

# Dynamics of Political Institutions

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# Introduction

- So far we have examined static models of political competition (PC), a specific democratic institution
- Can extend to generate dynamic implications
- A static PC model predicts at any given date  $t$ , a mapping from income distribution (ID) at  $t$  to Economic Policy (EP) at  $t$
- We can use this to generate a political economy theory of dynamics (growth or income distribution):

$$\text{ID at date } t \xrightarrow{\text{(politics)}} \text{EP at date } t \xrightarrow{\text{(economics)}} \text{ID at date } t+1 \rightarrow$$

# Political Economy Steady State Models

- Alesina-Rodrik (1994): take a PE model with no elite capture (instead populism a la median voter); high inequality countries have higher taxes and lower growth in the long run
- Benabou (2000): argues that the Alesina-Rodrik model is not consistent with cross-country facts
- Uses a PE model with elite capture, where high inequality generates low taxes, which in turn re-generates high inequality
- His model has multiple steady states which describe difference between US (high inequality, generates right-wing policy, which re-generates high inequality) and W Europe/E Asia (low inequality, generates redistributive welfare state, which re-generates low inequality)

# Dynamics of Political Institutions

- 'Bigger' questions (of interest to development economists and economic historians):
  - comparisons of outcomes of democracy with autocracy
  - transition between autocracy and democracy
- Of particular interest is the possibility of macro 'underdevelopment traps' owing to political economy reasons

## Institutional Traps: Historical Examples

- Engerman and Sokoloff (JEP 2000): historical analysis of divergence between North and Central/South America in 20th century traced back to colonial origins in 16th and 17th century:
  - CSA were more suitable for minerals and cash crops (sugar, coffee) than NA attracted wealthier colonial settlers from Europe
  - These settlers created political institutions to ensure their monopolization of these resources, enslavement of indigenous population and slave imports to create cheap labor source
  - Kept taxes low, did not educate the masses, prevented democracy (compared to NA)
  - When Industrial Revolution arrived in 19th century they were unprepared and fell behind NA
- Similar story by Acemoglu, Robinson and Johnson (2001): cross-country regressions of modern day p.c.i., political institutions on colonial settlements in 16th-17th century (instrumented by exposure of settlers to tropical disease)

# Transition from Autocracy to Democracy

- Spread of Democracy: e.g., extension of franchise in UK and US during 19th century
- Why did autocrats/elites agree to dilute their own power?
- Acemoglu-Robinson (QJE 2000) provide one answer: threat of revolution owing to progressive rise of inequality, autocrats cannot credibly commit to redistribute, so must agree to usher in democracy
- Lizzeri-Persico (QJE 2004) provide different answer for 19th century democratic reforms in the UK: democracy only way to ensure provision of public goods (eg sanitation and public health) which affect elites

# Transition from Autocracy to Democracy: Historical Path-Dependence

- Borguignon-Verdier model formalizes the Engerman-Sokoloff 'story'
- More generally:
  - how high historical inequality may trap some countries into persistent underdevelopment (zero growth) and autocracy
  - while others with less inequality but same 'fundamentals' transit into democracy with restricted/small middle class, low growth and perpetuation of elite power
  - and those with low starting inequality transit into robust democracy with large/growing middle class, high growth and vanishing elite power

## Borguignon-Verdier (2000), Assumptions

- Two Period version (later sections discuss extensions to more periods)
- Period 1: Two classes of citizens:
  - *elites*, income  $y^r$ , educated, proportion  $1 - p$  of population
  - *poor*, income  $y^p$ , uneducated, proportion  $p$
- All parents have one child
- Cost of education 1, where  $y^r > 1 > y^p$
- No credit market, poor cannot afford to educate their children, rich can
- Return to education:
  - private return:  $R > 1$
  - social return  $\mu$  (human capital externality): per capita income in the economy at  $t = 2$  increases by  $\mu \cdot E$  if  $E$  is the fraction of population with education at  $t = 2$

# Education Investment/Policy in Period 1

- Elites are altruistic towards their own children (zero discount rate), so will invest in education privately even without any public education subsidy
- They also decide on how much taxes to pay to fund public education for the poor
- Government funds subsidy  $1 - y^P$  for each poor child, parent has to contribute  $y^P$
- Public education provided to proportion  $e \leq p$ , costs government  $T = e(1 - y^P)$  per capita
- Government raises revenues via proportional income taxes at rate  $\tau$  involves deadweight losses/admin costs of  $a\tau^2$  per dollar of income taxed

# Political Power

- Country is an autocracy ruled by elites, or a 'nominal' democracy where political participation/awareness of citizens depends on their education
- An uneducated citizen has zero awareness/turnout, hence in period 1 the elites decide government policy entirely in their own self-interest (*oligarchy*)
- In period 2, any poor citizen that has received education in period 1 becomes politically aware/active:
  - If  $e \leq 1 - p$  the oligarchy persists (median voter is still an elite)
  - If  $e > 1 - p$  a genuine democracy emerges representing interest of the 'middle class' (educated child of a poor parent)

# Key Trade-off faced by Elites in Period 1

- *Cost* of funding public education at scale  $e$  at  $t = 1$ :
  - Fiscal cost  $\frac{1}{1-p} [e(1 - y^p) + ae^2 \frac{(1-y^p)^2}{\bar{y}}]$
  - Loss of political power in Period 2 to new middle class if  $e > 1 - p$
- *Benefit*: extra income at  $t = 2$  of  $\mu e$  owing to human capital externality

Elite Dynasty Payoff at  $t = 1$ 

$$Y(e) \equiv [y^r - 1 - \frac{1}{1-\rho}] [e(1-y^p) + ae^2 \frac{(1-y^p)^2}{\bar{y}}] + [y^r + R + \mu(1-\rho + e)] \quad (1)$$

$$\frac{\partial Y(0)}{\partial e} > 0 \quad \text{if and only if} \quad \mu > \frac{1-y^p}{1-\rho} \quad (2)$$

# Public Education Investment in Period 1, Conditional on Perpetuation of Oligarchy

## Proposition

The optimal choice of  $e$  by the elite over the range  $[0, 1 - p]$  is the following. If (2) holds, optimal choice of  $e$  is:

$$e^* = \min\left\{1 - p, \frac{\mu(1 - p) - [1 - \bar{y} + (1 - p)x]}{\frac{2a(1 - \bar{y} + (1 - p)x)^2}{\bar{y}}}\right\} \quad (3)$$

(where  $x \equiv y^r - y^p$ ,  $y^p \equiv \bar{y} - (1 - p)x$ , and zero otherwise.

Higher initial inequality/poverty ( $y^p$  low/ $x$  high, for given  $\bar{y}$ ) implies  $e^*$  low; high human capital externality  $\mu$  implies  $e^*$  high

## Government Policy in Period 2

- Two period model assumes  $t = 2$  is the last period, so there is no point investing in education
- So policy choice reduces to selecting (linear) income tax policy, which could redistribute from rich to poor at  $t = 2$
- If tax rate is  $\tau$ , it raises per capita revenue of  $c = \tau \bar{y}_B (1 - a\tau)$ , where  $\bar{y}_B \equiv \bar{y} + (\mu + R)(1 - p + e)$  is period 2 per capita income
- This allows government to provide lump sum welfare support of  $c$  to everyone in the population

## Government Policy in Period 2, contd.

- If  $e \leq 1 - p$ , median voter is elite, will not want to redistribute  $\rightarrow$  right wing government (oligarchy perpetuated) selects  $\tau = 0 = c$
- If  $e > 1 - p$ , median voter is the middle class (educated, child of a poor parent), whose after-tax income at  $t = 2$  is:

$$Z(\tau; e) = [\bar{y} - (1 - p)x + R + \mu(1 - p + e)](1 - \tau) + \tau(1 - a\tau)[\bar{y} + (\mu + R)(1 - p + e)] \quad (4)$$

## Government Policy in Period 2, contd.

### Proposition

Suppose democracy emerges in Period 2 ( $e > 1 - p$ ). Then the period 2 tax rate is 0 if

$$x(1 - p) \leq R(p - e) \quad (5)$$

and

$$\tau^*(e) = \frac{x(1 - p) - R(p - e)}{2a[\bar{y} + (\mu + R)(1 - p + e)]} \quad (6)$$

otherwise.

*Intuition:* Middle class does not want any redistribution if its pre-tax income  $\bar{y} - (1 - p)x + R + \mu(1 - p + e)$  is bigger than per capita income  $\bar{y} + (R + \mu)(1 - p + e)$ , which reduces to condition (5)

Can also interpret (5) as saying that income gap between elite and middle class at  $t = 2$  is smaller than gap between middle class and poor.

## Nature of Democracy in Period 2

- If  $e$  is low, condition (5) is more likely to hold, a right wing democracy ( $\tau = 0$ ) emerges
- If  $e$  is close enough to  $p$ , condition (5) will not hold, and we get a redistributive democracy ( $\tau > 0$ )
- $\tau^*(e)$  is increasing if  $R \geq (1 - p)x$  or  $R < (1 - p)x$  and  $1 + \frac{\mu}{R} < \frac{\bar{y}}{(1-p)x - R}$

## Elite's Income Loss in Period Two when Democracy Emerges

- Now consider choice by elite at  $t = 1$  over the range  $e > 1 - p$
- Elite has nothing to lose at  $t = 2$  from emergence of democracy if (5) holds, equivalent to  $e \leq e_\tau \equiv p - \frac{x}{R}(1 - p)$
- If  $e > e_\tau$ , elite stands to lose from emergence of democracy at  $t = 2$  an amount of

$$L(e) = \tau^*(e)[px + R(p - e)] - a(\tau^*(e))^2[\bar{y} + R + \mu(1 - p + e)] \quad (7)$$

- Total PV Income of elite families as a function of  $e$  and optimal choice  $e^*/e^0$  depicted in Figure 1

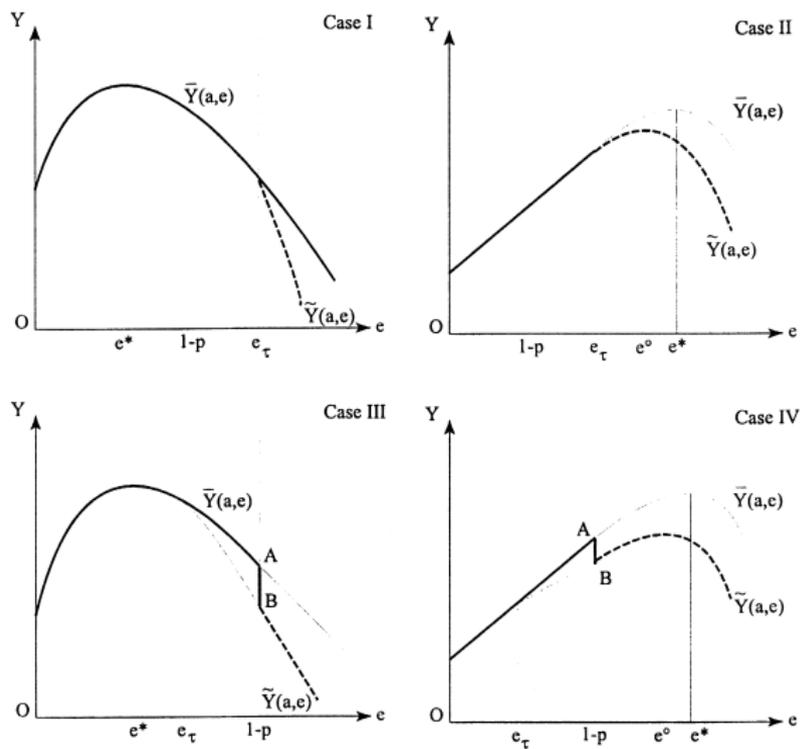
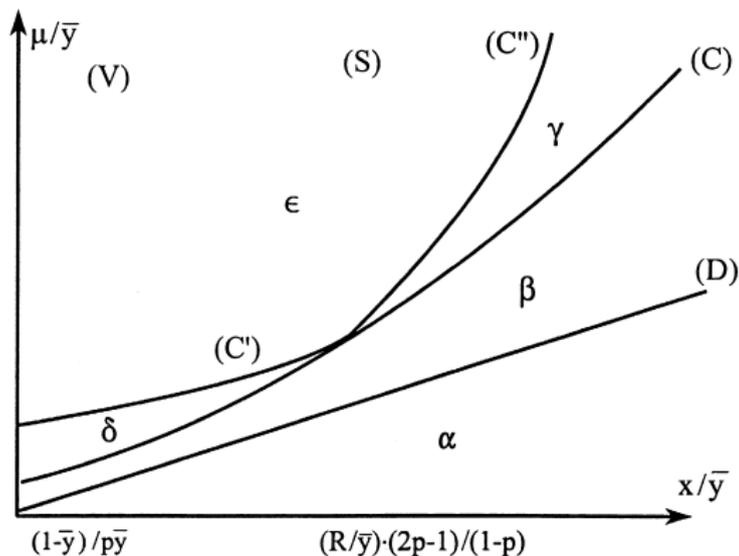


Fig. 1.

# Resulting Political and Economic Dynamics

- Different outcomes corresponding to parameters (initial inequality  $\frac{x}{y}$ , human capital externality ( $\frac{\mu}{\gamma}$ ) shown in Figure 2:
  - Case  $\alpha$ :  $e^* = 0$ , no education, no growth, preservation of oligarchy
  - Case  $\beta$ :  $0 < e = e^* < 1 - p$ , little growth, minority middle class, preservation of oligarchy
  - Case  $\gamma$ :  $e^* = 1 - p$ , medium growth, ruling oligarchy with equal sized middle class
  - Case  $\delta$ :  $1 - p < e^* < e_\tau$ , high growth, *de jure* democracy, transfer of power to middle class ruler who behaves the way the elite wants
  - Case  $\epsilon$ :  $e^* > e_\tau$ : fast growth, *de facto* democracy, middle class ruler ushers in welfare state



- solution  $\alpha$ : Pure oligarchy regime
- solution  $\beta$ : Minority middle class regime
- solution  $\gamma$ : Balance of power regime
- solution  $\delta$ : Accomodating ruling middle class regime
- solution  $\epsilon$ : Democracy regime

Fig. 2.