General Structure of the Model Solution

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Solution to the macro matching model

Need to solve a 2x2 system

{ 2 variables: y, x
2 equations: aggregate demand, aggregate supply

The solution is given by

$$\begin{cases} y = \sigma(x)\left[f(x)\, k + \nu/\rho \right] \\ y = f(x) \cdot k \end{cases}$$

$\sigma/1-\sigma = \frac{MPS}{1-MPS}$

endowment of wealth

AS curve: $y^s(x) = f(x) \cdot k$

AD curve: $y^d(x) = \frac{\sigma(x)}{1-\sigma(x)} \frac{\nu}{\rho} = \frac{x^\varepsilon}{[1+\tau(x)]^{\varepsilon-\alpha}} \frac{\nu}{\rho}$

(pure)

Behavioral curve: $y^b(x) = \sigma(x)\left[y^s(x) + \frac{\nu}{\rho} \right]$

(behavioral)

$$y^b(x) = \sigma(x)\, y^s(x) + [1-\sigma(x)]\, y^d(x)$$

↑ Behavior of household is linear combination of Spending Supply & demand b/c $\begin{cases} \sigma \in (0,1) \\ 1-\sigma \in (0,1) \end{cases}$

Two equivalent formulations of the solution (RA / HA)

$$\begin{cases} y = y^D(x) \\ y = y^S(x) \end{cases}$$

$$\Leftrightarrow \quad \begin{cases} y = \sigma(x)\, y^S(x) + [1-\sigma(x)]\, y^d(x) \\ y = y^S(x) \end{cases}$$

$$\Leftrightarrow \quad \begin{cases} y = y^S(x) \\ y^S(x) = \sigma(x)\, y^S(x) + [1-\sigma(x)]\, y^d(x) \end{cases}$$

$\sigma \in (0,1)$

$$\Leftrightarrow \quad \begin{cases} y = y^S(x) \leftarrow \text{output given by AS} \\ y^S(x) - y^d(x) \leftarrow \text{tightness at AS = AD} \end{cases}$$