From Economic Power to Political Power

Jens Prüfer (with Ivan Khomyanin)

Tilburg University and University of East Anglia

Institutional and Organizational Economics Academy
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A Unique Case?!

- Brazil, 2024: Elon Musk vs. Supreme Court of Brazil
  1. On Musk's platform X, lots of disinformation and hate speech $\Rightarrow$ Court ordered X to take down messages/block accounts + appoint legal representative
  2. Musk refused(!), citing "free speech" arguments
  3. Justice Alexandre de Moraes accused Musk of undermining democracy, labeled him "outlaw"
  4. Supreme Court imposed nationwide ban on X, froze Starlink assets, levied millions in fines
  5. After weeks, Musk gave in and X complied with all judicial mandates
  6. Court released the ban on X

Research Questions

- Case is special b/c private individual openly challenged authority of sovereign democracy's highest judicial body
  - Musk not only disregarded court orders but also publicly encouraged Brazilians to circumvent X's ban + used Starlink to resist enforcement

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- Case is special b/c private individual openly challenged authority of sovereign democracy's highest judicial body
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- General questions:
  - How can we explain that an individual feels comfortable confronting orders of a Supreme Court? More than hybris?
  - Does it foreshadow a future where certain individuals don't feel constrained by law or norms?
  - Should we expect any dynamic spillover effects on democracy or institutions?
  - What problems arise, and how can they be contained?

This Paper

- Develop *series of game-theoretic models* analyzing strategic interaction between government and firm
- Identify characteristics making transition from economic power $\Rightarrow$ political power more likely
- Show how accepting harmful platform creates *democratic erosion spiral*
- Provide *evidence from cases* and confront with theoretical predictions

Model Sketch: Setup

- Government G needs to invest scarce resources into public infrastructure (roads, water, energy, telecoms, internet)
- Unserved consumers/voters unhappy $\Rightarrow$ political repercussions (depends on political system)
- G also needs to invest elsewhere: health care, defense, Presidential palace, ...

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- G also needs to invest elsewhere: health care, defense, Presidential palace, ...
- Firm F (with superior technology) can co-invest $\Rightarrow$ earn profit + alleviate G's problem

The Conflict

- Tricky: what if F has *political motive* conflicting with G's goals?
- Besides infrastructure, F can invest in action X hurting G's payoff (supports illegal activities or undermines institutions = "societal harm")
- Assume: G has capacity to effectively forbid/shut down X on legal grounds

The Model: Players and Infrastructure

- 2 risk-neutral players: government G, monopolistic Firm F
- Both can invest I_j in public infrastructure, $j \in \{G, F\}$, cost $c(I)$ with $c'(I) > 0, c''(I) > 0$
- F more efficient: $c_F(I) = \tau c_G(I)$, $\tau \in (0, 1)$
- Population has unit mass, fixed demand D
- Welfare: $W(I) = \min\{I_G + I_F, D\} - (c_G(I_G) + c_F(I_F))$
- *Unserved demand*: $D - (I_G + I_F)$
- Example (rest of talk): $c_G(I) = I^2$, $c_F(I) = \tau I^2$, $D = 1$

Games 1-4 in a nutshell: adding complexities

Equilibrium payoffs:

- G: $\pi_G(I_G^*, \hat{I}_F) = I_P - c_G(I_G^*) - c_F'(\hat{I}_F)\hat{I}_F - P(I_P) - \rho X$
- F: $\pi_F(\hat{I}_F) = c_F'(\hat{I}_F)\hat{I}_F - c_F(\hat{I}_F) + X$

  where
  - I_P: total infrastructure preferred by G, $\hat{I}_F$: contracted infrastructure provision of F, which maximizes G's payoff and $\hat{I}_F = \hat{I}_F(\gamma, \tau) \Rightarrow$ the more efficient F is or the higher γ (democracy), the higher $\hat{I}_F$
  - $p = c_F'(\hat{I}_F)$: regulated price of the firm
  - $P(I_P) = \gamma(D - I_P)$: *political damage* from unserved demand
  - ρX: societal damage to democracy if X operates

Game 5: Infinitely Repeated version of Game 4

1. Contracting: F signs contract for $\hat{I}_F$, price p
2. G determines I_G
3. F establishes X (action $a = 1$), or not ($a = 0$)
4. If $a = 1$, G can forbid X, or refrain
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- Goal: find subgame-perfect equilibrium where F establishes X and G doesn't forbid
- Key mechanism: *punishment strategies*
  - If G forbids X: F withholds infrastructure co-investment
  - If F doesn't establish X: G produces alone, F gets zero

Game 5: Baseline Model's Main Result

Proposition

Equilibrium where X operates exists if:

(i) $\delta \geq \underline{\delta}_F = \frac{\pi_F(\hat{I}_F)}{2\pi_F(\hat{I}_F)+X-\xi}$ *(F's patience)*

(ii) $\frac{(1+\gamma)^2}{2(1+\tau)^2} \geq \rho X$ *(G's tolerance)*

Interpretation:

- LHS of (ii) = **F's economic power** (G's gain from infrastructure supplied by F)
- RHS of (ii) = **F's political power** (max societal damage G accepts)
- $\Rightarrow$ **Economic power = upper bound on political power**

6+2 Empirical Hypotheses from Baseline Model

From comparative statics, X operating more likely when:

1. High δ (patient players, long-term relationship)
2. High $X - \xi$ (high political payoff for F)
3. Low ρX (low societal damage)
4. Low B (binding budget)
5. High γ (strong democracy!)
6. Low τ (F very efficient)
7. F wealthy, politically motivated
   - If $\pi_F(\hat{I}_F) = c'_F(\hat{I}_F)\hat{I}_F - c_F(\hat{I}_F) + \alpha X$ and high α
8. F non-resident
   - Adapted from Greif/Milgrom/Weingast (1994, JPE)

Revisiting *Musk vs. Supreme Court of Brazil*

- Elon Musk...
  - is the **richest person on the planet** [H7]
  - who mainly **resides in the U.S.** and defied orders of a Supreme Court judge in **Brazil** [H8]
  - who just strongly and openly supported the **extremist political agenda of a U.S. Presidential candidate** (at the time of the conflict) [H2, H7]
- Brazil...
  - emerging market economy, **'slow-burning' fiscal problems** [4]
  - ranks 57th out of 167 countries with a **Democracy Index score** of 6.49 (and 9.58 in the category "Electoral Process and Pluralism", both out of 10), **way above global average** [H5]
- The market in question was internet access, where Musk's **satellite internet provider** Starlink offers significant efficiency advantages, especially in remote areas, over traditional, in-the-ground internet access [H6].

Case: Google/Meta vs. Australia (2021)

- Context: Australia's News Media Bargaining Code (pay news publishers)
- Platforms' threat: Exit Australian market if law passes
- Infrastructure leverage:
  - Facebook blocked news sharing (Feb 2021) to demonstrate threat
  - Google threatened to disable search
  - High γ (Australia = strong democracy) made government vulnerable
- Outcome: Government negotiated, diluted law's enforcement
- **Lesson:** Even strong democracies vulnerable when infrastructure dependence high

Additional Cases

- **OpenAI vs. EU (2023):**
  - Sam Altman threatened to withdraw from EU if AI Act too strict
  - Withdrew threat after backlash, but demonstrated leverage
- **Starlink in Ukraine (2022-2023):**
  - Musk provided free internet, then threatened to cut off
  - Used access as leverage in geopolitical negotiations
  - Ukraine dependent on Starlink for military communications
- **Traditional utilities (water, energy):**
  - Many cases of private firms threatening service withdrawal
  - BUT: only profit-motivated (no political objective X)

What Happens After X Operates?

- Baseline model: G tolerates X in **stationary** equilibrium
- Reality: platforms operating X degrade institutions **over time**
  - Misinformation erodes trust
  - Electoral interference weakens accountability
  - Content manipulation polarizes society

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- Baseline model: G tolerates X in **stationary** equilibrium
- Reality: platforms operating X degrade institutions **over time**
  - Misinformation erodes trust
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  - Content manipulation polarizes society
- $\Rightarrow$ **Operating X changes the game itself**
- $\Rightarrow$ Need dynamic model: democratic quality γ_t evolves endogenously

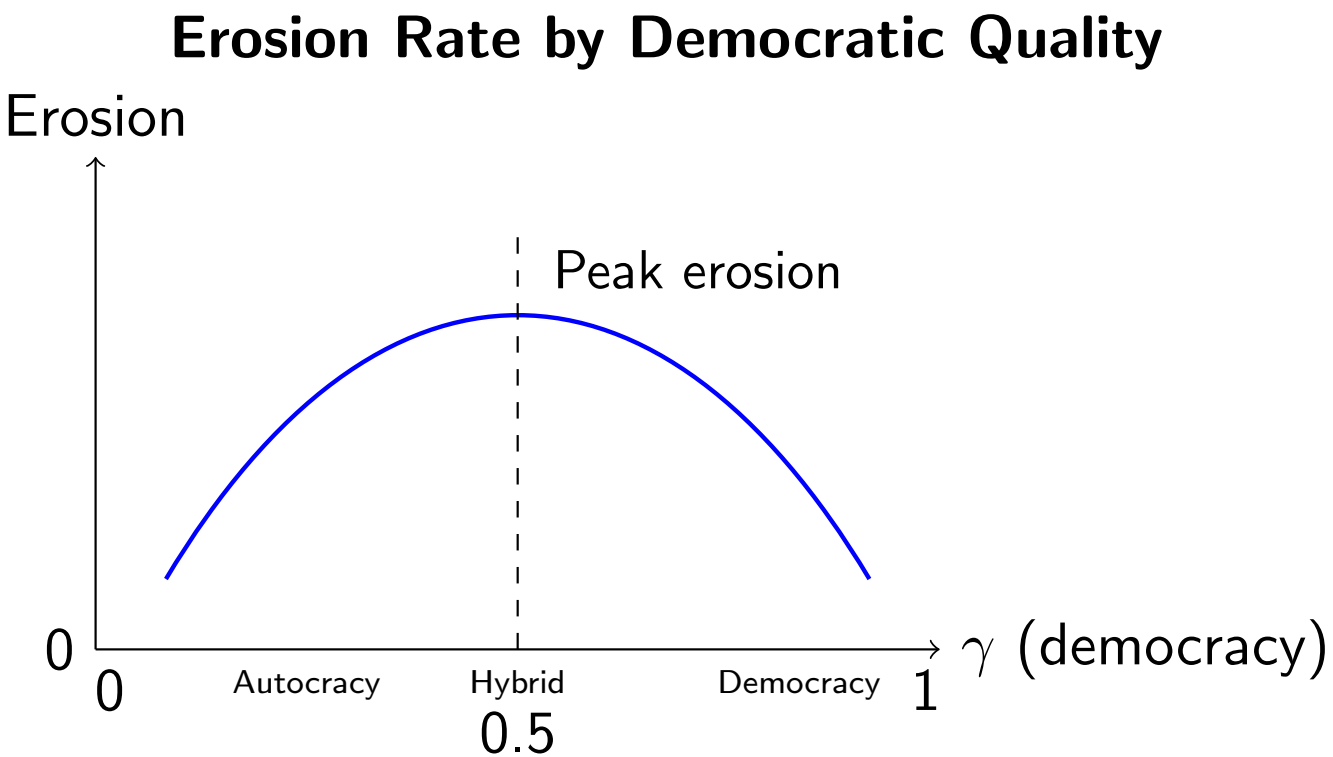
Endogenous Democratic Erosion

- Iff X operates, democratic quality evolves:

$$\gamma_{t+1} = \gamma_t - h(\gamma_t) \cdot \mathbb{1}_{X \text{ operates in t}}$$

where $h(\gamma_t) = \gamma_t(1 - \gamma_t)$

Inverted-U Pattern



Empirical support: V-Dem data shows fastest decline in "electoral autocracies" (intermediate γ). Hybrid regimes face highest risk of instability, civil war, and democratic breakdown (Hegre et al., 2001, Marshall, 2022).

The Erosion Spiral

- Start with high γ_t: G needs happy voters $\Rightarrow$ tolerates X for infrastructure
- X erodes $\gamma_t \Rightarrow$ G needs voters less $\Rightarrow$ F's economic power $\downarrow$
- But also: G cares less about societal damage $\rho(\gamma_t)X$

Proposition (Democratic Downward Spiral)

- *Assume X operates. Define γ^* where:*

$$\frac{(1+\gamma_t^*)^2}{2(1+\tau)^2} = \rho(\gamma_t^*)X$$

- *Two possible steady states:*
  - $\gamma^* > 0$ *(if LHS decreases quicker than RHS)*
  - $\gamma^* = 0$ *(if RHS decreases quicker)*

Can Erosion Be Stopped?

- Yes! Two domestic interventions:
  1. **Public Media Investment** (M_G)
  2. **Civil Society Mobilization** (strength S_t)
- Both work by counteracting X's harm

Policy 1: Public Media Investment

- G can invest in independent information infrastructure $M_G \in [0, \overline{M}]$, which competes with X, for cost $c_M(M_G)$
- $\Rightarrow$ G's payoff, if X operates:

$$\pi_G = I_P - c_G(I_G^*) - c_F'(\hat{I}_F)\hat{I}_F - P(I_P) - \rho(\gamma_t)X + \theta M_G - c_M(M_G)$$

- Modified erosion dynamics:

$$\gamma_{t+1} = \gamma_t - \kappa \cdot \mathbb{1}_{X \text{ operates}} \cdot h(\gamma_t) + \theta M_G$$

- *Direct* effect of M_G on democracy γ_t:
  - Public media provides accurate information
  - Strengthens institutional accountability
  - Offsets X's misinformation
- *Indirect* effect: higher M_G today $\Rightarrow$ higher $\gamma_{t+1} \Rightarrow$ higher societal costs $\rho(\gamma_{t+1})X \Rightarrow \gamma^* \uparrow$

Public Media Investment: Result

Proposition

(i) If there exists $M_G^* \in (0, \overline{M})$ *satisfying*

$$\theta \cdot \Phi(\gamma_{t+1}, \delta) = c'_M(M_G^*),$$

then G invests M_G^**, with dynamic multiplier* $\Phi(\gamma_{t+1}, \delta) \equiv 1 + \delta\rho'(\gamma_{t+1})X > 1$.
(ii) Under feasibility conditions, the interior steady state with public media is:

$$\gamma_M^{ss} = \frac{1 - \sqrt{1 - \frac{4\theta M_G^*}{\kappa}}}{2},$$

where $\gamma_M^{ss} > \gamma^*$ *and* γ_M^{ss} *increasing in media investment effectiveness* θM_G *and damage* X*, decreasing in erosion intensity* κ.

Policy 2: Civil Society Mobilization

- Civil society actor CS with organizational capacity S_t can impose reputational costs $\lambda(S_t, X) = \mu S_t X$ on F
- F's per-period payoff becomes:

$$\pi_{F,t} = \pi_F(\hat{I}_F) + X - \xi - \lambda(S_t, X) \tag{1}$$

- Suppose G invests $\sigma_{CS,t} > 0$ per period in civil society, and X exerts repressive effects $\zeta_t \equiv \zeta(\gamma_t)$ on civil society, where $\zeta'(\gamma) < 0$. Civil society strength evolves as:

$$S_{t+1} = S_t + \sigma_{CS,t} - \zeta(\gamma_t) \cdot \mathbb{1}_{X \text{ operates in } t}. \tag{2}$$

Civil Society Mobilization: Result

Proposition

Starting from $S_0 = 0$, F ceases operating X if, and only if:

$$S_t \geq \bar{S}(\gamma_t) \equiv \frac{X - \xi}{\mu X}. \tag{3}$$

Three possible development paths:

(i) *(Civil Society as Saviour): F ceases operating X and democratic erosion stops at $\gamma^* = \gamma_{TCS} > 0$.*

(ii) *(Civil Society Spring): Civil society grows initially but then collapses. X continues operating and democracy erodes.*

(iii) *(Civil Society Collapse): Civil society never establishes.*

Two Empirical Hypotheses from Dynamic Model

- H9: In countries where harmful platforms operate, **democratic quality declines over time**, with faster erosion in regimes with intermediate democracy levels.
- H10: **Public media investment and civil society mobilization** correlate with **slower democratic erosion rates** in platform-operating countries

Dynamic Implications: Inverted-U Confirmed (H9)

- V-Dem Democracy Report 2025 findings on Liberal Democracy Index (LDI):
  - Global LDI decline: 72% of population under autocratic rule (up from 50% in 2010)
  - Fastest erosion in "electoral autocracies" (LDI 0.3-0.5)
  - Liberal democracies: stable
  - Closed autocracies: already at bottom
- $\Rightarrow$ Consistent with inverted-U

Public Media DOES Help (H10)

- Quantitative: British Academy (2024): countries with strong public media exhibit significantly slower democratic erosion
- Cases:
  - BBC (UK): Counters platform misinformation, maintains trust
  - ARD/ZDF (Germany): Strong independent public media correlates with resilience against erosion
  - Contrast - Hungary: Orban systematically defunded public media, accelerating autocratization
- Lesson: Public media investment is protective, but only if independent and well-funded

Civil Society Also Helps Against Erosion (H10)

- V-Dem's Core Civil Society Index shows robust civil society correlates with resistance to autocratization (Nord et al., 2024)
- Baron and Diermeier (2007): Activist harm increases with credibility & issue salience
- Lost market value after protests: United Airlines (-$1B), Pepsi (-$2B), Facebook (-$72B initial) (Villagra et al., 2021)

Key Takeaways

1. **Economic power** $\rightarrow$ **political power** via infrastructure dependence (baseline model)
2. **Accepting platforms creates erosion spiral**, not static equilibrium (dynamic model)
3. **Democracies vulnerable**; **hybrid regimes most vulnerable** (inverted-U pattern, confirmed empirically)
4. **Two interventions work:** public media + civil society $\Rightarrow$ complementary!
5. **Timing critical:** Prevention exponentially easier than reversal
6. **Civil society backstop provides private-ordering solution**

Policy Implications

- **For governments:**
  - Avoid infrastructure dependence without public backup
  - Invest in public media *before* platforms dominate
  - Support civil society freedom to organize (invest $\sigma_{CS} > \zeta$!)
- **For democracies with intermediate γ:**
  - You are in danger zone (peak of inverted-U) ... but liberal democracies are not immune
  - Early intervention essential

Future Research

- **Multi-country extension:**
  - How do platforms sequence global entry?
  - When does resistance become futile (tipping point)?
  - Role of international coordination (Brussels effect)
- **State actors:**
  - China's Belt & Road as parallel dynamic
  - Economic coercion by governments

Thank you very much for your attention!

Game 1: Public Provision by G

- G sets I_G to solve

$$\max_{I_G} \quad \pi_G = I_G - c(I_G) \tag{4}$$

- Result (in example): G sets $I_{FB} = 1/2$

Game 2: Government with Political Motives

- G wants re-election/minimize unserved (unhappy) citizens. G solves:

$$\max_{I_G} \quad \pi_G = I_G - c(I_G) - P(I_G), \tag{5}$$

  where $P(I_G) = \gamma(D - I_G) =$ *political damage* from unserved demand
- $\gamma \in [0, 1]$ = governance parameter capturing how much G's fate depends on (un)happy citizens
  $\Rightarrow$ high γ in democracies, low in autocracies
- Result: G sets $I_P = \frac{1+\gamma}{2} > I_{FB}$

Game 3: Profit-Motivated Firm Enters

- G allows F to offer infrastructure, equips F with license, sets regulated price p (making F's operations profitable), where p is sufficient to make F's operations profitable (p = marginal cost of investment of the last supplied unit, I_F)
- Timing:
  1. Contracting: F signs contract to supply $\hat{I}_F$ for price p
  2. G determines I_G
  3. F determines I_F, complementing I_G. Payoffs materialize

Game 3: Results

- G contracts F to supply $\hat{I}_F = \frac{1+\gamma}{2(1+\tau)}$, produces $I_G^* = \frac{(1+\gamma)\tau}{2(1+\tau)}$ itself
- F produces $I_F = \hat{I}_F$ (fulfills contract)
- Compare payoffs (Games 2 vs 3):
  - $\pi_F(\hat{I}_F) > 0$ (F earns profit)
  - $\pi_G(I_G^*, \hat{I}_F) > \pi_G(I_P)$ (G better off)
- $\Rightarrow$ both G and F benefit from co-production

Game 4: Politically Motivated Firm

- F can invest in action X for cost $\xi > 0$, high political payoff X for F
- Assume $X - \xi > \pi_F(\hat{I}_F)$: net benefit from X exceeds infrastructure profit

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- Assume $X - \xi > \pi_F(\hat{I}_F)$: net benefit from X exceeds infrastructure profit
- BUT: X generates *societal harm*, G can forbid X on legal grounds
- If X operates (not forbidden): utility $-\rho X$ for G ($\rho > 0$)

Game 4: Timing

- F's political activities modify game:
  1. Contracting: F signs contract for $\hat{I}_F$, price p
  2. G determines I_G
  3. F establishes X (action $a = 1$), or not ($a = 0$)
  4. If $a = 1$, G can forbid X, or refrain
  5. F determines I_F. Payoffs materialize

Game 4: Result

- Key: backward induction $\Rightarrow$ stage 5 like Game 3: F maximizes by setting $I_F = \hat{I}_F$
- $\Rightarrow$ F's *potential threat not to supply* $\hat{I}_F$ is *not credible*
- $\Rightarrow$ stage 4: if F established X, G just forbids it (no consequences)
- $\Rightarrow$ stage 3: not worth it for F to establish X
- $\Rightarrow$ outcome identical to Game 3

How to Solve F's Dilemma?

- F's problem: Game 4 ends after stage 5
- Finite repetition: backward induction unravels any threat
- Solution: repeat game *infinitely* many times!
  - Inspired by literature on repeated games (Mailath & Samuelson 2006) and institutional economics (Ellingsen 2024, Prüfer 2025)

Backup: Game 5 Strategy Profile (F)

F's Equilibrium Strategy F*:

- Period $t = 1$:
  - Stage 1: Promise $\hat{I}_F = \frac{1}{1+\tau} I_P$
  - Stage 3: Establish X if $I_G = \frac{\tau}{1+\tau} I_P$, else don't
  - Stage 5: Produce $I_F = \hat{I}_F$ if X not forbidden, else $I_F = 0$
- Period $t > 1$: [Continue with grim trigger strategies]

Backup: V-Dem Democracy Index Trends

- **V-Dem Liberal Democracy Index (LDI) 2010-2024:**
  - Global average: 0.42 (2010) $\rightarrow$ 0.38 (2024)
  - 72% of world population now under autocracy
  - Freedom of expression declining in 44 countries (record)
  - Fastest decline: "electoral autocracies" (LDI 0.3-0.5)
- **Platform correlation:**
  - Countries with platform dominance ($>$60% penetration): -0.08 LDI/year
  - Countries with low penetration: -0.02 LDI/year
  - Not causal proof, but consistent with model