Divergence of Modernization

Civic Culture and State-Building under Autocracy and Democracy*

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Abstract

Why and how do authoritarian regimes pursue development strategies that eventually undermine their survival, while democracies under similar conditions exhibit different developmental patterns? I develop a dynamic model where education simultaneously fosters human capital and civic culture, which shapes political behavior asymmetrically across regimes. Under autocracy, growing civic culture increases regime change risk, creating a *modernization threat* that compels rulers to strategically curb investment as development proceeds, resulting in a hump-shaped development path of rapid growth followed by strategic stagnation. Under democracy, civic culture strengthens electoral accountability, but outcomes are history-dependent: weak initial civic foundations trap societies in low-investment equilibria, while sufficiently strong civic culture triggers virtuous cycles of sustained development. This asymmetry—where civic culture threatens autocratic survival but enables democratic accountability—explains divergent modernization paths. The model reconciles why some autocracies achieve impressive early growth yet face self-limiting development, while democracies exhibit varying performance depending on civic foundations, offering new insights into the political economy of long-run development.

Keywords: democracy, autocracy, civic culture, state capacity, modernization threat
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> *He [President Park Chung-hee] unleashed the public's desire for material prosperity and maintained his power by riding that current. But the masses, having escaped absolute poverty, were drawn to other desires. They wanted freedom, justice, democracy, and human dignity. When he did not respect those desires, many of the people abandoned him.*
>
> — Yu Si-min,[1] *My Contemporary History of Korea* (Author's translation)

1 Introduction

In 1987, South Korea experienced a dramatic democratic transition as university students and urban professionals took to the streets and forced the military regime to concede to direct presidential elections. This educated generation resulted from a remarkable social transformation. Their parents, having endured the severe poverty of the 1950s and 1960s, had invested heavily in their children's education as the authoritarian government's extraordinary economic growth made schooling increasingly valuable. The regime's developmental success—building infrastructure, expanding universities, and creating new industries—dramatically raised the returns to education and made such investments rational for families across the country. The result was an unprecedented expansion of higher education that produced a cohort of citizens with not only the human capital to drive continued economic development, but also the civic awareness and organizational skills that would prove instrumental in challenging authoritarian rule.[2]

This story illustrates a broader puzzle in political economy: why do some authoritarian regimes pursue development strategies that appear to undermine their own survival? The question becomes more pressing when we consider that many of the world's fastest-growing economies among poor countries have historically been autocracies, yet these same regimes often face the greatest threat from the educated middle classes they help create.[3] While recent empirical evidence suggests that democracies generally outperform autocracies in promoting long-term development,[4] these studies overlook a crucial dynamic—the conditions under which authoritarian rulers choose between extractive policies that maximize short-term rents and developmental policies that build state capacity but potentially threaten regime stability. Understanding this trade-off is essential for explaining not only why some autocracies succeed economically while others fail, but also why patterns of development differ so markedly between democratic and authoritarian contexts.

[1] Yu Si-min is a leading South Korean public intellectual and former Minister of Health and Welfare, known for his influential writings and public discourse on Korea's contemporary history and politics.

[2] This dynamic exemplifies the political tension inherent in the adage that "education is freedom", a process Cho (2024) describes in the context of South Korea as a "double-edged sword," where the very educational structures that initially bolstered the regime later became the *seeds of mobilization* against it.

[3] Luo and Przeworski (2019) attribute the prevalence of fast-growing autocracies among poor countries to a composition effect—poor countries are predominantly autocratic, and low-income democracies often revert to autocracy. This selection-based account, however, may not explain the strategic incentives that lead some autocrats to pursue developmentally oriented policies despite their political costs. My framework contributes to the literature by explicitly modeling these strategic incentives.

[4] For meta-analyses, refer to Doucouliagos and Ulubaşoğlu (2008) and Colagrossi et al. (2020).

To address these questions, this paper develops a framework in which education serves a dual role: it enhances human capital formation while fostering civic preferences that shape citizens' political behavior.[5] This dual role creates contrasting dynamics under different regime types. Under autocracy, citizens with stronger civic preferences are more willing to participate in collective action aimed at regime change, placing rulers in a strategic dilemma where they must weigh development gains against the imperative of political survival.[6] Under democracy, these same civic preferences strengthen electoral accountability by encouraging voters to prioritize policy effectiveness over partisan loyalty, thereby enhancing the quality of political competition.

I model these dynamics through an overlapping generations framework where educational investment, civic preference formation, and institutional development co-evolve endogenously under both autocratic and democratic regimes. The model incorporates three key agents: parents who choose educational investment for their children based on expected returns, with higher institutional capacity raising the payoffs to human capital formation; young citizens whose civic preferences are stochastically determined by their education and who decide whether to participate in collective action; and rulers or political parties who choose between investing in institutional capacity and extracting rents, with their survival or electoral success depending on citizens' responses to their policies.

Under autocracy, I use a global games framework (Carlsson and Van Damme, 1993; Morris and Shin, 1998, 2003) to describe how citizens participate in collective action. Specifically, those with stronger civic preferences are more likely to challenge autocratic rule, and regime survival depends on whether the mass of participants exceeds a critical threshold. Under democracy, I employ a probabilistic voting model (Lindbeck and Weibull, 1987; Persson and Tabellini, 2000) where political parties compete by proposing investment policies, with electoral outcomes determined by both citizens' policy preferences and partisan attachments.

The analysis reveals important mechanisms linking education, civic culture, and development that have been overlooked in studies treating these factors separately.[7] Under autocracy, optimal development strategy follows a non-monotonic pattern: rulers invest heavily

[5]The causal link between education and heightened human capital and political participation has been demonstrated in quasi-experimental settings. Wantchekon et al. (2015) find that the first generation to receive formal education in colonial Benin not only experienced significantly higher living standards but were also far more likely to be politically active.

[6]This focus on civic mobilization as a driver of democratization differs from the dominant class conflict models (Acemoglu and Robinson, 2000, 2001, 2006; Boix, 2003), which emphasize redistributive demands from the poor. As Haggard and Kaufman (2012) demonstrate, at least over 40% of democratic transitions among third wave countries were not explained by the class conflicts, but rather were led by middle or upper-middle classes without redistributive motives. Furthermore, while short-term elite conflict is a primary threat in many personalistic autocracies, the focus on an institutionalized autocrat with a long time horizon makes this long-run, middle-class-driven modernization threat particularly salient.

[7]While existing studies examine education-development links (Glaeser et al., 2007) or civic culture effects on democratization (Besley and Persson, 2019) and fiscal capacity (Besley, 2020) separately, existing theoretical frameworks provide only partial views that omit key mechanisms linking institutional development to civic culture formation.

when institutional capacity is low and few citizens hold strong civic preferences, but reduce investment as the economy develops and the educated population grows. This generates a hump-shaped investment profile that can leave autocratic economies trapped at intermediate levels of development, which I term *modernization threat*. Under democracy, the trajectory depends on initial conditions: when few hold strong civic preferences, partisan considerations dominate policy evaluation in electoral competition, leading to persistently low investment. However, once strong civic preferences are sufficiently widespread, electoral accountability strengthens, creating a virtuous cycle of higher investment and stronger civic culture.

Ultimately, these findings reveal that the role of civic culture—and thus the entire dynamic of modernization—is fundamentally asymmetric across regime types. For authoritarian rulers, education presents a double-edged sword; the same human capital that drives economic growth also fosters a civic culture that threatens political survival. For democracies, however, this same civic culture is not a threat but an indispensable condition for sustained development, acting as the critical ingredient that ensures electoral accountability and enables a virtuous cycle of growth. This core asymmetry results in the divergent developmental paths of modernizing nations.

The framework is further extended to analyze how performance-based legitimacy provides an alternative pathway for autocratic development. When rulers can obtain legitimacy by demonstrating superior economic performance compared to democratic benchmarks, the threat of democratization diminishes, incentivizing autocrats to sustain long-term development. However, as the educated population grows and civic preferences strengthen, maintaining this performance-based legitimacy becomes increasingly difficult, eventually forcing rulers to abandon further investment. The analysis thus demonstrates how competition between regime types can generate distinct developmental paths, shaped not only by internal civic culture dynamics but also by rulers' ability to outperform democratic competitors.

The remainder of the paper proceeds as follows. Section 2 reviews the literature on modernization and development while providing empirical evidence for the modernization threat mechanism. Section 3 presents the theoretical framework. Section 4 analyzes the model's implications for autocratic and democratic development. Section 5 compares the divergent trajectories across regime types. Section 6 extends the analysis to performance-based legitimacy. Section 7 discusses broader implications and concludes. All proofs are in the Appendix.

2 Background

2.1 Modernization and Development

The modernization theory, popularized by Lipset (1959)'s empirical documentation of correlations between economic development and democratic institutions, posits that rising prosperity creates structural changes that foster demand for democratic governance. Subsequent scholars developed these patterns into causal theories, arguing that development expands the

educated middle class, increases civic engagement, and reduces support for extremist movements, thereby creating pressures for democratic transition in non-democracies and enhancing institutional accountability in democracies. At the individual level, substantial empirical evidence supports this link: Inglehart and Welzel (2005)'s World Values Survey analyses demonstrate that educational attainment and childhood economic security strongly predict pro-democratic attitudes, political tolerance, and civic engagement.[8]

However, establishing causation at the aggregate level remains contested. While early works report a positive result between income and democracy (e.g., Barro, 1999; Burkhart and Lewis-Beck, 1994; Epstein et al., 2006), Acemoglu et al. (2008, 2009) show that per-capita income loses explanatory power when controlling for country- and year-fixed effects. To this, critics argue this reflects overly restrictive modeling of slow-moving processes (e.g., Boix, 2011; Murtin and Wacziarg, 2014; Treisman, 2015).[9] Further refining this debate, Papaioannou and Siourounis (2008b) find that education is a more robust predictor of democratization than income, with its effect being particularly large among Third Wave countries.

Regardless of these debates, a crucial insight emerges: economic and political institutions co-evolve over the long run, yet the mechanisms driving this co-evolution remain underexplored. Recent work emphasizes that development contributes to democratization *probabilistically* rather than deterministically, by creating structural conditions making regime change more likely when triggering events (e.g., economic crises, leadership turnovers, and international affairs) occur (Kennedy, 2010; Miller, 2012; Treisman, 2020).

The main theoretical challenge is to model how development decisions are made within environments where modernization dynamics operate. Existing frameworks offer only partial answers. Bourguignon and Verdier (2000) blur regime distinctions by treating autocracy and democracy as a continuum based on education-restricted suffrage, omitting key autocratic features such as repression and restrictions on collective action. Boucekkine et al. (2019) sidestep collective action dynamics by modeling democratization as elite-controlled transitions.[10] Besley and Persson (2019) examine civic culture and regime transitions but omit institutional development and ignore how autocrats can strategically limit investment to prevent civic culture formation. Besley (2020) study civic culture and state capacity but ignore regime-specific differences in how civic culture operate under different political institutions.

This paper addresses this theoretical challenge by modeling how an autocrat's strategic calculus is shaped by civic culture formation—a core mechanism of modernization that makes

[8]Conversely, those raised in material hardship are more prone to authoritarian or exclusionary views, including xenophobia and intolerance (Inglehart and Baker, 2000; Inglehart and Welzel, 2003; Inglehart, 2018).

[9]They argue that Acemoglu et al. (2009)'s fixed-effects approach may be too restrictive to capture developmental processes that unfold over decades or centuries, filtering out genuine modernization dynamics through overly stringent controls.

[10]Boucekkine et al. (2019) treat democratization as deterministic, elite-timed hand-over in which citizens are merely a "no-revolt" constraint, making regime change a purely elite-driven calculus that precludes collective-action risk, repression costs, and coordination failures. This setup thus predicts a binary outcome of either development followed by a voluntary handover or stagnation, precluding an intermediate, self-limiting development path or a contested transition where the ruler does not voluntarily cede power.

democratic transitions probabilistically more likely. The key innovation is the joint treatment of state-capacity investment, education-based civic culture formation, and their asymmetric political effects across autocracy and democracy. This reveals how the same modernization forces produce systematically different developmental trajectories, providing a novel insight into the relationship between institutions and development.

2.2 Regime and Growth, and the Threat of Modernization

The question of whether autocracies or democracies are better for economic growth has generated extensive empirical debate. Recent studies increasingly favor democracy, with meta-analyses showing positive long-term effects of democratic institutions on economic development (see Doucouliagos and Ulubaşoğlu, 2008; Colagrossi et al., 2020).

However, this emerging consensus overlooks several puzzling patterns that neither theoretical nor empirical work has adequately explained. First, as pointed out by Luo and Przeworski (2019), many of the fastest-growing economies among developing countries have historically been autocracies. Second, even more telling is a striking phenomenon: autocracies that eventually transition to democracy often experience a systematic GDP decline in the years immediately preceding the transition (e.g., Papaioannou and Siourounis, 2008a; Acemoglu et al., 2019)—a pattern that standard theories cannot easily account for.[11]

These patterns suggest that the simple democracy-versus-autocracy framework may miss important dynamics in how regime type affects development. Indeed, the category of *autocracy* itself is not monolithic. Recent work by Blattman et al. (2025) highlights this heterogeneity, showing that institutionalized autocracies tend to produce more stable growth than personalist ones. This work, however, focuses on the different outcomes of autocratic types rather than the strategic incentives that lead a ruler to choose between developmental and extractive paths in the first place. My framework speaks directly to this strategic choice, modeling the dilemma faced by any autocrat considering development: the very institutions they build can endogenously generate the civic culture that threatens their survival.

To provide motivational evidence for this theory, this section explores patterns in the data that are consistent with a modernization threat.[12] The goal is not to make a causal claim, but to demonstrate that the strategic dilemma we model has empirical plausibility. For this descriptive analysis, I adopt the dynamic panel model with country and year fixed effects from Acemoglu et al. (2019) and apply it to their replication dataset.

The core of the analysis is to compare growth patterns between autocracies presumed to

[11] While Papaioannou and Siourounis (2008a) document a sharp, short-term growth dip centered on the transition year, the pattern in Acemoglu et al. (2019, Figure 1) appears to be a much more prolonged decline in the years preceding democratization. My model suggests this long-term downward trend may not be an exogenous shock, but rather the endogenous outcome of a ruler strategically underinvesting to prolong their regime's survival.

[12] This modernization threat mechanism is also studied by Parente et al. (2022), who instead analyze the trade-off in which public education can stabilize autocratic rule in the short run but, by empowering the educated masses, heightens the risk of future revolt. They support this argument with descriptive evidence from protest data and historical cases, showing that increases in education coincide with a greater frequency of protests.

be facing different levels of modernization pressure. To proxy for regimes where this pressure was most acute, *transitional autocracies* (TA) are classified as those that eventually democratize within the sample. It is important to note that this classification is based on a future outcome, and thus the resulting associations should be interpreted as descriptive patterns, not causal effects. The remaining *permanent autocracies*—a heterogeneous group of kleptocracies or highly stable autocracies where this threat was likely less salient—form the baseline for comparison.[13]

The main specification is as follows:

$$\begin{aligned} y_{c,t} =& \beta_1 P_{c,t-1} + \beta_2 S_{c,t-1} + \beta_3 (TA_{c,t} \times P_{c,t-1}) + \beta_4 (TA_{c,t} \times S_{c,t-1}) \\ &+ \beta_5 D_{c,t} + \sum_{r=1}^{8} \varphi_r y_{c,t-r} + \alpha_c + \delta_t + \varepsilon_{c,t} \end{aligned} \tag{1}$$

where $y_{c,t}$ is log GDP per capita in country c at time t; $P_{c,t-1}$ and $S_{c,t-1}$ are lagged primary and secondary school enrollment; $TA_{c,t}$ is an indicator for Transitional Autocracies that eventually democratize; and $D_{c,t}$ is a democracy dummy. The model includes country fixed effects (α_c) to control for time-invariant national characteristics, year fixed effects (δ_t) to account for common shocks, and eight lags of log GDP per capita to control for pre-existing income dynamics.

The interaction terms are central to exploring the patterns predicted by this paper's theory. The coefficient β_4 captures the differential association between secondary education and growth in transitional autocracies, a pattern consistent with the modernization threat. The coefficient β_3 provides a crucial point of comparison, allowing us to examine whether this distinctive pattern is specific to the rise of an educated middle class, as the theory predicts. In robustness checks, I confirm that these patterns persist even after controlling for lags of social unrest.

Table 1 presents results that are strongly consistent with the modernization threat. The analysis reveals that the association between education and economic growth is not uniform, but is instead highly conditional on the political context of autocratic regimes. While the baseline model in Column 1 shows no clear, direct link between education enrollment and growth, a powerful pattern emerges in Column 2 when the political context is considered. Specifically, for autocracies on a path toward democratization, the expansion of secondary education is associated with significantly slower economic growth. This statistical pattern is consistent with the core idea of the theory: that autocrats potentially threatened by modernization perceive a burgeoning, educated middle class as a political risk and strategically act in

[13] I use secondary school enrollment as the primary measure of education for theoretical reasons, as it is a widely used proxy for the emergence of a broad, educated middle class central to the argument. While tertiary education is also a relevant channel, we limit analysis to the variables present in the original Acemoglu et al. (2019) dataset to ensure data consistency and avoid potential issues arising from merging different World Bank Development Indicators (WDI) vintages. This approach prioritizes the internal validity and replicability of the motivational evidence.

Table 1: The Conditional Effect of Education on Growth for Transitional Autocracies

	log GDP per capita				
	(1)	(2)	(3)	(4)	(5)
Primary Education (first lag)	-0.015*	-0.005	-0.008	-0.016	-0.006
	(0.008)	(0.008)	(0.008)	(0.015)	(0.010)
Secondary Education (first lag)	-0.004	0.000	0.004	0.006	-0.004
	(0.013)	(0.013)	(0.013)	(0.019)	(0.010)
Democracy	0.761**	-0.802	0.260	-0.744	0.104
	(0.328)	(0.486)	(0.579)	(0.927)	(0.740)
Transitional Autocracy		-0.041***	-0.060***	-0.064**	-0.045**
× Secondary Education (first lag)		(0.012)	(0.016)	(0.026)	(0.022)
Transitional Autocracy			0.022**	0.029**	0.014
× Primary Education (first lag)			(0.009)	(0.015)	(0.012)
Education and Democracy interactions	No	No	No	Yes	No
Unrest lags 1-8	No	No	No	No	Yes
Observations	3992	3992	3992	3992	3540
Countries	170	170	170	170	165

Notes: The table reports estimates from panel model with country and year fixed effects on log GDP per capita. All specifications include country and year fixed effects and eight lags of the dependent variable. Column 1 presents the baseline regression. Column 2 adds an interaction between transitional autocracies (TA) and secondary education. Column 3, the main model, includes an additional interaction between TA and primary education. Column 4 controls for interactions of education terms and democracy and Column 5 adds lags of social unrest as a robustness check. Standard errors, clustered at the country level, are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

ways that curb development.

Furthermore, the patterns in Column 3 suggest a sophisticated and discriminating autocratic strategy. The negative association between growth and secondary education exists alongside a significant positive association for primary education within the same transitional autocracies. This striking contrast is consistent with the idea that autocrats are not against human capital in general, but rather differentiate between what they may view as politically "threatening" education (secondary) and economically productive but "safe" education (primary).

This central finding remains robust across several demanding specifications. As shown in Column 4, the negative coefficient on the secondary education interaction holds at the 5 percent significance level even under the demanding test of controlling for interactions between democracy and education. Furthermore, one might argue that this negative association is driven by social unrest often experienced during transitions. The final specification in Column 5 directly addresses this alternative explanation. Even after controlling for eight lags of social unrest, the coefficient remains negative and statistically significant, lending further support to the modernization threat.[14]

[14]It is worth noting that in the final specification, the interaction term for primary education loses its statistical significance, although the coefficient's sign and magnitude remain stable. This does not detract from the

The patterns uncovered in this analysis are highly consistent with the modernization threat, which offers a potential explanation for the puzzling underperformance of some autocracies despite educational achievements. The results suggest that the mixed evidence on regime type and growth discussed above may partly reflect the failure to account for how educational development creates different incentives and constraints for rulers under different institutional arrangements. These empirical patterns therefore motivate a formal theoretical analysis of how education affects development under different regime types.

3 Model

This model describes how political regimes evolve differently with civic culture, in forming long-run state capacity. State capacity develops civic culture, and this civic culture functions differently depending on the type of regime. Under an autocracy, this civic culture poses a potential threat to bring down the regime. However, under a democracy, this civic culture functions to strengthen the accountability of political organizations.

3.1 Baseline Environment

I consider an infinite-horizon model in discrete time, indexed by $t \in \mathbb{N}$. The economy in period t is governed by a political regime $\mathcal{P}_t \in \{0, 1\}$, where 0 denotes autocracy and 1 denotes democracy.

State capacity at time t is represented by institutional capital $I_t \in [0, 1]$, with initial value $I_1 \in (0, 1)$. Here, $I_t = 0$ denotes institutional collapse and $I_t = 1$ maximal capacity.[15] Institutional capital evolves according to

$$I_{t+1} = \min\{(1 - \delta)I_t + i_t,\ 1\}, \tag{2}$$

where $\delta \in (0, 1)$ is the depreciation rate and i_t denotes investment.

The economy has a skilled (industrial) and an unskilled (traditional) sector with productivities π_h and π_l. Wages are $w_t^h = (1 - \tau)\pi_h \sqrt{I_t}$ for skilled and $w_t^l = \pi_l \sqrt{I_t}$ for unskilled workers. Define $\Delta\pi := (1 - \tau)\pi_h - \pi_l$, and assume $(1 - \tau)\pi_h > \pi_l$ so the skill premium is positive. Only the skilled sector is taxed at rate $\tau \in (0, 1)$. Let $H_t \in [0, 1]$ denote the mass of skilled workers; total tax revenue is $G_t = \tau\pi_h \sqrt{I_t}\, H_t$.

The regime faces a fiscal constraint $\varphi i_t \leq G_t$, where $\varphi > 0$ is the unit cost of converting revenue into institutional capacity. A larger φ means lower state-building efficiency. As we will see in Section 4.1, higher i_t today raises I_{t+1}, widens the skill premium, induces more

paper's central claim. The core hypothesis here concerns the political threat posed by secondary education, an effect restricted to transitional autocracies. In contrast, the economic benefits of primary education are assumed to be less regime-dependent. Therefore, the robust negative effect of secondary education provides the key evidence for the modernization threat, regardless of the statistical significance of the primary education term in this demanding specification.

[15] I normalize I_t to $[0, 1]$ to focus on transitions from weak to moderately strong states while abstracting from fine distinctions among advanced economies.

education, and expands next period's tax base G_{t+1} via a larger H_{t+1}.

3.2 Education, Human Capital, and Civic Preferences

Demographic structure and value types. The population consists of overlapping generations, with a unit mass of individuals born each period. Individuals live for two periods: young citizens in the first period, and old citizens (parents) in the second.

After parental education choices are realized, each young citizen i is assigned a value type $v_{i,t} \in \{V, R\}$. *Value-rational* (V) citizens attach intrinsic value to democracy and exhibit stronger civic duty, whereas *instrumental-rational* (R) citizens value democracy mainly for material benefits and liberties.

These types matter in three places. Under democracy, both types $v \in \{V, R\}$ enjoy regime utility μ_v with $\mu_V > \mu_R > 0$; under autocracy, the (psychological) cost of abstaining from a successful collective action is ψ_v with $\psi_V > \psi_R \geq 0$; and in democratic elections, voters weight policy by λ_v—interpretable as the marginal valuation of institutional investment—with $\lambda_V > \lambda_R > 0$.

Intergenerational Civic Value Formation. Education is the key endogenous channel linking development to civic culture. Parents choose education purely for economic reasons (to raise their child's future earnings), but education incidentally shapes civic values by fostering analytical skills and institutional understanding. This by-product channel is stronger at higher education levels. To capture the accelerating civic returns of schooling—where advanced coursework has a greater marginal impact on democratic reasoning than basic skills—we adopt a quadratic functional form.[16]

Formally, let $e_{i,t}$ be parent i's educational investment in period t. The probability that child i becomes value-rational is

$$\Pr(v_{i,t} = V) = \eta_s + \eta_e e_{i,t}^2, \tag{3}$$

where $\eta_s \in (0, 1)$ captures baseline historical/cultural factors and $\eta_e > 0$ the civic effect of education.[17] I consider restriction $\eta_s + \eta_e \leq 1$, together with the other parametric assumptions, to ensure $\Pr(v_{i,t} = V) \in [0, 1]$. Define civic capital as $D_t = \int \mathbb{1}\{v_{i,t} = V\} di$, the measure of value-rational citizens.

Parental Investment and Skill Acquisition. Upon entering their second period of life, citizens become parents and choose how much to invest in their child's education. Let $e_{i,t} \in [0, 1]$ denote the level of educational investment by parent i in period t. The child becomes skilled with probability $e_{i,t}$; otherwise, they remain unskilled. Taking next period's wages

[16] This assumption is grounded in the extensive literature of modernization theory, which documents the empirical link between education and pro-democratic values (e.g., Lipset, 1959; Inglehart and Welzel, 2005). For a detailed discussion of modeling choices regarding civic culture, see Section 3.5.

[17] For a micro-founded variant with vertical (parental) transmission, see Online Appendix, which yields the same aggregate law and leaves all results unchanged.

(w^h_{t+1}, w^l_{t+1}) as determined by aggregate institutional capital I_{t+1} and outside the individual family's control, the expected wage is

$$\mathbb{E}[w_{i,t+1} \mid e_{i,t}] = e_{i,t}\, w^h_{t+1} + (1 - e_{i,t})\, w^l_{t+1}. \tag{4}$$

Each parent derives utility from three components—own consumption, the child's expected earnings, and regime-contingent satisfaction under democracy. After observing the regime's investment i_t, and thus inferring I_{t+1}, the utility of parent i of type $v \in \{V, R\}$ with period-t wage $w_{i,t}$ is

$$\left(w_{i,t} - \frac{e^2_{i,t}}{2} \right) \; + \; \gamma\, \mathbb{E}[w_{i,t+1} \mid e_{i,t}] \; + \; \mu_v\, \mathbb{1}\{\mathcal{P}_t = 1\}. \tag{5}$$

Here, the quadratic term captures convex schooling costs (time, effort, tuition) and delivers strict concavity in $e_{i,t}$. The schooling cost is borne privately and subtracts from current resources. $\gamma > 0$ measures altruism toward the child, and $\mu_v > 0$ captures the parent's regime-contingent satisfaction from living under democracy. The last term is constant in $e_{i,t}$ and therefore does not affect the schooling choice directly.

To ensure the model is well-behaved and yields interior solutions, I impose some parametric restrictions. I assume $\gamma \Delta\pi < 1$, which ensures that the probability of skill acquisition never exceeds one. Further, I assume $(1 - \delta) + \tau\pi_h/\varphi \leq 2\pi_l$ to guarantee that the autocrat's investment can outpace depreciation and that parents' optimal educational choice remains within their budget constraint.[18]

3.3 Political Economy of Authoritarian Rule

I model a farsighted, institutionalized autocrat focused on long-term rent maximization, contingent on regime survival. The analysis therefore centers on the long-term strategy of state-building through institutional investment, setting aside the study of short-term tactics like repression or propaganda. This approach distinguishes my framework from studies of personalistic regimes, where the ruler's calculus is often dominated by the immediate threat of elite-level conflict and coups.

Investment under Political Threat. Under autocracy, fiscal resources in period t are tax revenues $G_t = \tau\pi_h \sqrt{I_t} H_t$, since only skilled workers are taxed. Revenues are split between contemporaneous rents and investment i_t in institutional capital. Investment is chosen at the beginning of period t after observing I_t and G_t and is sunk before political uncertainty is realized. While investment raises productivity and encourages education—expanding the future tax base—its payoff for the autocrat accrues only if the regime survives. Institutional capital evolves by (2) subject to the fiscal constraint $\varphi i_t \leq G_t$.

At the end of each period, citizens may attempt to overthrow the regime. If successful, the polity transitions to democracy ($\mathcal{P}_{t+1} = 1$) and the autocrat receives no further rents. Let

[18] The derivation of how these conditions work is provided in Online Appendix.

$\Pr(\mathcal{P}_{t+1} = 0|I_t, i_t) \in [0,1]$ denote the survival probability into $t+1$. The autocrat's expected discounted rents are

$$\sum_{t=1}^{\infty} \beta^{t-1} \left(G_t - \varphi i_t\right) \prod_{s=1}^{t-1} \Pr(\mathcal{P}_{s+1} = 0|I_s, i_s), \tag{6}$$

with $\prod_{s=1}^{0} = 1$. Thus, effective discounting reflects both time preference and political fragility.

Democratization through Civic Protest. Once civic preferences are formed through intergenerational socialization, the young decide whether to protest to change the regime. We model this stage with a global games framework featuring two civic types.

Let $\theta_t \in [\underline{\theta}, \bar{\theta}]$, with $\underline{\theta} < -\sigma$ and $\bar{\theta} > 1 + \sigma$, denote latent regime vulnerability in period t, with higher values indicating greater fragility (easier to topple).[19] Each period θ_t is drawn i.i.d. from a uniform or strongly concave cdf F with pdf f. The autocrat knows F, but citizens do not know its exact shape; they only know the signal structure. Each citizen i observes a private signal $s_{i,t} = \theta_t + \sigma\varepsilon_{i,t}$, where $\varepsilon_{i,t} \sim \mathcal{U}[-1,1]$ is i.i.d. across individuals and periods, and $\sigma > 0$ determines signal precision. Let $n_t \in [0,1]$ denote the fraction of young citizens who protest. The protest succeeds (transition to democracy) if $n_t \geq 1 - \theta_t$.

Each citizen i of type $v \in \{V, R\}$ decides whether to protest based on their signal and civic orientation. Payoffs depend on the protest outcome and the individual's action. If $n_t \geq 1 - \theta_t$, the protest succeeds and the polity transitions to democracy; every citizen then receives the regime payoff μ_v in the next period, while abstainers additionally incur a reputational/psychological cost ψ_v (with $\psi_V > \psi_R \geq 0$). If $n_t < 1 - \theta_t$, the protest fails; only protesters suffer a repression cost $\chi > 0$, whereas abstainers incur no penalty. Payoffs are summarized in Table 2.[20]

	$n_t > 1 - \theta_t$	$n_t < 1 - \theta_t$
Protest	μ_v	$-\chi$
No protest	$\mu_v - \psi_v$	0

Table 2: Payoff matrix for citizen i of type $v \in \{V, R\}$

The protest subgame admits a (symmetric) cutoff equilibrium; I characterize it and establish uniqueness under the parametric assumptions in Section 4.2.

[19] Think of transitory, economy- or polity-wide shocks that shift perceived regime resilience—e.g., backlash from repression, elite fragmentation, macroeconomic turbulence, or exogenous scandals. I treat θ_t as i.i.d. across periods and orthogonal to contemporaneous investment i_t (and to I_t). Intuitively, θ_t captures unanticipated political shocks; systematic effects of state-building on survival operate via I_{t+1} and civic mobilization, not through θ_t.

[20] For parsimony, I abstract from material payoffs to participation: a common post-transition dividend does not alter individual incentives because it is realized only upon success and is independent of individual participation. A common material gain $m > 0$, realized only upon success and independent of individual participation, leaves the marginal private incentive to protest unchanged (free-riding). Moreover, democratization's growth dividends arrive slowly (Acemoglu et al., 2019), mass protests rarely deliver immediate redistribution, and bureaucratic continuity limits post-transition rents. I therefore focus on civic/psychological motives; for models with material motivations, see De Mesquita and Shadmehr (2023).

Timeline. The within-period sequence under autocracy is as follows:

(i) Given I_t (and thus G_t), the autocrat chooses investment i_t subject to $\varphi i_t \leq G_t$.

(ii) Parents observe i_t, earn $w_{i,t}$, and choose education $e_{i,t}$.

(iii) Civic values realize: each young citizen draws $v_{i,t} \in \{V, R\}$ per (3).

(iv) Nature draws θ_t; young citizens observe $s_{i,t}$ and decide whether to protest.

(v) If the protest succeeds, i.e., $n_t \geq 1 - \theta_t$, the regime transitions to democracy ($\mathcal{P}_{t+1} = 1$); otherwise autocracy persists ($\mathcal{P}_{t+1} = 0$). In either case, the next period begins with $I_{t+1} = \min\{(1-\delta)I_t + i_t,\ 1\}$.

3.4 Political Economy of Democratic Governance

Under democracy, investment arises endogenously from electoral competition. Whereas an autocrat unilaterally chooses i_t to maximize intertemporal rents subject to survival, democratic investment is pinned down by party platforms disciplined by voters. A higher prevalence of value-rational citizens strengthens electoral incentives to allocate revenue to institutional investment.

Formally, democracy is modeled as probabilistic electoral competition (Lindbeck and Weibull, 1987; Persson and Tabellini, 2000). Two parties, A and B, compete to form government. At the start of period t, each party $j \in \{A, B\}$ proposes a platform $\alpha_t^j \in [0, 1]$, the share of tax revenue G_t allocated to institutional investment. The winner implements policy, so $\varphi i_t = \alpha_t^j G_t$ and the remainder $(1-\alpha_t^j)G_t$ is appropriated as rents by the winner; the loser obtains zero. Parties observe G_t and the civic composition of the electorate, but not the realizations of preference shocks.

Voters cast ballots right in the beginning of their second period of life. Let λ_v denote policy sensitivity—the (marginal) valuation a voter of type $v \in \{V, R\}$ places on institutional investment. Value-rational citizens attach both instrumental and intrinsic value to state-building and suffer a moral loss from rents, so they place greater weight on policy than instrumental voters; hence $\lambda_V > \lambda_R > 0$.[21] Voter i evaluates party j as

$$U_i^j = \lambda_v\, \alpha_t^j + \xi_t + \zeta_{i,t}, \tag{7}$$

where $\xi_t \sim \mathcal{U}[-1/J, 1/J]$ is an aggregate popularity shock and $\zeta_{i,t} \sim \mathcal{U}[-1/K, 1/K]$ is an idiosyncratic shock, with $J, K > 0$ and shocks independent across i and from parties' choices. Voter i supports A if

$$\lambda_v \alpha_t^A + \xi_t + \zeta_{i,t} > \lambda_v \alpha_t^B,$$

[21] This approach follows a rich tradition in political economy that models a civic culture as one where citizens place greater weight on the public interest over parochial concerns. (Persson and Tabellini, 2021), for instance, model *civic values* as a higher weight on common welfare within a probabilistic voting framework, linking the concept to *moral universalism*.

and votes for B otherwise. Thus value-rational voters are more responsive to policy differences relative to non-policy forces.[22] Because policy weights are heterogeneous and non-policy shocks $(\xi_t, \zeta_{i,t})$—capturing valence, identity, and informational frictions—enter preferences, a party proposing a lower investment share can still prevail. When civic capital for the voters (old citizens) D_{t-1} is low, platform competition endogenously converges to low investment on both sides (low α).

Parties know distributions of ξ_t and $\zeta_{i,t}$, but cannot observe their realizations, and choose platforms to maximize expected electoral payoff. The equilibrium investment choice is characterized as a function of G_t and the electorate's civic composition. The equilibrium derivation is provided in Online Appendix.

Timeline. The within-period sequence under democracy is as follows:

(i) Parties propose investment shares α_t^A, α_t^B given I_t (and thus G_t) and the electorate's civic composition D_{t-1}.

(ii) Voters (old citizens) cast ballots based on proposed policies and non-policy shocks $(\xi_t, \zeta_{i,t})$.

(iii) The winner forms government; policy is implemented with $\varphi i_t = \alpha_t^j G_t$.

(iv) Parents earn $w_{i,t}$ and choose education $e_{i,t}$, taking next period's wages (w_{t+1}^h, w_{t+1}^l) as implied by I_{t+1}.

(v) Civic values realize: each young citizen draws $v_{i,t} \in \{V, R\}$ per (3).

(vi) Democracy continues into $t+1$ with $I_{t+1} = \min\{(1-\delta)I_t + i_t,\ 1\}$.

Remark. Unlike the autocratic case—where democratization arises endogenously via civic protest—I do not model democratic reversals explicitly. The analysis focuses on contrasting developmental dynamics under the two regimes; abstracting from reversals keeps attention on the core mechanisms. Extensions to allow stochastic democratic breakdowns are conceptually straightforward and are discussed in Section 7.

3.5 Discussion of Modeling Assumptions

Institutional Capital. My model employs institutional capital I_t as a composite index representing the overall state capacity. This conception of institutional capital is not limited to a single physical asset or an intangible norm; rather, it is a comprehensive measure encompassing the *software* of governance such as administrative processes and legal frameworks,

[22] A simple micro-foundation is as follows: Let voter i's per-period utility from party j be $U_i^j = \bar{\lambda}\,\alpha_t^j + \nu_v\,\alpha_t^j - \omega_v(1-\alpha_t^j) + \xi_t + \zeta_{i,t}$, where $\bar{\lambda} > 0$ captures instrumental returns common across types, ν_v is an intrinsic civic valuation of investment, and $\omega_v \geq 0$ is disutility from rents. The implied policy weight is $\lambda_v := \bar{\lambda} + \nu_v + \omega_v$. With $\nu_V > \nu_R$ and $\omega_V > \omega_R$, it follows that $\lambda_V > \lambda_R > 0$. Note that altruism toward children is modeled separately by the common parameter γ.

the bureaucratic know-how accumulated within the state apparatus, and the *hardware* of the state like enabling infrastructure.[23]

The law of motion for this institutional capital in (2) captures the complex process of state-building through three key parameters. The depreciation parameter δ represents more than physical wear and tear; it captures the concept of organizational entropy, whereby complex social systems tend toward disorder without active maintenance. This entropy manifests as the dissipation of tacit knowledge through bureaucratic turnover, the obsolescence of legal codes, and the erosion of public trust. Investment i_t encompasses all resource-intensive efforts to counteract this entropy and enhance institutional quality. Crucially, the cost parameter φ reflects the efficiency of this state-building process, determining how effectively a state translates fiscal resources into tangible institutional improvements.

Skilled-Sector Taxation. The model restricts taxation to the skilled sector as a simplifying assumption. This reduces model complexity while preserving the core mechanism linking tax revenue to public investment and rent extraction. This assumption is not merely for analytical convenience; it reflects real-world fiscal constraints that governments face in developing economies. As noted by Bisin (2020), governments face significant challenges in enforcing taxation outside the skilled or formal sector, due to limited income observability and weak administrative capacity. In particular, sectors such as subsistence agriculture, petty trade, or household production often lack verifiable records, making taxation prohibitively costly or infeasible. These constraints are well documented in studies on the limits of fiscal reach across occupational categories (see Gordon and Li, 2009; Besley and Persson, 2014).

Civic Culture. The model distinguishes between two types of citizens based on their motivations for supporting democracy. Individuals of type V value democratic institutions intrinsically, reflecting internalized civic norms and a sense of obligation. Their political behavior aligns with Weberian value-rationality (Weber, 1922). The preferences of citizens of type R, by contrast, are shaped by contingent considerations of stability, order, and individual freedom. This typology is consistent with a range of findings in political economy that highlight the role of identity, fairness norms, and internalized values alongside material incentives (Alesina and Giuliano, 2011; Tabellini, 2008; Ticchi et al., 2013; Besley and Persson, 2019; Besley, 2020; Enke et al., 2025).

Building on this distinction, the model assumes that utility depends not only on institutional outcomes but also on norm-conforming behavior. All citizens incur a cost from abstaining in the event of successful collective action, but the magnitude of this cost is type-dependent. Value-rational individuals bear greater disutility due to stronger internalized obli-

[23]The seminal work of Besley and Persson (2009, 2010, 2011) conceptualizes state capacity as a combination of fiscal and legal capabilities and discusses its co-evolution with political institutions. Simplification of this complex reality allows to isolate the core strategic trade-offs political leaders face regarding state-capacity building.

gations. This formulation captures heterogeneity not only in regime preferences, but also in how political inaction is morally evaluated. The assumption is grounded in theories of moral identity and prosocial behavior, where reputational concerns and normative consistency sustain cooperation even in the absence of material incentives (Bénabou and Tirole, 2006; Tabellini, 2008). Experimental evidence corroborates this view: individuals are often willing to punish norm violations at personal cost, underscoring the behavioral salience of civic duty (Fehr and Gächter, 2000).

Formation of Civic Values. This model describes the intergenerational civic value formation through education. It departs from cultural transmission frameworks (Bisin and Verdier, 2001) by treating education not as a tool for intentional value replication, but as a purely instrumental choice for parents to maximize their children's future earnings. Civic preferences thus emerge indirectly as an unintended by-product, a mechanism that explains how a public good like civic culture can arise from private economic motivations. This assumption is consistent with quasi-experimental evidence showing that early schooling, presumably sought for its economic returns, also generated significant positive effects on political participation (Wantchekon et al., 2015).

This intergenerational mechanism also contrasts with recent models that feature utility-driven switching between civic and non-civic types within a single generation (Besley and Persson, 2019; Besley, 2020). By focusing on preference formation rather than selection, the framework provides a richer, micro-founded account of how civic culture evolves endogenously over the long run through the interplay of individual educational investment and cultural context.

The educational channel for civic value formation is assumed to be increasing and convex. This convexity encodes accelerating civic returns: higher stages of schooling disproportionately build abstract reasoning and deliberative competence, and it can also capture effects like curriculum thresholds or peer spillovers. For parsimony and tractability, we adopt the specific functional form. While this quadratic form is not essential, the model's qualitative results are robust to other sufficiently convex functions. The core mechanism simply requires that the civic impact of education accelerates at higher investment levels, a condition this functional form satisfies.

4 Dynamics of Institution-Building and Civic Culture

How do political institutions shape long-run state-building when civic preferences evolve endogenously? This section analyzes how autocracy and democracy respond fundamentally differently to the tension between institutional development and civic culture formation established in the previous section. While both regimes operate through identical underlying mechanisms—where educational investment simultaneously builds fiscal capacity and fosters civic values—their political incentives generate strikingly divergent outcomes.

Under autocracy, the same civic culture that emerges from successful development threatens regime survival, creating endogenous limits to growth. Under democracy, civic culture can either fail to materialize, trapping the polity in low-capacity equilibrium, or trigger a virtuous cycle of accountability and institutional strengthening. These contrasting dynamics reveal why modernization processes that destabilize authoritarian rule actually constitute the foundation for sustained democratic development.

4.1 The Common Engine: Education and Civic-Fiscal Formation

This section characterizes the equilibrium dynamics of the baseline environment that operates identically under both regime types. Specifically, I analyze how institutional investment determines parents' educational choices, and how these choices generate human capital formation, fiscal capacity, and civic culture.

Once investment i_t determines next period's institutional capital I_{t+1}, parent i chooses educational investment $e_{i,t}$ to maximize utility. For any I, define $H(I) = \gamma \Delta\pi \sqrt{I}$. Then, the education is chosen by $e_{i,t} = H(I_{t+1})$, which shows that $e_{i,t}$ increases with the prospect of institutional capital. As I_{t+1} rises, productivity improvement widens the skilled-unskilled wage differential, strengthening returns to education. From this observation, the human capital stock in period t is $H(I_t)$. Using this, the equilibrium tax revenue is $G_t = G(I_t) := \tau \pi_h \sqrt{I_t} H(I_t)$. Since taxation applies only to the skilled sector, institutional capital strengthens fiscal capacity through a dual mechanism: it raises productivity for existing skilled workers and expands the pool of skilled (taxable) workers.

Education not only builds job skills but also fosters civic values. Using the optimal education choice in the value formation from (3), civic culture evolves according to $D_t = D(I_{t+1}) := \eta_s + \eta_e H(I_{t+1})^2$, where $D(I_{t+1})$ represents the share of value-rational citizens as a function of institutional capital.

These dynamics imply that institutional investment creates a fundamental duality: the same educational choices that build human capital and expand the tax base also foster civic values that shape political behavior. This civic formation mechanism operates identically under both regime types, but its political consequences prove diametrically opposite—strengthening electoral accountability under democracy while threatening regime survival under autocracy.

4.2 Autocracy: Civic Protest and Endogenous Underinvestment

In the common framework just described, institutional investment simultaneously builds fiscal capacity and civic culture. For an autocrat, this dual effect creates a fundamental dilemma. While stronger institutions enhance future rents through expanded tax revenue, they also cultivate the value-rational citizens who pose the greatest threat to regime survival. This section analyzes how this political risk endogenously constrains autocratic development. The analysis proceeds in two steps: first, characterizing the protest game that generates political risk, and second, examining how the autocrat balances this risk against future profits in their

dynamic investment decision.

Collective Action and Regime Change. Each period, young citizens observe signals about regime vulnerability and decide whether to protest against the regime. Each citizen's participation decision hinges on a belief threshold, $\rho_v \in (0,1)$, at which they are indifferent between protesting and abstaining, i.e., $\rho_v \mu_v - (1-\rho_v)\chi = \rho_v(\mu_v - \psi_v)$, where the left-hand side represents the expected payoff from protesting and the right-hand side from abstaining. This yields the type-dependent belief thresholds

$$\rho_v = \frac{\chi}{\chi + \psi_v}.$$

Since value-rational citizens face a higher cost of abstention ($\psi_V > \psi_R$), their belief threshold for action is strictly lower. Note that the unconditional utility from democracy does not affect these thresholds. This is because democratic benefits accrue to all citizens regardless of participation, creating incentives to free-ride on others' protest efforts.

In the global games framework, this belief threshold translates into a threshold strategy based on the private signal, $s_{i,t}$, that each citizen receives. A citizen protests if $s_{i,t}$ is above a type-dependent threshold, $\hat{s}_{v,t}$. Consequently, as D_t increases, both $\hat{s}_{V,t}$ and $\hat{s}_{R,t}$ decline, making regime change more likely for any given signal.

Proposition 1 (Collective Action and Regime Change)**.** *The probability of regime transition is given by*

$$\Pr(\mathcal{P}_{t+1} = 1) = 1 - F(\bar{\rho}_t),$$

where $\bar{\rho}_t = D_t \rho_V + (1 - D_t)\rho_R$ is the weighted belief threshold. This probability is strictly increasing in the share of value-rational citizens D_t.

This result formalizes how civic culture weakens autocratic resilience. As investment strengthens civic culture, protest becomes more likely, amplifying political risk. Institutional development thus carries an inherent tension: it enhances fiscal capacity while simultaneously eroding regime stability through endogenous civic mobilization.

Autocratic Investment under Political Risk. Building on Proposition 1, I now characterize the autocrat's optimal investment decision. Each period, the autocrat chooses investment i_t to maximize discounted net rents, internalizing both the fiscal returns and the endogenously determined risk of regime transition. Investment increases fiscal capacity, but also fosters civic mobilization and reduces regime resilience. The autocrat's dynamic problem is

$$\begin{aligned} \max_{\{i_t\} \in \mathbb{R}_+^\infty} \quad & \sum_{t=1}^{\infty} \beta^{t-1} (G_t - \varphi i_t) \prod_{s=1}^{t-1} F(\bar{\rho}_s) \\ \text{s.t.} \quad & I_{t+1} = \min\{(1-\delta) I_t + i_t,\ 1\}, \quad \varphi i_t \leq G_t \quad \text{for all } t. \end{aligned} \tag{8}$$

This formulation captures the autocrat's core trade-off: greater investment improves future revenues but accelerates civic development, thereby shortening the expected horizon of rent extraction.[24]

This political–economic trade-off gives rise to a non-monotonic investment policy. When I_t is low, civic culture is weak and the marginal fiscal return is high, so the autocrat invests actively. However, when I_t is high, civic culture has emerged and regime survival becomes more precarious. This leads to more heavily discounted planning for the future, leading the autocrat to reduce investment. This yields a *single-peaked* investment function.

Proposition 2 (Single-Peaked Investment)**.** *There exists $I^* \in [0, 1)$ such that i_t is increasing in I_t for $I_t < I^*$, and decreasing for $I_t > I^*$.*

This interior peak reflects the self-limiting logic of authoritarian development: the ruler restrains investment when civic mobilization begins to threaten regime stability.[25] This endogenous retrenchment provides a theoretical rationale for why autocracies may fail to sustain growth even under favorable conditions. If rulers internalize the political risks of modernization—as emphasized by modernization theory—then a rational, self-interested autocrat may choose to limit development to avoid democratization.

This insight helps reinterpret empirical findings that show weak or insignificant correlations between income and regime change. Rather than contradicting modernization theory, such null results (e.g., Acemoglu et al., 2008, 2009) may reflect the very mechanism the theory anticipates: that authoritarian rulers, anticipating the political consequences of rising civic capacity, strategically limit growth. In light of this modernization threat, this model cautions against interpreting the absence of democratization at higher income levels as evidence against modernization logic.

Building on the autocrat's optimal investment behavior, I characterize the long-run outcome. The steady-state level of institutional capital I_{ss} depends critically on the unit cost of investment φ, which governs the trade-off between fiscal gain and political risk.

There are three distinct cases. If φ is sufficiently low, investment remains highly profitable even as the modernization threat grows, so the autocrat continues to invest until institutional capital reaches its upper bound. Conversely, if φ is very high, the cost of state-building outweighs any potential fiscal return, leading the autocrat to abandon investment altogether, causing institutional capital to decay to zero. Most interestingly, for an intermediate range of φ, the autocrat's trade-off is actively binding. In this case, the ruler initially invests to reap fiscal benefits, but as institutional capital and the associated political threat rise, they optimally curtail investment, eventually settling at an interior steady state where investment is

[24] I construct the recursive formulation to characterize the optimal policy. Establishing the strict concavity is non-trivial in this problem due to the multiplicative interaction between survival probability and the continuation value. The detailed formal construction is provided in Online Appendix.

[25] Corner cases are also included in this proposition: if $I^* = 0$, the autocrat never invests; if $(1-\delta)I^* + i(I^*) = 1$, capital converges to its upper bound.

just enough to offset depreciation. This is the case where the modernization threat creates a self-limiting path of development.

Proposition 3 (Autocratic Steady State)**.** *There exist cost thresholds* $\underline{\varphi}^{\text{aut}} < \bar{\varphi}^{\text{aut}}$ *that determine the long-run institutional capital* I_{ss}*:*

1. *(Decay) If* $\varphi \geq \bar{\varphi}^{\text{aut}}$*, institutional capital converges to* $I_{ss} = 0$*.*
2. *(Full Capacity) If* $\varphi \leq \underline{\varphi}^{\text{aut}}$*, institutional capital converges to* $I_{ss} = 1$*.*
3. *(Interior State) If* $\varphi \in (\underline{\varphi}^{\text{aut}}, \bar{\varphi}^{\text{aut}})$*, institutional capital converges to* $I_{ss} \in (0, 1)$*, which is decreasing in* φ*.*

Proposition 3 formalizes the long-run institutional outcomes that arise from the autocrat's core trade-off between fiscal gain and political survival. The result shows that the steady state is determined by the autocrat's calculus of balancing the profitability of state-building against the rising modernization threat. The steady state is monotonically decreasing in φ, implying that autocracies with less efficient state capacity building are destined for a lower level of long-term development. This mechanism of self-limiting development provides a theoretical foundation for the puzzling phenomenon of middle-income autocracies that experience long-term stagnation.

Cuba and Iran provide illustrative examples of regimes with relatively high human capital but limited long-run growth. Both countries have invested heavily in education, achieving high literacy and tertiary enrollment rates—among the highest in their respective regions—despite relatively low levels of per capita income.

In Cuba, the government's long-standing emphasis on universal education and healthcare has produced one of the highest educational attainment levels in Latin America (Bertelsmann Stiftung, 2024a). However, as Pérez-López (2001) argues, economic liberalization has been systematically constrained by the regime's fear that rapid development might destabilize its political control. Even in periods of economic crisis, such as the post-Soviet "Special Period," reforms have been selectively and cautiously introduced—and in many cases reversed—to preserve political control (Alonso and Vidal, 2023). For instance, the pace of reforms slowed by 1996 out of fear they could be destabilizing, and the regime prohibited professional self-employment—creating a "severe liability" for the economy—to prevent an independent professional class from emerging (Ritter, 2004).[26]

Iran displays a similar pattern. The regime has invested heavily in expanding university access, creating a well-educated population with rapidly growing higher education enrollment. However, this educational expansion has generated precisely the civic mobilization that

[26]In a 2008 speech outlining U.S. policy, President George W. Bush articulated this perspective, interpreting economic reform in Cuba not merely as a matter of efficiency, but as a step toward democratic transition. He framed the proposed liberalization of markets as inseparable from expanding civil liberties and individual autonomy (Bush, 2008).

threatens regime stability—recurrent unrest particularly among the educated youth who demand greater political freedoms (Bertelsmann Stiftung, 2024b). The regime's response reflects acute awareness of education's political risks: despite having the human capital for sustained growth, it has deliberately maintained a state-dominated economy to prevent the emergence of an autonomous middle class that might challenge authoritarian rule (Povey, 2019).[27] International sanctions have exacerbated these problems, but the underlying constraint reflects the regime's strategic choice to limit development that could fuel civic opposition.

These patterns are consistent with the model's prediction that autocrats may endogenously suppress development when civic mobilization becomes a threat. They illustrate how rational, self-preserving regimes may restrict growth not because they lack capacity or technical knowledge, but because they anticipate the political costs of modernization. In this sense, the absence of democratization in countries with high human capital is not anomalous, but rather consistent with the logic of political endogeneity.

4.3 Democracy: From Civic Culture to Electoral Accountability

Under democracy, institutional investment arises from electoral competition. Unlike autocratic investment—where the ruler unilaterally chooses investment—democratic outcomes reflect voters' civic preferences and parties' electoral incentives.

As described in Section 3.4, two parties A and B propose investment shares $\alpha_t^A, \alpha_t^B \in [0,1]$, and the winning party j's platform determines investment as $i_t = \alpha_t^j G_t/\varphi$. Each party j chooses α_t^j to maximize expected rents, given by

$$(1-\alpha_t^j)G_t \cdot \Pr(\text{party } j \text{ wins}). \tag{9}$$

Electoral outcomes follow a probabilistic voting framework, where the probability of winning depends on voters' responsiveness to policy differences.

Define the average policy responsiveness as $\bar{\lambda}_t = D_{t-1}\lambda_V + (1-D_{t-1})\lambda_R$, which captures how sensitive the electorate is to policy differences rather than partisan attachments.[28] As D_{t-1} increases, electoral accountability strengthens, incentivizing both parties to propose higher investment.

In equilibrium, both parties converge to a common platform $\alpha_t^* = \alpha_t^A = \alpha_t^B$, where

$$\alpha_t^* = \begin{cases} 1 - \frac{1}{J\bar{\lambda}_t} & \text{if} \quad J\bar{\lambda}_t > 1, \\ 0 & \text{otherwise.} \end{cases} \tag{10}$$

[27] This creates a paradox where education does not translate into economic opportunities. Youth aged 15-29, while better educated than previous generations, accounted for more than two-thirds of the unemployed (Salehi-Isfahani, 2011)—a pattern consistent with deliberate constraints on sectors that might empower the educated class.

[28] The variable $\bar{\lambda}_t$ depends on the previous period's civic culture because current voters' preferences were formed in the previous period.

The equilibrium policy formalizes how civic culture enhances electoral accountability and drives institutional investment. As the share of value-rational voters D_{t-1} rises, the electorate becomes more policy-responsive, inducing political parties to allocate a larger share of fiscal revenues toward investment. In contrast, when average policy responsiveness is too low, parties make no investment, focusing instead on rent extraction. The derivation is provided in Online Appendix.

I now turn to the steady state outcomes under democracy.

Proposition 4 (Democratic Steady State)**.** *There exist cost thresholds $\underline{\varphi}^{\text{dem}} < \bar{\varphi}^{\text{dem}}$ that characterize the long-run dynamics of institutional capacity:*

1. *(Decay) If $\varphi \geq \bar{\varphi}^{\text{dem}}$, institutional capital converges to $I_{ss} = 0$.*
2. *(Full Capacity) If $\varphi \leq \underline{\varphi}^{\text{dem}}$, institutional capital converges to $I_{ss} = 1$.*
3. *(History Dependence) If $\varphi \in (\underline{\varphi}^{\text{dem}}, \bar{\varphi}^{\text{dem}})$, there is a threshold of initial civic culture $\hat{D} \in (0, 1)$ such that institutional capital converges to $I_{ss} = 1$ if $D_0 > \hat{D}$, but falls into $I_{ss} = 0$ if $D_0 < \hat{D}$. Furthermore, $\hat{D}$ is increasing in φ.*[29]

The first two cases follow the same logic as in Proposition 3. The third case illustrates the crucial role of initial conditions in democratic development. Since democratic accountability requires citizens who value and demand it, when civic culture is initially weak, electoral competition fails to generate accountability—voters focus on partisan attachments rather than policy performance, allowing parties to prioritize rent extraction over investment. As Tabellini (2008, p. 938) notes, "weak state enforcement is retained even under democracy, because adverse cultural traits make citizens more tolerant of ineffective government." This creates a low-capacity trap where weak institutions perpetuate weak civic engagement.

However, when the initial share of value-rational voters crosses the threshold $\hat{D}$, electoral competition sets off a self-reinforcing cycle: investment strengthens civic culture through education, which in turn amplifies policy responsiveness and raises future investment. This strengthens institutions and fosters even greater civic engagement in the next generation, creating a virtuous cycle of democratic development.

This threshold effect highlights the non-linear nature of democratic development—small differences in civic composition can yield sharply divergent institutional trajectories. This logic aligns with Besley (2020), where civic capital and state capacity serve as strategic complements: voluntary tax compliance depends on perceived state responsiveness, while here, institutional investment depends on civic expectations of electoral accountability. A similar

[29] Given the direct and increasing mapping from institutional to civic capital $D_0 = D(I_1)$, this condition could equivalently be expressed as a threshold on the initial institutional stock, $\hat{I}$. Specifically, there is a unique threshold $\hat{I}$ that corresponds to $\hat{D}$. If I_1 is below $\hat{I}$, it fails to generate sufficient civic capital to sustain democratic accountability, leading to $I_{ss} = 0$. If I_1 is above $\hat{I}$, it triggers the self-reinforcing cycle of civic and institutional development, leading to $I_{ss} = 1$.

threshold logic appears in Bernhardt et al. (2022), who show that electoral competition under a demagogue can trigger a self-reinforcing economic decline if initial capital stock falls below a critical level. Both models, like this one, feature endogenous institutional failure under democracy when initial conditions are insufficient to sustain positive feedback mechanisms.

The relevance of this result is not confined to theory; this dynamic corresponds to the literature suggesting a virtuous and vicious cycle between citizens' trust and state effectiveness. Algan and Cahuc (2010) show that inherited trust has a sizable causal impact on growth. Trust creates positive effects on institutional support and policy compliance leading to greater governmental effectiveness (Besley and Dray, 2024), which in turn reinforces trust through powerful lifelong growth experiences. Using a global dataset of 2.8 million respondents, Besley et al. (2025) find that an individual's entire lifetime experience of GDP growth is a strong positive predictor of their trust in government, an effect that is more than twice as large in democracies as in autocracies.

It also relates to historical experience. A clear example of this failure mechanism can be found in the Philippines after the democratic transition of 1986. The fall of Ferdinand Marcos's dictatorship through the "People Power Revolution" restored electoral competition and constitutional democracy, yet the underlying civic foundations remained fragile.[30] Schooling access has been expanded during the preceding decades, and enrollment in higher education continued to rise. However, education was not accompanied by the formation of broad civic values capable of disciplining elected leaders. Instead, political participation was largely channelled through entrenched clientelistic networks, and civic associations remained weak (Teehankee, 2012).

As a result, the new democracy did not generate the accountability mechanism that, in the model, requires a critical level of civic culture (Hutchcraft and Rocamora, 2003). Although democratic institutions formally operated, political leaders sustained power by relying on patronage, rather than pursuing systematic investment in fiscal and institutional capacity. Over the subsequent decades, the Philippines experienced recurrent political instability and underwhelming economic growth, especially compared with other East Asian economies (Gerson, 1998).

This trajectory illustrates that democracy alone does not guarantee entry into the self-reinforcing path of civic value formation and institutional development; when the stock of civic culture remains below the threshold, democratic institutions can persist without delivering sustained state capacity or growth.

[30]The fragility of these civic foundations is deeply rooted in the nation's history. The political culture has long been called *Cacique Democracy*. This system, originating in the Spanish colonial era's use of local elites (caciques) for indirect rule, fostered a political landscape dominated by powerful landowning families rather than a broad-based citizenry with strong civic values. The 1986 revolution removed the dictator but did not dismantle this underlying oligarchic structure.

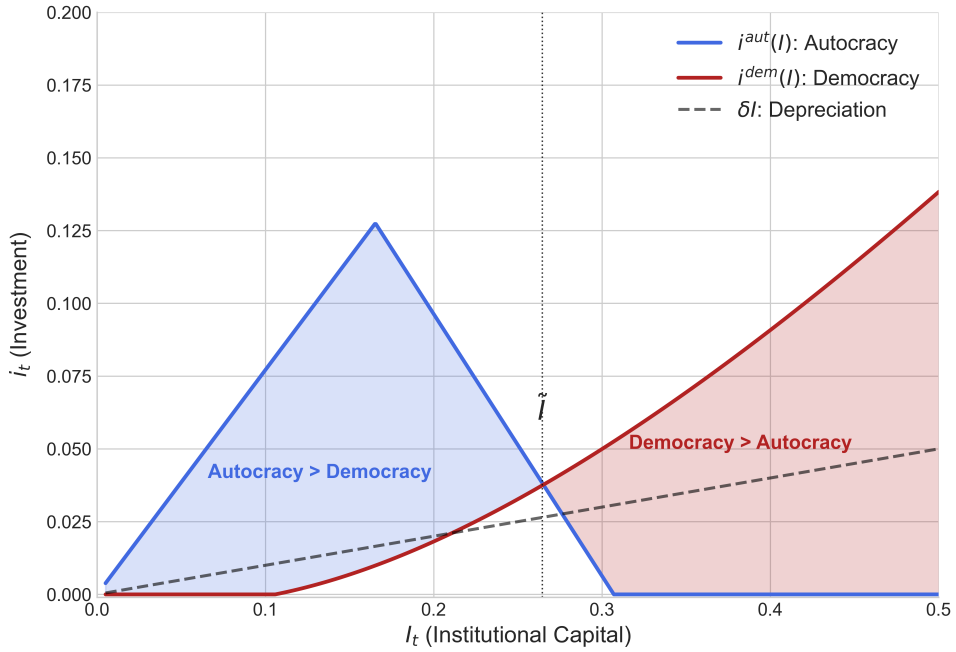


Figure 1: Crossing Investment Paths

Notes: The figure uses the parameters $F \sim U[0,1]$, $\beta = 0.9$, $\delta = 0.1$, $\varphi = 3.5$, $\gamma = 0.15$, $\eta_s = 0.1$, $\eta_e = 0.5$, $\tau = 0.3$, $\pi_h = 10$, $\pi_\ell = 1$, $\lambda_V = 4$, $\lambda_R = 0.5$, $J = 1$, $\rho_V = 0.4$, and $\rho_R = 0.8$. The dashed line shows depreciation as a function of institutional capital; its intersection with autocratic investment determines the autocratic steady state I_{ss}^{aut}, while its intersection with democratic investment marks the threshold $\hat{I}$.

5 Divergent Paths under Autocracy and Democracy

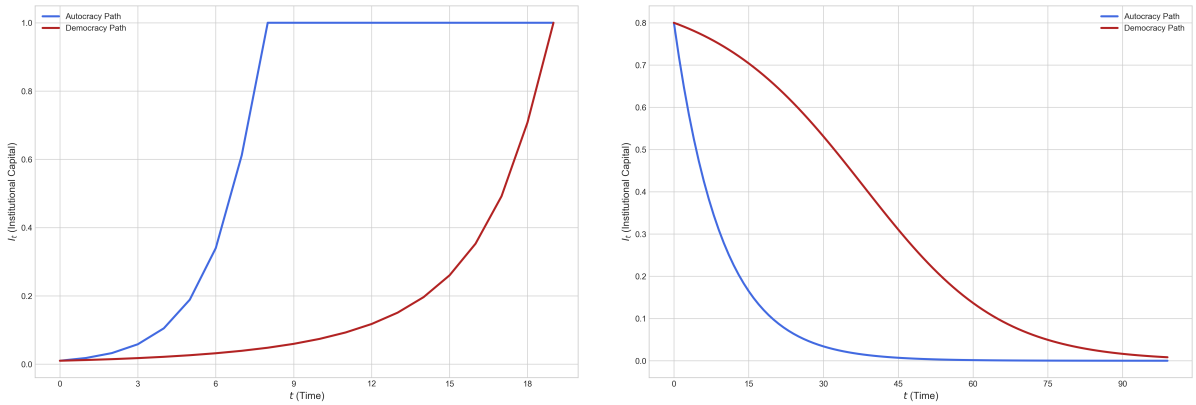
I now compare the developmental trajectories of autocracy and democracy. Although both regimes operate within the same economic and cultural environment, they exhibit qualitatively different responses to the endogenous evolution of civic preferences. These regime-specific incentive structures lead to divergent investment dynamics—even when the long-run steady state may coincide.

Proposition 5 (Comparative Dynamics of Autocracy and Democracy)**.** *Let the investment functions be* $i^{\text{aut}}(I)$ *and* $i^{\text{dem}}(I)$.

1. *(Crossing Investment Paths) In the intermediate cost range* $\max\{\underline{\varphi}^{\text{aut}}, \underline{\varphi}^{\text{dem}}\} < \varphi < \min\{\bar{\varphi}^{\text{aut}}, \bar{\varphi}^{\text{dem}}\}$*, investment dominance reverses once from autocracy to democracy as* I *rises.*[31]

2. *(Divergent Convergence Paths) Even when converging to the same steady state, the paths differ. When* $\varphi < \min\{\underline{\varphi}^{\text{aut}}, \underline{\varphi}^{\text{dem}}\}$*, the autocratic path to* $I_{ss} = 1$ *exhibits faster initial growth. When* $\varphi > \max\{\bar{\varphi}^{\text{aut}}, \bar{\varphi}^{\text{dem}}\}$*, the autocratic path to* $I_{ss} = 0$ *exhibits a faster rate of decay.*

[31] Formally, the switch occurs either at a unique threshold $\tilde{I} \in (0,1)$ with $i^{\text{aut}}(I) > i^{\text{dem}}(I)$ for $I < \tilde{I}$ and $i^{\text{aut}}(I) < i^{\text{dem}}(I)$ for $I > \tilde{I}$, or across a zero–investment plateau on which $i^{\text{aut}}(I) = i^{\text{dem}}(I) = 0$; in the latter case autocracy dominates below the plateau and democracy dominates above it.



(a) Case 1: Steady state converges to 1

(b) Case 2: Steady state converges to 0

Figure 2: Divergent Convergence Paths

Notes: Both panels use the following common parameter values: $F \sim U[0,1]$, $\beta = 0.9$, $\delta = 0.1$, $\gamma = 0.15$, $\eta_s = 0.1$, $\eta_e = 0.5$, $\tau = 0.3$, $\pi_h = 10$, and $\pi_\ell = 1$. Panel (a) sets $\varphi = 3$, $\lambda_V = 6$, $\lambda_R = 1$, $\rho_V = 0.7$, $\rho_R = 0.95$, and $J = 1$, yielding convergence to 1. Panel (b) sets $\varphi = 5$, $\lambda_V = 1.5$, $\lambda_R = 1$, $\rho_V = 0.4$, and $\rho_R = 0.8$, yielding convergence to 0.

The first part of the proposition stems from the regimes' fundamentally different responses to the evolution of civic culture. Investment dominance reverses as institutions develop (possibly after a mid-range interval where both invest zero). Initially, the autocrat faces little political risk and invests heavily relative to democracy, while democratic parties, facing a disengaged electorate, prioritize rent extraction. As civic culture strengthens with rising capital, the autocrat curtails investment to manage growing survival risk, whereas democratic parties are compelled by a more engaged citizenry to compete by offering greater investment.

These qualitatively different responses lead to the divergence in long-run outcomes. For φ in this range, democracy's path is history-dependent, hinging on a critical threshold of initial civic culture. A sufficiently strong civic foundation ($D_0 > \hat{D}$) can trigger a virtuous cycle of self-reinforcing growth toward the institutional frontier. Conversely, if civic culture is initially too weak ($D_0 < \hat{D}$), democratic accountability fails to materialize, leading to a low-capacity trap where institutions decay to zero. In contrast, the autocrat's growth is self-limiting. The ruler optimally halts investment at an interior equilibrium that balances profit against political survival, regardless of favorable initial conditions (see Figure 1).

The second part of the proposition indicates that, even when both regimes converge to the same steady state, their dynamics differ. At low costs, both reach maximal capacity ($I_{ss} = 1$), but autocracy follows a *growth-first* trajectory of rapid investment until it reaches the highest level, whereas democracy's path is more gradual due to persistent electoral competition (see Figure 2 (a)). At high costs, both decay ($I_{ss} = 0$), but democratic decay is slower as competitive pressures provide some incentive to preserve institutional capacity, in contrast to the autocrat's unconstrained extraction (see Figure 2 (b)).

These patterns illuminate the deeper political economy mechanisms at play. The auto-

crat's long-term planning horizon enables rapid, front-loaded growth but creates self-limiting incentives as civic threats emerge. Democratic competition, while creating frictions that slow initial growth, provides more robust long-term incentives for development once civic accountability is established. The framework thus provides theoretical foundations for understanding why some autocracies exhibit impressive early growth and why well-functioning democracies tend to outperform in the long run.

6 Extension: Performance-Based Legitimacy

The main model shows how autocrats may deliberately constrain institutional development to limit civic culture. In this section, I consider an alternative autocratic strategy: competing with democracy through superior economic performance. When regimes convincingly outperform democracies, citizens—even those with strong civic preferences—may doubt that a democratic transition would improve their welfare, reducing participation in collective action. Notable examples include Singapore's pragmatic authoritarianism and China's "Beijing Consensus", where sustained economic growth has been used to dampen demands for political change.

I extend the model to examine how such performance-based legitimacy narrative shapes developmental trajectories. For tractability, I modify the baseline model by considering a dynasty of autocrats rather than an infinitely-lived ruler. In period t, the incumbent extracts current rents while also seeking to preserve the regime for the successor in period $t+1$.[32] The ruler's objective in period t is thus to maximize their own current rents plus the discounted total tax revenue available to their successor (G_{t+1}), contingent on regime survival. The period-t autocrat solves

$$\max_{i_t \in [0, G_t/\varphi]} \; G_t - \varphi i_t + \beta \Pr(\mathcal{P}_{t+1} = 0) G_{t+1} \tag{11}$$

where, as before, φ denotes the cost of producing one unit of institutional capital. Note that, under analogous parametric conditions, the growth dynamics without the legitimacy narrative are qualitatively similar to those under the infinite-horizon autocracy in Proposition 2.[33]

I now incorporate the performance-based legitimacy narrative. Assume that each young citizen i has the same baseline payoff structure as in the main model. In addition, when the autocratic regime delivers economic growth that meets or exceeds the level under democracy, citizens face an additional disincentive to protest.

Let i_t^{dem} denote the investment level under democracy, derived in Section 4.3. When $i_t \geq i_t^{\text{dem}}$, the autocracy is perceived as economically competent, thereby strengthening its

[32] This specification is justified by two features of the environment: citizens live for at most two periods, and under a group-based institutionalized autocracy the ruler has an incentive to maintain the regime's capacity for the next generation of leadership.

[33] This qualitative similarity holds because the continuation value, $\Pr(\mathcal{P}_{t+1} = 0) G_{t+1}$, is strictly concave in I_{t+1}, which is because G_{t+1} is linearly increasing in I_{t+1}, and $\Pr(\mathcal{P}_{t+1} = 0)$ is linearly decreasing in I_{t+1} if F is uniform, and strongly concave decreasing in I_{t+1} if F is strongly concave CDF.

	$n_t > 1-\theta_t$	$n_t < 1-\theta_t$
Protest	$\mu_v - \kappa \mathbb{1}\{i_t \geq i_t^{\text{dem}}\}$	$-\chi$
No protest	$\mu_v - \psi_v$	0

Table 3: Payoff matrix for a citizen i of type $v \in \{V, R\}$

legitimacy. Let κ denote the magnitude of the protest disincentive arising from this narrative. I assume that $\psi_R < \kappa < \psi_V$, so that performance legitimacy partially—but not fully—offsets the civic motivation to protest. The resulting payoffs are described in Table 3.

If the autocrat invests at least the democratic counterfactual, $i_t \geq i_t^{\text{dem}}$, R-type citizens no longer participate in collective action, and V-type citizens face an additional disincentive to protest. Let

$$\rho_V^{\text{leg}} = \frac{\chi}{\chi + \psi_V - \kappa} > \rho_V,$$

denote the belief threshold at which a V-type citizen is indifferent between protesting and abstaining under performance-based legitimacy. In this case, only V-type citizens determine the regime change threshold, so the weighted belief threshold under the performance-based legitimacy is

$$\bar{\rho}_t^{\text{leg}} = 1 - D_t\big(1 - \rho_V^{\text{leg}}\big).$$

When $i_t \geq i_t^{\text{dem}}$, the probability of regime survival is therefore given by $F(\bar{\rho}_t^{\text{leg}})$. When $i_t < i_t^{\text{dem}}$, the thresholds and survival probability revert to those in the baseline model. Formally,

$$\Pr(\mathcal{P}_{t+1} = 0) = \begin{cases} F(\bar{\rho}_t^{\text{leg}}), & \text{if} \quad i_t \geq i_t^{\text{dem}}, \\ F(\bar{\rho}_t), & \text{if} \quad i_t < i_t^{\text{dem}}, \end{cases} \tag{12}$$

where $\bar{\rho}_t$ is the weighted belief threshold in the baseline model.

Substituting this survival probability into the autocrat's dynamic problem in (11) yields

$$\begin{aligned} \max_{i_t \in [0, G_t/\varphi]} \quad & (G_t - \varphi i_t) + \beta G_{t+1} \left[F(\bar{\rho}_t^{\text{leg}})\, \mathbb{1}\{i_t \geq i_t^{\text{dem}}\} + F(\bar{\rho}_t)\big(1 - \mathbb{1}\{i_t \geq i_t^{\text{dem}}\}\big) \right] \\ \text{s.t.} \quad & I_{t+1} = \min\{(1-\delta) I_t + i_t,\ 1\}. \end{aligned} \tag{13}$$

The main difference from the problem in the baseline model (8) is that the probability of regime survival depends on whether $i_t \geq i_t^{\text{dem}}$ or not.

To evaluate the strategic impact of the legitimacy narrative, I establish two benchmarks within the two-period framework. The first is a baseline autocrat facing the standard survival probability, $\Pr(\mathcal{P}_{t+1} = 0) = F(\bar{\rho}_t)$. The second is a hypothetical autocrat who unconditionally benefits from the higher survival probability, $F(\bar{\rho}_t^{\text{leg}})$. Analogous to Proposition 2, the optimal policies for both are single-peaked; denote their respective peaks as I_{base}^* and I_{leg}^*. I further assume parameters are such that the policy for the hypothetical autocrat yields a unique interior

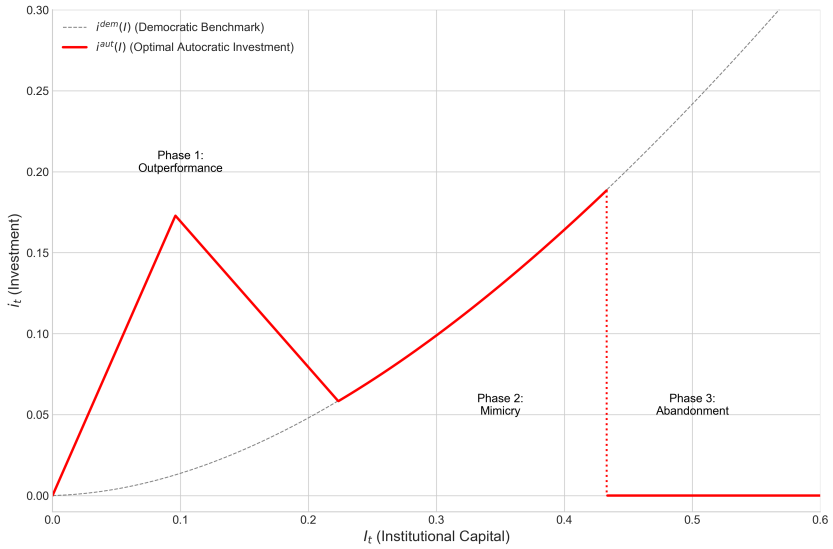


Figure 3: Investment under the performance-based legitimacy

Notes: The figure illustrates Proposition 6 under the following parameter values: $\theta_\ell = 0$, $\theta_h = 1$, $\beta = 0.9$, $\delta = 0.1$, $\varphi = 1.5$, $\gamma = 0.15$, $\eta_s = 0.1$, $\eta_e = 0.8$, $\bar{I} = 1$, $\tau = 0.3$, $\pi_h = 10$, $\pi_\ell = 1$, $\lambda_V = 2$, $\lambda_R = 0.9$, $J = 1$, $\chi = 1$, $\psi_V = 8$, $\psi_R = 0.1$, and $\kappa = 9/11$. The resulting policy displays the three phases described in the proposition: outperformance ($i_t > i_t^{\text{dem}}$ for low I_t), mimicry ($i_t = i_t^{\text{dem}}$ for intermediate I_t), and abandonment ($i_t < i_t^{\text{dem}}$ for high I_t).

steady state. The following proposition describes how the policy of the strategic autocrat, who must actively earn legitimacy by investing at or above i_t^{dem}, compares to these benchmarks.

Proposition 6. *There exist thresholds* $0 \leq I^*_{\text{leg}} < \underline{I}^{\text{leg}} < \bar{I}^{\text{leg}} \leq 1$ *such that the autocrat's optimal investment policy is characterized by three distinct phases:*

1. *(Outperformance) If* $I_t < \underline{I}^{\text{leg}}$*, the autocrat invests more than the democratic benchmark. The investment is increasing for* $I_t \in [0, I^*_{\text{leg}}]$ *and decreasing for* $I_t \in [I^*_{\text{leg}}, \underline{I}^{\text{leg}}]$.

2. *(Mimicry) If* $I_t \in [\underline{I}^{\text{leg}}, \bar{I}^{\text{leg}}]$*, the autocrat matches the democratic investment level.*

3. *(Abandonment) If* $I_t > \bar{I}^{\text{leg}}$*, the autocrat abandons the legitimacy strategy. Investment drops discontinuously at* $\bar{I}^{\text{leg}}$ *and remains below the democratic benchmark.*

The first part of the result follows the same logic as Proposition 2. When the institutional capital is low, it is optimal for the autocrat to allocate the entire budget to investment, whereas the democratic counterfactual prescribes low investment in this range. Hence, $i_t > i_t^{\text{dem}}$ for sufficiently low I_t. As I_t increases, the autocrat reduces investment due to the growing threat from an emerging civic culture.

Whenever the regime delivers economic growth at least as high as the democratic counterfactual, citizens' incentives to demand a transition weaken, and only value-rational citizens may participate in collective action. This raises the investment peak to $I^*_{\text{leg}} > I^*_{\text{base}}$.

For the institutional capital above I^*_{leg}, there exists an intermediate range in which the hypothetical autocrat would invest below i_t^{dem}. In this range, rather than losing legitimacy by

investing below i_t^{dem}, the autocrat mimics the democratic investment level to preserve regime stability for $I_t \in [\underline{I}^{\text{leg}}, \bar{I}^{\text{leg}}]$.

When I_t is high, if under the democratic counterfactual the required investment level is very high, mimicking it may require substantially greater resources and, over time, further intensify the pressure of democratization by increasing the share of value-rational citizens. If the resulting legitimacy gains are insufficient and the strategy becomes unprofitable, the autocrat abandons it and prioritizes immediate rent extraction.

This extension shows that a performance-based legitimacy narrative can serve as a driver for sustaining autocratic development. By raising the peak investment threshold and allowing for a mimicry phase, the autocracy can prolong high investment levels to preserve stability—performance-based legitimacy weakens protest incentives and delays the point at which rising civic culture constrains investment. Note that this strategy is feasible because autocracies face fewer institutional constraints than democracies: the autocrat can choose any $i_t \in [0, G_t/\varphi]$, whereas democratic parties are disciplined by electoral competition to propose the unique equilibrium policy $i_t^{\text{dem}}(I_t)$. This enables them to replicate democratic investment levels when strategically beneficial and abandon this strategy when it becomes too costly or politically counterproductive.

7 Discussions

This section discusses the broader implications of my findings. I begin by situating my framework relative to the influential literature on inclusive and extractive institutions. I then show how my model offers a novel resolution to the long-standing debate on whether civic culture and institutions function as substitutes or complements. Finally, I conclude by considering the boundaries of my framework and discussing its potential extensions.

7.1 Inclusive and Extractive Institutions

The influential work of Acemoglu and Robinson has established inclusive versus extractive institutions as a central organizing principle in political economy (Acemoglu and Robinson, 2006, 2013). Inclusive institutions—characterized by secure property rights, broad educational access, and participatory governance—generate sustained prosperity by fostering individual incentives to invest, innovate, and accumulate human capital, thereby aligning private returns with socially efficient outcomes. Extractive institutions, by contrast, concentrate political power and economic rents in the hands of narrow elites, enabling episodes of rapid growth but ultimately undermining long-run development by discouraging innovation and broad-based investment.

However, this dichotomy embeds a critical assumption that institutional effects operate independently of political and cultural context.[34] Institutions are often treated as if they pos-

[34]Outside of this issue, the institutional view has sparked a major debate on primacy. Glaeser et al. (2004) argue for the primacy of human capital and development in determining institutions. In response, Acemoglu

sess intrinsic developmental properties: inclusive institutions automatically promote growth, while extractive ones inhibit it. Such a perspective underplays how institutional arrangements interact with political and cultural circumstances—particularly how the same institutions generate fundamentally different incentives depending on the level of civic culture in society.

Addressing this static view, Acemoglu and Robinson's (2019) recent work recasts institutional development as a dynamic contest between state and society. Prosperity emerges only within a "narrow corridor" where a balance of power creates a *shackled leviathan*—a state strong enough to provide order but constrained by a mobilized society. Outside this corridor lie two forms of extractive states: the *despotic leviathan*, where the state dominates society, and the chaos of an *absent leviathan*, where society is fragmented and the state is too weak to govern.

While this framework provides a powerful dynamic lens, its treatment of the underlying forces that drive the state-society contest remains incomplete. Specifically, it does not fully endogenize the origins of society's power, nor does it systematically model the strategic incentives that determine whether political actors enter—or actively avoid—this dynamic in the first place. This theoretical gap is particularly evident when considering cases like South Korea's democratization: why some autocracies pursue developmental strategies that strengthen the very society that may eventually challenge their rule. The mechanisms that power societal mobilization and shape a ruler's strategic calculus between development and political survival thus remain undertheorized.

My framework addresses this theoretical gap by endogenizing the mechanism that powers societal mobilization: civic culture that emerges as an unintended by-product of educational investment. The model demonstrates why autocracies—archetypal extractive institutions—may nonetheless pursue substantial development in early stages when civic mobilization remains limited. Crucially, this investment is strategically curtailed once the resulting civic culture becomes a modernization threat, which can be understood as the ruler's rational choice to avoid entering the narrow corridor where state power would be challenged. Conversely, the model reveals that democracy's formally inclusive structures do not guarantee superior outcomes; without sufficient civic foundations, democracies can become trapped in low-capacity equilibria, underperforming even extractive autocracies. By embedding institutions within endogenous civic culture dynamics, this analysis provides a more nuanced account of institutional effectiveness and identifies the political-cultural preconditions necessary for sustained development.

7.2 Culture and Institutions: Substitutes or Complements?

A central question in political economy is how civic culture and formal institutions interact to shape developmental outcomes. The literature, as summarized by Persson and Tabellini

et al. (2014) see institutions as fundamental because they provide incentives for human capital. This paper moves beyond this debate by synthesizing both factors within different political regimes.

(2021), has often been divided on whether these two forces are *substitutes* or *complements*.[35] The substitutes view posits that a strong civic culture is most crucial where formal institutions are weak, for example, by sustaining cooperation where legal enforcement is inefficient. Conversely, the complements view highlights the long-run clustering of good outcomes, arguing that strong institutions and civic cultures are mutually reinforcing, creating a dynamic, virtuous cycle.

This framework suggests that the relationship between culture and institutions is not a static dichotomy, but is fundamentally contingent on the political regime. In democracies, civic culture reinforces political accountability, leading to dynamic complementarity. When a critical mass of civic culture exists, it strengthens electoral accountability, which compels parties to invest in institutional capacity. This investment, primarily through education, then fosters a stronger civic culture in the next generation, creating a virtuous cycle of co-evolution.

In autocracies, however, the modernization threat means a rising civic culture and institutional development become strategic substitutes in the game-theoretic sense from the ruler's perspective of political survival.[36] The same institutional investment required for economic growth also cultivates the civic-minded populace that endangers the regime. Therefore, a rational autocrat will invest in state capacity only when the civic threat is negligible, but is forced to curtail that investment once civic culture becomes a salient political risk.

Future empirical work could explore how culture and institutions function as complements in democracies and as substitutes in autocracies.

7.3 Endogenizing Democratic Erosion

Recent instances of democratic backsliding suggest that democracies can undergo authoritarian reversals through the gradual erosion of norms and institutional checks. Although the baseline model does not consider the reversal of democracy, it can be extended to settings where democratic breakdown is endogenous. Such an extension preserves the model's core logic: just as civic capacity enables protest and regime change under autocracy, it can also serve to defend democratic institutions against authoritarian threats.

This perspective aligns with a broader literature on civic capital and democratic resilience. Putnam et al. (1993) and Persson and Tabellini (2009) emphasize the role of accumulated civic and democratic capital in consolidating democracy, while Besley and Persson (2019) formalize the link between civic culture and regime type through value-driven citizens who shape political transitions.

[35] This discussion relates to but differs from recent work by Besley and Persson (2019) and Bisin and Verdier (2024), who analyze how civic culture and institutional forms co-evolve. They focus on institutional choice—democracy vs. autocracy in Besley and Persson (2019) and the determination of Pareto weights in collective decision-making in Bisin and Verdier (2024). In contrast, my framework examines institutional development: how the level of state capacity evolves within a given regime type.

[36] The term substitutes here refers specifically to the autocrat's political survival calculus: higher civic culture reduces the marginal continuation value of institutional investment by increasing democratization risk, leading to lower optimal investment. This differs from the standard substitutes view, where strong civic norms compensate for weak formal institutions.

To endogenize democratic collapse, the model could incorporate authoritarian threats that citizens resist through coordination games analogous to the anti-regime protests already modeled, following a similar approach to Persson and Tabellini (2009) in modeling the defense of democratic institutions. In such an extension, a higher civic culture D_t would lower the probability of successful coups, enhancing democratic resilience. This mechanism recently manifested in South Korea's December 2024 event, where widespread civic resistance—including citizens physically blocking access to the National Assembly—quickly reversed President Yoon Suk Yeol's martial law declaration and led to his impeachment.[37]

While this extension lies beyond the present model's scope, the coordination logic governing civic protest under autocracy readily extends to modeling bottom-up defenses of democracy. Incorporating endogenous threats to democracy would strengthen rather than weaken the model's core message: that civic culture and institutional development co-evolve to create fundamentally different political dynamics under alternative regime types.

7.4 Regime Heterogeneity in the Civic Impact of Education

The benchmark model assumes a regime-invariant coefficient η_e, implying that education exerts the same influence on civic value formation under both autocracy and democracy. In reality, however, authoritarian regimes frequently constrain the civic content of education—through curriculum design, ideological filtering, or restricted access to higher education—thereby weakening its capacity to foster democratic orientations. This suggests that the civic responsiveness of education may be regime-dependent.

To incorporate this possibility, the model can allow the civic coefficient η_e to vary by regime, such that $\eta_{e,\mathcal{P}_t}$ satisfies $\eta_{e,0} < \eta_{e,1}$. That is, education is more effective in promoting civic values under democracy than under autocracy. Crucially, the qualitative results of the model remain intact. Allowing for regime-dependent civic responsiveness would only reinforce the institutional investment in autocracy.

A deeper extension, beyond the scope of this paper, would be to model the endogenous manipulation of education as a tool of political control. In practice, authoritarian regimes may not only dampen the civic effects of education but also actively shape curriculum and restrict access to higher education. A growing body of research underscores these mechanisms. For instance, Alesina et al. (2021) model how autocrats, facing a threat to regime stability, strategically invest in mass education not to empower citizens but to indoctrinate them, thereby preempting democratization. Supporting this view, Cantoni et al. (2017) provide causal evidence from China showing that state-driven curriculum reforms successfully aligned students' beliefs with government ideology regarding markets and political authority.

[37] This episode highlights how strong civic culture can defend democratic institutions even under acute institutional stress, particularly notable given that self-coup attempts historically have high success rates.

8 Conclusion

This paper explains how the endogenous evolution of civic culture creates fundamentally different developmental dynamics under autocracy and democracy. By modeling education as a force that simultaneously builds human capital and fosters civic values, the analysis reveals why the same modernization process produces systematically divergent outcomes: what threatens an autocrat's survival is precisely what strengthens a democracy's accountability.

Under autocracy, rulers face a modernization threat. While investment in state capacity boosts future tax revenues, it also cultivates a stronger demand for democracy, increasing the risk of a successful democratic transition. This trade-off leads to a non-monotonic, single-peaked investment strategy, where rational, self-interested autocrats curtail development as the political threat grows, potentially trapping their economies at an intermediate level of institutional capacity. The extended analysis further shows, however, that this threat can be partially mitigated through performance-based legitimacy, where superior economic outcomes can temporarily dampen citizens' protest incentives. Under democracy, development is history-dependent. A sufficiently strong initial stock of civic culture creates a virtuous cycle of electoral accountability, higher investment, and further civic strengthening. A weak civic foundation, however, leads to a low-capacity trap, as electoral competition fails to discipline politicians who prioritize rent extraction over long-term investment.

These findings offer a more nuanced perspective on the relationship between institutions, culture, and development. By endogenizing the political trade-offs of state-building, my framework challenges static views that treat institutional performance as a monotonic process. It shows that formally *extractive* autocracies can deliver substantial early development, while formally *inclusive* democracies can stagnate if a critical mass of civic culture is absent. Furthermore, it resolves the apparent tension in the literature over whether culture and institutions are substitutes or complements. This study suggests the relationship is fundamentally regime-contingent: they are dynamic complements in a well-functioning democracy but become strategic substitutes from the perspective of a self-preserving autocrat.

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Appendix

Proof of Proposition 1

In this protest game, the equilibrium thresholds are $\hat{s}_{R,t} = \sigma(2\rho_R - 1) + \bar{\rho}_t$ and $\hat{s}_{V,t} = \sigma(2\rho_V - 1) + \bar{\rho}_t$ where $\bar{\rho}_t := D_t\rho_V + (1 - D_t)\rho_R$ is the average of belief thresholds where the citizens protest whenever her posterior is above it (see Online Appendix for derivation). These closed-form solutions illustrate that each type's threshold consists of a common belief term $\bar{\rho}_t$ and a type-specific adjustment. Since $\rho_R > \rho_V$, it follows directly that $\hat{s}_{V,t} < \hat{s}_{R,t}$: value-rational citizens protest under more pessimistic signals.

The main objective here is derive the (ex-ante) probability of regime change $\Pr(\mathcal{P}_{t+1} = 1)$ conditional on the civic culture D_t. The derivation proceeds by examining how the protest share n_t varies with θ_t. To do so, I partition the support of θ_t into regions determined by the threshold values $\hat{s}_{V,t}$ and $\hat{s}_{R,t}$. In each region, the set of citizens who find it optimal to protest differs, which allows me to characterize the protest share n_t and the corresponding condition for regime change.

First, when $\theta_t \leq \hat{s}_{V,t} - \sigma$, all citizens receive signals below their respective thresholds and abstain from protest, so $n_t = 0$ and the regime remains in place. Second, when $\theta_t \in (\hat{s}_{V,t} - \sigma, \hat{s}_{R,t} - \sigma]$, only citizens of type V protest, and the expected participation share is

$$n_t = D_t \cdot \frac{\theta_t + \sigma - \hat{s}_{V,t}}{2\sigma},$$

and protest succeeds if $n_t > 1 - \theta_t$, which is equivalent to

$$\theta_t \geq \frac{2\sigma + D_t(\hat{s}_{V,t} - \sigma)}{2\sigma + D_t}.$$

However, this condition is not satisfied throughout this region. Even at the upper bound $\theta_t = \hat{s}_{R,t} - \sigma$, the inequality fails, meaning that the number of participants is insufficient to overthrow the regime for any θ_t in that region. Third, consider the region $\theta_t \in (\hat{s}_{R,t} - \sigma, \hat{s}_{V,t} + \sigma]$, where both types may participate. The protest share becomes

$$n_t = D_t \cdot \frac{\theta_t + \sigma - \hat{s}_{V,t}}{2\sigma} + (1 - D_t) \cdot \frac{\theta_t + \sigma - \hat{s}_{R,t}}{2\sigma},$$

and protest succeeds if

$$\theta_t \geq D_t \cdot \frac{\hat{s}_{V,t} + \sigma}{1 + 2\sigma} + (1 - D_t) \cdot \frac{\hat{s}_{R,t} + \sigma}{1 + 2\sigma}.$$

At the upper bound of the region, $\theta_t = \hat{s}_{V,t} + \sigma$, the inequality is satisfied. This means, by the intermediate value theorem, there exists a unique threshold $\bar{\theta}_t \in [\hat{s}_{R,t} - \sigma, \hat{s}_{V,t} + \sigma]$ such that regime change occurs if and only if $\theta_t \geq \bar{\theta}_t$, where the uniqueness comes from the monotonicity of n_t in the region of θ_t.

To derive this threshold $\bar{\theta}_t$, substituting the equilibrium cutoffs $\hat{s}_{R,t}$ and $\hat{s}_{V,t}$, I get $\bar{\theta}_t = D_t\rho_V + (1 - D_t)\rho_R = \bar{\rho}_t$. Thus, the probability of regime change $\Pr(\mathcal{P}_{t+1} = 1)$ is $\Pr(\theta_t \geq \bar{\theta}_t) = 1 - F(\bar{\rho}_t)$. This completes the derivation of the regime transition probability.

Proof of Proposition 2

The autocrat's dynamic optimization problem admits a unique value function $V(I)$ that is strictly concave in the domain of interest. The technical detail is provided in Online Appendix. The recursive formulation is

$$V(I) = \max_{i \in [0, G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))V(I') \right\} \tag{14}$$

subject to the capital accumulation constraint $I' = (1-\delta)I + i$, with $I, I' \in [0, 1]$. Let $W(I') := F(\bar{\rho}(I'))V(I')$ denote the survival-weighted continuation value, which is strictly concave in I'.

To characterize the shape of the equilibrium investment function $i^{\text{aut}}(I)$, consider the behavior of the marginal continuation value $\beta W'(I')$ at the domain boundaries. If φ is sufficiently high such that $\lim_{I' \to 0} \beta W'(I') \leq \varphi$, then the marginal value of investment never exceeds its cost, and the autocrat optimally chooses $i^{\text{aut}}(I) = 0$ for all I. In this case, the investment function is identically zero, and the peak occurs at $I^* = 0$.

Suppose instead that $\lim_{I' \to 0} \beta W'(I') > \varphi$. Then, for sufficiently small I, the autocrat finds it optimal to invest the entire fiscal revenue, i.e., $i^{\text{aut}}(I) = G(I)/\varphi$. Specifically, since $G(I) \to 0$ as $I \to 0$, for any fixed $\varphi > 0$, the resulting capital stock $I' = (1-\delta)I + G(I)/\varphi$ also converges to zero, confirming that the marginal return to investment is high and justifying full investment when I is small.

Now assume further that $\lim_{I' \to 1} \beta W'(I') < \varphi$. Given that W is strictly concave, the first derivative $W'(I')$ is strictly decreasing in I'. With I such that $(1-\delta)I + G(I)/\varphi < 1$, the marginal benefit of investment is strictly decreasing in I. By continuity, there exists a unique threshold $I^* \in (0,1)$ such that $\beta W'((1-\delta)I^* + G(I^*)/\varphi) = \varphi$. Then, for all $I < I^*$, the autocrat fully invests, and the equilibrium investment $i^{\text{aut}}(I) = G(I)/\varphi$ is strictly increasing in I.

For $I > I^*$, $i^{\text{aut}}(I)/\varphi$ decreases in I. Specifically, $i^{\text{aut}}(I)$ solves the first-order condition:

$$\beta W'((1-\delta)I + i^{\text{aut}}(I)/\varphi) = \varphi$$

whenever $(1-\delta)I + i^{\text{aut}}(I)/\varphi < 1$. Suppose, for contradiction, that $I' > I \geq I^*$ and $i^{\text{aut}}(I') \geq i^{\text{aut}}(I)$ such that $(1-\delta)I + i^{\text{aut}}(I)/\varphi < 1$. Then

$$\varphi = \beta W'((1-\delta)I + i^{\text{aut}}(I)/\varphi) > \beta W'((1-\delta)I' + i^{\text{aut}}(I')/\varphi)$$

which violates the first-order condition. Hence, $i^{\text{aut}}(I)$ is strictly decreasing for $I > I^*$, establishing that it exhibits a unique peak at I^*.

Finally, if $\lim_{I' \to 1} \beta W'(I') \geq \varphi$, then full investment remains optimal up to the highest level of the institutional capital. That is, the autocrat fully invests until $(1-\delta)I + G(I)/\varphi \leq 1$. Let I^* be such I that holds with equality. For $I > I^*$, due to the capital ceiling, the optimal investment is given by $i(I) = 1 - (1-\delta)I$, which is strictly decreasing in I. Thus, even in this case, the investment function is single-peaked.

Proof of Proposition 3

The result follows from the shape of the equilibrium investment function $i^{\text{aut}}(I)$ characterized in Proposition 2, and its interaction with the capital accumulation process $I_{t+1} = (1-\delta)I_t + i^{\text{aut}}(I_t)$, subject to $I_t, I_{t+1} \in [0,1]$ and the fiscal constraint $\varphi i(I_t) \leq G(I_t)$. A steady state corresponds to a fixed point $I^{ss} \in [0,1]$ where $i^{\text{aut}}(I^{ss}) = \delta I^{ss}$. The analysis proceeds by examining investment dynamics for different values of the cost parameter φ.

To establish the thresholds, I define several bounds on the survival probability function. Let $\bar{\rho}(I) = D(I)\rho_V + (1 - D(I))\rho_R$ denote the weighted belief threshold. The bounds of $F \circ \bar{\rho}$ on $[0,1]$ are $\underline{F} = F(\bar{\rho}(1))$ and $\bar{F} = F(\bar{\rho}(0))$. Similarly, the derivative bounds are $\bar{f} = \sup_{I \in [0,1]} f(\bar{\rho}(I))$, $\underline{f} = \inf_{I \in [0,1]} f(\bar{\rho}(I))$, and analogously for $\bar{f}' = \sup_{I \in [0,1]} f'(\bar{\rho}(I))$ and $\underline{f}' = \inf_{I \in [0,1]} f'(\bar{\rho}(I))$, where $f = F'$ and $f' = F''$. Finally, $\bar{G} = G'(I) = \tau\gamma\pi_h\Delta\pi$ represents the (constant) marginal fiscal capacity.

Case 1: $\varphi \geq \bar{\varphi}^{\text{aut}}$. Suppose the unit cost of investment is so high that investment becomes unprofitable even when institutional capital approaches zero. Define the upper threshold as $\bar{\varphi}^{\text{aut}} := \lim_{I \to 0} \beta W'(I)$ where $W(I) := F(\bar{\rho}(I))V(I)$ denotes the survival-weighted continu-

ation value. When $\varphi \geq \bar{\varphi}^{\text{aut}}$, the autocrat finds investment unprofitable at all $I \in [0,1]$. The system follows the decay path $I_{t+1} = (1-\delta)I_t$, converging to the state $I = 0$.

To compute this threshold, I use the envelope condition from the value function, which yields $V'(I) = \bar{G} + \beta(1-\delta)W'(I')$. Since the derivative of $W(I')$ is

$$W'(I') = F'(\bar{\rho}(I'))\bar{\rho}'V(I') + F(\bar{\rho}(I'))V'(I'), \tag{15}$$

by substituting this and using $\lim_{I'\to 0} V(I') = 0$, $\lim_{I\to 0} V'(I)$ is given by

$$\lim_{I\to 0} V'(I) = \frac{\bar{G}}{1-\beta(1-\delta)\bar{F}}.$$

Then, $\bar{\varphi}^{\text{aut}}$ is obtained as

$$\bar{\varphi}^{\text{aut}} = \frac{\beta\bar{F}\bar{G}}{1-\beta(1-\delta)\bar{F}}. \tag{16}$$

Case 2: $\varphi \leq \underline{\varphi}^{\text{aut}}$. Now suppose that investment remains attractive even at the highest level of institutional capital. Define the lower threshold as $\underline{\varphi}^{\text{aut}} := \lim_{I\to 1} \beta W'(I)$. When $\varphi \leq \underline{\varphi}^{\text{aut}}$, the autocrat finds full investment optimal throughout. For large I, optimal investment satisfies $i^{\text{aut}}(I) = 1-(1-\delta)I$, and the system converges to $I = 1$, where investment exactly offsets depreciation.

At this steady state, tax revenue is $G(1) = \bar{G}$ and investment cost is $\varphi\delta$, yielding fiscal surplus $\bar{G} - \varphi\delta$, and regime survival probability stabilizes at $\underline{F}$. The corresponding continuation value is

$$V(1) = \frac{\bar{G} - \varphi\delta}{1-\beta\underline{F}}. \tag{17}$$

Using (15) and (17), the condition for $\underline{\varphi}^{\text{aut}}$ is derived as

$$\underline{\varphi}^{\text{aut}} = \frac{\beta}{1-\beta(1-\delta)\underline{F}}\left[\underline{F}\bar{G} + \frac{\underline{f}\bar{\rho}'[\bar{G} - \underline{\varphi}^{\text{aut}}\delta]}{1-\beta\underline{F}}\right],$$

so that

$$\underline{\varphi}^{\text{aut}} = \beta\bar{G}\left(\underline{F} + \frac{\underline{f}\bar{\rho}'}{1-\beta\underline{F}}\right) / \left(1-\beta(1-\delta)\underline{F} + \frac{\beta\underline{f}\bar{\rho}'\delta}{1-\beta\underline{F}}\right). \tag{18}$$

Case 3: $\varphi \in (\underline{\varphi}^{\text{aut}}, \bar{\varphi}^{\text{aut}})$. In this intermediate range, the dynamics converge to a unique interior steady state, $I_{ss} \in (0,1)$. To prove this, we analyze the intersections of the investment function $i^{\text{aut}}(I)$ and the depreciation line δI. A steady state is a point where $i^{\text{aut}}(I) = \delta I$.

The condition $\varphi < \bar{\varphi}^{\text{aut}}$ ensures that investment is attractive at low capital levels, meaning the slope of the investment function at the origin exceeds the depreciation rate: $i^{\text{aut}\prime}(0) = \bar{G}/\varphi > \delta$. This implies that for small $I > 0$, $i^{\text{aut}}(I) > \delta I$, guaranteeing that the system moves away from the origin. Conversely, the condition $\varphi > \underline{\varphi}^{\text{aut}}$ ensures investment is unattractive

at high capital levels, meaning $i^{\text{aut}}(I) < \delta I$ for I sufficiently close to 1. By continuity, there must be at least one intersection in $(0, 1)$.

Uniqueness is a direct consequence of the single-peaked shape of $i^{\text{aut}}(I)$ established in Proposition 2. The investment function $i^{\text{aut}}(I)$ starts steeper than the linear function δI, increases to a single peak at I^*, and then decreases. A single-peaked function can intersect an increasing line originating from the same point ($i(0) = \delta \cdot 0 = 0$) at most once for a positive value. Thus, there exists a unique interior fixed point $I_{ss} \in (0, 1)$, which balances marginal fiscal gains and political costs.

Proof of Proposition 4

The long-run dynamics of institutional capacity under democracy are governed by the difference equation $\Psi(I_t) := (1 - \delta)I_t + i^{\text{dem}}(I_t)$. A steady state I_{ss} is a fixed point of this map, satisfying $\Psi(I_{ss}) = I_{ss}$, which simplifies to the condition $i^{\text{dem}}(I_{ss}) = \delta I_{ss}$. The equilibrium investment policy is

$$i^{\text{dem}}(I) = \left(1 - \frac{1}{\hat{\lambda}(I)}\right) G(I)/\varphi, \tag{19}$$

where we define $\hat{\lambda}(I) := J\bar{\lambda}(I) = J[D(I)\lambda_V + (1 - D(I))\lambda_R]$ for notational simplicity. The local stability of a steady state is determined by the derivative of the mapping, $\Psi'(I_{ss}) = 1 - \delta + i^{\text{dem}\prime}(I_{ss})$, and is stable if $|\Psi'(I_{ss})| < 1$.

We analyze the existence and stability of steady states for the three cases defined by the cost parameter φ.

Case 1: $\varphi \geq \bar{\varphi}^{\text{dem}}$. The threshold $\bar{\varphi}^{\text{dem}}$ is defined as the cost level above which net investment $i^{\text{dem}}(I) - \delta I$ is negative for all $I > 0$. The term $(1 - 1/\hat{\lambda}(I))$ is increasing in I (assuming $\lambda_V > \lambda_R$) and is thus maximized at $I = 1$. To ensure that $i^{\text{dem}}(I) - \delta I < 0$ for all $I > 0$, we require the expression to be negative even at this maximum. The condition is $(1 - 1/\hat{\lambda}(1))\bar{G}/\varphi - \delta < 0$. Therefore, define the threshold as $\bar{\varphi}^{\text{dem}} := (1 - 1/\hat{\lambda}(1))\bar{G}/\delta$. For any $\varphi \geq \bar{\varphi}^{\text{dem}}$, it follows that $\Psi(I) < I$ for all $I > 0$, and the unique steady state is $I_{ss} = 0$. This steady state is stable, since $i^{\text{dem}\prime}(0) = 0$ in this case, which implies $\Psi'(0) = 1 - \delta < 1$.

Case 2: $\varphi \leq \underline{\varphi}^{\text{dem}}$. The threshold $\underline{\varphi}^{\text{dem}}$ is defined as the cost level below which investment always overcomes depreciation for any $I \in (0, 1)$. To ensure $i^{\text{dem}}(I) - \delta I > 0$, we require the expression to be positive even at its minimum, which occurs at $I = 0$. We thus define the threshold as $\underline{\varphi}^{\text{dem}} := (1 - 1/\hat{\lambda}(0))\bar{G}/\delta$. For any $\varphi \leq \underline{\varphi}^{\text{dem}}$, it follows that $\Psi(I) > I$ for all $I \in (0, 1)$. This implies the system converges to the unique steady state at $I_{ss} = 1$. This steady state is stable, as the condition ensures that the left-derivative satisfies $\Psi'(1^-) \leq 1$.

Case 3: $\varphi \in (\underline{\varphi}^{\text{dem}}, \bar{\varphi}^{\text{dem}})$. In this intermediate range, the dynamics are characterized by two stable steady states, leading to history dependence. The conditions for this case ensure

stability at both boundaries of the state space. First, a low-capacity trap at $I_{ss} = 0$ exists because weak baseline civic culture makes investment unattractive at the origin, ensuring the mapping $\Psi(I)$ starts below the 45-degree line ($\Psi'(0) < 1$). Second, the condition on φ ensures that the full-capacity state at $I_{ss} = 1$ is also a stable equilibrium ($\Psi'(1) < 1$).

The existence of two stable fixed points for the continuous map $\Psi(I)$ implies there must be at least one intermediate, unstable fixed point, $\hat{I} \in (0, 1)$, which acts as a tipping point. This is because the map, starting below the 45-degree line but needing to approach the equilibrium at $I = 1$ from above it, must cross the line from below at some point $\hat{I}$, where by definition $\Psi'(\hat{I}) > 1$. This threshold $\hat{I}$ is the unique interior solution to the steady-state condition $i^{\text{dem}}(I) = \delta I$.

Consequently, the long-run outcome is determined by the initial state's position relative to this threshold. Because $\Psi(I) < I$ for all $I \in (0, \hat{I})$ and $\Psi(I) > I$ for all $I \in (\hat{I}, 1)$, an initial state $I_1 < \hat{I}$ iterates downwards to the stable trap at $I_{ss} = 0$, while an initial state $I_1 > \hat{I}$ iterates upwards to the stable equilibrium at $I_{ss} = 1$. The threshold $\hat{D}$ in the proposition corresponds to this unstable fixed point, i.e., $\hat{D} = D(\hat{I})$.

Proof of Proposition 5

Part 1. Suppose the parameters satisfy $\max\{\underline{\varphi}^{\text{aut}}, \underline{\varphi}^{\text{dem}}\} < \varphi < \min\{\bar{\varphi}^{\text{aut}}, \bar{\varphi}^{\text{dem}}\}$. By Proposition 2, the autocrat's policy $i^{\text{aut}}(I)$ is single-peaked: there exists $I^* \in (0, 1)$ such that $i^{\text{aut}}(I)$ is (weakly) increasing on $[0, I^*]$ and strictly decreasing on $[I^*, 1]$. Moreover, by Proposition 3 (intermediate-cost case), there exists $I' \in (I^*, 1)$ such that $i^{\text{aut}}(I)$ is strictly decreasing on $[I^*, I')$ and $i^{\text{aut}}(I) = 0$ for all $I \geq I'$.

The policy under democracy is $i^{\text{dem}}(I) = \alpha^*(I)G(I)/\varphi$ where $\alpha^*(I) = \max\{0, 1 - \hat{\lambda}(I)^{-1}\}$ and $\hat{\lambda}(I) = J\left[D(I)\lambda_V + (1 - D(I))\lambda_R\right]$. Since $D(\cdot)$ is strictly increasing and affine in I, so is $\hat{\lambda}(\cdot)$. Define $I'' := \inf\{I \in [0, 1] : \hat{\lambda}(I) \geq 1 \in [0, 1]\}$. Because $\varphi < \bar{\varphi}^{\text{dem}}$ in the assumed range, we have $\hat{\lambda}(1) > 1$, so $i'' < 1$. If $I'' > 0$, then $i^{\text{dem}}(I) = 0$ for $I \in [0, I'']$ and strictly increasing in I for $I \in (I'', 1]$. This is because both $\alpha^*(I)$ and $G(I) = \bar{G}I$ are strictly increasing on $(I'', 1]$.

Define $h(I) := i^{\text{aut}}(I) - i^{\text{dem}}(I)$. On $[0, \min\{I', I''\})$ we have $i^{\text{dem}}(I) = 0$ and $i^{\text{aut}}(I) > 0$, so $h(I) > 0$. On $(\max\{I', I''\}, 1]$ we have $i^{\text{aut}}(I) = 0$ and $i^{\text{dem}}(I) > 0$, so $h(I) < 0$. For the middle region, consider two subcases.

(i) $I' > I''$. On $[I'', I')$, $i^{\text{aut}}(I)$ is strictly decreasing (by single-peakedness) while $i^{\text{dem}}(I)$ is strictly increasing. Hence $h(I)$ is strictly decreasing and continuous on $[I'', I')$, with $h(I'') = i^{\text{aut}}(I'') - 0 > 0$ and $h(I') = 0 - i^{\text{dem}}(I') < 0$. By the intermediate value theorem, there exists a unique $\tilde{I} \in (I'', I')$ such that $h(\tilde{I}) = 0$, and the sign reverses once: $h(I) > 0$ for $I < \tilde{I}$ and $h(I) < 0$ for $I > \tilde{I}$.

(ii) $I' \leq I''$. Then both policies are zero on the interval $[I', I'']$, so $i^{\text{aut}}(I) = i^{\text{dem}}(I) = 0$ for all $I \in [I', I'']$. Thus the equality set is the (nonempty) interval $[I', I'']$, and the dominance reverses across this flat segment: $h(I) > 0$ for $I < I'$ and $h(I) < 0$ for $I > I''$.

The knife-edge case $I' = I''$ is immediate: equality holds only at $I' = I''$, with the same left/right sign pattern. This completes the proof of part (1).

Part 2. Consider first the low–cost case in which both regimes converge to $I_{ss} = 1$. From the first-order condition, the autocrat invests

$$i^{\text{aut}}(I) = \begin{cases} G(I)/\varphi, & \text{if } (1-\delta)I + G(I)/\varphi < 1, \\ 1-(1-\delta)I, & \text{if } (1-\delta)I + G(I)/\varphi \geq 1, \end{cases}$$

Let $\bar{I}$ solve $(1-\delta)\bar{I}+G(\bar{I})/\varphi = 1$. For any $I < \bar{I}$ we have $i^{\text{aut}}(I) = G(I)/\varphi$. $\alpha^*(I) = 1-\hat{\lambda}(I)^{-1} < 1$ for all $I \in [0,1]$, hence $i^{\text{dem}}(I) = \alpha^*(I)G(I)/\varphi < G(I)/\varphi = i^{\text{aut}}(I)$ whenever $(1-\delta)I+i^{\text{aut}}(I) < 1$. Therefore, the autocratic path exhibits (strictly) faster initial growth toward $I = 1$.

Now consider the high–cost case in which both regimes converge to $I_{ss} = 0$. Under autocracy, $i^{\text{aut}}(I) = 0$ for all $I \in (0,1]$, so $I_{t+1} - I_t = -\delta I_t$. Under democracy, Proposition 4 (Case 1) implies $i^{\text{dem}}(I) \leq \delta I$ for all $I > 0$, with $i^{\text{dem}}(I) > 0$ whenever $\hat{\lambda}(I) > 1$. Hence, $I_{t+1} - I_t = i^{\text{dem}}(I_t) - \delta I_t \geq -\delta I_t$, with strict inequality on any interval where $\hat{\lambda}(I_t) > 1$ (so that $i^{\text{dem}}(I_t) > 0$). Thus decay is (weakly) faster under autocracy, and strictly faster wherever democratic policy responsiveness triggers positive investment.

Proof of Proposition 6

In the extension, the autocrat's problem is

$$\max_{i \in [0,\, G(I)/\varphi]} G(I) - \varphi i + \beta P(i;I) G(I') \quad \text{s.t.} \quad I' = \min\{(1-\delta)I + i, 1\}$$

where the survival term is piecewise:

$$P(i;I) = \begin{cases} F(\bar{\rho}^{\text{leg}}(I')) & \text{if } i \geq i^{\text{dem}}(I), \\ F(\bar{\rho}(I')) & \text{if } i < i^{\text{dem}}(I). \end{cases}$$

Since $G(I) = \bar{G}\, I$ is linearly increasing in I, $D(I) = \eta_s + \eta_e(\gamma\Delta\pi)^2 I$ is linearly increasing in I, hence $\bar{\rho}(I) = \rho_R - (\rho_R - \rho_V)D(I)$ and $\bar{\rho}^{\text{leg}}(I) = 1 - (1-\rho_V^{\text{leg}})D(I)$ are both affine and strictly decreasing in I. With F uniform or strongly concave and increasing, $I' \mapsto F(\bar{\rho}(\cdot))$ and $I' \mapsto F(\bar{\rho}^{\text{leg}}(\cdot))$ are decreasing and (weakly) concave. Therefore, both $W_A(i;I) = G(I) - \varphi i + \beta\, G(I')F(\bar{\rho}^{\text{leg}}(I'))$ and $W_B(i;I) = G(I) - \varphi i + \beta\, G(I')F(\bar{\rho}(I'))$ are strictly concave functions of i. Write these solutions as $i_A^*(I)$ and $i_B^*(I)$. Because $\bar{\rho}^{\text{leg}}(I') > \bar{\rho}(I')$ pointwise (since $\rho_V^{\text{leg}} > \rho_V$) and F is increasing, the marginal continuation term in the first-order condition is larger in region A for a given I', so $i_A^*(I) \geq i_B^*(I)$ for each I. Then, analogous to Proposition 2, both i_A^* and i_B^* are single-peaked.

Since the objective is piecewise strictly concave with a single kink at $i = i^{\text{dem}}(I)$, the global maximizer is

$$i^*(I) = \begin{cases} i_A^*(I), & \text{if } i_A^*(I) \geq i^{\text{dem}}(I), \\ i^{\text{dem}}(I), & \text{if } i_A^*(I) \leq i^{\text{dem}}(I) \text{ and } W_A(i^{\text{dem}}(I); I) \geq W_B(i_B^*(I); I), \\ i_B^*(I), & \text{if } W_B(i_B^*(I); I) > W_A(i^{\text{dem}}(I); I). \end{cases}$$

Specifically, the optimal investment policy is categorized as the following phases:

Phase 1 (Outperformance). For I small, the first-order condition in region A yields the full–budget corner $i = G(I)/\varphi$, whereas $i^{\text{dem}}(I) < G(I)/\varphi$. Hence $i^*(I) = i_A^*(I) > i^{\text{dem}}(I)$. i_A^* increases as I rises below I_{leg}^* and decreases as I rises above I_{leg}^* because $\bar{\rho}^{\text{leg}}$ is decreasing in I'—the survival component declines and the first-order condition implies $i_A^*(I)$ decreases. Strict concavity ensures a unique peak.

Phase 2 (Mimicry). Assume, as stated in the extension section, parameter values under which the autocrat who always enjoys $F(\bar{\rho}^{\text{leg}})$ has a unique interior steady state. Then $i_A^*(I)$ is single-peaked and eventually falls to 0 as I rises. Since $i^{\text{dem}}(I)$ is nondecreasing in I on the region where it is positive, there exists a unique $\underline{I}^{\text{leg}} \in (0, 1)$ solving $i_A^*(\underline{I}^{\text{leg}}) = i^{\text{dem}}(\underline{I}^{\text{leg}})$.

For $I > \underline{I}^{\text{leg}}$ but close to it, $i_A^*(I) < i^{\text{dem}}(I)$, so within region A the best feasible choice is $i = i^{\text{dem}}(I)$. Region B can dominate only if its value at its own maximizer exceeds region A's value at $i = i^{\text{dem}}(I)$. By continuity and strict concavity, there is a unique $\bar{I}^{\text{leg}} > \underline{I}^{\text{leg}}$ solving $W_A\big(i^{\text{dem}}(I); I\big) = W_B\big(i_B^*(I); I\big)$, and for all $I \in [\underline{I}^{\text{leg}}, \bar{I}^{\text{leg}}]$ the global maximizer is $i^*(I) = i^{\text{dem}}(I)$.

Phase 3 (Abandonment). For $I > \bar{I}^{\text{leg}}$, we have $W_B(i_B^*; I) > W_A(i^{\text{dem}}; I)$, so the autocrat strictly prefers to give up the legitimacy premium and choose $i_B^*(I) < i^{\text{dem}}(I)$. Since i^* equals i^{dem} just below $\bar{I}^{\text{leg}}$ and equals $i_B^*(\cdot)$ just above it, $i^*(\cdot)$ exhibits a downward jump at $I = \bar{I}^{\text{leg}}$, because $i_B^*(\bar{I}^{\text{leg}}) < i^{\text{dem}}(\bar{I}^{\text{leg}})$, which proves the discontinuity claimed.

Finally, the ordering $0 \leq I_{\text{leg}}^* < \underline{I}^{\text{leg}} < \bar{I}^{\text{leg}} \leq 1$ follows from uniqueness of the peak in Phase 1, the unique crossing $i_A^* = i^{\text{dem}}$, and the unique value–equality point that ends mimicry. This completes the proof. □

A Online Appendix

A.1 Derivation of Equilibrium Threshold in the Protest Game

In this section, I show how to derive the equilibrium thresholds of the protest game. It is common in global games framework that such threshold strategies constitute the unique BNE (e.g., Morris and Shin, 2003; Sakovics and Steiner, 2012).

Consider that citizens form beliefs about regime strength based on noisy private signals $s_{i,t}$ and choose whether to protest using threshold strategies. Each type $v \in \{V, R\}$ adopts a threshold $\hat{s}_{v,t}$ such that a citizen protests if and only if their signal is above $\hat{s}_{v,t}$. Given the uniform noise in signal structure, a citizen receiving signal $s_{i,t}$ holds a posterior belief about the true θ_t that is uniform on the interval $[s_{i,t} - \sigma, s_{i,t} + \sigma]$.

For each type, the protest participation rate varies with the realized regime vulnerability. When $\theta_t < \hat{s}_{v,t} - \sigma$, no citizen of type v receives a high enough signal to protest. When $\theta_t > \hat{s}_{v,t} + \sigma$, all of them join the protest. Within the intermediate range $\theta_t \in [\hat{s}_{v,t} - \sigma, \hat{s}_{v,t} + \sigma]$, participation increases linearly with θ_t. The protest share among R-type, n_t^R, and V-type, n_t^V, is

$$n_t^R = (1 - D_t) \cdot \frac{\theta_t + \sigma - \hat{s}_{R,t}}{2\sigma}, \qquad n_t^V = D_t \cdot \frac{\theta_t + \sigma - \hat{s}_{V,t}}{2\sigma}.$$

when $\theta_t \in [\hat{s}_{v,t} - \sigma, \hat{s}_{v,t} + \sigma]$ for $v \in \{V, R\}$.

Let $\rho^*(s_{i,t})$ denote the posterior belief of regime change conditional on signal $s_{i,t}$. In equilibrium, a citizen of type $v \in \{V, R\}$ is indifferent between protesting and abstaining when receiving $s_{i,t} = \hat{s}_{v,t}$. This yields $\rho^*(\hat{s}_{v,t}) = \rho_v$.

A structural property of the equilibrium is that the thresholds cannot be arbitrarily far apart. The following lemma shows that the difference between them must lie within a 2σ range.

Lemma A.1. *$\hat{s}_{V,t} - \hat{s}_{R,t}$ is strictly less than 2σ.*

Proof. Suppose, for contradiction, that $\hat{s}_{R,t} - \hat{s}_{V,t} \geq 2\sigma$. Consider an R-type citizen who receives the signal $\hat{s}_{R,t}$. By the indifference condition, $\rho^*(\hat{s}_{R,t}) = \rho_R$.

Given the separation between thresholds, all V-type citizens protest. The expected protest participation rate at $s_{i,t} = \hat{s}_{R,t}$ is therefore

$$n_t = D_t + (1 - D_t) \cdot \frac{\theta_t + \sigma - \hat{s}_{R,t}}{2\sigma}.$$

Using this, the posterior belief of regime change $\rho^*(\hat{s}_{R,t})$ is

$$\Pr(n_t \geq 1 - \theta_t | \hat{s}_{R,t}) = \Pr\left(D_t + (1 - D_t) \cdot \frac{\theta_t + \sigma - \hat{s}_{R,t}}{2\sigma} - 1 + \theta_t \geq 0 \middle| \hat{s}_{R,t} \right)$$

Since θ_t is uniform on $[\hat{s}_{R,t} - \sigma, \hat{s}_{R,t} + \sigma]$ and $\rho^*(\hat{s}_{R,t}) = \rho_R$,

$$\rho_R = \frac{1}{2\sigma}\left[\hat{s}_{R,t} + \sigma - \frac{(1 - D_t)(\hat{s}_{R,t} + \sigma)}{1 - D_t + 2\sigma}\right],$$

and, by rearranging the terms, the threshold $\hat{s}_{R,t}$ is derived as $\hat{s}_{R,t} = \rho_R(1 - D_t + 2\sigma) - \sigma$.

Next, consider a V-type citizen who receives $\hat{s}_{V,t}$. Then, by assumption, R-type citizens do not protest in this case. The expected participation rate is

$$n_t = D_t \cdot \frac{\theta_t + \sigma - \hat{s}_{V,t}}{2\sigma}.$$

Using this and $\rho^*(\hat{s}_{V,t}) = \rho_V$,

$$\rho_V = \frac{1}{2\sigma}\left[\hat{s}_{V,t} + \sigma - \frac{D_t(\hat{s}_{V,t} - \sigma) + 2\sigma}{D_t + 2\sigma}\right],$$

and, by rearranging the terms, the threshold $\hat{s}_{V,t}$ is derived as $\hat{s}_{V,t} = \rho_V(D_t + 2\sigma) + 1 - D_t - \sigma$. Using the derivations $\hat{s}_{R,t}$ and $\hat{s}_{V,t}$, I obtain

$$\hat{s}_{R,t} - \hat{s}_{V,t} - 2\sigma = (\rho_R - 1)(1 - D_t + 2\sigma) - \rho_V(D_t + 2\sigma) < 0 \tag{20}$$

since $\rho_v \in (0, 1)$ for $v \in \{V, R\}$ and $D_t \in (0, 1)$, contradicting the assumption that the distance is at least 2σ. Therefore, $\hat{s}_{R,t} - \hat{s}_{V,t} < 2\sigma$. □

Lemma A.1 shows that the protest thresholds $\hat{s}_{R,t}$ and $\hat{s}_{V,t}$ is not too distanced, so that $n_t^R \neq 0$ whenever $s_{i,t} = \hat{s}_{V,t}$, and $n_t^V \neq 1$ whenever $s_{i,t} = \hat{s}_{R,t}$. For any realization of regime vulnerability $\theta_t \in [\hat{s}_{R,t} - \sigma, \hat{s}_{V,t} + \sigma]$, the expected participation rate is given by

$$n_t = D_t \cdot \frac{\theta_t + \sigma - \hat{s}_{V,t}}{2\sigma} + (1 - D_t) \cdot \frac{\theta_t + \sigma - \hat{s}_{R,t}}{2\sigma}.$$

To derive the equilibrium thresholds, consider an R-type citizen who receives $s_{i,t} = \hat{s}_{R,t}$. The citizen is indifferent between protesting and abstaining, so $\rho^*(\hat{s}_{R,t}) = \rho_R$. Since the posterior of θ_t is uniform on $[\hat{s}_{R,t} - \sigma, \hat{s}_{R,t} + \sigma]$, using $\rho^*(\hat{s}_{R,t}) = \rho_R$,

$$\rho_R = \frac{1}{2\sigma}\left[\hat{s}_{R,t} + \sigma - \frac{D_t(\hat{s}_{V,t} + \sigma) + (1 - D_t)(\hat{s}_{R,t} + \sigma)}{1 + 2\sigma}\right],$$

and by rearranging the terms, the condition

$$\hat{s}_{R,t} = \frac{2\sigma(1 + 2\sigma)\rho_R + D_t\hat{s}_{V,t} - 2\sigma^2}{D_t + 2\sigma}. \tag{21}$$

is derived. A symmetric argument for a V-type citizen yields

$$\hat{s}_{V,t} = \frac{2\sigma(1+2\sigma)\rho_V + (1-D_t)\hat{s}_{R,t} - 2\sigma^2}{1-D_t+2\sigma}. \tag{22}$$

These two expressions (21) and (22) jointly determine the equilibrium thresholds as

$$\hat{s}_{R,t} = \sigma(2\rho_R - 1) + \bar{\rho}_t, \quad \hat{s}_{V,t} = \sigma(2\rho_V - 1) + \bar{\rho}_t$$

where $\bar{\rho}_t := D_t\rho_V + (1-D_t)\rho_R$.

A.2 Derivation of Equilibrium Investment under Probabilistic Voting

This section provides the derivation of the equilibrium investment policy under democratic rule, where competing parties choose policy platforms to maximize expected rents. Following the probabilistic voting framework, each party $j \in \{A, B\}$ selects $\alpha_t^j \in [0,1]$, the share of public revenue allocated to institutional investment, in order to solve:

$$\max_{\alpha_t^j \in [0,1]} (1-\alpha_t^j) G_t \cdot \Pr(\text{party } j \text{ wins}). \tag{23}$$

To compute the probability of winning the election in period t, consider a fixed pair of platforms α_t^A and α_t^B. Voter i supports party A if $\lambda_{v_{i,t-1}}(\alpha_t^A - \alpha_t^B) + \xi_t + \zeta_{i,t} > 0$, where $\xi_t \sim \mathcal{U}[-1/J, 1/J]$ is an aggregate popularity shock and $\zeta_{i,t} \sim \mathcal{U}[-1/K, 1/K]$ is an idiosyncratic shock, both independent of voter type.

Rewriting, voter i votes for A if $\zeta_{i,t} > \lambda_{v_{i,t-1}}(\alpha_t^B - \alpha_t^A) - \xi_t$. Because $\zeta_{i,t}$ is independent of voter type, the share of R-type voters (of mass $1 - D_{t-1}$) who support party A is given by:

$$(1-D_{t-1}) \cdot \frac{1}{2}\left[1 - K\left(\lambda_R(\alpha_t^B - \alpha_t^A) - \xi_t\right)\right],$$

provided the term inside brackets lies in $[0,1]$; otherwise it is truncated at 0 or 1. Similarly, the share of V-type voters (of mass D_{t-1}) supporting party A is:

$$D_{t-1} \cdot \frac{1}{2}\left[1 - K\left(\lambda_V(\alpha_t^B - \alpha_t^A) - \xi_t\right)\right].$$

Aggregating across types, the total support for party A is:

$$\frac{1}{2}\left[1 - K\bar{\lambda}_t(\alpha_t^B - \alpha_t^A) + K\xi_t\right], \tag{24}$$

where $\bar{\lambda}_t = D_{t-1}\lambda_V + (1-D_{t-1})\lambda_R$ is the average responsiveness to policy.

The party wins if its support exceeds one half. Hence, the probability that party A wins is

$$\Pr(\text{party } A \text{ wins}) = \Pr\left(\xi_t \geq \bar{\lambda}_t(\alpha_t^B - \alpha_t^A)\right) = \frac{1}{2}\left[1 + J\bar{\lambda}_t(\alpha_t^A - \alpha_t^B)\right]. \tag{25}$$

Substituting into the party's objective (23), the first-order condition is $J\bar{\lambda}_t(1-2\alpha_t^A+\alpha_t^B)-1=0$ if α_t^A is in the interior, and $J\bar{\lambda}_t(1+\alpha_t^B)-1\leq 0$ if α_t^A is a boundary solution.

By symmetry, party B's first-order condition yields the same expression. In equilibrium, both parties converge to a common platform $\alpha_t^* = \alpha_t^A = \alpha_t^B$ such that

$$\alpha_t^* = \begin{cases} 1 - \frac{1}{J\bar{\lambda}_t} & \text{if} \quad J\bar{\lambda}_t > 1, \\ 0 & \text{otherwise.} \end{cases} \tag{26}$$

This expression shows that investment increases with the electorate's average policy responsiveness. As civic culture spreads and $\bar{\lambda}_t$ rises, electoral accountability strengthens, inducing parties to allocate a larger share of public revenue to productive institutional investment.

A.3 Recursive formulation of autocrat's problem

The autocrat's dynamic problem can be formulated recursively as follows. Let $I \in [0,1]$ denote the given institutional capital, $G(I)$ the corresponding government revenue, and i the level of institutional investment. Using the result of Proposition 1, the value function $V(I)$ is written as

$$\begin{aligned} V(I) = \max_{i\in[0,G(I)/\varphi]} \quad & \{G(I) - \varphi i + \beta F(\bar{\rho}(I'))V(I')\} \\ \text{s.t.} \quad & I' = \min\{(1-\delta)I + i, 1\}, \end{aligned} \tag{27}$$

where $\bar{\rho}(I') = D(I')\rho_V + (1 - D(I'))\rho_R$.

Existence and uniqueness of value function. To establish the existence and uniqueness of the value function, define the Bellman operator $\mathbb{T}$ acting on any bounded continuous function $\tilde{V} : [0,1] \to \mathbb{R}$ as

$$\begin{aligned} \mathbb{T}\tilde{V}(I) = \max_{i\in[0,G(I)/\varphi]} \quad & \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))\tilde{V}(I') \right\} \\ \text{s.t.} \quad & I' = \min\{(1-\delta)I + i, 1\} \end{aligned}$$

I claim that $\mathbb{T}$ satisfies Blackwell's sufficient conditions for a contraction. To verify monotonicity, suppose that $V(I) \geq \tilde{V}(I)$ for all $I \in [0,1]$. For any I and $I' = \min\{(1-\delta)I + i, 1\}$,

$$\begin{aligned} \mathbb{T}V(I) &= \max_{i\in[0,G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))V(I') \right\} \\ &\geq \max_{i\in[0,G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))\tilde{V}(I') \right\} = \mathbb{T}\tilde{V}(I), \end{aligned}$$

where the inequality follows because $V(I') \geq \tilde{V}(I')$ and $F(\bar{\rho}(\cdot)) \geq 0$. To verify discounting,

for an arbitrary $c > 0$,

$$\begin{aligned}
\mathbb{T}(V + c)(I) &= \max_{i \in [0, G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))(V(I') + c) \right\} \\
&= \max_{i \in [0, G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))V(I') + \beta F(\bar{\rho}(I'))c \right\} \\
&\leq \max_{i \in [0, G(I)/\varphi]} \left\{ G(I) - \varphi i + \beta F(\bar{\rho}(I'))V(I') \right\} + \beta c \\
&= \mathbb{T}V(I) + \beta c,
\end{aligned}$$

where the inequality holds because $F(\bar{\rho}(I')) \leq 1$ for all I'. Therefore, $\mathbb{T}$ is a contraction mapping with modulus β. By Banach's fixed point theorem, there exists a unique bounded continuous value function V solving the Bellman equation.

Constructing the analysis domain. The recursive formulation does not, in general, guarantee concavity in this problem, due to the multiplicative interaction between the survival probability and the value function. To analyze the structure of the value function and to derive shape concave property, I introduce the finite-horizon approximation of the Bellman recursion.

For each integer $T \geq 1$, the T-period value function $V_T(I)$ is recursively given by

$$\begin{aligned}
V_T(I) = \max_{i \in [0, G(I)/\varphi]} \quad & \{G(I) - \varphi i + \beta F(\bar{\rho}(I'))V_{T-1}(I')\} \\
\text{s.t.} \quad & I' = \min\{(1 - \delta)I + i, 1\}
\end{aligned} \tag{28}$$

with terminal condition $V_0(I) = 0$ for all $I \in [0, 1]$. Here, $V_T(I)$ represents the autocrat's optimal expected payoff over T remaining periods, starting from institutional capital I. As shown above, since $\mathbb{T}$ satisfies Blackwell's sufficient conditions for contraction, $\{V_T\}_{T=0}^{\infty}$ converges uniformly to the unique fixed point V solving the infinite-horizon Bellman equation.

I define the (T-period) auxiliary function

$$W_T(I) := F(\bar{\rho}(I))V_T(I),$$

which captures the survival-weighted continuation value. Throughout the appendix, we collect the following shorthand notations. First, define $\bar{G} = \tau\, \pi_h\, \gamma\, \Delta\pi$. Then, $\bar{G} = G(1) = G'(I)$ for all $I \in [0, 1]$. Next, since $\bar{\rho}$ maps $[0, 1]$ into $[\bar{\rho}(1), \bar{\rho}(0)]$ and F is evaluated on this range, we denote the lower and upper bounds of $F \circ \bar{\rho}$ on $[0, 1]$ by $\underline{F} = F(\bar{\rho}(1))$ and $\overline{F} = F(\bar{\rho}(0))$. Writing $f = F'$ and $f' = F''$ for the first and second derivatives of F, we also record the (pointwise) derivative bounds of $F \circ \bar{\rho}$ over $[0, 1]$ as $\bar{f} = \sup_{I \in [0,1]} f(\bar{\rho}(I))$, $\underline{f} = \inf_{I \in [0,1]} f(\bar{\rho}(I))$, and $\bar{f}' = \sup_{I \in [0,1]} f'(\bar{\rho}(I))$, $\underline{f}' = \inf_{I \in [0,1]} f'(\bar{\rho}(I))$.

Lemma A.2. *Suppose that $W_s' \geq 0$ and $W_s'' < 0$ for all $I \in [0, 1]$. Then V_{s+1} and W_{s+1} are strictly concave.*

Proof. First, I show that V_{s+1} is strictly concave. Fix an arbitrary investment level $i \in [0, G(I)/\varphi]$ such that $I' = (1-\delta)I + i \leq 1$, define the function $\hat{V}(I;i)$ as

$$\hat{V}(I;i) := G(I) - \varphi i + \beta W_s(I').$$

I verify that $\hat{V}(I;i)$ is strictly concave in I by differentiating it twice. The first and second derivatives are

$$\hat{V}'(I;i) = G'(I) + \beta(1-\delta)W_s'(I') > 0$$

and

$$\hat{V}''(I;i) = \beta(1-\delta)^2 W_s''(I') < 0$$

because $W_s' \geq 0$ and $W_s'' < 0$ for any $I' \in [0,1]$. Using this, since $\hat{V}(I;i)$ is strictly concave for every fixed i, and note that

$$V_{s+1}(I) = \sup_{i \in [0, G(I)/\varphi]} \hat{V}(I;i),$$

by standard results in parametric optimization (see Sundaram, 1996, Theorem 6.4), $V_{s+1}(I)$ is strictly concave in I.

Second, to establish that W_{s+1} is strictly concave, differentiate it twice with respect to I. The first derivative is

$$W_{s+1}'(I) = f(\bar{\rho}(I))\bar{\rho}'(I)V_{s+1}(I) + F(\bar{\rho}(I))V_{s+1}'(I). \tag{29}$$

Because $\bar{\rho}'' = 0$ as $D''(I) = 0$, the second derivative simplifies to

$$W_{s+1}''(I) = f'(\bar{\rho}(I))\left(\bar{\rho}'(I)\right)^2 V_{s+1}(I) + 2f(\bar{\rho}(I))\bar{\rho}'(I)V_{s+1}'(I) + F(\bar{\rho}(I))V_{s+1}''(I). \tag{30}$$

Note that all terms in (30) are weakly or strictly negative under the maintained assumptions. The first term is negative since $f' < 0$, $\bar{\rho}' < 0$, and $V_{s+1} > 0$. The second term is negative because $f > 0$ and $V_{s+1}' \geq 0$. The third term is negative due to $F > 0$ and $V_{s+1}'' < 0$. Since at least one term is strictly negative and none are positive, it follows that $W_{s+1}''(I) < 0$ for all $I \in [0,1]$, establishing the strict concavity of the auxiliary function. □

Lemma A.3. *There exist $c > 0$ such that $W_T(I) \geq cI$ for all $T \geq 1$ and all $I \in [0,1]$.*

Proof. For any $T \geq 1$ in the recursion,

$$V_T(I) = \max_{i \in [0, G(I)/\varphi]} \{G(I) - \varphi i + \beta\, W_{T-1}((1-\delta)I + i)\},$$

the feasible choice $i = 0$ yields $V_T(I) \geq G(I)$. Hence, for $I \in [0,1]$,

$$W_T(I) = F(\bar{\rho}(I))\, V_T(I) \;\geq\; F(\bar{\rho}(I))\, G(I) \;\geq\; \underline{F}\bar{G}I$$

Let $c := \underline{F}\bar{G} > 0$. Then the proof concludes. □

Lemma A.4. *There exists $r \in (0,1]$ and a finite constant $M < \infty$ such that $W_T''(I) \geq -M$ for all $I \in (0,r)$ and all $T \geq 1$.*

Proof. Choose $r \in (0,1]$ so that the next state remains in $[0,r]$ for all admissible choices $\min\{(1-\delta)I + i, r\} \in [0,r]$ for all $I \in [0,r]$, $i \in [0, G(I)/\varphi]$. Define

$$B_0(T) := \sup_{I\in[0,1]} |V_T(I)|, \quad B_1(T) := \sup_{I\in[0,1]} |V_T'(I)|, \quad B_2(T) := \sup_{I\in[0,1]} |V_T''(I)|.$$

For any given T, $B_0(T+1)$ is bounded by $\bar{G} + \beta\bar{F}B_0(T)$, so that

$$B_0^* := \sup_T B_0(T) \leq \bar{G}/\{1-\beta\bar{F}\}. \tag{31}$$

The derivative of $T+1$-period value function is

$$V_{T+1}'(I) = G'(I) + \beta(1-\delta)W_T'((1-\delta)I + i^*(I))$$

for an optimal policy $i^*(I)$. Since $W_T' = F'(\bar{\rho})\bar{\rho}'V_T + F(\bar{\rho})V_T'$, substituting into the expression for V_{T+1}', the upper bound of $B_1(T+1)$ is derived as

$$B_1(T+1) \leq \bar{G} + \beta(1-\delta)(|\bar{f}||\bar{\rho}'|B_0(T) + \bar{F}B_1(T)) \tag{32}$$

and that

$$B_1^* := \sup_T B_1(T) \leq \frac{\bar{G} + \beta(1-\delta)|\bar{f}||\bar{\rho}'|B_0^*}{1-\beta(1-\delta)\bar{F}}.$$

For fixed i, the mapping $\hat{V}(I;i) := G(I) - \varphi i + \beta W_T((1-\delta)I + i)$ has

$$\hat{V}''(I;i) = \beta(1-\delta)^2 W_T''((1-\delta)I + i)$$

because $G''(I) = 0$. Hence

$$B_2(T+1) \leq \beta(1-\delta)^2 \sup_{J\in[0,1]} |W_T''(J)|. \tag{33}$$

From the second derivative $W_T'' = F''(\bar{\rho})(\bar{\rho}')^2V_T + 2F'(\bar{\rho})\bar{\rho}'V_T' + F(\bar{\rho})V_T''$, we obtain

$$\sup_{J\in[0,1]} |W_T''(J)| \leq |\bar{f}'||\bar{\rho}'^2|B_0(T) + 2\bar{f}|\bar{\rho}|B_1(T) + \overline{F}\,B_2(T). \tag{34}$$

Combining with (33) yields

$$B_2(T+1) \leq \beta(1-\delta)^2\left(|\bar{f}'||\bar{\rho}'^2|B_0^* + 2|\bar{f}||\bar{\rho}'|B_1^* + \bar{F}B_2(T)\right), \tag{35}$$

so

$$B_2^* := \sup_T B_2(T) \leq \frac{\beta(1-\delta)^2\left(|\bar{f}'||\bar{\rho}'^2|B_0^* + 2|\bar{f}||\bar{\rho}'|B_1^*\right)}{1-\beta(1-\delta)^2\bar{F}}.$$

Finally,

$$\sup_{I\in[0,1]} |W_T''(I)| \leq |\bar{f}'||\bar{\rho}'^2|B_0^* + 2|\bar{f}||\bar{\rho}'|B_1^* + \bar{F}B_2^* := M, \tag{36}$$

which is finite by the bound above. Thus, $W_T''(I) \geq -M$ almost everywhere on $(0,1)$ for all $T \geq 1$. □

Proposition A.1. *There exists* $q = \min\left\{r, \frac{c}{2M}\right\} \in (0, r]$ *such that, for every* $T \geq 1$, $W_T'(I) \geq \frac{c}{2} > 0$ *and* $W_T''(I) < 0$ *for all* I *when* I *is restricted to the set* $[0, q]$.

Proof. First, note that $W_T(0) = 0$ for all T. To show, the terminal condition is $V_0(0) = 0$. For $I = 0$, the investment set is $\{0\}$, so the recursive formulation gives $V_T(0) = \beta W_{T-1}(0)$. By induction, this implies $V_T(0) = 0$ for all T, and thus $W_T(0) = F(\bar{\rho}(0))V_T(0) = 0$.

Now, applying Lemma A.3, which states $W_T(I) \geq cI$, the right-derivative of W_T at the origin is bounded below:

$$W_T'(0^+) = \lim_{\varepsilon\to 0^+} \frac{W_T(\varepsilon) - W_T(0)}{\varepsilon} = \lim_{\varepsilon\to 0^+} \frac{W_T(\varepsilon)}{\varepsilon} \geq c.$$

By Lemma A.4, we have $W_T'' \geq -M$ on $(0, r)$ uniformly in T. Hence, for any $I \in [0, q]$, integrating the lower bound on the second derivative yields

$$W_T'(I) \geq W_T'(0^+) - MI \geq c - Mq.$$

By the choice of $q \leq \frac{c}{2M}$, it follows that $Mq \leq \frac{c}{2}$, which ensures

$$W_T'(I) \geq c - \frac{c}{2} = \frac{c}{2} > 0.$$

This establishes that W_T is strongly increasing on $[0, q]$ for all $T \geq 1$.

Next, I prove that $W_T(I)$ is strictly concave on $[0, q]$ for all $T \geq 1$ by induction.

Base Case ($T = 1$). From the terminal condition $V_0 = 0$, the value function for $T = 1$ is $V_1(I) = G(I)$. Thus, $W_1(I) = F(\bar{\rho}(I))G(I)$. Differentiating twice with respect to I and using $\bar{\rho}''(I) = G''(I) = 0$ yields

$$W_1''(I) = f'(\bar{\rho}(I))(\bar{\rho}'(I))^2 G(I) + 2f(\bar{\rho}(I))\bar{\rho}'(I)\bar{G}.$$

For $I \in (0, q]$, $G(I) > 0$. Under the assumptions, the first term is negative since $f' < 0$ and $(\bar{\rho}')^2 > 0$. The second term is also negative since $f > 0$, $\bar{\rho}' < 0$, and $G' > 0$. Thus, $W_1''(I) < 0$ for all $I \in (0, q]$, establishing the base case.

Inductive Step. Suppose that the set of possible I is restricted to $[0, q]$ and assume that for $T = s$, $W_s''(I) < 0$ for all $I \in [0, q]$. As shown above, we know that $W_s'(I) \geq c/2 > 0$ on this interval. These two conditions ($W_s' \geq 0$ and $W_s'' < 0$) satisfy the prerequisites of Lemma A.2. Therefore, applying the lemma, it follows directly that $W_{s+1}(I)$ is strictly concave on $[0, q]$. I conclude that $W_T''(I) < 0$ for all $T \geq 1$ and all $I \in [0, q]$. □

Define $\hat{I}_1 := \sup\{I \in [0,1] : W_1'(I) \geq 0\}$ and $\hat{I}_{s+1} := \sup\{I \in [0, \hat{I}_s] : W_{s+1}'(I) \geq 0\}$. By Proposition A.1, the interval $[0, q]$ is a subset of the region where W_s' is positive for all s, which implies $\hat{I}_s \geq q$. Thus, the limit $\hat{I} := \lim_{s\to\infty} \hat{I}_s$ exists and satisfies $\hat{I} \geq q > 0$. Moreover, since $\{V_T\}$ converges uniformly to V by the contraction property of $\mathbb{T}$ and consequently $W_T \to W := F(\bar{\rho})V$ uniformly, the limit function W is increasing and concave on $[0, q]$. Furthermore, for the limiting function W to be strictly concave, the strict concavity of W_T must not vanish as $T \to \infty$. A sufficient condition for this is that the strict concavity is uniform across T; that is, there exists an $\eta < 0$ such that $W_T''(I) \leq \eta$ for all $T \geq 1$ and all $I \in [0, q]$.

A straightforward way to ensure this uniform bound is to impose a stronger condition on the model primitives. One approach, common in the global games literature, is to assume that the survival function F follows a uniform distribution. If F is uniform, its cumulative distribution function is linear over its support, which implies its first derivative f is a positive constant and its second derivative f' is zero. In this case, the source of strict concavity is simplified but robust. For instance, the second derivative in the base case of the induction becomes $W_1''(I) = 2f\bar{\rho}'G'$. Since f, $\bar{\rho}'$, and G' are all constants under this specification, W_1'' itself becomes a strictly negative constant. This provides a very strong starting point for the induction, ensuring a non-vanishing degree of concavity is introduced through the interaction of the model's linear components.

Alternatively, it can be considered to impose that F is strongly concave, meaning there exists a constant $k > 0$ such that $F''(x) \leq -k < 0$ for all relevant x. This assumption ensures that a baseline level of new concavity is introduced at each step of the Bellman iteration, primarily through the term involving F'', thus preventing the curvature of W_T from approaching zero. Under such a condition, the strict concavity of W on the interval $[0, q]$ is guaranteed. By manipulating the parameters, we can construct the concavity on the interval $[0, 1]$.

A.4 Technical Conditions and Model Foundations

Parametric Assumptions for Interior Solutions

Suppose that $\gamma\Delta\pi < 1$ and $(1-\delta) + \tau\pi_h/\varphi \leq 2\pi_l$. To verify the parametric assumptions $\gamma\Delta\pi < 1$ and $(1-\delta) + \tau\pi_h/\varphi \leq 2\pi_l$ lead to the interior solution, it is enough to show that the first-order condition level of education $e_{i,t} = \gamma\Delta\pi\sqrt{I_{t+1}}$ is feasible for unskilled parent for any $I_t \in [0,1]$ and any possible I_{t+1} derived from I_t.

$$\pi_l\sqrt{I_t} - \frac{\gamma^2\Delta\pi^2 I_{t+1}}{2} > \pi_l\sqrt{I_t} - \frac{I_{t+1}}{2}$$

where the inequality holds because $\gamma\Delta\pi < 1$. Note that $I_{t+1} \leq (1-\delta)I_t + G_t/\varphi$ and $G_t = \tau\gamma\Delta\pi\pi_h I_t$ when the constraint for education is not binding. Using this inequality and $\gamma\Delta\pi < 1$ and substituting G_t,

$$\pi_l\sqrt{I_t} - \frac{I_{t+1}}{2} > \pi_l\sqrt{I_t} - \{(1-\delta) + \tau\pi_h/\varphi\}\frac{I_t}{2}$$

Multiplying 2 and dividing by $\sqrt{I_t}$, which do not affect the sign,

$$2\pi_l - (1-\delta) - \tau\pi_h I_t/\varphi \geq 2\pi_l - (1-\delta) - \tau\pi_h/\varphi \geq 0$$

by assumption. The inequality holds because $I_t \in [0,1]$. Therefore, the education choice is strictly in the interior of the buget constraint.

Next, the probability that young citizen i becomes the skilled worker in the next period is $e_{i,t} < 1$. From the first-order condition, $e_{i,t} = \gamma\Delta\pi\sqrt{I_{t+1}} < 1$ because $\gamma\Delta\pi < 1$ and $I_{t+1} \in [0,1]$.

Derivation under micro-founded value formation

This section provides a micro-founded variant of (3) with cultural substitution. Under symmetric education choices the parental transmission terms net out in the aggregate, delivering the same D_t mapping; hence all propositions in the main text are unaffected.

I incorporate the insight of *cultural substitution* from Bisin and Verdier (2001): the principle that parents intensify value transmission when their own values are a minority. For analytical tractability in the broader framework, I implement this mechanism in an additive form. The full individual-level probability, which includes this parental effect, is

$$\Pr(v_{i,t} = V) = \eta_s + \eta_p(1 - D_{t-1}) \cdot \mathbb{1}\{v_{i,t-1} = V\} - \eta_p D_{t-1} \cdot \mathbb{1}\{v_{i,t-1} = R\} + \eta_e e_{i,t}^2. \tag{37}$$

The η_p term captures this parental effect. This mechanism preserves micro-level heterogeneity, but due to symmetry, it cancels out at the aggregate level. This simplification allows the main analysis to focus on the effect of educational investment, which is the central endogenous mechanism linking the government's development strategy to the evolution of civic culture.

Under the micro-founded value formation process, the probability that child i adopts value-rational preferences is:

$$\Pr(v_{i,t} = V) = \begin{cases} \eta_s + \eta_p(1 - D_{t-1}) + \eta_e H(I_{t+1})^2, & \text{if } v_{i,t-1} = V, \\ \eta_s - \eta_p D_{t-1} + \eta_e H(I_{t+1})^2, & \text{if } v_{i,t-1} = R. \end{cases}$$

At the aggregate level, the share of value-rational individuals in period t becomes:

$$D_t = \int_0^1 \Pr(v_{i,t} = V)\, di = \eta_s + \eta_e H(I_{t+1})^2.$$

Despite individual-level heterogeneity in transmission probabilities, the aggregate expression simplifies due to the cancellation of parental-type effects. This occurs because parents of both types invest identically in education, and the influence of the lagged civic share D_{t-1} nets out across the population due to symmetry. This functional form preserves the micro-foundations of cultural transmission (Bisin and Verdier, 2001) while yielding a tractable aggregate relationship that directly serves the analytical purpose. Since my focus is on comparing how different regimes respond to aggregate civic culture formation through educational channels, this simplified structure isolates the key mechanism without introducing additional complexities that would obscure the central comparative insights.