

# IT Spillovers in TFP

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$$\max_{C_t, H_t, K_t^C, K_t^I} \sum_{j=0}^{\infty} \beta^j \left[ \log C_t - \frac{1}{2} H_t^2 \right]$$

subject to

$$Y_t^C = C_t + I_t^C \quad \text{and} \quad Y_t^I = I_t^I;$$

$$K_{t+1}^C = (1 - \delta^C) K_t^C + I_t^C \quad \text{and} \quad K_{t+1}^I = (1 - \delta^I) K_t^I + I_t^I;$$

$$C_t + K_{t+1}^C + P_t K_{t+1}^I = Y_t^C + P_t Y_t^I + (1 - \delta^C) K_t^C + (1 - \delta^I) P_t K_t^I$$

# Production Function

$$Y_t^C = S_t^C N_t (K_t^I)^\gamma (H_{1,t})^{1-a-b} (K_{1,t}^C)^a (K_{1,t}^I)^b$$

$$Y_t^I = S_t^I N_t (K_t^I)^\gamma (H_{2,t})^{1-a-b} (K_{2,t}^C)^a (K_{2,t}^I)^b$$

where

$$Y_t^C = C_t + I_t^C \quad \text{and} \quad Y_t^I = I_t^I;$$

$$K_{t+1}^C = (1 - \delta^C) K_t^C + I_t^C \quad \text{and} \quad K_{t+1}^I = (1 - \delta^I) K_t^I + I_t^I;$$

and

$$H_{1,t} + H_{2,t} = H_t,$$

$$K_{1,t}^C + K_{2,t}^C = K_t^C,$$

$$K_{1,t}^I + K_{2,t}^I = K_t^I$$

# IT productivity (level) on TFP







