

Economics 404W

lecture 18

Professor Tybout
March 16, 2006

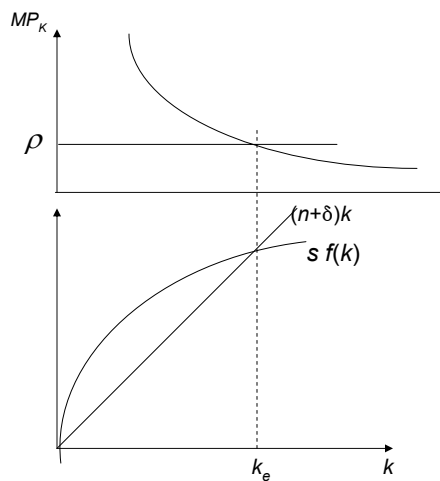
Note: Problem set to be posted today

The case for government intervention

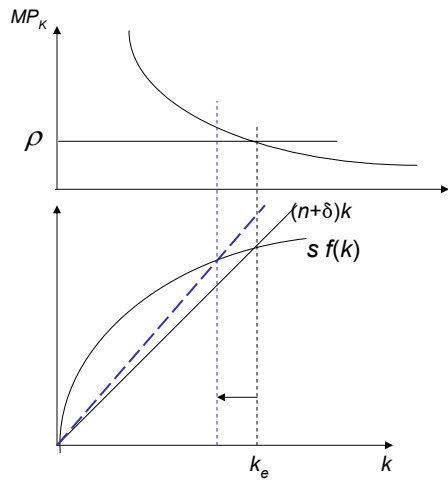
- Fertility choices by poor households can sustain poverty traps across generations.
- Rapid population growth should drive down per capita incomes (Solow model).
- When decision-making is not centralized, fertility decisions don't take the costs of public goods into consideration (The "tragedy of the commons").
 - Subsidized services are treated as free at the margin—schools, roads, water works, security forces, grazing lands, fishing waters, clean air.
 - Even in extended households, costs imposed on other members by extra children are not fully factored into decisions.
 - Sometimes externalities are imposed on other countries—environmental, global wage effects.

Some arguments against government intervention

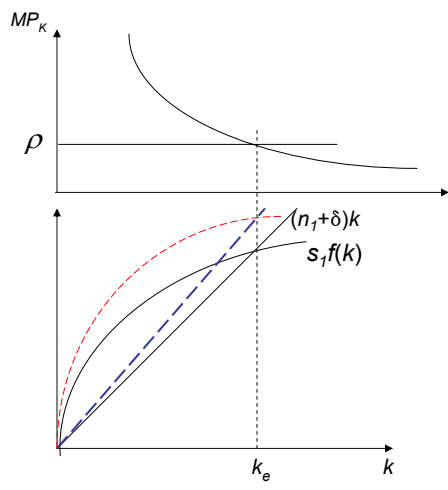
- When families have more kids the parents work harder. (This isn't a positive benefit, it perhaps reduces the negative impact)
- More people mean more brains around.
- More people mean a higher return to capital, which stimulates investment.



In the Solow model with an endogenous savings rate, people choose s so that the marginal product of capital matches their rate of time preference (ρ).



If the population growth rate increases, this reduces the equilibrium capital-labor ratio (k), and drives up the marginal product of capital.



People should react by saving more, thereby restoring equality between the marginal product of capital and the rate of time preference.

Some arguments against government intervention

- The correlation between *growth rates* in per capita GDP and per capita income is negative but weak.
- While it is certainly true that poor countries tend to have high rates of population growth, it is not clear whether this growth is a cause or a consequence of poverty.

Some arguments against government intervention

- It is not clear how to weight the welfare of future generations. Maximize well-being of typical individual?

$$\max \sum_{t=0}^{\infty} \frac{U(c_t)}{(1+\rho)^t} \quad \text{subject to:} \quad \begin{aligned} \Delta K_t &= F(K_t, L_t) - cL_t \\ \Delta L_t &= nL_{t-1} \end{aligned}$$

Or maximize the total amount of well-being in the society, summing over individuals?

$$\max \sum_{t=0}^{\infty} \frac{L_t U(c_t)}{(1+\rho)^t} \quad \text{subject to:} \quad \begin{aligned} \Delta K_t &= F(K_t, L_t) - cL_t \\ \Delta L_t &= nL_{t-1} \end{aligned}$$

Policies that influence desired family size

- Education for girls/women
 - Children cost women more than they do men in terms of time and energy. The more educated the woman, the higher the opportunity cost.
 - Women who complete primary school have significantly fewer children. Example from India during 1960s:

<i>Education level of Women</i>	<i>Average Number of Children</i>
Illiterate	3.5
Primary School	3.4
Secondary School	3.1
College	3.0
Post-Graduate	2.5

Policies that influence desired family size

- Education, continued
 - Education delays marriage in favor of schooling, or work. One recent study: Women with more than 7 years of education married at least 3.5 years later in 10 of 14 LDCs studied.
 - Educated women are also more likely to know about and adopt new birth control methods.
 - Kenya: 22% of women with more than 9 years of schooling use contraceptives; 7% with less than 5 years
 - Mexico: 72% versus 31% for same groups

Policies that influence desired family size

- Improved labor market for women
 - Women who work full time, especially in modern sector jobs, have fewer children.
 - higher opportunity cost of time, and
 - in the modern sector, no extended family to watch the kids
 - Women who work in the marketplace also delay marriage 1.5 to 2 years relative to those who don't
 - Increased opportunities for women increase the return to educating girls, which in turn reduces pressures to keep having children until there are males who will support the parents in old age.

Policies that influence desired family size

- Direct incentives and disincentives
 - Payments for delaying births, sterilization
 - Withholding of social benefits from families that are “too big”
 - Minimum marriage age
 - Various forms of incentive and disincentives exist in over 30 countries, but it is difficult to gauge their impact.
 - Tax disincentives are the most common (Ghana, Malaysia, Pakistan, Philippines)
 - These limit deductions, child allowances, maternity benefits.

Policies that influence desired family size

- Emphasis on basic needs satisfaction
 - Increases the probability of survival for infants, and reduces the incentives for bulk production
 - Makes parents more inclined to invest in the education of their children if they are likely to survive.
 - Success stories: In Sri Lanka, Thailand and Turkey income gains and social services have been relatively equally distributed; these countries also have made rapid progress in terms of birth rate reductions.
 - Less successful: Brazil and Venezuela had rapid GDP growth but unequal income distribution; these countries improved less in terms of birth rate reductions.

Policies that influence desired family size

- Develop alternative means of old age support
 - Can mean improving financial markets, or implementing a social security system.
 - Experimental evidence
 - Experimental Mexican social security program for sugarcane workers appeared to reduce fertility by 10%.
 - Indian tea estate paid into savings accounts for individual female workers. Amounts paid in were negatively related to number of children. The program led to later marriage, fewer children

Policies that help couples realize their desired family size

- Disseminate information about birth control and the benefits of smaller families,
- Promote the notion that family planning is socially acceptable, and/or provide subsidized contraception.

Evidence

- There is some evidence that family planning programs reduce fertility rates, particularly in countries and regions where people are relatively educated.

What fertility determinants are empirically important?

- Difficult to sort out the roles individual policies in determining fertility rates.
- One can, however, look at the proximate causes of fertility decline:
 - Marriage delay (x_{1i})
 - Breast feeding (x_{2i})
 - Use of contraception (x_{3i})
 - Other ($\beta_0 + u_i$)

Regression model:

$$f_i = 17 - \beta_1 x_{1i} - \beta_2 x_{2i} - \beta_3 x_{3i} - (\beta_0 + u_i)$$