country a : Australia

country b : US

1 : 1 AU\$ = 0.7 US\$

2. 1 US\$ = $\frac{1}{0.7}$ AU\$

$\simeq$ 1.43 AU\$

$\boxed{\text{Scenario 1: } [\text{AU\$}]}$

option 1: $\boxed{V_t^a = 10 \text{ apples}}$

option 2: $e_t = 0.7$ US\$

$\rightarrow V_t^b = 5a/\text{US\$}$

$\boxed{e_t V_t^b = 3.5a}$

$$\boxed{V_t^a < e_t V_t^b}$$

Scenario 2: 1 US\$

option 1: $V_t^b = 5$ apple

2: $\frac{1\text{US\$}}{e_t} = 1.43$ AU\$

$V_t^a = 10$ apple/AU\$

$\frac{1}{e_t} \cdot V_t^{a} = 14.3$ apples

$V_t^b \qquad \frac{1}{e_t} V_t^a$

$V_t^b \cdot e_t \qquad V_t^a$

$$e_t = \frac{V_t^a}{V_t^b} \quad ?$$

$$h^a = 1.2 \qquad h^b = 1$$

$$z^a = z^b = 1$$

$$\frac{e_{t+1}}{e_t} = 1.2$$

$$\frac{V^a_{t+1}}{V^a_t} = \frac{\dfrac{N^a_{t+1}\cancel{(y^a - c^a_1)}}{M^a_{t+1}}}{\dfrac{N^a_t\cancel{(y^a - c^a_1)}}{M^a_t}}$$

$$= n^a = 1.2$$

$$\frac{V^b_{t+1}}{V^b_t} = n^b = 1$$

$$n^a = n^b = 1, \quad z^a = 1.2$$

$$z^b = 1$$

$$\frac{V^a_{t+1}}{V^a_t} = \frac{M^a_t}{M^a_{t+1}} = \frac{1}{z^a} = 0.83$$

$$\frac{V^b_{t+1}}{V^b_t} = \frac{1}{z^b} = 1$$

$$\frac{e_{t+1}}{e_t} = \frac{1}{1.2} = 0.83$$

$$\frac{e_{t+1}}{e_t} = \frac{V^a_{t+1}/V^a_t}{V^b_{t+1}/V^b_t} = 1$$

$\therefore$ $e_{t+1} = e_t$ requires

$$V^a_{t+1}/V^c_t = V^b_{t+1}/V^b_t$$

$$\frac{n^a}{z^a} = \frac{n^b}{z^b}$$

$$z^a = \frac{n^a}{n^b} \neq z^b$$

$$\frac{V^a_{t+1}}{V^a_t} = 1 \quad , \quad n^a = 1$$

$$\boxed{\frac{V^b_{t+1}}{V^b_t} = 2}$$

$$\frac{e_{t+1}}{e_t} = \frac{V^a_{t+1}}{V^a_t} \cdot \frac{V^b_t}{V^b_{t+1}} = \boxed{1 \cdot \frac{1}{2}}$$

what if $\frac{e_{t+1}}{e_t} = 1$

$$z^a = \frac{n^a}{n^b} \cdot z^b$$

$$= \left(n^a\right)\left(\frac{z^b}{n^b}\right)^{\frac{1}{2}}$$

$$\frac{V_{t+1}^b}{V_t^b} = \frac{n^b}{z^b} = 2$$

$$\therefore \boxed{z^a = \frac{1}{2}}$$

$$z^* = 2.414$$

T3 Q6

$n = 1000$

$y = 20$

$$y - c_1 = \frac{y}{1 + \frac{V_t}{V_{t+1}} r}$$

(2) $\longrightarrow \frac{V_{t+1}}{V_t} = \frac{1}{2}$

$$y - c_1 = \frac{y}{1+2}$$

b) $(M_t - M_{t-1}) V_t$

$$= \boxed{\left(1 - \frac{1}{z}\right) \cdot \frac{2000}{1+z}}$$

$$\max_{z^*} \left(1 - \frac{1}{z}\right) \cdot \frac{\cancel{2000}}{1+z}$$

$$\Longleftrightarrow \max_{z^*} \frac{z-1}{z+z^2}$$

For: $$\frac{1 - z^2 + 2z}{(z+z^2)^2} = 0$$

$$\longrightarrow 1 - z^2 + 2z = 0$$

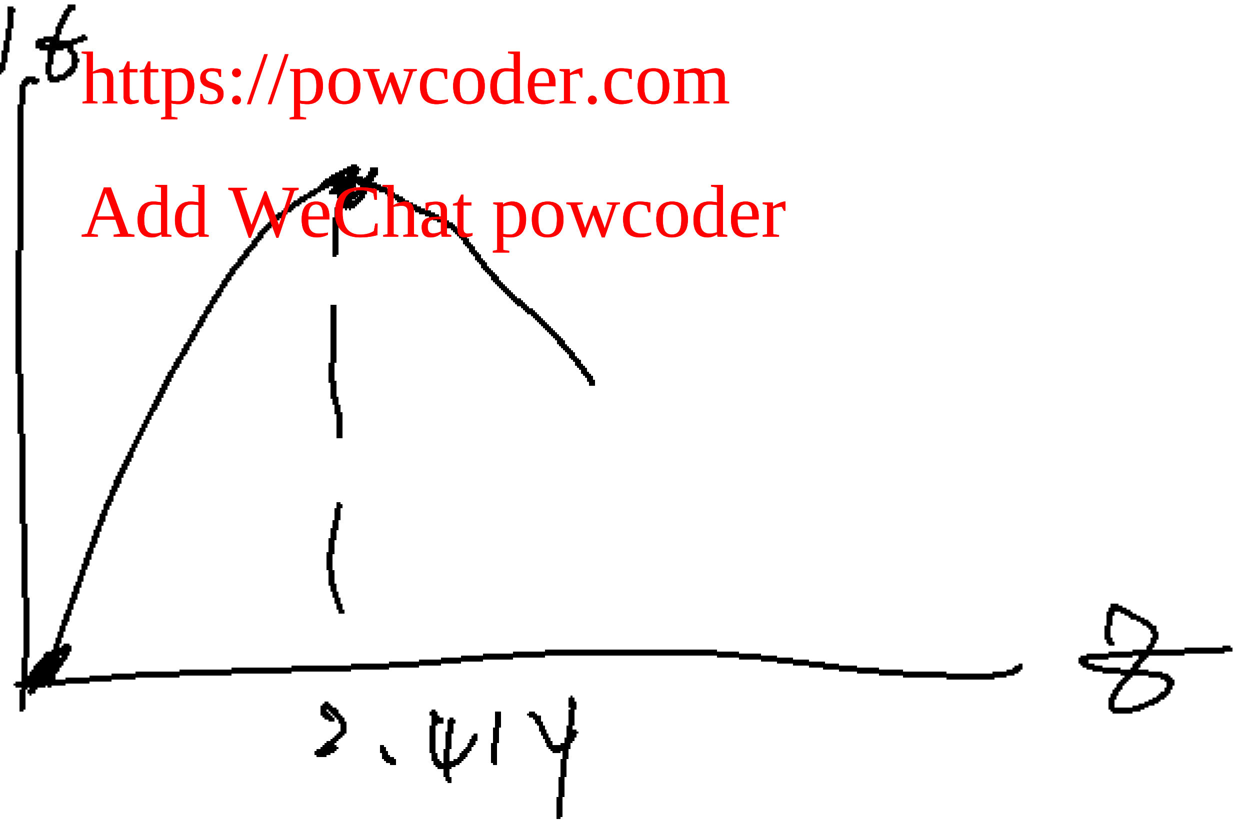
$$\Longrightarrow z^* = 1 \pm \sqrt{2}$$

$\therefore z^*$ has to be > 0

$$m_t = \gamma m_{t-1}$$

$$\therefore \gamma^* = 1 + \sqrt{2} \simeq 2.414$$

$(m_t - m_{t-1}) \cdot V_t$



Under foreign currency control

$$l_t = \frac{V_t^a}{V_t^b}$$

$$\begin{cases} V_t^a M_t^a = N_t^a \cdot (y - c_{1,t}^a) \\ V_t^b M_t^b = N_t^b \cdot (y - c_{1,t}^b) \end{cases}$$

$$\hookrightarrow (V_t^a, V_t^b)$$

w/o foreign currency control

$$e_t = \frac{V_t^a}{V_t^b}$$

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$$V_t^a m_t^a + V_t^b m_t^b$$

$$= w_t^a (y^a - c_{1,t}^a) +$$

$$\lambda^b_t (y^b - c^b_{1,t})$$

2 unknowns (V^a_t, V^b_t)

1 eqn

$$e_t = \frac{1+\lambda_t}{2-\lambda_t}, \quad \lambda_t \in [0,1]$$

$$\lambda_t = 0, \quad e_t = \frac{1}{2}$$

$\lambda_t = 1$, $e_t = 2$

- $N^a = 200$, $N^b = 200$, $N^c = 100$

- $y^a - c^a_{1,t} = y^b - c^b_{1,t} = y^c - c^c_{1,t}$

$= 10$

- $m^a_t = 100$, $m^b_t = 200$

$$V_t^a = \frac{3000 + \lambda t\,1000}{100}$$

$$= 30 + 10\lambda t$$

$$V_t^b = 15 - 5\lambda t$$

$$e_t = \frac{V_t^a}{V_t^b} = \frac{6 + 2\lambda t}{3 - \lambda t}$$

$\boxed{\text{sps } \lambda t = \frac{1}{2}}$,

then
$$\begin{cases} e_t = 2.8 \\ V_t^a = 35 \\ V_t^b = 12.5 \end{cases}$$

sps $\lambda t = \frac{1}{4}$

$$\begin{cases} e_t = 2.36 \\ V_t^a = 32.5 \end{cases}$$

$v_t^b = 13{,}75$

for type c people
it's feasible to be as
well as off as before
$(\$X, \$Y) \leftarrow$ portfolio

$$x\cdot \overset{v_t^a}{35} + y\cdot \overset{v_t^b}{12.5}$$

$$= \underbrace{x\cdot 32.5 + y\cdot 13.75}$$

$$\Rightarrow \boxed{\frac{x}{y} = \frac{1}{2}}$$

1 sup D
2 ws D