

Lecture 3: Financial Markets and Development

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- Better diversification of idiosyncratic risks.
- Reduce credit constraints on investors
- Enable the transfer of funds to individuals with better investment opportunities.

Financial Development and Growth (Greenwood & Jovanovic 1990, Townsend 1979)

- Individuals' preferences

$$\log c(t) + E_t \log c(t+1)$$

- Labour Endowment, $l \in [\underline{l}, \bar{l}]$ with distribution $G(l)$ and $L = 1$.

- Production

$$Y(t) = K(t)^\alpha L(t)^{1-\alpha}$$

- 2 indivisible assets

1) q with certainty

2) $Q + \varepsilon$, $\varepsilon \sim iid(0)$

$$Q > q$$

- Fixed cost $\tilde{\zeta} > 0$ of participating to the market for risky assets

Financial Development and Growth (cont'd)

- Wage per unit of labor

$$\omega(t) = (1 - \alpha)K(t)^\alpha$$

- Indirect Utility for individuals with safe assets

$$V^N = \log\left(\frac{1}{1 + \beta}W_i(t)\right) + \beta \log\left(\frac{\beta R(t + 1)q}{1 + \beta}W_i(t)\right)$$

- Indirect Utility for individuals with risky assets

$$V^F = \log\left(\frac{1}{1 + \beta}(W_i(t) - \zeta)\right) + \beta \log\left(\frac{\beta R(t + 1)Q}{1 + \beta}(W_i(t) - \zeta)\right)$$

- $V^F > V^N$:

$$W > W^* = \frac{\zeta}{1 - (q/Q)^{\beta/(1+\beta)}}$$

Financial Development and Growth (cont'd)

Dynamics in Equilibrium

- Individuals using the market for risky assets

$$g^F = 1 - G\left(\frac{W^*(\tilde{\zeta})}{(1 - \alpha)K(t)^\alpha}\right)$$

- The higher $K(t)$ the more individuals in the financial market.
- The lower $\tilde{\zeta}$ the more individuals in the financial market.
- Let $\chi_{\tilde{\zeta}}(t) = W^*(\tilde{\zeta}) / (1 - \alpha)K^\alpha(t)$

$$K(t+1) = \frac{\beta}{1 + \beta} \left[q \int_I^{\chi_{\tilde{\zeta}}(t)} IdG(I) + Q \int_{\chi_{\tilde{\zeta}}(t)}^1 IdG(I) \right] (1 - \alpha)K(t)^\alpha$$

- A better financial market (lower $\tilde{\zeta}$) increases development (higher $K(t+1)$)
- More capital $K(t)$ improves the financial market (i.e. more individuals can efficiently use it)
- Inverse U-shaped relation between growth and inequalities (Kuznet effect)

Financial Development and Growth (cont'd)

Empirical Evidence

- Levine (2005) provides a survey of this literature
- King and Levine (1993) document the cross-country correlation between measures of financial development and economic growth,
- Rajan and Zingales (1998) show that lack of financial development has particularly negative effects on sectors that have greater external borrowing needs
- Jayaratne and Strahan (1996) document how banking deregulation that increased competition in US financial markets led to more rapid financial and economic growth within the United States.

Credit Market Imperfection and capital Investments

A “convex” world

$$\begin{aligned} \max_{c_t} \quad & \sum_{t=0}^{\infty} \beta^t u(c_t) \\ & c_t + s_t \leq y_t \\ & y_t = f(s_{t-1}); y_0 = \omega \end{aligned}$$

- For any ω , convergence to a Unique steady state c^*, y^*, s^*
- Initial inequalities do not matter

Credit Market Imperfection and Human capital Investments (Galor and Zeira 1993)

The model

- Individuals Utility

$$\begin{aligned} \max_{c(t), b(t)} & (1 - \delta) \log c_i(t) + \delta \log b_i(t) \\ \text{st } & c_i(t) + b_i(t) \leq y_i(t) \end{aligned}$$

- Individuals work when young and obtain wage w^u
- Or invest a **fixed amount** h in human capital and obtain w^s , when adult.
- **Imperfect Credit markets:** Lending rate r , borrowing rate i ; $i > r$ (Costs of monitoring necessary to induce agents to pay back the loans)
- Assume

$$w^s - h(1 + r) > (2 + r)w^u$$

(With wealth $x > h$ it is always profitable to invest in human capital)

Credit Market Imperfection and Human capital Investments (cont'd)

Analysis

- if $x < h$

$$U_s(x) = \log(w^s - (1+i)(h-x)) + \log(1-\delta)^{1-\delta} \delta^\delta$$

$$U_u(x) = \log((1+r)(w^u + x) + w^u) + \log(1-\delta)^{1-\delta} \delta^\delta$$

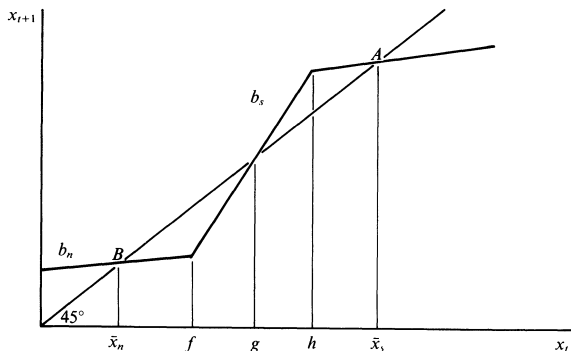
- $U_s(x) > U_u(x)$

$$x > f \equiv \frac{(2+r)w^u + (1+i)h - w_s}{1-r}$$

Credit Market Imperfection and Human capital Investments (cont'd)

Analysis

$$x_{t+1} = \begin{cases} b^u(x_t) = \delta((1+r)(w^u + x_t) + w^u) & x_t < f \\ b^s(x_t) = \delta(w^s + (1+i)(x_t - h)) & f \leq x_t < h \\ b^s(x_t) = \delta(w^s + (1+r)(x_t - h)) & x_t \geq h \end{cases}$$



Credit Market Imperfection and Human capital Investments (cont'd)

Main results

- Poor individuals with $x < g$ converge to x_n
- Rich individuals converge to x_r
- An economy initially poor stay poor in the long run: Initial Wealth distribution matters

Credit Market Imperfection and capital Investments

Other Contributions

- There is a general equilibrium effect on Price that Galor and Zeira do not take into account
- Banerjee and Newman (1994) consider effect of inequalities on Wages
- Piketty (1997) and Aghion and Bolton (1997) the effect of inequalities on Interest rates
- Proto (2006) the effect on rental prices

- Positive effect of Financial Markets on Development due to better risk diversification opportunities
- Imperfect Credit markets and poverty affect access to rentable investments and growth