A Dispersed Information Theory of Asset Purchases, Sovereign Risk and Inflation

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Sciences Po

Model

Two periods, $t = 1, 2$
Fiscal authority

- $t = 1$ budget constraint

$$y(\epsilon)\gamma = \Phi(\epsilon) = b$$

- $t = 2$ budget constraint

$$\frac{R(1-\delta h)}{\Pi} = \tau$$

normalisation

Continuum of risk-neutral agents $i \in [0, 1]$

- $t = 1$ budget constraint: portfolio choice

$$b^i + m^i + s^i \leq e_1$$

- $t = 2$ budget constraint: consumption

$$c^i = b^i \frac{R(1-\delta h)}{\Pi} + \frac{m^i}{\Pi} + \rho s^i - \tau - \phi\delta - \zeta(\tau)$$

what about the tax normalisation for households???

Model 2

Central bank

- $t = 1$ budget constraint Period $t = 1$

$$s^{cb} + b^{cb} = m \qquad\qquad s^{cb} = 1 - \alpha$$

- $t = 2$ budget constraint

$$\rho s^{cb} + \frac{b^{cb} R(1 - \delta h)}{\Pi} = \frac{m}{\Pi} \qquad\qquad \rho(1 - \alpha) + \frac{\alpha R(1 - \delta h)}{\Pi_2} = \frac{1}{\Pi_2}$$

CB balance sheet

Let share of money invested in bonds be $\alpha := \frac{b}{m}$

How is inflation determined?

$$\frac{1}{\Pi(\delta)} = \frac{\rho(1 - \alpha)}{1 - \alpha R(1 - \delta h)}$$

Return on money is weoghted (by α) average of storage & bonds returns

$$\frac{1}{\Pi(\delta)} = (1 - \alpha)\rho + \alpha \frac{R(1 - \delta h)}{\Pi_2}$$

$\alpha \Rightarrow$ degree of fiscal dominance

Default decision

$$\zeta\left(\frac{R}{\Pi(0)}\right) > \zeta\left(\frac{R(1-h)}{\Pi(1)}\right) + \phi(\theta)$$

Government Budget Normalisation

$$\gamma y(\epsilon) = b$$

$$\frac{B_1}{P_2} R(1 - \delta h) = \tau y(\epsilon)$$

which becomes

$$\gamma \frac{P_1}{P_2} R(1 - \delta h) = \tau$$

back

Central Bank Balance Sheet

Central bank balance sheet at $t = 1$

Assets	Liabilities
bonds b^{cb}	money m
storage s^{cb}	

Central bank balance sheet at $t = 2$

Assets	Liabilities
bonds $b^{cb}\frac{R(1-\delta h)}{\Pi}$	money $\frac{m}{\Pi}$
storage ρs^{cb}	

back