

# A Theory of Developmental Dictatorship

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## Development of Dictatorship

While many dictatorships are remained underdeveloped, some dictatorships do provide economic growth:

- ▶ Several impoverished nations have escaped poverty under the rule of **pro-growth dictators** (Glaeser et al., 2004).
- ▶ The four Asian tigers demonstrated remarkable economic growth, with annual rates exceeding 6 percent for three decades.

Inducing economic growth can be good for a dictator for the future gain.

But it may engender a **threat** to him.

## Modernisation Hypothesis

*Increased wealth is not only related causally to the development of democracy by changing the social conditions of the workers, but it also affects the **political role of the middle class** through changing the shape of the stratification structure (Lipset, 1959).*

# Modernisation Hypothesis

**Middle class** plays an important role in transitions and consolidations to **democracy**. They have different **values** from other social classes, which lead them to **demand** more **democratic institutions**.

e.g., post-materialistic values vs. materialistic values (Inglehart & Welzel, 2005):  
People tend to have **post-materialistic values** if they grow up in a **stable environment** with **higher education**.

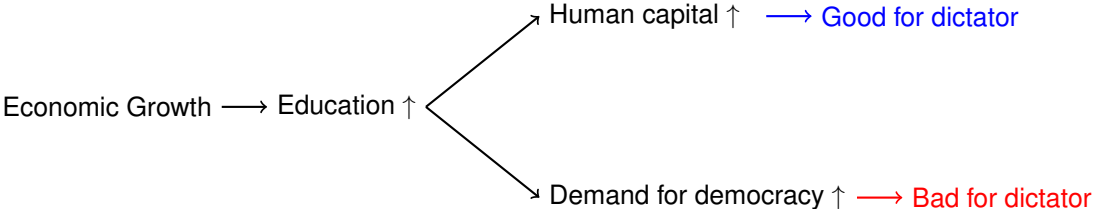
Evidences

## This Paper

I present a **Political Economy Model of dictatorship** in light of **modernisation hypothesis**:

- ▶ When the country is **poor**, dictator has **less resources** to extract rent. For a greater future gain, the dictator may pursue economic growth.
- ▶ As the economy grows, the **middle class** emerges, with higher education attainment. They **demand democracy** more strongly, which becomes a **threat** to the dictator.
- ▶ The dictator faces a **trade-off**: “low resource with a more secure regime” and “high resource with a less secure regime.”

# At a glance



## Brief Outline

We first describe how democratic values (demand for democracy) change the regime in a static game.

We then extend to the dynamic problem:

- ▶ How democratic value evolve from economic condition,
- ▶ How dictatorship optimally make an economic growth.

## Collective Action: Model

Suppose that there is a unit mass of citizens.

Each citizen's value type  $v_{it}$  is either materialistic ( $m$ ) or democratic ( $d$ ) type.

Participation cost to the collective action

- Participation cost differs by value types:  $c_{it} \in \{c_m, c_d\}$  ( $0 < c_d < c_m < 1$ )
- Proportion of democratic citizens:  $\bar{d}_t = \int_0^1 \mathbf{1}[v_{it} = d] di$
- Average participation cost:  $\bar{c}_t = c_d \bar{d}_t + c_m(1 - \bar{d}_t)$ .

Action

- Participation to the collective action:  $a_{it} \in \{0, 1\}$  (1: participate, 0: not).
- Mass of participants:  $M_t := \int_0^1 a_{it} di$



# Collective Action: Model

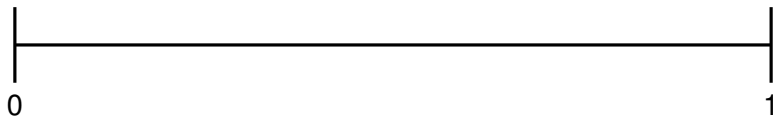
## Payoff

- Regime vulnerability:  $\theta_t \sim \text{Unif}[\underline{\theta}, \bar{\theta}]$  ( $\underline{\theta} < 0, \bar{\theta} > 1$ ).
- If  $M_t \geq 1 - \theta_t$ , the regime changes, and the participants obtain 1.
- Preference of young citizen  $i$ :  $\{\mathbf{1}[M_t \geq 1 - \theta_t] - c_{it}\} a_{it}$

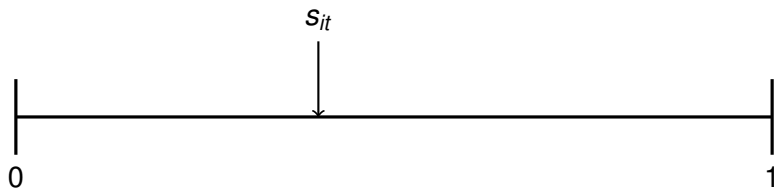
## Information

- Each citizen  $i$  gets private signal  $s_{it} = \theta_t + \sigma \varepsilon_{it}$ ,  $\varepsilon_{it} \sim \text{Unif}[-1, 1]$ , i.i.d.  
( $\sigma$  is the precision of signal:  $\sigma \in (0, 1/2]$ ,  $\underline{\theta} < -\sigma$  and  $\bar{\theta} > 1 + \sigma$ ).
- Based on the signal received, each citizen forms a posterior belief about  $\theta_t$ .
- If a citizen gets a low (high) signal, he/she expects that others also get a low (high) signal.

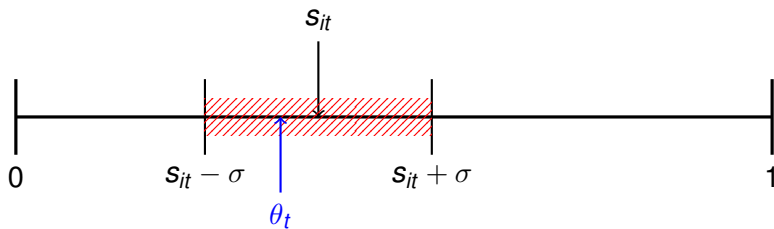
## Collective Action: What citizens are informed



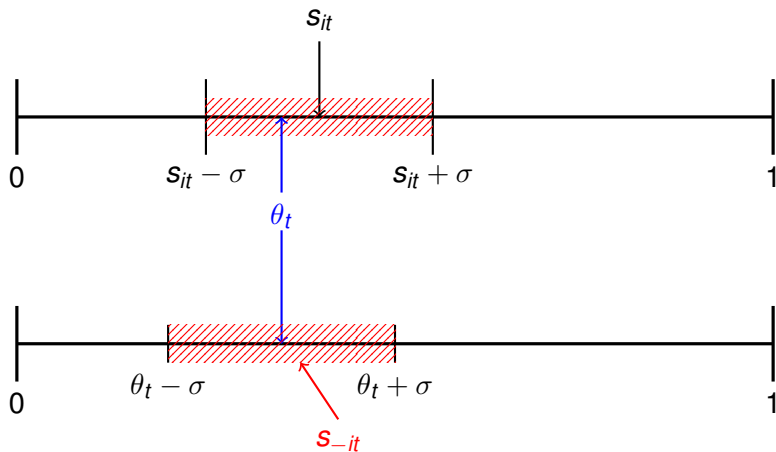
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## Collective Action: Equilibrium

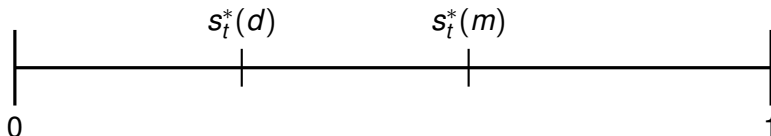
Unique BNE is cutoff strategy

- ▶ Citizens participate when their signal is higher than the threshold.
- ▶ Thresholds depend on the types.

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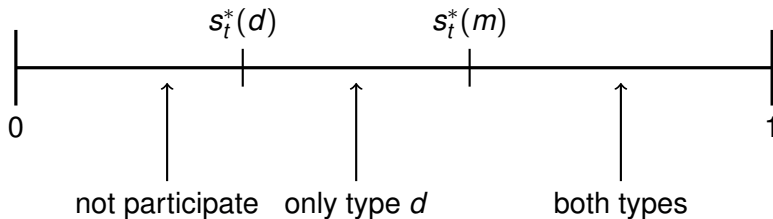


- ▶ Both thresholds decrease as more proportion of democratic citizens  $\bar{d}_t$ .
- ▶ That is, when  $\bar{d}_t$  is high, the collective action is more likely to succeed.

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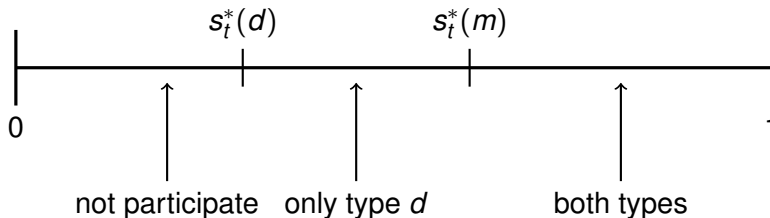




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# Collective Action: Equilibrium

## Proposition (Likelihood of Regime Change)

Collective action succeeds if  $\theta_t \geq \bar{c}_t$  and the regime remains in autocracy if  $\theta_t < \bar{c}_t$ .

And the *ex-ante* probability of collective action success  $\Pr[M_t \geq 1 - \theta_t | \bar{d}_t]$  is

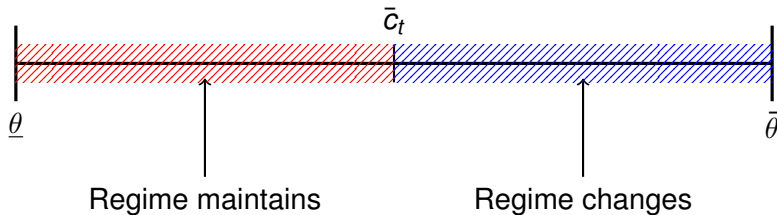
$$\Pr[M_t \geq 1 - \theta_t | \bar{d}_t] = \frac{\bar{\theta} - \bar{c}_t}{\bar{\theta} - \underline{\theta}}.$$

- ▶ As the average participation cost  $\bar{c}_t$  decreases in the proportion of democratic citizens  $\bar{d}_t$ , a greater number of democratic citizens makes successful collective action more likely.

## Collective Action: Equilibrium

Regime vulnerability:  $\theta_t \sim \text{Unif}[\underline{\theta}, \bar{\theta}]$

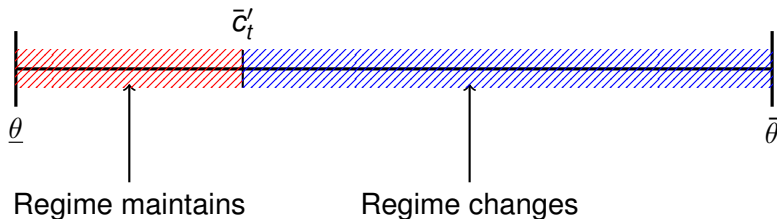
Average participation cost:  $\bar{c}_t = c_d \bar{d}_t + c_m(1 - \bar{d}_t)$



## Collective Action (6)

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Average participation cost:  $\bar{c}_t = c_d \bar{d}_t + c_m(1 - \bar{d}_t)$



## Extending the model

### Overlapping Generations:

- ▶ Citizens with mass 1 born in each period, live for 2 periods.
- ▶ Each parent  $i$  earns  $w_{ht}$  or  $w_{lt}$ , and educate children.
- ▶ Education has two effects: (i) high probability to become **skilled worker**, (ii) more likely embrace **democratic values**.

### Dictator:

- ▶ Given the revenue  $G_t$ , decide how much to **invest** and obtain **rent**.
- ▶ Investment not only **increases revenue** but also **decreases the probability of regime survival** in the future.

# Economy

- ▶ Economy begins with infrastructure  $A_1 \in (0, \bar{A})$ .
- ▶ Accumulation:  $A_{t+1} = \min\{(1 - \delta)A_t + I_t, \bar{A}\}$ ,  $\delta \in (0, 1]$
- ▶ Production of the economy:

$$Y_t = \underbrace{\pi_h \sqrt{A_t} q_t}_{\text{skilled production}} + \underbrace{\pi_l \sqrt{A_t} (1 - q_t)}_{\text{unskilled production}}$$

$q_t$ : fraction of skilled labour.

- ▶ Skilled wages:  $w_{ht} = (1 - \tau)\pi_h \sqrt{A_t}$ .
- ▶ Unskilled wages:  $w_{lt} = \pi_l \sqrt{A_t}$ .
- ▶ Dictator's revenue from tax:  $G_t = \tau\pi_h \sqrt{A_t}$ ,  $\tau \in (0, 1)$ .

## Setting: Parental Education

- ▶ Each parent  $i$  educates her child to bequest a skilled job.
- ▶ Preference of parent  $i$ :

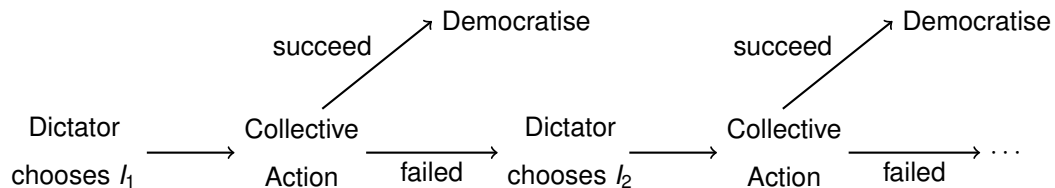
$$\underbrace{\left\{ w_{it} - \frac{e_{it}^2}{2} \right\}}_{\text{Consumption by parent } i} + \gamma \underbrace{\mathbb{E}[w_{it+1} | e_{it}]}_{\text{Expected wage of child } i}$$

- ▶ Probability of becoming a skilled worker:

$$\Pr[w_{it+1} | e_{it}] = \begin{cases} w_{ht+1} & \text{with probability } e_{it} \\ w_{lt+1} & \text{with probability } 1 - e_{it} \end{cases}$$

- ▶ Evolution of democratic values:  $\Pr[v_{it} = d | e_{it}] = \mu e_{it}^2$

## Dictator's Investment Decision





## Dictator's Investment Decision

- ▶ The dictator survives until collective action rules him out.
- ▶ Cost of generating 1 unit of infrastructure:  $\kappa > 0$ .
- ▶ Investment  $I_t$  is *feasible* if  $\kappa I_t \leq G_t$ .
- ▶ The dictator's expected payoffs:

$$\underbrace{\{G_1 - \kappa I_1\}}_{\text{rent obtained in period 1}} + \sum_{t=1}^{\infty} \beta^t \underbrace{\{G_{t+1} - \kappa I_{t+1}\}}_{\text{rent obtained in period } t+1} \prod_{s=1}^t \underbrace{\Pr[M_t < 1 - \theta_t | \bar{d}_s]}_{\text{Prob. of survival from collective action}}$$

# Dictator's Problem

The dictator's optimal investment,  $\{I_t^{\text{dict}}\}_{t=1}^{\infty}$ , solves the following:

$$\max_{\{I_t\}_{t=1}^{\infty} \in \mathbb{R}_+^{\infty}} \{G_1 - \kappa I_1\} + \sum_{t=1}^{\infty} \beta^t \{G_{t+1} - \kappa I_{t+1}\} \prod_{s=1}^t \Pr[M_t < 1 - \theta_t | \bar{d}_s]$$

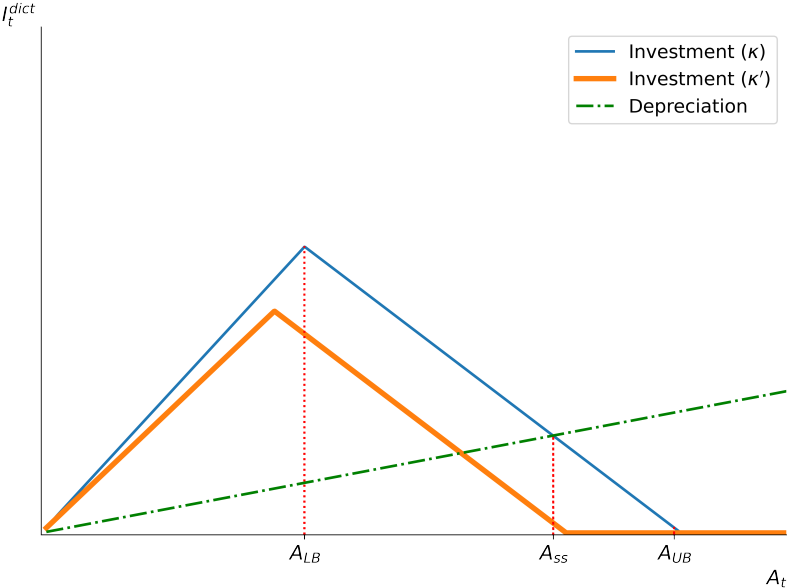
$$\text{s.t. } A_{t+1} = \min \{(1 - \delta)A_t + I_t, \bar{A}\},$$

$$e_{it} = \arg \max_{\tilde{e}_{it} \in [0, \sqrt{2w_{it}}]} \left\{ w_{it} - \frac{\tilde{e}_{it}^2}{2} \right\} + \mu \mathbb{E}[w_{it+1} | \tilde{e}_{it}],$$

$$\bar{d}_t = \int_0^1 \mu e_{it}^2 di,$$

$I_t$  is feasible

# Optimal Investment: Graphical Illustration



# Implications

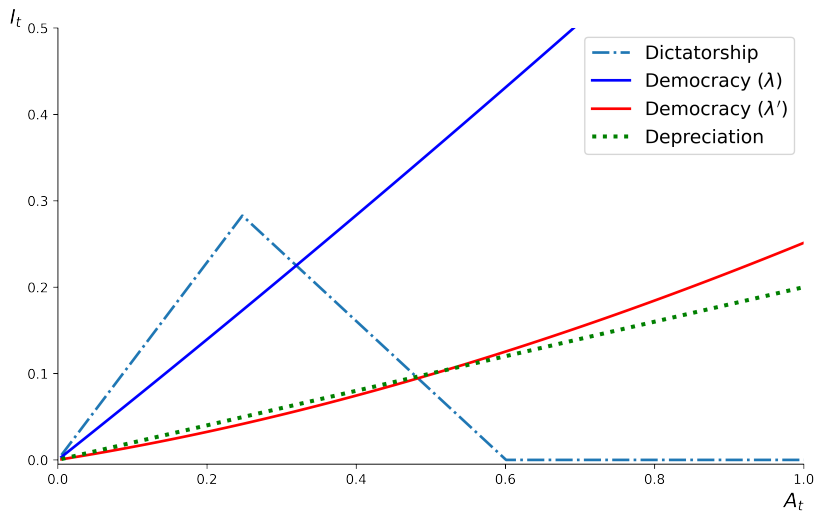
- ▶ The model corresponds to empirical findings that political instability significantly reduces economic growth (Alesina et al., 1996; Aisen & Veiga, 2013).
- ▶ New insight: Under the **modernisation effect**, the dictatorship provides economic growth when the economy is underdeveloped, but **reduces the growth** in order to balance future profitability with regime stability.

# Democracy

- ▶ Empirical studies indicate that **social capital** (including participatory political culture) determines democratic economic growth (Rodrik, 2000; Persson & Tabellini, 2009).
- ▶ I use probabilistic voting model (Persson & Tabellini, 2002, 2021).
- ▶ Assumption: democratic citizens are less partisan and more policy-oriented than materialistic citizens.

Detailed Setting

# Result



## Contribution: Regime and Economic Growth

Empirical debates: **economic growth** is faster under **democracy** or **dictatorship**.

- ▶ Favourable to **autocracies** before 1982 and to **democracies** after 1982.
- ▶ **Democracy** grows faster when there is
  - property right (North, 1990; Przeworski & Limongi, 1993)
  - participatory political culture (Rodrik, 2000)
  - high attainment of secondary education (Acemoglu et al., 2019)
- ▶ In every period, the fastest growing countries among the poor were **autocracies** (Luo & Przeworski, 2019).

⇒ This framework provides a mechanism for this empirical puzzle.

# Contribution: GDP dip before democratisation

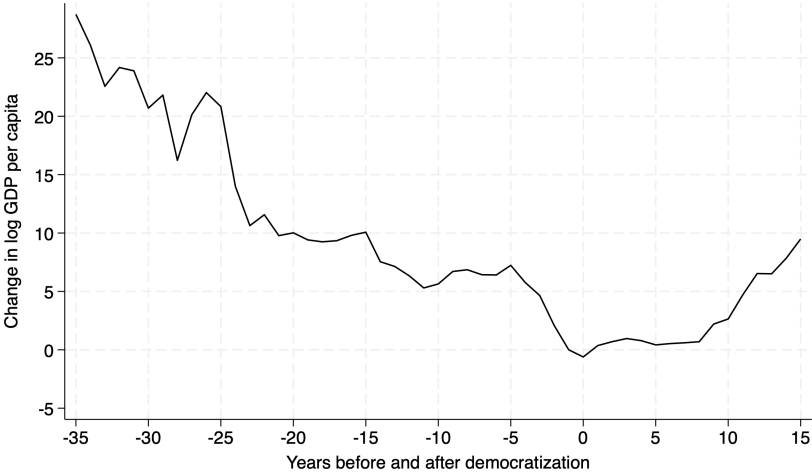


Figure: GDP dip before democratisation



Thank you!

# Modernisation Hypothesis: Evidences

## Historical evidences:

- ▶ A well-educated populace fosters broad opposition and popular uprisings against European monarchies. Similar dynamics in East Asia, the former Soviet Union, and Eastern Europe led to the overthrow of dictatorial regimes.(Huntington, 1993; Glaeser et al., 2007).
- ▶ Expansion of the urban middle classes consistently contributed to mass mobilisation during the Arab Spring in Egypt and Tunisia (Haggard & Kaufman, 2016).

## Recent empirical evidences:

- ▶ Modernisation is effective in the long-run (Kennedy, 2010; Treisman, 2020).
- ▶ Structural change from economic growth makes democratisation more likely when there is a triggering event (Miller, 2012; Treisman, 2015).

## Collective Action

Collective action modelling and result align with recent studies of the modernisation hypothesis (Kennedy, 2010; Miller, 2012; Treisman, 2015):

- ▶ They highlight that economic growth makes democratisation more likely from **trigger events** due to socio-economic and institutional changes.
- ▶ Miller (2012) and Kennedy (2010) centre their attention on the period of regime vulnerability and economic crisis.
- ▶ Treisman (2015) considers leadership turnover, such as the death of Generalissimo Franco in Spain.

Average participation cost  $\bar{c}_t$  captures the **institutional and socio-economic changes**, and the realisation of  $\theta_t$  captures the period of these **trigger events**.

## Democracy: Model (1)

There is an election at the end of each period.

Only the first-period citizens vote.

There are two parties  $A$  and  $B$  who propose policies  $\rho_{t+1}^A$  and  $\rho_{t+1}^B$ .

Winning party's policy is adopted, which determines the next period investment:

$$I_{t+1}^{\text{dem}} = \rho_{t+1}^j G_{t+1}.$$

The remaining is obtained by the winning party  $j$  as the rent, and opponent gets 0.

Partisan preference of citizen  $i$  is  $\xi_{it} = \xi_t^m + \xi_{it}^v$  where  $\xi_t^m, \xi_{it}^v \sim \text{Unif}[-1/2, 1/2]$ .

After observing  $\rho_{t+1}^j, j \in \{A, B\}$ , voter  $i$  votes for party  $A$  if

$$\rho_{t+1}^A + \lambda c_{v_{it}} \xi_{it} > \rho_{t+1}^B$$

## Democracy: Model (2)

The expected payoffs of each party  $j \in \{A, B\}$  are described as

$$\psi_j(\rho_{t+1}^A, \rho_{t+1}^B) \{1 - \rho_{t+1}^j\} G_{t+1}$$

where  $\psi_j$  is Party  $j$ 's winning probability.

In equilibrium, both parties propose the same policy  $\rho_{t+1}^*$ , which is derived as

$$\rho_{t+1}^* = 1 - \frac{1}{2} \left\{ \frac{\lambda c_m c_d}{c_d + (c_m - c_d) \bar{d}_t} \right\}.$$

Back

- Acemoglu, D., Naidu, S., Restrepo, P., & Robinson, J. A. (2019). Democracy does cause growth. *Journal of Political Economy*, 127(1), 47–100.
- Aisen, A., & Veiga, F. J. (2013). How does political instability affect economic growth? *European Journal of Political Economy*, 29, 151–167.
- Alesina, A., Özler, S., Roubini, N., & Swagel, P. (1996). Political instability and economic growth. *Journal of Economic growth*, 1, 189–211.
- Glaeser, E. L., La Porta, R., Lopez-de Silanes, F., & Shleifer, A. (2004). Do institutions cause growth? *Journal of Economic Growth*, 9(3), 271–303.
- Glaeser, E. L., Ponzetto, G. A., & Shleifer, A. (2007). Why does democracy need education? *Journal of Economic Growth*, 12(2), 77–99.
- Haggard, S., & Kaufman, R. R. (2016). *Dictators and democrats: Masses, elites, and regime change*. Princeton University Press.
- Huntington, S. P. (1993). *The third wave: Democratization in the late twentieth century* (Vol. 4). University of Oklahoma press.

- Inglehart, R., & Welzel, C. (2005). *Modernization, cultural change, and democracy*. Cambridge University Press.
- Kennedy, R. (2010). The contradiction of modernization: A conditional model of endogenous democratization. *The Journal of Politics*, 72(3), 785–798.
- Lipset, S. M. (1959). Some social requisites of democracy: Economic development and political legitimacy. *American Political Science Review*, 53(1), 69–105.
- Luo, Z., & Przeworski, A. (2019). Why are the fastest growing countries autocracies? *The Journal of Politics*, 81(2), 663–669.
- Miller, M. K. (2012). Economic development, violent leader removal, and democratization. *American Journal of Political Science*, 56(4), 1002–1020.
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.

Persson, T., & Tabellini, G. (2002). *Political economics: explaining economic policy*. MIT press.

Persson, T., & Tabellini, G. (2009). Democratic capital: The nexus of political and economic change. *American Economic Journal: Macroeconomics*, 1(2), 88–126.

Persson, T., & Tabellini, G. (2021). Culture, institutions, and policy. In *The handbook of historical economics* (pp. 463–489). Elsevier.

Przeworski, A., & Limongi, F. (1993). Political regimes and economic growth. *Journal of economic perspectives*, 7(3), 51–69.

Rodrik, D. (2000). Institutions for high-quality growth: what they are and how to acquire them. *Studies in Comparative International Development*, 35, 3–31.

Treisman, D. (2015). Income, democracy, and leader turnover. *American Journal of Political Science*, 59(4), 927–942.



Treisman, D. (2020). Economic development and democracy: predispositions and triggers. *Annual Review of Political Science*, 23(1), 241–257.