;

$I = S + (T - G) = -c_0 + (1-c_1)[y - T] + (T - G)$

$= -160 + (1 - 0{,}60)[800 - 100] + [100 - 110]$

$= -160 + 0{,}40(800) - 10$

$= \underbrace{160}_{\text{privat sparing}} \underbrace{- 10}_{\text{budsj. underskudd}} = 150 = I$

Oppgave 3

(a) $y = C + I + G = c_0 + c_1(y - T) + I + G$

$= c_0 + c_1 y - c_1(t_0 + t_1 \cdot y) + I + G$

$y - c_1 y + c_1 \cdot t_1 y = c_0 + I + G - c_1 t_0$

$y[1 - c_1 + c_1 t_1] = \ldots$

$y[1 - c_1(1 - t_1)] = c_0 + I + G - c_1 t_0$

$$\Rightarrow y = \left[\frac{1}{1 - c_1(1 - t_1)}\right]\{c_0 + I + G - c_1 t_0\}$$

Lar $0 \leq t_1 \leq 1$; then we have for

(b) $t_1 = \underline{0} \Rightarrow$ multiplikator $= \left[\frac{1}{1 - c_1}\right]$ "somme saw tidligere" realsjon på autonams forbruk.

$t_1 = \underline{1} \Rightarrow$ multiplikator $= \left[\frac{1}{1}\right]$

(c)

E.g: $c_1 = \underline{0{,}60}$

$t_1 = 0 \Rightarrow$ multiplikator $= \frac{1}{0{,}40} = \underline{2{,}5}$

$t_1 = 0{,}5 \Rightarrow$ — " — $= \frac{1}{0{,}70} = \underline{1{,}4}$ ← Ja!

(lavere multiplikator)

Stabiliserings-effekt

(a)

$$y = c_0 + c_1(y-T) + \underbrace{(b_0 + b_1 y)}_{I} + G$$

$$y = c_0 + c_1 y - c_1 T + b_0 + b_1 y + G$$ "Likevektsproduksjon"

$$y + c_1 y - b_1 y = c_0 + b_0 + G - c_1 T$$

(b) Multiplikatoren

$$y(1 - c_1 - b_1) = c_0 + b_0 + G - c_1 T$$

$$\Rightarrow y = \left[\frac{1}{1-c_1-b_1}\right]\{c_0 + b_0 + G - c_1 T\}$$

$0 \leq b_1 \leq 1$

$b_1 > 0 \Rightarrow$ multiplikatoren vokser

positiv multiplikator $\Rightarrow (c_1 + b_1) \neq 1 \;\&\; (c_1 + b_1) < 1$

redundant!

(c) b_0 øker $\Rightarrow y\uparrow$

$I = (b_0 + b_1 y)$ øker mer enn b_0

Aggregat, tot-sparing; I

$I = S + (T - G)$

Siden $I\uparrow$ then $S\uparrow$ (privat sparing)

gitt $T = \bar{T}$, $G = \bar{G}$