- 2 countries
- 1 central bank
- Non-traded goods only

A) Equations : 25

$$\frac{1}{1+r_t} = \beta E_t \left[\left(\frac{C_{t+1}}{C_t} \right)^{-\sigma} \left(\frac{1+\tau_{VAT,t}}{1+\tau_{VAT,t+1}} \right) \frac{1}{\left(1+\pi_{t+1}\right)} \right]$$ (1) Euler equation Home

$$\frac{1}{1+r_t} = \beta E_t \left[\left(\frac{C^*_{t+1}}{C^*_t} \right)^{-\sigma} \left(\frac{1+\tau^*_{VAT,t}}{1+\tau^*_{VAT,t+1}} \right) \frac{1}{1+\pi^*_{t+1}} \right]$$ (2) Euler equation Foreign

$$L_t = \left(\frac{w_t}{(1+\tau_{VAT,t})} \right)^{\frac{1}{\eta}} C_t^{-\frac{\sigma}{\eta}}$$ (3) Labor-leisure tradeoff equation Home

$$L^*_t = \left(\frac{w^*_t}{(1+\tau^*_{VAT,t})} \right)^{\frac{1}{\eta}} C^{*-\frac{\sigma}{\eta}}_t$$ (4) Labor-leisure tradeoff equation Foreign

$$MC^R_{H,t} = (1+\tau^P_t)w_t$$ (5) Marginal cost definition Home

$$MC^R_{F,t} = (1+\tau^{P*}_t)w^*_t$$ (6) Marginal cost definition Foreign

$$\Lambda_{H,t}Y_{H,t} = L_{H,t}$$ (7) Production function Home

$$\Lambda^*_{F,t}Y^*_{F,t} = L^*_{F,t}$$ (8) Production function Foreign

$$\Lambda_{H,t} = \left(1-\mu\right)\left(1+\pi^O_{H,t}\right)^{-\varepsilon}\left(1+\pi_{H,t}\right)^{\varepsilon} + \left(1+\pi_{H,t}\right)^{\varepsilon}\mu\,\Lambda_{H,t-1}$$ (9) Price dispersion index evolution Home

$$\Lambda^*_{F,t} = \left(1-\mu^*\right)\left(1+\pi^{O*}_{F,t}\right)^{-\varepsilon}\left(1+\pi^*_{F,t}\right)^{\varepsilon} + \left(1+\pi^*_{F,t}\right)^{\varepsilon}\mu^*\Lambda^*_{t-1}$$ (10) Price dispersion index evolution Foreign

$$\left(1+\pi^O_{H,t}\right) = \frac{\varepsilon}{\varepsilon-1}\left(1+\pi_{H,t}\right)\frac{x^1_{H,t}}{x^2_{H,t}}$$ (11) Pricing equation

$$\left(1+\pi^{O*}_{F,t}\right) = \frac{\varepsilon}{\varepsilon-1}\left(1+\pi^*_{F,t}\right)\frac{x^{1*}_{F,t}}{x^{2*}_{F,t}}$$ (12) Pricing equation

$$x^1_{H,t} = Y_{H,t} MC^R_{H,t} + \left(\mu \; \frac{1}{1+r_t} \right) E_t \left(1 + \pi_{H,t+1} \right)^{1+\varepsilon} x^1_{H,t+1} \qquad \text{(13) Home auxiliary variable pricing 1}$$

$$x^2_t = Y_t + \left(\mu \; \frac{1}{1+r_t} \right) E_t x^2_{t+1} \left(1 + \pi_{t+1} \right)^{\varepsilon} \qquad \text{(14) Home auxiliary variable pricing 2}$$

$$x^{1*}_{F,t} = Y^*_{F,t} MC^{R*}_{F,t} + \left(\mu^* \; \frac{1}{1+r_t} \right) E_t \left(1 + \pi^*_{F,t+1} \right)^{1+\varepsilon} x^{1*}_{F,t+1} \qquad \text{(15) Foreign auxiliary variable pricing 1}$$

$$x^{2*}_{F,t} = Y^*_{F,t} + \left(\mu^* \; \frac{1}{1+r_t} \right) E_t x^{2*}_{F,t+1} \left(1 + \pi^*_{F,t+1} \right)^{\varepsilon} \qquad \text{(16) Foreign auxiliary variable pricing 2}$$

$$\tau_{VAT,t} C_t + \tau^P_t w_t L_t = G_t \qquad \text{(17) Home government budget constraint}$$

$$\tau^*_{VAT,t} C^*_t + \tau^{P*}_t w^*_t L^*_t = G^*_t \qquad \text{(18) Foreign government budget constraint}$$

$$G_t = \Delta_G Y_t \qquad \text{(19) Home law of government expenditure}$$

$$G^*_t = \Delta^*_G Y^*_t \qquad \text{(20) Foreign law of government expenditure}$$

$$\left(1 + \pi_{H,t} \right)^{1-\varepsilon} = \left(1 - \mu \right) \left(1 + \pi^O_{H,t} \right)^{1-\varepsilon} + \mu \qquad \text{(21) Evolution of Home price index}$$

$$\left(1 + \pi_{H,t} \right)^{1-\varepsilon} = \left(1 - \mu \right) \left(1 + \pi^O_{H,t} \right)^{1-\varepsilon} + \mu \qquad \text{(22) Evolution of Foreign price index}$$

$$\frac{(1+r_t)}{(1+r^T)} = \left(\frac{(1+r_{t-1})}{(1+r^T)} \right)^{\phi_R} \left[\left[\left(\frac{\frac{(1+\tau_{VAT,t})}{(1+\tau_{VAT,t-1})}(1+\pi_{H,t})}{(1+\pi^T_{H,t})} \right)^{1/2} \left(\frac{\frac{(1+\tau^*_{VAT,t})}{(1+\tau^*_{VAT,t-1})}(1+\pi^*_{F,t})}{(1+\pi^{T*}_{F,t})} \right)^{1/2} \right]^{\phi_\pi} \left[\left(\frac{Y_t}{Y_{t-1}} \right)^{1/2} \left(\frac{Y^*_t}{Y^*_{t-1}} \right)^{1/2} \right]^{1-\phi_\pi} \right]^{1-\phi_R}$$

(23) Interest rate rule

$$Y_t = C_t + G_t \qquad \text{(24) Home goods market equilibrium}$$

$$Y^*_t = C^*_t + G^*_t \qquad \text{(25) Foreign goods market equilibrium}$$

B) Variables: 25

1	r_t
2	C_t
3	$\tau_{VAT,t}$
4	π_t
5	L_t
6	w_t
7	MC_t^R
8	Λ_t
9	Y_t
10	π_t^O
11	x_t^1
12	x_t^2
13	G_t
14	C_t^*
15	$\tau_{VAT,t}^*$
16	π_t^*
17	L_t^*
18	w_t^*
19	MC_t^{R*}
20	Λ_t^*
21	Y_t^*
22	π_t^{O*}
23	x_t^{1*}
24	x_t^{2*}
25	G_t^*