The Long Shadow of Political Campaigns: Inequality and Welfare

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- Democracy and economic outcomes: Acemoglu et al. (2019).
- Political clientelism + elite capture: Bardhan and Mookherjee (2000).
- We ask/study:
 - When public investment in human K formation is *more* effective than private investment, does electoral democracy *necessarily* lead to a more skilled population in the long run?
 - The *long-run* level of inequality and aggregate consumption in such an environment with and without *political campaigns*.
- Our analysis serves to link two stylised facts.
 - Lower inequality in Europe relative to the US.
 - Stricter rules on campaign donations in Europe relative to the US.

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- We study the dynamics of inequality with a focus on politics.
- Convergence in incomes: Becker and Tomes (1979), Loury (1981),...
- Steady states with inequality: Banerjee and Newman (1993), Galor and Zeira (1993), Ljungqvist (1993), Mookherjee and Ray (2003, 2010),...
- Our route relies on the *political process* embedded in the setup.
- Similar to to Hassler et al. (2007) in terms of setup.
- Also relates to Lizzeri and Persico (2001), Levy (2005), Dasgupta and Saha (2022), and Mitra (2023).

- Single good economy, produced through two technologies.
- Using skilled labor (*L_{st}*).
 - Production function: AL_{st}^{ϕ} , where $0 < \phi < 1$, and $A \ge 1$.
 - A skilled worker gets a wage as well as a share of profit.
 - Income of a skilled worker: $m_{st} \equiv w_{st} + \pi_{st}/L_{st} = AL_{st}^{-(1-\phi)}$.

- Using unskilled labor (L_{ut}) .
 - Production function: *L*_{ut}.
 - The income of an unskilled worker is $m_{ut} = 1$.
- $A \ge 1$ and $L_{st} + L_{ut} = 1$; so, $L_{st} < 1 \implies y_{st} > y_{ut}$.

- Education: necessary, not sufficient to get a job in the skilled sector.
- An educated individual gets such a job with probability $p \in (0, 1)$.
- Cost of
 - private education: h < 1.
 - public education: $\frac{h}{\gamma}$, where $\gamma > 1$.
- Note: An unskilled worker can invest in education, if she wishes to.

- OLG with no population growth.
- Each agent lives for 2 periods: first as a child and then as an adult.
- Warm glow/intergenerational altruism.
- Expected income of a child depends upon education.
- Govt. collects tax in period t from the rich: τ_t
- Tax money can be used in two ways:
 - Transfer to all adults: b_t
 - **2** Public Education: $e_t^i \in \{0, \frac{h}{\gamma}\}; i = u, s.$
- Denote the policy tuple: $\Pi_t \equiv \langle \tau_t, \{b_t, e_t^u, e_t^s\} \rangle$.
- At period t, the balanced budget constraint of the Govt.:
 L_{st} · τ_t = b_t + Σ_{i={u,s}} L_{it} · eⁱ_t.

• At any period *t*, the present discounted value of lifetime utility of a parent of type *i* is

$$V_t^{i} = \frac{(c_{it})^{1-\sigma}}{1-\sigma} + \beta \frac{(Ey_{t+1}^{i})^{1-\sigma}}{1-\sigma}$$

- $eta \in (0,1)$: parental warm glow/intergenerational altruism,
- c_{it}: her own consumption,
- Ey_{t+1}^i : expected income of her child.
- Given a policy tuple, if $e_t^i = 0$, then a parent of type *i* decides the probability with which she wants to invest in her child's education.

No Govt./Autarky: Based on Dasgupta and Saha (2022)

- Markov perfect equilibria: at any period t, each parent's educational investment is only conditioned on the state variable y_{st}.
- ⟨λ_{st}, λ_{ut}⟩ is an equilibrium if for any parent of type *i*, when all other parent of type *i* invest with probability λ_{it} and parents of type *j* invest with probability λ_{jt}, where *i*, *j* = {*s*, *u*} and *i* ≠ *j*, the following condition holds:

$$\frac{(y_{it}-h)^{1-\sigma}}{1-\sigma} + \beta \cdot \frac{[p \cdot y_{st+1} + (1-p) \cdot 1]^{1-\sigma}}{1-\sigma} \ge \frac{(y_{it})^{1-\sigma}}{1-\sigma} + \beta \cdot \frac{1}{1-\sigma}$$
(1)

where $L_{st+1} = p \cdot (\lambda_{st}L_{st} + \lambda_{ut}L_{ut})$ and $y_{st+1} = AL_{st+1}^{-(1-\phi)}$ if $\lambda_{it} \in (0, 1)$ then (1) must bind.

- State Variable: y_{st}.
- Three Distinct ranges of Parental Warm Glow.



Figure 1: Characterisation of the Equilibria at Autarky



Figure 2: Dynamics and Steady States at Autarky

The Timeline: Majority Rule Without Political Campaign



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Assumption 1

Post-tax income of a skilled worker is higher than that of an unskilled worker: $y_{st} - \tau_t > y_{ut}$, in particular, $\max \tau_t = y_{st} - (1 + \bar{\tau})$.

Assumption 2

Even when the skilled earn the least and pay taxes to fund education for all children, their post-tax income will be higher than $1 + \overline{\tau}$:

$$\min y_{st} - \frac{1}{p} \cdot \frac{h}{\gamma} > 1 + \bar{\tau} \quad \Rightarrow \quad Ap^{-(1-\phi)} - \frac{1}{p} \cdot \frac{h}{\gamma} > 1 + \bar{\tau}.$$

Assumption 3

A taxpayer's child cannot be excluded from public education.

- We characterise various policies and analyse their welfare implications.
 - Benevolent Social Planner's Ideal Policy: tax the rich to fund public education for all.
 - Pro-Rich Policy: rich pay tax to fund public education for only their children.

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- Pro-Poor Policy: tax the rich to fund public education for all+redistribute.
- Voting will entail choosing one of these policies.



Figure 3: Ranges of Parental Warm Glow/ Intergenerational Altruism Parameter

Welfare Comparisons

Rankings are the same $\forall \beta \geq \bar{\beta}^P$

	Social Planner's Ideal Policy	Pro-Rich Policy	Pro-Poor Policy
Who gets public education? Children of	All	Only Skilled	All
Transfer?	No	No	Yes
Present discounted value of lifetime utility of a skilled	In between	Maximum	Minimum
Present discounted value of lifetime utility of an unskilled	In between	Minimum	Maximum
Social Welfare /Size of the Pie ($eta \geq ar{eta}$)	Maximum	Minimum	Maximum
Inequality	In between	Highest	Least

- Rich may spend on political campaign to influence voters.
- Why? So that the winning party may implement the pro-rich policy.
- Only relevant when $L_{ut} > L_{st}$, so let's assume that is the reality.
- Assume political campaign can only influence unskilled workers
- All skilled workers pay for political campaign equally.
- For this talk, assume only party A is opportunist and party B is not [can be relaxed].



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- Let c be the proposed amount for the political campaign.
- Suppose party A has accepted this offer.
- Party A runs the advertisement to malign the opposition, party B.
- In particular, party A campaigns that if party B comes to power, then the future incomes will go down by θ(c).
- We assume $\theta^{'}(c) < 0$ and $\theta(0) = 1$.
- An unskilled parent would believe that were party B to win, then her present discounted value of lifetime utility would be

$$\frac{1}{1-\sigma} + \beta \frac{(\theta(c) \cdot (Ap^{\phi} + 1 - p))^{1-\sigma}}{1-\sigma}$$

Comparison of Cost Thresholds for Various Ideologies

- Parental Warm Glow is **H**igh.
- Ideology of Party B could be (i) Benevolent Social Planner's, Pro-Rich, or Pro-Poor.



Minimum Costs of Political Campaign to Influence against various Ideologies

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Discussion: Comparative Statics and Welfare

• Based on the cost thresholds, political campaign is more likely when

- the mass of skilled is lower
- the income of skilled is higher
- the extra amount $\bar{\tau}$ they can keep is lower.
- Pro-rich policy is implemented.
- Welfare: benchmark pro-rich, but with deadweight loss due to the political campaign!

- Even if party B *is* pro-rich, there is still a deadweight loss.
- Why? The existence of an opportunist party (i.e., Party A).

- In an unskilled majority economy:
 - without political campaign, pro-poor policy gets implemented
 - with political campaign, pro-rich policy gets implemented.
- Effect of Political Campaign:
 - Cross-sectional: (i) Inequality is higher because of less redistribution, (ii) Deadweight loss.
 - Long-term Effect: The mass of skilled workers is lower for eternity.
- In terms of inequality, an economy with political campaign is worse than the autarky – more effective (less costly) public education benefits only the rich and affect the poor (weakly) adversely.