

Discussion of
**Fertility, Social Mobility and Long-Run
Inequality**

by **Juan Carlos Cordoba, Xiying Liu, and Marla Ripoll**

Ali Shourideh

Wharton

Intergenerational Persistence

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- Is this consistent with altruism and fertility choice?
- Potentially important:
 - How much of inequality comes from being born in large families
 - Non-altruistic motives for fertility → tax policy to fix the possible externalities

Standard Framework

- Barro-Becker model of endogenous fertility (Alvarez (1999))

$$\max \frac{c^{1-\sigma}}{1-\sigma} + \beta n^\varepsilon V(B'/n; \omega)$$

subject to

$$c + \lambda(\omega)n + B' = \omega + (1+r)b$$

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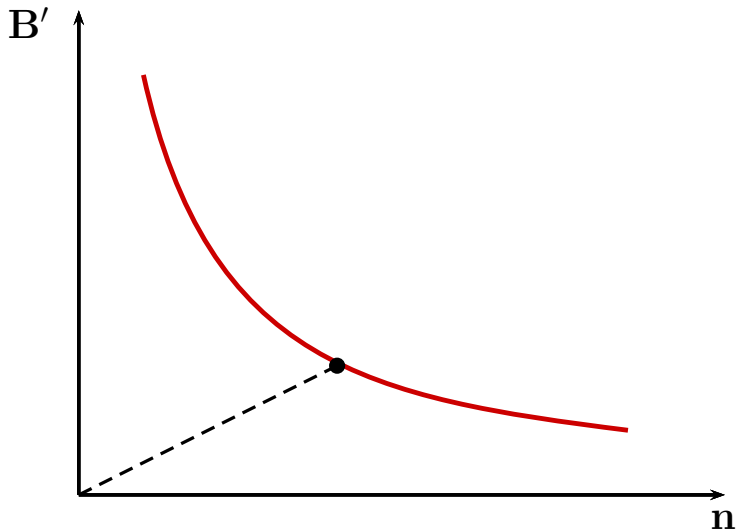
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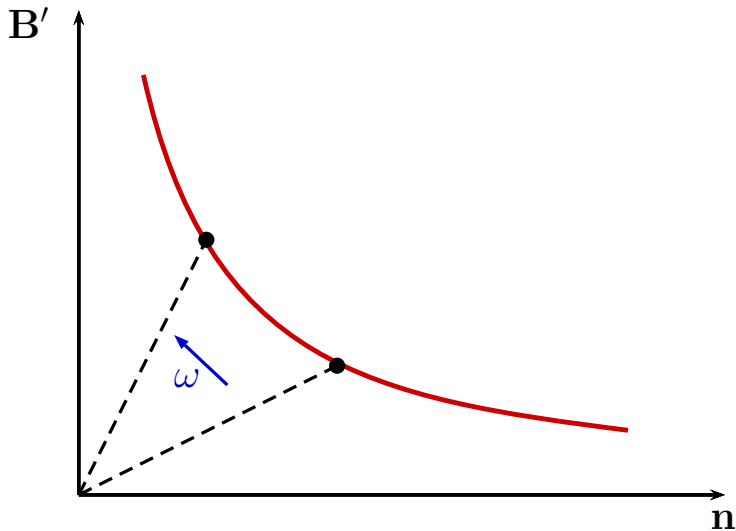
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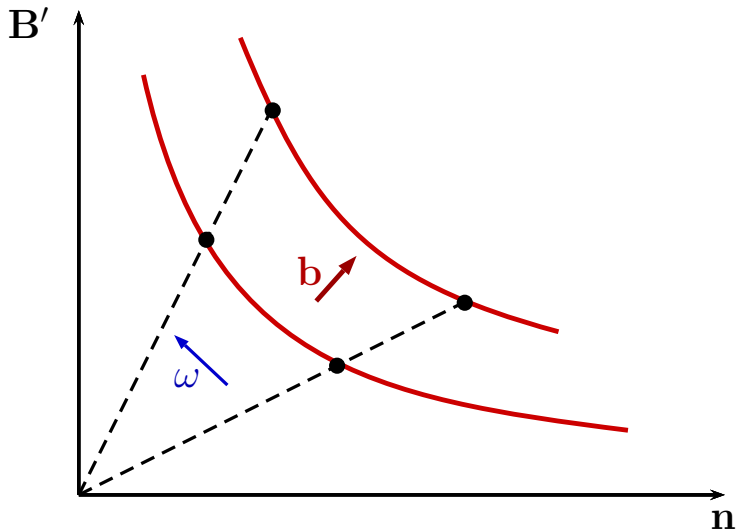
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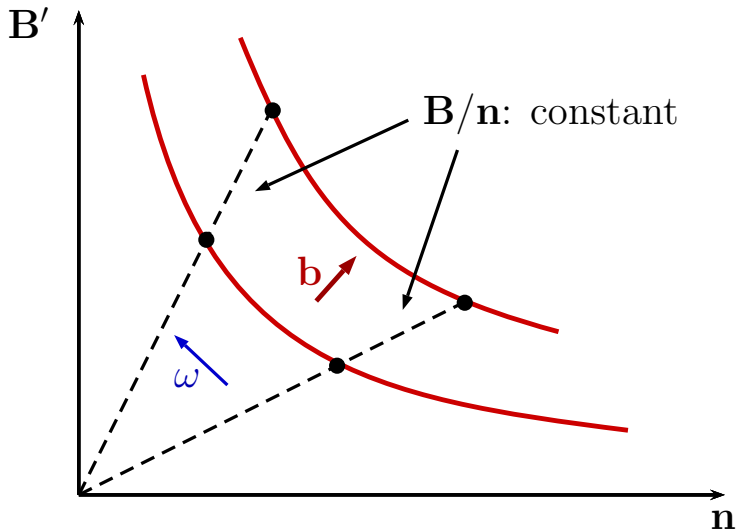
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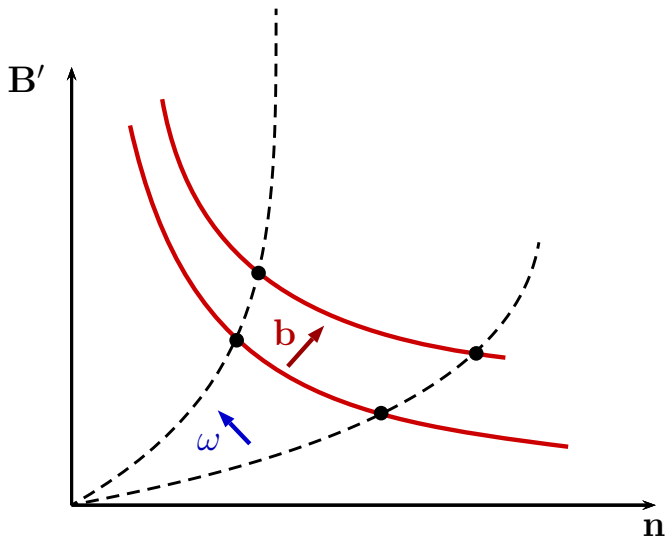
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 $\Rightarrow B'/n$ is independent of b
- persistence: inconsistent with altruism
- More broad definition of altruism - can be warm-glow

- Cordoba, Liu and Ripoll: non-homothetic preferences + concave costs of children
 - non-homothetic preferences: exponential discounting:

$$\beta(1 - e^{-\mu n})V(B'/n; \omega)$$

- concave costs: cost of children: $\lambda [(n + \kappa)^\theta - \kappa^\theta]$
- MRS between n and B' decreasing in n

Wealth-expansion lines



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 - non-homothetic preferences: exponential discounting:

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- concave costs: cost of children: $\lambda [(n + \kappa)^\theta - \kappa^\theta]$
- My discussion:
 - Are these assumptions reasonable?
 - Are there other ways to create persistence?

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Utility from kids

- How can we identify utility from kids?
 - BB: “Frisch” elasticity of fertility is constant
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 - Alternative – identification via wealth effect: look at how changes in house prices affect fertility

Evidence – Lovenheim and Mumford (2013)

Table 6: Linear Probability Model Estimates of the Effect of 4-Year Housing Price Change on Birth Probability for Homeowners, by Number of Children, Family Income, and Decade

4-Year Home Price Change Interacted with:	Estimated Effect of \$100,000 Increase (1)	Mean Fertility Rate (2)	Estimated % Change in Birth Probability (3)
<u>Family Income:</u>			
Top Quartile	0.0103** (0.0023)	0.0543	18.97%
Third Quartile	0.0105** (0.0049)	0.0605	17.36%
Second Quartile	0.0076** (0.0038)	0.0515	14.76%
Bottom Quartile	-0.0018 (0.0034)	0.0427	-4.22%

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<u>Number of Children:</u>			
0 Children	-0.0007 (0.0025)	0.0428	-1.64%
1 Child	0.0305** (0.0048)	0.0727	41.95%
2 Children	0.0041* (0.0024)	0.0448	9.15%
3+ Children	0.0056* (0.0032)	0.0494	11.34%

ALTERNATIVE MECHANISMS

Standard Barro-Becker

- BB not qualitatively in contradiction with persistence:
 - If ω_t is AR(m) \rightarrow b_t is AR(m)
- Does it work?
 - Special case: $1 - \sigma = \varepsilon$
 - Cast the problem in terms of dynasty aggregates C_t, N_t, B_t :

$$\max \frac{C^{1-\sigma}}{1-\sigma} + \beta E [V(\omega'N' + (1+r)B'; \omega') | \bar{\omega}]$$

subject to

$$C + \lambda(\omega)N' + B' = \omega N + (1+r)B$$

- Standard portfolio problem with a risk-free bond and risky asset with return: $\frac{\omega'}{\lambda(\omega)}$

Standard Barro-Becker

- Solution - Samuelson/Merton:

$$\frac{B'}{N'} = \frac{1 - \rho_n(\vec{\omega})}{\rho_n(\vec{\omega})} \lambda(\omega)$$

- ρ_n determined by the stochastic process for $\omega'/\lambda(\omega)$
- Olivetti and Paserman(2014):

$$\log \omega' = 0.07 \log \omega_- + 0.21 \log \omega + \epsilon'$$

- If $\lambda(\omega)$ is linear: 1% increase in ω_- increases $\omega'/\lambda(\omega)$ by 0.09% percent
- Does not seem to be able to create enough persistence

Intergenerational Transfers

- The only source of persistence: bequests
- Many households do not leave bequests or do not have bequest motives
 - Hurd (1987): people with children decumulate wealth faster!
 - Kopczuk and Lupton (2007): around a quarter of the elderly do not have bequest motive
- The decision to have children is at a young age: uncertainty about bequests
- maybe need to consider other notions of intergenerational transfers

Quantity-Quality Trade-off

$$\max \frac{c^{1-\sigma}}{1-\sigma} + \beta n^\varepsilon V(\omega'; \omega)$$

subject to

$$\begin{aligned} c + sn + \lambda(\omega)n &= \omega \\ \omega' &= h(s, \omega) \end{aligned}$$

- Persistence through human capital: $h(s, \omega)$
- Including bequests: same issue as before

Q-Q + Credit Constraints

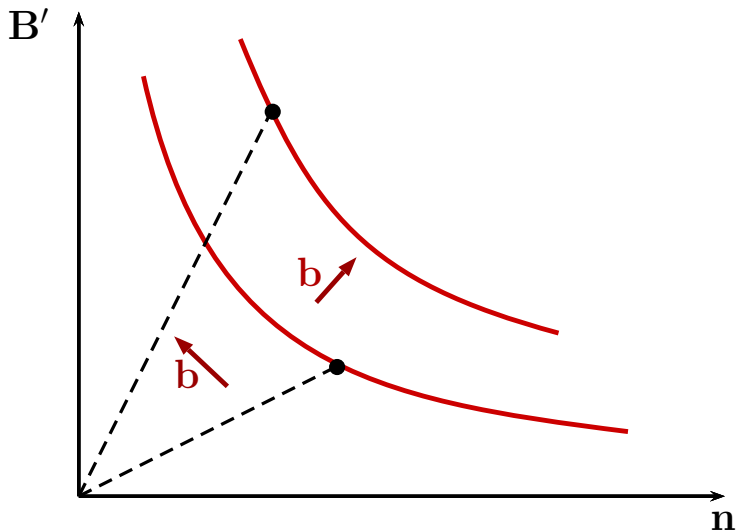
$$\max \frac{c^{1-\sigma}}{1-\sigma} + \beta n^\varepsilon V(B'/n(1+r) + \omega'; \omega)$$

subject to

$$\begin{aligned} c + sn + \lambda(\omega)n + B' &= b + \omega \\ \omega' &= h(s, \omega) \\ s &\leq f(b) \end{aligned}$$

- Increase in b allows parents to invest more in children's quality
- increase in b leads to a higher cost of children: quantity bequest trade-off

Q-Q + Credit Constraints



Conclusion

- Break lack of persistence with non-homothetic preferences:
 - needs some validation outside the model
- Alternative: Quality-quantity trade-off + credit constraints