

Households

$$\begin{aligned} \max_{c,h} & u(c, \ell) \\ \text{s.t.} \quad & c = ((1 - s_M)w_Y + s_M w_M)h + rk + \tilde{\pi} \\ & 1 - h = \int_0^M \ell_t \mathrm{d}t \end{aligned}$$

Final Good

Consumption

$$\begin{aligned} Y &= \int_0^A \left( \left( \frac{b_i}{\bar{b}} \right)^{\chi\Omega} x_i \right)^\alpha L_y^{1-\alpha} \mathrm{d}i \\ \bar{b} &= \frac{1}{A} \int_0^A b_t \mathrm{d}i \end{aligned}$$

$$\max_{x_i} p_i x_i - rk - p_B b_i$$

Intermediate Market

Leisure

$$\ell = \left( \int_0^M \ell_t^{\frac{1}{1+\zeta}} \mathrm{d}t \right)^{1+\zeta}$$

$$\begin{aligned} \max_{L_{M_j}, N_j} & p_B B_j - w_M L_{M_j} \\ \text{s.t.} \quad & \ell_j = B_j = N_j \frac{L_{M_j}}{M} \ell \end{aligned}$$