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Political Polarization and the Asymmetric Fragility of Political Regimes

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Abstract

Why do democratic and autocratic regimes fail under different political conditions? Using V-Dem data for 202 countries over 1900-2024, we construct regime spells and estimate duration models with lagged covariates. The apparent unconditional durability advantage of autocracy is largely driven by regimes already in place when observation begins in 1900. Among spells observed from entry, and in models controlling for observable characteristics and historical environment, autocratic spells exhibit higher exit hazards. Political polarization strongly predicts democratic termination but is weakly associated with greater autocratic persistence. It rises before democratic breakdown and declines before and after democratization, although the latter pattern lies outside the baseline model. Autocratic survival is associated non-monotonically with repression, while democratic regional environments are strongly associated with autocratic exit. A parsimonious framework explains the central asymmetry: polarization raises the costs of democratic policy competition, whereas concentrated authority creates vulnerabilities through extraction and coercive overreach.

Keywords: political polarization, democracy, autocracy, regime persistence

JEL Codes: C41, D72, P16

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1. Introduction

Recent democratic backsliding has renewed interest in the conditions under which political regimes persist or collapse. Much of this debate emphasizes the vulnerability of democracy: polarization, weakening institutional constraints, and declining confidence in representative government may undermine acceptance of electoral outcomes and facilitate the concentration of political authority. Autocratic regimes, however, face different sources of instability, including predation, coercive overreach, elite conflict, and exposure to democratic developments elsewhere. The forces that threaten democracy may therefore differ systematically from those that threaten autocracy.

This paper studies these asymmetric sources of regime fragility. Rather than asking whether democracy or autocracy is intrinsically more durable, we examine whether the two regime types terminate under different political conditions. Our central focus is political polarization, together with repression, historical environment, and the regional prevalence of democracy. Aggregate comparisons may obscure substantial heterogeneity: polarization may be especially damaging when authority is allocated through competitive elections, while concentrated rule may suppress open political conflict but create vulnerabilities of its own.

We use Version 15 of the Varieties of Democracy data for 202 countries over 1900–2024. Electoral and liberal democracies are classified as democratic, while electoral and closed autocracies are classified as autocratic. We construct consecutive regime spells and combine nonparametric survival estimates, parametric duration models, Cox models estimated on annual start–stop records with lagged covariates, separate hazard models by regime type, event studies around political transitions, and estimates restricted to countries observed under both regimes. Because the evidence is observational, we interpret the estimates as associations rather than causal effects.

The clearest finding concerns political polarization. Higher polarization is strongly associated with democratic termination and only weakly with lower autocratic exit risk. In the separate-regime models, a one-unit increase in lagged polarization is associated with an approximately 84 percent increase in the democratic exit hazard. The corresponding estimate for autocratic spells is slightly below one. This asymmetry survives historical-period controls and restriction to countries that have experienced both regime types. It does not imply that autocratic societies are

less polarized. Rather, it indicates that polarization is especially damaging when political authority depends on electoral competition, coalition formation, and acceptance of political turnover.

Event-study evidence provides a dynamic counterpart. Polarization rises before transitions from democracy to autocracy and remains elevated thereafter. It declines before transitions from autocracy to democracy and continues to fall following the transition. The pronounced pre-transition movements preclude a causal interpretation in either direction. The rise before democratic breakdown is consistent with the paper's central mechanism, whereas the decline around democratization is an additional empirical regularity outside the baseline model, which treats polarization as exogenous.

A second finding concerns relative regime persistence. In the full historical sample, unconditional survival estimates appear to favor autocracy. This comparison is heavily influenced, however, by regimes already in place when observation begins in 1900. Of the 120 left-censored spells, 115 are autocratic, and they generate much of the long autocratic right tail. Once these spells are excluded, the unconditional autocratic advantage disappears. Among spells observed from entry, and in models controlling for observable characteristics and historical environment, autocratic spells exhibit higher exit hazards. Period-specific survival curves nevertheless reveal meaningful historical variation: autocratic spells display greater persistence among earlier entry cohorts, while democratic spells are more persistent among Cold War and post-Cold War cohorts. Regime durability therefore reflects both sample composition and the political environment in which regimes emerge.

The evidence also identifies distinct correlates of autocratic survival. Repression is associated non-monotonically with autocratic exit. Greater repression is associated with lower termination risk at low to moderate levels, but this relationship weakens and eventually reverses at high levels. The result is robust to lagged continuous measures, entry-based quartiles, alternative classification rules, and parametric specifications. It is consistent with deterrence at moderate levels and coercive overreach at high levels, although repression may itself respond to threats facing the regime. The regional political environment exhibits another pronounced asymmetry. A larger share of democracies in the surrounding region is strongly associated with higher

autocratic exit hazards, while its association with democratic termination is negative but imprecisely estimated.

To interpret the central mechanism, we develop a parsimonious political-economy framework built around a tradeoff between democratic policy competition and concentrated authority. Under democracy, electoral turnover provides accountability, but polarization increases the expected cost of alternation between competing policy positions. Concentrating authority avoids this instability and can therefore become attractive when political disagreement is sufficiently intense. Once in power, however, an autocrat can use repression to extract resources. Moderately extractive autocrats restrain themselves to preserve future political rents, whereas sufficiently extractive types choose their preferred repression level despite the resulting removal. The framework therefore explains why polarization can undermine democratic persistence while concentrated authority creates a separate source of autocratic fragility.

The paper contributes to three related literatures. First, it adds to research on endogenous political institutions by shifting attention from institutional choice to regime persistence and by showing that democratic and autocratic termination have different correlates (Acemoglu and Robinson, 2001, 2006; Persson and Tabellini, 2003; Lizzeri and Persico, 2004; Ticchi and Vindigni, 2010; Besley and Persson, 2011). Second, it contributes to work on polarization and democratic erosion by identifying a regime-specific relationship between political division and institutional survival (Arbatli and Rosenberg, 2021; Graham and Svolik, 2020; Svolik, 2019). Third, it relates to research on authoritarian rule and political survival by placing the tradeoff between coercion and removal alongside the costs of polarized democratic competition (Wintrobe, 1998; Besley and Kudamatsu, 2008; Svolik, 2012). More broadly, the findings redirect attention from which regime is inherently more durable toward the conditions under which each becomes vulnerable.

2. Historical Context and Motivating Patterns

The persistence of democracy and autocracy has varied substantially across historical periods. In the early twentieth century, democratic institutions were often recently established, politically contested, and embedded in environments marked by limited state capacity, restricted political participation, and weak acceptance of electoral competition. Autocratic regimes, by contrast,

frequently operated in regional and international environments in which nondemocratic rule was common and faced relatively little external pressure. The relative stability of the two regime types may therefore reflect the conditions under which they operated rather than an inherent durability advantage of either democracy or autocracy.

The interwar period illustrates the vulnerability of democracy under intense political conflict. Economic disruption, ideological polarization, fragmented party systems, and weak political institutions contributed to democratic breakdown across Europe and elsewhere (Berman, 2019). The postwar environment differed markedly. Democratic institutions became more deeply established in much of Western Europe, while the prevalence and international legitimacy of democracy increased. Subsequent democratization in Southern Europe, Latin America, and post-communist countries further altered the regional environments confronting both democratic and autocratic governments. These changes suggest that regime persistence should be understood as historically contingent: conditions that once favored autocratic survival may weaken it in later periods, while democracies that survive their early years may become increasingly consolidated. Historical experience also suggests that the sources of fragility differ across regime types. Polarization can impair democratic decision-making, intensify distributive conflict, and weaken willingness to accept electoral defeat. The concentration of authority may appear attractive when competitive politics becomes ineffective or unstable. Autocratic rule can suppress some of these conflicts, but it creates other vulnerabilities because incumbents face fewer constraints on repression and extraction. Political forces that initially support centralized authority may therefore later oppose it once the costs of concentrated power become apparent.

Brazil provides a compact illustration (Fausto, 2014). Its twentieth-century political history alternated between electoral and authoritarian rule. The oligarchic First Republic ended in 1930, and the Estado Novo dictatorship under Getúlio Vargas followed between 1937 and 1945. Electoral democracy was restored after World War II, but mounting polarization and institutional conflict preceded the military coup of 1964. The military regime subsequently relied on political restrictions and repression before a gradual liberalization culminated in democratization during the 1980s. Since the adoption of the 1988 Constitution, democracy has persisted despite renewed episodes of polarization and institutional strain.

Brazil provides an illustration rather than a test of these mechanisms. Political conflict can weaken democratic institutions and increase support for concentrated authority, while the exercise of autocratic power can generate pressures for renewed democratization. The framework developed in the next section formalizes these competing sources of regime fragility, and the cross-country analysis examines their broader empirical relevance.

3. A Simple Political-Economy Framework

This section develops a simple political-economy framework to interpret the empirical patterns documented below. Democracy provides accountability, but polarization can generate costly policy instability. Autocracy avoids policy alternation by concentrating authority, yet centralized power creates opportunities for repression and extraction. The framework is intentionally parsimonious: its purpose is to organize a set of empirically testable predictions.

3.1. Model setup

Consider an economy operating over two periods, $t = 1, 2$. The population consists of two equally sized and internally homogeneous political groups, indexed by $J = L, R$, with policy preferences satisfying $p_L < p_R$. The expected period utility of group J from policy π_t is

$$u_{Jt} = \bar{u} - E(\pi_t - p_J)^2, \quad J = L, R, \quad (1)$$

where $\bar{u}$ is a sufficiently large constant and expectations are taken over the policy outcome. The difference $\Delta = p_R - p_L$ measures political polarization: a larger Δ implies greater disagreement between the two groups over policy.

A potential autocrat is partly concerned with aggregate policy welfare and partly motivated by private extraction. His period utility is

$$v_t = u_{Lt} + u_{Rt} + \lambda s(r_t) - r_t \quad (2)$$

where r_t denotes the level of repression and $s(r_t)$ the resources that repression enables the autocrat to extract. Assume that $s: [0, \infty) \rightarrow [0, \infty)$ is continuous, strictly increasing, and strictly concave. We impose $s(0) = 0$, $\lim_{r \downarrow 0} s'(r) = \infty$, and $\lim_{r \rightarrow \infty} s'(r) = 0$. The parameter λ measures the weight the autocrat places on extraction relative to policy welfare. His type is initially unknown to citizens and is drawn from a commonly known distribution with cdf F on $[0, \infty)$. We assume that all expectations used below are finite.

Individual period utility can therefore be written as

$$U_{jt} = \bar{u} - E(\pi_t - p_j)^2 - s(r_t)A_t \quad (3)$$

where $A_t = 1$ under autocracy and $A_t = 0$ under democracy. The autocrat's period utility is

$$V_t = [u_{Lt} + u_{Rt} + \lambda s(r_t) - r_t]A_t \quad (4)$$

Abstracting from discounting, lifetime utilities are, respectively,

$$\sum_{t=1}^2 U_{jt} \text{ and } \sum_{t=1}^2 V_t. \quad (5)$$

In each period, the political system is either democracy or autocracy. Under democracy, a representative of one of the two groups is selected with equal probability and implements that group's preferred policy. Under autocracy, the autocrat chooses policy and repression. The regime choice is interpreted as a reduced-form representation of the political support required to sustain or replace a regime, rather than as a literal constitutional vote by all citizens. If autocracy is selected in period 1, the repression level chosen by the autocrat remains in force in period 2 unless he is removed. Citizens observe this choice and may remove the autocrat before period 2 and restore democracy. If an autocrat assumes power only in period 2, he chooses repression for that period alone. We normalize the direct cost of removing the autocrat to zero and solve for the subgame-perfect equilibrium.

3.2. Analysis

Suppose first that democracy prevails in period t . The randomly selected representative chooses either p_j or p_{-j} , each with probability one-half. Expected utility for either group is therefore

$$U_{jt}(A_t = 0) = u_{jt}(A_t = 0) = \bar{u} - \frac{1}{2}\Delta^2. \quad (6)$$

To isolate the tradeoff between policy coordination and extraction, we assume that the autocrat minimizes aggregate policy losses. His policy choice is therefore the midpoint of the groups' preferred policies, $\pi_t(A_t = 1) = (p_L + p_R)/2$. Then,

$$u_{jt}(A_t = 1) = \bar{u} - \frac{1}{4}\Delta^2 > \bar{u} - \frac{1}{2}\Delta^2 = u_{jt}(A_t = 0). \quad (7)$$

The advantage in (7) arises because concentrated authority eliminates random alternation between the two groups' preferred policies. Autocracy consequently eliminates random alternation between the groups' preferred policies, although citizens bear the additional cost of

extraction. Absent strategic considerations, an autocrat of type λ chooses repression to maximize $\lambda s(r) - r$. The first-order condition is $\lambda s'(r) - 1 = 0$, which gives

$$r^*(\lambda) = (s')^{-1}\left(\frac{1}{\lambda}\right). \quad (8)$$

Strict concavity yields a unique interior solution for every $\lambda > 0$; define $r^*(0) = 0$. Because s' is strictly decreasing, $r^*(\lambda)$ is strictly increasing in λ : an autocrat who places greater weight on extraction chooses greater repression.

When autocracy begins in period 1, the autocrat takes into account that sufficiently extensive extraction may induce citizens to remove him before period 2. Let $\bar{r}$ denote the maximal repression level consistent with remaining in power. Citizens are indifferent between retaining the autocrat and restoring democracy when $s(\bar{r}) = \frac{\Delta^2}{4}$. The resulting choice depends on the autocrat's type. We assume that, for sufficiently high λ , the return from unconstrained extraction exceeds the value of moderating repression in order to remain in power. This ensures the existence of an upper cutoff $\bar{\lambda}$.

Lemma 1. There exist cutoffs $0 < \underline{\lambda} < \bar{\lambda}$ such that when $\lambda > \bar{\lambda}$, the autocrat chooses his unconstrained preferred repression level and is removed before period 2. When $\underline{\lambda} < \lambda < \bar{\lambda}$, he chooses the maximal repression level that allows him to remain in power, $\bar{r}$. When $\lambda < \underline{\lambda}$, he chooses his unconstrained preferred level and remains in power.

The proof is provided in the Appendix. For low values of λ , the autocrat's preferred extraction is sufficiently limited that citizens retain him. For intermediate values, he moderates repression to preserve future political rents. For high values, the immediate return from extraction exceeds the value of remaining in power, and he chooses his preferred level despite the resulting removal. Table 1 summarizes the corresponding utility levels in the two periods for each of the three autocrat types.

Table 1. Summary of Utility Levels

	1	2
$\lambda > \bar{\lambda}$	$\bar{u} - 0.25\Delta^2 - s(r^*(\lambda))$	$\bar{u} - 0.5\Delta^2$
$\underline{\lambda} < \lambda < \bar{\lambda}$	$\bar{u} - 0.25\Delta^2 - s(\bar{r})$	$\bar{u} - 0.25\Delta^2 - s(\bar{r})$
$\lambda < \underline{\lambda}$	$\bar{u} - 0.25\Delta^2 - s(r^*(\lambda))$	$\bar{u} - 0.25\Delta^2 - s(r^*(\lambda))$

Integrating over the distribution of autocratic types, the expected lifetime utility of either group when autocracy is selected in period 1 is

$$\begin{aligned} \sum_{t=1}^2 U_{Jt} (A_1 = 1) &= \int_{\bar{\lambda}}^{\infty} \left[2\bar{u} - \frac{3}{4}\Delta^2 - s(r^*(\lambda)) \right] dF(\lambda) \\ &\quad + \int_{\underline{\lambda}}^{\bar{\lambda}} \left[2\bar{u} - \frac{1}{2}\Delta^2 - 2s(\bar{r}) \right] dF(\lambda) \\ &\quad + \int_0^{\underline{\lambda}} \left[2\bar{u} - \frac{1}{2}\Delta^2 - 2s(r^*(\lambda)) \right] dF(\lambda). \end{aligned} \quad (9)$$

To compare this outcome with an initial democracy, suppose polarization is sufficiently high that democracy in period 1 is followed by autocracy in period 2. Expected lifetime utility is then

$$(10) \quad \sum_{t=1}^2 U_{Jt} (A_1 = 0) = \bar{u} - \frac{1}{2}\Delta^2 + \bar{u} - \frac{1}{4}\Delta^2 - E_{\lambda} s(r^*(\lambda)) = 2\bar{u} - \frac{3}{4}\Delta^2 - E_{\lambda} s(r^*(\lambda))$$

Comparing (9) and (10) shows that sufficiently high polarization can make autocracy preferable in period 1. By avoiding partisan policy alternation, autocracy generates a benefit that grows with Δ . Its attractiveness is limited, however, by the anticipated extraction of the autocrat. Once in office, highly extractive autocrats may therefore provoke their own removal.

Proposition 1.

- (i) When polarization is sufficiently low, citizens prefer democracy in period 1 and prefer it to continue in period 2.
- (ii) When polarization is sufficiently high, citizens prefer autocracy in period 1. Conditional on this choice, the autocrat is removed and democracy restored in period 2 for all realizations $\lambda > \bar{\lambda}$, which occurs with probability $1 - F(\bar{\lambda})$.

The proposition identifies distinct sources of fragility under the two regimes. Polarization lowers the relative attractiveness and persistence of democracy by increasing the costs of policy conflict. Autocracy avoids these costs but is vulnerable to the extraction made possible by concentrated power. The result therefore generates regime-specific predictions rather than an unconditional ranking of democratic and autocratic durability. Appendix II replaces random policy selection under democracy with a costly political contest, shows that weaker institutional constraints

further increase the relative appeal of autocracy, and reports supplementary correlations involving institutional quality.

The framework yields two principal empirical implications. First, polarization should be more strongly associated with the termination of democratic than autocratic spells. Second, concentrated authority creates an endogenous source of autocratic fragility: sufficiently extensive repression or extraction may increase the likelihood of regime removal.

4. Empirical Evidence on Democratic Persistence and Regime Change

This section confronts the model’s two principal implications with global historical data and documents a further asymmetry that the framework does not address. We examine relative regime durability and its dependence on historical composition, the asymmetric role of polarization across regime types, the dynamics of polarization around regime transitions, the regional political environment, and the non-monotonic relationship between repression and autocratic survival. An extension of the framework, together with supplementary correlations involving institutional quality, is presented in Appendix II. Our objective is not causal identification, but to assess whether broad historical regularities align with the mechanisms highlighted by the theory. While the paper does not claim a single quasi-experimental design, credibility comes from the convergence of multiple approaches: nonparametric duration evidence, pooled and separate hazard models, event-study timing patterns, and estimates restricted to countries observed under both regime types.

4.1. Data, Measurement, and Econometric Approach

Our empirical analysis uses Version 15 of the Varieties of Democracy (V-Dem) dataset, covering 202 countries from 1900 to 2024 (Coppedge et al., 2025). We collapse V-Dem’s four-category Regimes of the World classification into a binary regime indicator: democracy (electoral and liberal democracy) and autocracy (electoral and closed autocracy). This aggregation matches the model’s central distinction between regimes with and without meaningful electoral accountability. We adopt this simplification because the theory’s predictions are formulated at the democracy-versus-autocracy level, and the four-category alternative would substantially reduce statistical power in the duration models. The cleaned country-year panel contains 19,581

observations. Regime spells are defined as consecutive years within the same binary regime category. A spell ends when a country transitions to the alternative regime type and is otherwise right censored in 2024. The resulting duration sample contains 468 spells: 190 democratic and 278 autocratic. The main covariates are political polarization (v2cacamps, the V-Dem item-response-theory measure, used identically in the duration models and in the event studies below), log GDP per capita, log population, fiscal capacity, regional democracy share excluding the country itself, and historical-period indicators.

The Cox models are estimated on an annual start–stop panel rather than on one record per spell. Each spell contributes one record per year at risk, with the interval $(t-1, t]$ and a failure indicator switched on only in the year a transition occurs. Every time-varying covariate—polarization, repression, fiscal capacity, log GDP per capita, log population, and the regional democracy share—enters lagged one year, so that each is predetermined relative to the year in which the regime is at risk. This construction matters. Covariates aggregated over the whole spell, such as spell averages, incorporate information realized after the spell begins and, for terminating spells, information from the years immediately preceding collapse; they are therefore not admissible as predictors of the hazard. For the same reason the historical-period controls are annual calendar indicators for the interwar years, the Cold War, and the post-Cold War era, and not spell-level indicators of whether a spell ever overlapped a given era. An overlap indicator of that kind is a function of realized duration: among spells beginning before 1947, overlapping the Cold War is equivalent to surviving until 1947. Spells beginning during 1914–1918 or 1939–1945 are retained in the sample. Because the specification includes annual indicators for the interwar, Cold War, and post-Cold War periods, the omitted calendar category comprises 1900–1918 and 1939–1945. The repression quartiles used in Section 4.5 are defined using repression in the first observed year of each spell, so assignment is fixed at entry and does not depend on realized duration. Listwise deletion on the covariate set reduces the estimation sample from 468 to 420 spells, with the loss driven almost entirely by missing national accounts data in the early decades of the panel; the repression models, which use a different covariate set, retain 252 of the 278 autocratic spells.

Two features of the sample require comment. First, 120 of the 468 spells are already under way in 1900 and are therefore left-censored: their true start dates precede the panel, and treating 1900 as the origin assigns them artificial durations. The issue is severely asymmetric, since 115 of

these spells are autocratic and only five democratic, and they are the source of the very long right tails in Figures 1 and 2 and of much of the pre-war panel of Figure 3. We retain them in the baseline for comparability with the literature but report the full set of estimates without them in Appendix Table A4. Excluding them does not weaken the paper’s conclusion; it strengthens it. The unconditional autocracy hazard ratio, which is 0.809 in the full sample and appears to favour autocratic durability, rises to 1.366 once left-censored spells are dropped, and the controlled estimates remain between 1.73 and 1.77. The apparent unconditional advantage of autocracy is thus itself largely an artifact of left-censoring.

Second, the pooled Cox specifications impose a constant proportional effect of the autocracy indicator over duration, while Figures 1 and 2 suggest that relative persistence varies with spell age. Appendix Table A4 reports the relevant diagnostics. A Schoenfeld residual test provides no evidence against proportionality, and specifications allowing the autocracy effect to vary with duration yield the same qualitative conclusion (Appendix Table A4).

All covariates are drawn from V-Dem version 15 unless otherwise noted. Polarization is `v2cacamps`, the item-response-theory measure of political camp division, standardized over the full country-year panel where used in standardized form. Repression is `v2csreprss`, the civil-society repression score, sign-reversed so that higher values denote more repression. Fiscal capacity is `v2stfiscap`. GDP per capita and population are the Fariss et al. latent estimates distributed with V-Dem as `e_gdppc` and `e_pop`, both entering in logs and the former lagged at source. Regions follow V-Dem’s nineteen-category geographic classification `e_regiongeo`, and the regional democracy share is the proportion of other countries in a region classified as democratic in that year, excluding the country itself. Institutional quality, used in Appendix II, is the simple average of judicial constraints on the executive (`v2x_jucon`) and legislative constraints on the executive (`v2xlg_legcon`), each on a zero-to-one scale, standardized after averaging. Appendix Table A5 reports source series, provenance, scale, timing and summary statistics for every variable.

We use Kaplan–Meier and Nelson–Aalen estimators for nonparametric comparisons, parametric duration models for robustness, and Cox proportional hazards models as the main specification. Additional specifications introduce calendar-period controls or stratify the baseline hazard by historical period.

4.2. Regime Persistence and Historical Composition

We begin with unconditional comparisons of democratic and autocratic spells. Kaplan–Meier estimates indicate substantially longer median duration for autocratic spells—seventy years, compared with twenty-five years for democratic spells (Table 2 and Figure 1). However, neither the log-rank nor the Wilcoxon–Breslow–Gehan test rejects equality of the two survivor functions at conventional significance levels. The median difference should therefore be interpreted as descriptive rather than as decisive evidence of an inherent autocratic durability advantage. This full-sample comparison is heavily influenced by left-censored regimes already in place in 1900, almost all of which are autocratic. When these spells are excluded, the unconditional autocratic advantage disappears (Appendix Table A4).

Table 2. Non-Parametric Survival Comparison: Democratic vs. Autocratic Spells

	Median (yrs)	95% CI	Test Statistic	p-value
Democracies	25	19–40	Log-rank: 2.69	0.101
Autocracies	70	52–86	WBG: 3.04	0.081

KM median survival times with 95% CIs. Log-rank and Wilcoxon-Breslow-Gehan (WBG) tests for equality of survivor functions. N=468 spells (190 democratic, 278 autocratic). V-Dem v15, 1900–2024.

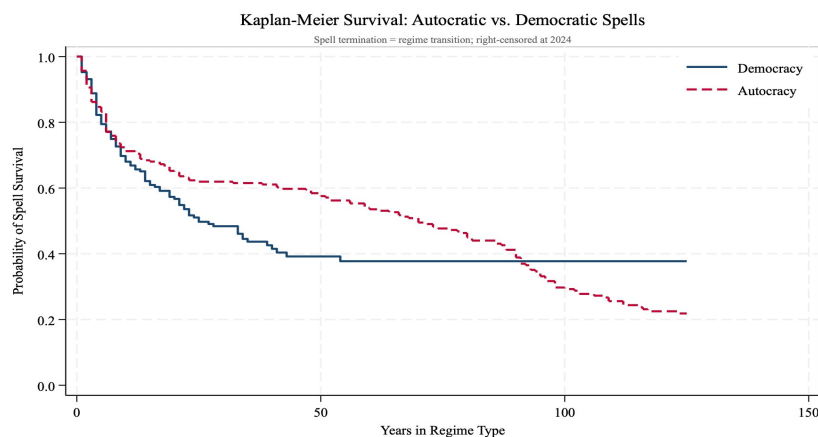


Figure 1. Kaplan-Meier survival curves for autocratic and democratic spells. Spell termination is defined as a transition to the opposite regime type; spells are right censored at 2024. The democratic curve displays a steep early decline followed by a pronounced plateau; the autocratic curve declines more gradually throughout without a comparable plateau.

The shape of the survivor functions is more informative than the medians alone. Democratic spells exhibit greater early attrition but a pronounced flattening among long-lived regimes, consistent with a consolidation process in which surviving democracies become increasingly resilient (Svolik, 2008; Boese et al., 2021). Autocratic survival declines more steadily.

Figure 2 presents the corresponding Nelson–Aalen cumulative hazards. Democratic spells accumulate exit risk more rapidly at shorter durations, but the curves converge and eventually cross among very long-lived spells. Beyond approximately ninety years, autocratic spells have accumulated greater exit risk than democratic spells. Because relatively few spells remain at risk at such long durations and the confidence bands widen substantially, this late crossing should be interpreted cautiously.

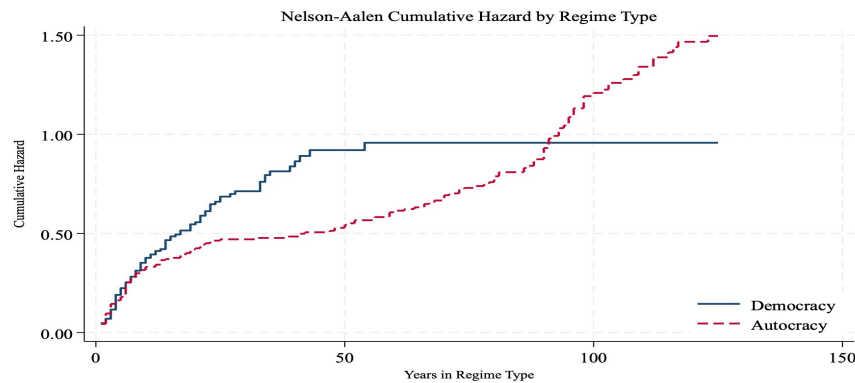


Figure 2. Nelson–Aalen cumulative hazards by regime type. Democratic spells accumulate exit risk more rapidly at shorter durations, while the curves converge and eventually cross among very long-lived spells.

Parametric duration models provide a first controlled comparison. These models are estimated at the spell level under three distributional assumptions, with covariates measured at spell entry. In every specification, the autocracy coefficient is negative and statistically significant, indicating shorter predicted duration for autocratic spells once entry conditions and historical period are controlled (Appendix Table A2). The Cox models that follow use the annual start–stop structure described in Section 4.1.

Table 3 reports pooled Cox estimates. In the unconditional specification, autocratic spells have a modestly lower exit hazard than democratic spells (column 1). Once lagged covariates are introduced, however, the relationship reverses: the autocratic exit hazard is almost twice the democratic hazard (column 2). The difference becomes somewhat larger when annual historical-

period indicators are included or the baseline hazard is stratified by period (columns 3 and 4). The apparent autocratic advantage in the raw data therefore does not survive adjustment for observable composition and historical environment.

Table 3. Pooled Cox Proportional Hazard Models: Regime Spell Persistence

	Bivariate	Controls	Period FE	Stratified	+ Pol Int	Full Int
Autocracy (1=Aut)	0.809*	1.920***	2.211***	2.356***	2.357***	0.456***
	(0.098)	(0.375)	(0.404)	(0.416)	(0.448)	(0.120)
Polarization (t-1)		1.160***	1.142**	1.148***	1.902***	1.767***
		(0.063)	(0.061)	(0.058)	(0.203)	(0.185)
Aut × Polarization					0.481***	0.509***
					(0.057)	(0.060)
Aut × Reg. Dem. Share						19.431***
						(9.673)
ln(GDP per capita, t-1)		1.010	0.953	0.929	0.965	0.941
		(0.101)	(0.096)	(0.098)	(0.102)	(0.099)
Fiscal capacity (t-1)		1.021	1.044	1.064	1.071	1.056
		(0.075)	(0.080)	(0.082)	(0.093)	(0.091)
Reg dem. share (t-1)		3.729***	3.209***	2.980***	3.891***	0.645
		(1.074)	(0.952)	(0.893)	(1.170)	(0.250)
Interwar (annual)			1.330		1.236	1.123
			(0.520)		(0.496)	(0.413)
Cold War (annual)			2.078**		2.078**	1.425
			(0.755)		(0.750)	(0.482)
Post-Cold War (annual)			2.221**		2.070**	1.448
			(0.778)		(0.759)	(0.496)
Spell-years	19581	14593	14593	14593	14593	14593
Spells	468	420	420	420	420	420

Hazard ratios throughout. HR > 1 indicates faster spell exit (lower persistence). Standard errors clustered by country in parentheses. Col. (4) uses period-stratified baseline hazards. Cols. (5) and (6) include interaction terms between regime type and polarization/regional democracy. *p < 0.10, **p < 0.05, ***p < 0.01.

The interaction specifications reveal pronounced regime-specific associations. Polarization is strongly associated with democratic termination, while its association with autocratic termination is substantially weaker (column 5). Column 6 shows that the relationship between the regional prevalence of democracy and regime termination also differs across regime types. The regional-democracy main effect is imprecisely estimated for democratic spells, whereas the interaction indicates sharply higher autocratic exit hazards in more democratic regional environments. Holding polarization at zero, the implied autocratic-to-democratic hazard ratio at regional democracy share x is 0.456×19.431^x , crossing one at approximately $x = 0.27$. Because interaction estimates can be sensitive to the covariate distribution and multicollinearity, we treat

the separate-regime estimates in Tables 4 and 6 as the primary evidence and return to this result in Section 4.4.

Figure 3 provides complementary descriptive evidence on historical variation. Autocratic spells display greater persistence in the prewar period and retain a modest right-tail advantage during the interwar period, when many democratic regimes were comparatively new and politically fragile. The ordering reverses during the Cold War and post-Cold War periods, when democratic survival curves generally lie above their autocratic counterparts.

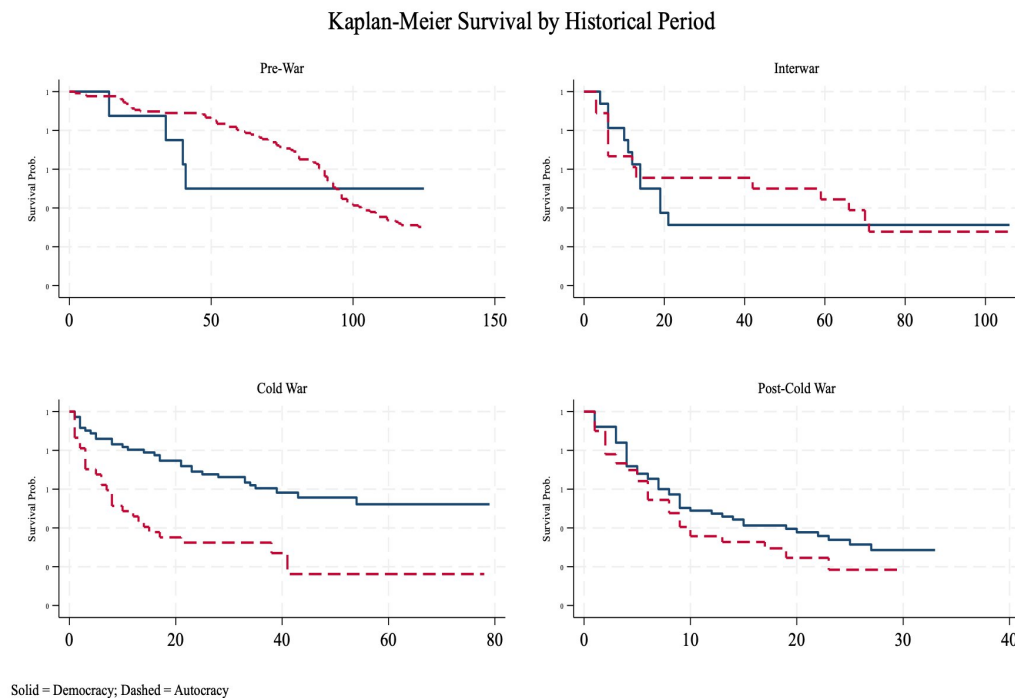


Figure 3. Kaplan-Meier survival curves by historical period. Spells are assigned to a period by the year in which they begin, and each spell then contributes its full duration to that period's curve; spell-years are not reallocated across calendar periods. Solid lines: democratic spells; dashed lines: autocratic spells. Pre-War and Interwar periods favor autocracies; Cold War and Post-Cold War periods favor democracies, with the reversal concentrated precisely in the eras covering the past eight decades.

Taken together, the evidence does not support a fixed durability ranking between democracy and autocracy. The unconditional data partly reflect the concentration of regime types in different historical environments. Once observable characteristics and calendar period are taken into account, autocratic spells exhibit higher exit hazards. Democracies suffer substantial early attrition, but surviving democratic regimes display a degree of consolidation that is less apparent among autocracies.

4.3. Polarization and Democratic Fragility

4.3.1. Regime-Specific Hazard Estimates

We next examine whether polarization is associated differently with democratic and autocratic termination. Table 4 reports separate Cox models by regime type, allowing each regime to have its own baseline hazard and covariate effects. All time-varying covariates enter with a one-year lag.

Polarization displays the clearest asymmetry. In the democratic-spell model, the hazard ratio is 1.835 ($p < 0.01$): a one-unit increase in the lagged V-Dem polarization measure is associated with an 84 percent increase in the democratic exit hazard. The estimate is similar after annual historical-period controls are added, with a hazard ratio of 1.877. In the autocratic-spell models, by contrast, the corresponding hazard ratios are 0.893 and 0.886, both weakly significant and below one. Polarization is therefore strongly associated with democratic fragility but, if anything, with slightly greater autocratic persistence.

Table 4. Separate Cox Models: Heterogeneous Fragility Mechanisms

	Democracy	Autocracy	Dem. + Periods	Aut. + Periods
Polarization (t-1)	1.835***	0.893*	1.877***	0.886*
	(0.196)	(0.056)	(0.206)	(0.056)
ln(GDP per capita, t-1)	0.553***	1.186	0.548***	1.155
	(0.102)	(0.126)	(0.103)	(0.130)
Fiscal capacity (t-1)	0.849	1.247**	0.819	1.257***
	(0.116)	(0.108)	(0.119)	(0.111)
Regional dem. share (t-1)	0.771	10.214***	0.826	8.678***
	(0.330)	(3.111)	(0.379)	(2.875)
Cold War (annual)	0.682	1.736**	0.330***	2.451***
	(0.217)	(0.479)	(0.139)	(0.822)
Interwar (annual)			0.447*	1.533
			(0.199)	(0.598)
Post-Cold War (annual)			0.435**	1.627
			(0.171)	(0.573)
Spell-years	4539	10054	4539	10054

Spells	176	244	176	244
Hazard ratios; separate models by regime type. Models share no common baseline hazard and do not constitute a direct persistence comparison. All covariates lagged one year. Standard errors clustered by country. *p < 0.10, **p < 0.05, ***p < 0.01.				

This asymmetry is consistent with the mechanism emphasized in Section 3. Polarization can impede coalition formation, weaken acceptance of electoral defeat, and erode support for institutional constraints under democracy. Autocratic incumbents are less directly exposed to these channels because political turnover does not depend on competitive elections. The estimates do not imply that autocratic societies are less polarized; rather, they indicate that polarization has markedly different associations with regime termination across the two institutional settings.

The remaining covariates also differ across regime types. Higher GDP per capita is associated with substantially lower democratic exit risk but has no precise association with autocratic termination, consistent with the established finding that economic development particularly strengthens democratic survival (Przeworski et al., 2000). The regional democracy share exhibits another regime-specific pattern, driven principally by its strong positive association with autocratic exit. Because this mechanism lies outside the theoretical framework, we consider it separately in Section 4.4.

These estimates are observational and do not establish causal effects. Nevertheless, the polarization asymmetry is economically large, stable to the inclusion of historical-period controls, and reproduced in the switcher-country sample reported in Table 6. Restricting the analysis to countries observed under both regime types reduces concern that the result is entirely attributable to cross-country composition.

4.3.2. Event-Study Dynamics Around Regime Transitions

The survival analysis shows that polarization is an important predictor of democratic fragility. We complement this evidence with event studies examining whether polarization rises around democratic collapse and falls around democratization. We estimate the following specification separately for each transition type:

$$(12) \quad y_{it} = \sum_{k \neq -1} \beta_k \cdot 1[k_{it} = k] + \alpha_i + \gamma_t + \epsilon_{it}$$

where y_{it} is the standardized V-Dem polarization measure ($v2cacamps$), the same item-response-theory series used as the polarization covariate in the duration models above, for country i in year t , kit denotes the number of years between year t and the transition event for country i , α_i and γ_t are country and year fixed effects, and the omitted category is $k = -1$. Standard errors are clustered by country¹.

We do not estimate equation (12) using the conventional two-way fixed-effects event-study estimator. Transitions are staggered across countries and the polarization response evolves over event time, so the two-way fixed-effects estimator of (12) would recover a weighted average of comparisons that includes later-transitioning countries measured against countries that transitioned earlier, with weights that need not be positive (Goodman-Bacon, 2021; Callaway and Sant’Anna, 2021). We therefore estimate the dynamic coefficients with the interaction-weighted estimator of Sun and Abraham (2021), saturating the specification in cohort-by-relative-period indicators, where a cohort is the year of a country’s first transition of the relevant type, and aggregating the cohort-specific estimates using the sample shares of cohorts observed at each relative period. Countries that never experience the transition in question form the comparison group: sixty-five for democratization and one hundred and ten for autocratization. Because regime status is not absorbing, each treated country is censored at its first reversal, so that no post-reversal observation enters as either a treated or a control unit.

Figure 4 presents event-study coefficients for autocracy-to-democracy transitions. Polarization is elevated eight years before the transition, at 0.242 standard deviations above the omitted year, and declines monotonically thereafter: 0.191 at $t = -4$, 0.147 at $t = -3$ and 0.088 at $t = -2$. Beginning at $t = 0$ the coefficients turn negative, reaching -0.131 at $t = +1$ and drifting to -0.174 by $t = +8$, where they remain strongly significant. The post-transition decline is therefore real and persistent, but it is the continuation of a trend already under way rather than a break at the transition. A joint test that the seven lead coefficients are zero is decisively rejected, $\chi^2(7) = 127.8$, $p < 0.0001$. We accordingly make no causal claim: polarization is falling before democratization occurs, and the design cannot separate the effect of the transition from the

¹ The event window spans eight years either side of a transition. Cohorts are defined by a country’s first transition of the relevant type, and countries are censored at any subsequent reversal so that treatment is absorbing. The autocracy-to-democracy estimation uses 8,381 country-years across 60 cohorts and 65 never-transitioning countries; the democracy-to-autocracy estimation uses 12,541 country-years across 45 cohorts and 110 never-transitioning countries.

process that produced it. The estimates establish a substantial and persistent decline in polarization around democratization, but this pattern lies outside the baseline framework, which treats polarization as exogenous.

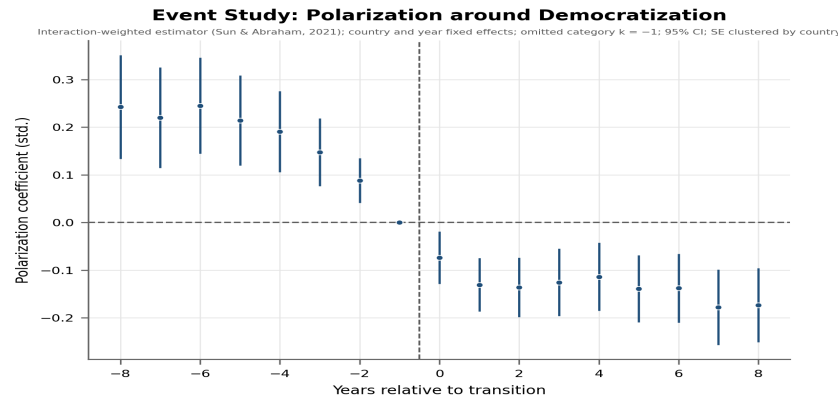


Figure 4. Event-study coefficients: standardized polarization around autocracy-to-democracy transitions. Sun–Abraham interaction-weighted estimates; never-transitioning countries as comparison group; country and year fixed effects; omitted category $t = -1$; standard errors clustered by country. $N = 8,381$ country-years; 60 first-transition cohorts and 65 never-transitioning countries. Polarization declines steadily across the pre-transition window and continues falling afterwards, remaining significantly negative through $t = +8$.

Figure 5 presents the corresponding path around democracy-to-autocracy transitions.

Polarization stands 0.240 standard deviations below the omitted year at $t = -8$ and rises steadily to -0.110 at $t = -2$, turns positive at the transition, and reaches 0.332 by $t = +8$. As with democratization the pre-transition movement is pronounced, and a joint test of the lead coefficients is decisively rejected, $\chi^2(7) = 205.4$, $p < 0.0001$. The coefficients describe the trajectory of polarization around autocratization rather than the causal effect of the transition upon it.

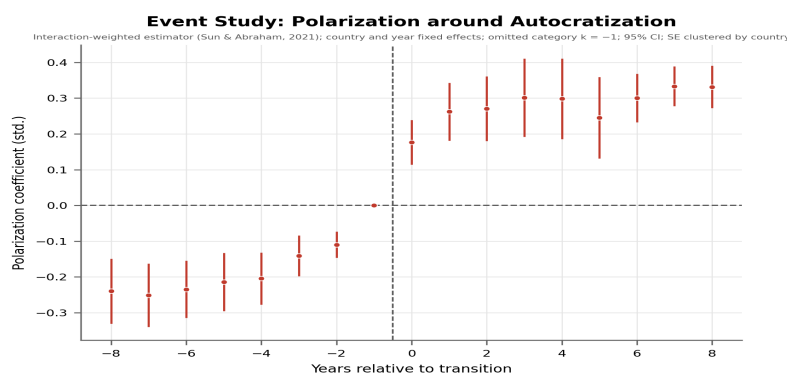


Figure 5. Event-study coefficients for standardized polarization around democracy-to-autocracy transitions. Sun–Abraham interaction-weighted estimates; never-transitioning countries form the comparison group; country and year fixed effects; omitted category $t = -1$; standard errors clustered by country. Polarization rises before the transition and remains elevated afterwards.

Figure 6 juxtaposes the two transition paths. Polarization rises before democratic breakdown but declines before and after democratization. The first pattern is consistent with the mechanism in Proposition 1, whereas the second is an additional empirical regularity outside the baseline framework. The pronounced pre-transition movements preclude a causal interpretation in either direction.

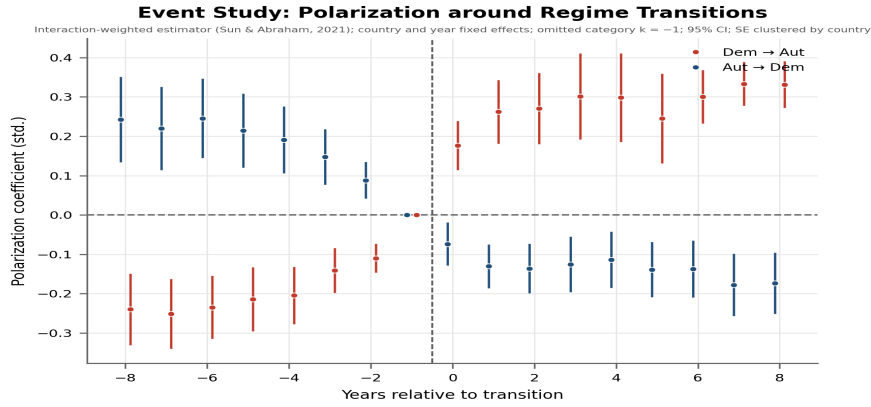


Figure 6. Event-study comparison: standardized polarization coefficients around autocracy-to-democracy (blue) and democracy-to-autocracy (red) transitions. The two series move in opposite directions, with polarization declining around democratization and rising around autocratization. Sun–Abraham interaction-weighted estimates; never-transitioning countries as comparison group; country and year fixed effects; omitted category $k = -1$; 95% CI; SE clustered by country.

4.4. The Regional Political Environment

A further asymmetry concerns the regional political environment. The share of democracies in a country’s region, excluding the country itself, is strongly associated with autocratic termination but has no precisely estimated association with democratic exit. In the separate Cox models reported in Table 4, the regional democracy hazard ratio is 0.771 for democratic spells and statistically insignificant, compared with 10.214 for autocratic spells ($p < 0.01$). The corrected estimates therefore indicate that the regional asymmetry is carried principally by the autocratic side.

The pooled interaction model in Table 3 yields the same qualitative result. At a regional democracy share x , the implied ratio of autocratic to democratic exit hazards is 0.456×19.431^x , crossing one at approximately $x = 0.27$. Autocratic spells therefore exhibit lower relative exit hazards in predominantly autocratic regions but substantially higher relative hazards as democracy becomes more prevalent in the surrounding region. The result also survives in the switcher-country sample: regional democracy is strongly associated with autocratic exit, with a

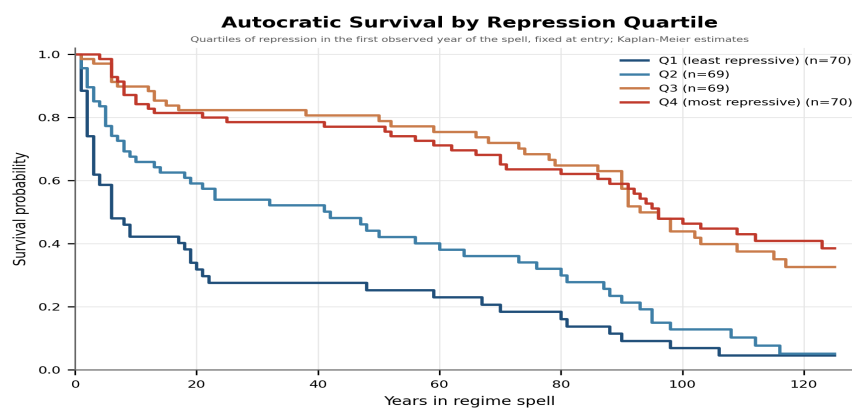
hazard ratio of 5.501, while its association with democratic exit remains negative but imprecisely estimated (Table 6).

Several mechanisms could generate this pattern, including demonstration effects, diffusion of political norms, external support and conditionality, economic integration, and common regional political shocks. The present design cannot distinguish among them, and the regional democracy share is closely related to the historical expansion of democracy documented in Section 4.2. We therefore interpret the result as a robust descriptive regularity rather than as a causal estimate. As democracy became more prevalent over the twentieth century, the regional environment appears to have become increasingly unfavorable to autocratic persistence. A fuller account of regime interdependence lies beyond the framework developed in Section 3.

4.5. Repression and Autocratic Survival

The model identifies a potential cost of coercive overreach: sufficiently extractive autocrats may provoke their own removal. More broadly, repression may stabilize autocratic rule at low to moderate levels by deterring challengers, while becoming destabilizing at high levels through backlash, elite defections, or intensified resistance. The baseline framework captures the latter mechanism but not the deterrent effect of repression.

Figure 7



Kaplan–Meier survival curves for autocratic spells by repression quartile (Q1 = least repressive; Q4 = most repressive). Quartiles are defined using repression in the first observed year of each spell, so that assignment is fixed at entry and cannot depend on realized duration. Thirty-one autocratic spells end before their third year; under the alternative three-year averaging rule their classification would have used only the one or two years observed. Survival is lowest in Q1, rises through Q3, and is slightly lower

in Q4 than in Q3, consistent with a non-monotonic association between repression and autocratic persistence. Log-rank test of equality across quartiles: $\chi^2(3) = 79.1, p < 0.0001$.

The Q1 (least repressive) survival function collapses most rapidly, with a median spell duration of approximately six years against forty-two to ninety-six years for Q2–Q4. The pattern is not an artifact of the classification rule. Under the alternative three-year averaging rule the Q1 median is eight years and the log-rank statistic is essentially unchanged (79.1 against 79.0), and under a three-year landmark design that restricts attention to the 247 spells surviving to year three and restarts the clock there, the Q1 median is eighteen years against seventy-three to ninety-five for Q2–Q4, with a log-rank statistic of 50.0. Short-lived autocracies are indeed concentrated among the least repressive; roughly sixty-eight percent of spells ending within three years fall in Q1 under either rule. The non-monotonic pattern between Q3 and Q4 is consistent with the theory that excessive repression ultimately elevates exit risk relative to moderate repression. Table 5 formalizes this through Cox models on autocratic spells.

Table 5. Cox Proportional Hazard Models: Repression and Autocratic Spell Duration

	Linear	Quadratic	Period FE	Strat period	Quartiles	TVC
Repression (t–1)	0.454***	0.478***	0.476***	0.458***		0.544***
	(0.043)	(0.035)	(0.034)	(0.037)		(0.086)
Repression squared (t–1)		1.180***	1.177***	1.171***		1.410***
		(0.056)	(0.056)	(0.056)		(0.132)
Q2 vs Q1					0.452***	
					(0.112)	
Q3 vs Q1					0.310***	
					(0.090)	
Q4 vs Q1					0.335***	
					(0.095)	
ln(GDP per capita, t–1)	1.346***	1.387***	1.374***	1.332***	1.373***	1.357***
	(0.147)	(0.153)	(0.155)	(0.148)	(0.140)	(0.148)
ln(Population, t–1)	1.038	1.028	1.028	1.015	0.997	1.031
	(0.058)	(0.059)	(0.058)	(0.055)	(0.055)	(0.059)

Regional dem. share (t-1)	6.243***	6.019***	5.145***	4.974***	7.160***	6.386***
	(1.777)	(1.751)	(1.619)	(1.535)	(2.143)	(1.921)
Cold War (annual)	2.112***	1.917**	2.986***	—	1.456	1.787**
	(0.603)	(0.530)	(1.202)		(0.415)	(0.496)
Interwar (annual)			2.157*			
			(0.897)			
Post-Cold War (annual)			1.669			
			(0.638)			
Rep × log(t)						0.967
						(0.051)
Rep ² × log(t)						0.938*
						(0.036)
Spell-years	10763	10763	10763	10763	10763	10763
Spells	252	252	252	252	252	252

Hazard ratios are reported throughout, including for the time-varying interactions in Column 6; a hazard ratio above one indicates a higher exit hazard. Autocratic spells only; all covariates lagged one year. Quartiles in Column 5 are defined using repression in the first observed year of the spell. The estimated turning point is 2.230. The Cold War indicator is omitted from Column 4 because the baseline hazard is stratified by historical period. Standard errors clustered by country are reported in parentheses. *p < 0.10, **p < 0.05, ***p < 0.01.

Table 5 confirms a non-monotonic relationship between repression and autocratic survival. Higher repression is associated with lower exit risk at low to moderate levels, but this effect weakens and eventually reverses at high levels. The same pattern appears in alternative specifications, including period fixed effects, a baseline hazard stratified by historical period, and the parametric families of Appendix Table A3. Column 6 allows the repression terms to vary with log duration; neither interaction is large, indicating that the quadratic relationship is reasonably stable over the life of a spell. Repression is measured with a one-year lag, so the estimates are not contaminated by coercion adopted in the year a regime falls, and the quartile comparison in Column 5 uses repression in the first observed year of a spell, which is fixed at entry. The estimated turning point is 2.230, above the sample mean, so the descending branch of the relationship is estimated off a minority of highly coercive spells. One caution nonetheless remains: repression responds to perceived threat even at a one-year lag, so the least-repressive quartile may still contain regimes already in the process of collapse. The non-monotonicity is

therefore best read as a descriptive regularity consistent with the intertemporal tradeoff in Lemma 1 rather than as an estimate of the causal effect of coercion.

4.6. Robustness and the Switcher-Country Sample

We conclude by examining whether the principal findings survive alternative duration specifications and restriction to countries observed under both regime types. The parametric models in Appendix Table A2 yield the same broad persistence result under three distributional assumptions, while the period-stratified Cox specification in Table 3 allows baseline exit hazards to vary across historical environments.

Table 6 restricts the analysis to countries that have experienced at least one democratic and one autocratic spell. This restriction ensures that both regime types are represented within the selected countries and reduces the influence of cross-country composition. It does not constitute a country fixed-effects design, however, and therefore does not eliminate persistent country characteristics or time-varying confounders.

The relative-persistence result becomes stronger in this sample. In the pooled Cox model, autocratic spells have an exit hazard approximately twice that of democratic spells, with a hazard ratio of 2.119 ($p < 0.01$). Allowing the baseline hazard to vary by historical period raises the estimate to 2.869. Thus, the apparent autocratic durability advantage in the unconditional data is not reproduced among countries that have experienced both regime types once covariates and historical environment are taken into account.

Table 6. Switcher-Country Sample

	Pooled Cox	Period-stratified	Sep. Cox Dem	Sep. Cox Aut
Autocracy (1=Aut)	2.119***	2.869***		
	(0.422)	(0.518)		
Polarization (t-1)	1.115**	1.092*	1.792***	0.821***
	(0.056)	(0.051)	(0.192)	(0.047)
ln(GDP per capita, t-1)	1.060	0.997	0.558***	1.657***
	(0.107)	(0.105)	(0.102)	(0.215)
Fiscal capacity (t-1)	0.897*	0.920	0.857	0.957
	(0.055)	(0.057)	(0.117)	(0.064)
Regional dem. share (t-1)	2.766***	1.789**	0.736	5.501***

	(0.712)	(0.485)	(0.314)	(1.654)
Cold War (annual)	1.181	—	0.657	1.641*
	(0.248)		(0.208)	(0.470)
Spell-years	9832	9832	4180	5652
Spells	358	358	173	185
Hazard ratios throughout. Switcher sample: countries with spells of both regime types. Annual start–stop records, covariates lagged one year. The Cold War indicator is omitted from Column 2 because the baseline hazard is stratified by historical period. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.				

The polarization asymmetry also persists. In the separate democratic-spell model, the polarization hazard ratio is 1.792 ($p < 0.01$), while in the autocratic-spell model it is 0.821 ($p < 0.01$). Higher polarization is therefore associated with substantially greater democratic exit risk but lower autocratic exit risk within the switcher-country sample. The regional result is likewise concentrated on the autocratic side: the regional democracy hazard ratio is 5.501 ($p < 0.01$) for autocratic spells, compared with 0.736 and statistically insignificant for democratic spells.

Taken together, these estimates reinforce the paper’s central conclusion. Democratic and autocratic spells do not share a common set of vulnerabilities. Polarization is strongly associated with democratic termination, whereas democratic regional environments are especially unfavorable to autocratic persistence. Restricting the analysis to countries observed under both regimes reduces concern that these asymmetries are entirely driven by differences in the countries that experience democracy and autocracy, although the estimates remain observational.

5. Concluding Remarks

This paper shows that democratic and autocratic regimes face distinct sources of fragility. The apparent durability advantage of autocracy in the full historical sample is largely driven by regimes already in place when observation begins in 1900. Among spells observed from entry, and in models accounting for observable characteristics and historical environment, autocratic spells exhibit higher exit hazards. Regime persistence therefore does not admit a fixed ranking across institutional forms.

The clearest asymmetry concerns political polarization. Higher polarization strongly predicts democratic termination but is weakly associated with greater autocratic persistence. It rises before democratic breakdown, consistent with the paper’s central mechanism, while its decline

before and after democratization is an additional empirical regularity outside the baseline framework. Autocratic survival is instead associated non-monotonically with repression, and more democratic regional environments are strongly associated with autocratic exit. These findings are observational, but they are robust across alternative duration specifications, historical controls, and the switcher-country sample.

The framework organizes the central result through a tradeoff between democratic policy competition and concentrated authority. Polarization raises the costs of political alternation and can increase the appeal of centralized rule. Concentrated authority, however, permits extraction and coercive overreach that may ultimately provoke removal. The durability of political regimes thus depends less on whether authority is democratic or autocratic than on the particular vulnerabilities created by each institutional form.

APPENDIX

I. Model Proofs

Proof of Lemma 1. If democracy prevails in period 1, then the citizens have to make the choice between letting it continue into period 2 or installing an autocrat. In the latter case, their expected utilities are: $U_{J2}(A_2 = 1/A_1 = 0) = \bar{u} - 0.25\Delta^2 - E_\lambda s(r^*(\lambda))$. And this option is favored whenever

$$U_{J2}(A_2 = 1/A_1 = 0) = \bar{u} - 0.25\Delta^2 - E_\lambda s(r^*(\lambda)) > U_{J2}(A_2 = 0) = \bar{u} - 0.5\Delta^2, \text{ or when}$$

$$(A1) \quad 0.25\Delta^2 > E_\lambda s(r^*(\lambda)).$$

In other words, autocracy is preferred when the policy-stability gain from centralized authority exceeds the expected resource loss from extraction. The lifetime utility level of each of the citizen groups is

$$(A2) \quad \sum_1^2 U_{Jt}(A_1 = 0) = \bar{u} - 0.5\Delta^2 + \text{Max} \{U_{J2}(A_2 = 1/A_1 = 0), U_{J2}(A_2 = 0/A_1 = 0)\}$$

Suppose, in contrast, that autocracy is in place in period 1. As shown above, the autocrat chooses the midpoint of the two groups' preferred policies. If his chosen repression level—which remains in force in period 2 if he stays in office—exceeds the policy benefit he provides, citizens remove him. Let $\bar{r}$ denote the repression level that makes citizens indifferent between removing the autocrat and retaining him in office. Let $\underline{\lambda}$ denote the type satisfying $r^*(\underline{\lambda}) = \bar{r}$. For $\lambda \leq \underline{\lambda}$, the autocrat chooses his unconstrained preferred repression $r^*(\lambda)$ and remains in office. For $\lambda > \underline{\lambda}$, he chooses between selecting $r^*(\lambda)$ and being removed before period 2, or moderating repression to $\bar{r}$ and remaining in office. Let $\bar{\lambda}$ denote the type that is indifferent between these alternatives:

$$(A3) \quad V_1 = u_{L1} + u_{R1} + \lambda s(r^*(\lambda)) - r^*(\lambda) = 2\bar{u} - 0.5\Delta^2 + \lambda s(r^*(\lambda)) - r^*(\lambda)$$

and

$$(A4) \quad V_1 + V_2 = u_{L1} + u_{R1} + \lambda s(\bar{r}) - \bar{r} + u_{L2} + u_{R2} + \lambda s(\bar{r}) - \bar{r} = 4\bar{u} - \Delta^2 + 2(\lambda s(\bar{r}) - \bar{r})$$

Equating these two utilities defines $\bar{\lambda}$:

$$(A5) \quad 2\bar{u} - 0.5\Delta^2 = \lambda s(r^*(\lambda)) - r^*(\lambda) - 2(\lambda s(\bar{r}) - \bar{r})$$

Differentiating the right-hand side of (A5) with respect to λ and applying the envelope theorem yields $s(r^*(\lambda)) - 2s(\bar{r})$. Because $r^*(\lambda)$ and $s(\cdot)$ are increasing, this derivative is increasing in λ . It is negative when $s(r^*(\lambda)) < 2s(\bar{r})$, zero at equality, and positive when $s(r^*(\lambda)) > 2s(\bar{r})$. At the lower cutoff, where $r^*(\underline{\lambda}) = \bar{r}$, the derivative equals $-s(\bar{r}) < 0$. Together with the maintained assumption that sufficiently high types prefer unconstrained repression, this establishes a unique upper cutoff $\bar{\lambda}$.

It follows that low types choose their unconstrained preferred repression and remain in office; intermediate types choose $\bar{r}$ and remain in office; and high types choose their unconstrained preferred repression and are removed. This proves Lemma 1. $\square$

Proof of Proposition 1. In period 2, continuation of democracy gives each group utility $\bar{u} - \frac{1}{2}\Delta^2$, whereas installing a new autocrat gives expected utility $\bar{u} - \frac{1}{4}\Delta^2 - E_\lambda s(r^*(\lambda))$. Democracy is therefore preferred whenever $\frac{\Delta^2}{4} \leq E_\lambda s(r^*(\lambda))$. Thus, democracy continues for sufficiently low polarization, while autocracy is selected for sufficiently high polarization. At $\Delta = 0$, initial democracy entails no policy loss or extraction, whereas initial autocracy entails positive expected extraction. By continuity, democracy is also preferred in period 1 for sufficiently small Δ , establishing part (i).

Now suppose that Δ is sufficiently high that democracy in period 1 would be followed by autocracy in period 2. Recall that $s(\bar{r}) = \Delta^2/4$. Comparing initial autocracy with democracy followed by autocracy, conditional on the autocrat's type, gives the following. For $\lambda < \underline{\lambda}$, the gain from initial autocracy is $\frac{\Delta^2}{4} - s(r^*(\lambda)) \geq 0$, since $r^*(\lambda) \leq \bar{r}$. For $\underline{\lambda} < \lambda < \bar{\lambda}$, the gain is $s(r^*(\lambda)) - \frac{\Delta^2}{4} > 0$, since $r^*(\lambda) > \bar{r}$. For $\lambda > \bar{\lambda}$, the two sequences yield the same lifetime utility: the autocrat extracts his preferred amount in one period and democracy prevails in the other. Initial autocracy therefore weakly dominates democracy followed by autocracy, and strictly dominates it whenever the first two type intervals have positive probability. Finally, by Lemma 1, the autocrat is removed and democracy restored when $\lambda > \bar{\lambda}$, which occurs with probability $1 - F(\bar{\lambda})$. This proves part (ii). $\square$

II. Extension: Institutional Quality and Political Contest

We now replace random policy selection under democracy with a costly political contest between the two groups. Thus, let x_J denote the resource effort of group J; we will assume that it is determined collectively by the group's members. To simplify, we will assume a unit marginal cost of effort. The probability of policy outcome p_J is $P(x_J, x_{-J}) = \frac{x_J^\varepsilon}{x_J^\varepsilon + x_{-J}^\varepsilon}$ where $0 < \varepsilon \leq 1$, the elasticity of “winning” the favored outcome, is interpreted as the opposite of institutional quality: the higher ε the larger is the payoff from wasteful intergroup struggle. We then have:

Proposition A. Lower institutional quality increases the relative attractiveness of autocracy by raising the costs of democratic conflict.

Proof. We rewrite the expected utility under democracy (skipping the period subscript for brevity):

$$(A6) \quad U_J(A_t = 0) = -x_J + \frac{x_J^\varepsilon}{x_J^\varepsilon + x_{-J}^\varepsilon} \cdot \bar{u} + \frac{x_{-J}^\varepsilon}{x_J^\varepsilon + x_{-J}^\varepsilon} [\bar{u} - \Delta^2] = -x_J + \bar{u} - \frac{x_{-J}^\varepsilon}{x_J^\varepsilon + x_{-J}^\varepsilon} \Delta^2$$

The first order conditions with respect to struggle efforts are:

$$(A7) \quad \frac{\partial U_J}{\partial x_J} = -1 + \frac{\varepsilon x_J^{\varepsilon-1} x_{-J}^\varepsilon}{(x_J^\varepsilon + x_{-J}^\varepsilon)^2} \Delta^2 = 0$$

At a symmetric equilibrium, $x_J = x_{-J} = x$, this becomes $-1 + \frac{\varepsilon \Delta^2}{4x} = 0$, and therefore $x_J = x_{-J} = \frac{\varepsilon \Delta^2}{4}$.

The resulting utility is $U_J(A_t = 0) = \bar{u} - \left(\frac{1}{2} + \frac{\varepsilon}{4}\right) \Delta^2$.

Since the payoff under autocracy is independent of ε , a higher ε lowers the relative payoff from democracy. Interpreting higher ε as weaker institutional constraints on political contest establishes the result. This extension is especially relevant to politically fragmented democracies in which weak institutions allow competing groups to devote substantial resources to influencing political outcomes. The interwar experiences of Germany and Italy provide prominent historical illustrations (Gentile, 2005; Lyttelton, 1987).

As a supplementary exercise, Table A1 examines the association between institutional quality and annual changes in the V-Dem Liberal Democracy Index. All specifications include country

and year fixed effects. Columns 1 and 2 enter polarization and institutional quality separately, each without the other, to show the unconditional association of each with democratic change; Column 3 enters both together with their interaction on the full sample, and Columns 4 and 5 repeat that joint specification separately for democratic and autocratic country-years.

Polarization is negatively associated with democratic change and institutional quality positively associated with it, whether entered alone or jointly. Stronger institutional quality is positively associated with democratic improvement in the full sample and in both regime subsamples. The interaction between polarization and institutional quality is small and statistically insignificant in the full and democratic samples, while it is negative and significant among autocracies.

These estimates should be interpreted as descriptive correlations. The exercise differs from the main analysis in both its unit of observation and its outcome, using country-years and changes in a continuous democracy index rather than regime spells and their termination. It therefore provides supplementary evidence on the broader relationship between institutional quality and democratic development rather than a direct test of Proposition A.

Table A1. Panel Fixed-Effects Models: Polarization, Institutions, and Annual Change in LDI

	Polarization	Institutions	Full Sample	Democracies	Autocracies
Polarization (Std.)	−0.0044***		−0.0019**	0.0027	−0.0065***
	(0.0007)		(0.0008)	(0.0057)	(0.0013)
Inst. Quality (Std.)		0.0097***	0.0090***	0.0141*	0.0092***
		(0.0008)	(0.0009)	(0.0083)	(0.0013)
Polarization x Inst. Quality			−0.0001	−0.0016	−0.0048***
			(0.0007)	(0.0038)	(0.0013)
Ln GDP per Capita (lag)	−0.0021**	−0.0027***	−0.0030***	−0.0106*	−0.0001
	(0.0009)	(0.0010)	(0.0010)	(0.0054)	(0.0009)
Ln Population	0.0026***	0.0017	0.0024**	−0.0024	−0.0024*
	(0.0010)	(0.0010)	(0.0011)	(0.0053)	(0.0014)

Regional Dem. Share	0.0007	−0.0047*	−0.0052*	−0.0202***	−0.0040
	(0.0024)	(0.0027)	(0.0026)	(0.0054)	(0.0040)
Cold War Dummy	0.0158***	0.0155***	0.0160***	0.0406***	0.0182***
	(0.0051)	(0.0052)	(0.0053)	(0.0130)	(0.0058)
Observations	14,932	14,124	13,919	4,566	9,353
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Dependent variable: annual change in V-Dem Liberal Democracy Index. Standard errors clustered by country. *p < 0.10, **p < 0.05, ***p < 0.01.					

III. Supplementary Empirical Results

Table A2 reports parametric accelerated failure-time models under three distributional assumptions, estimated at the spell level with all covariates measured in the year of spell entry and the full set of entry-period indicators. The autocracy coefficient is negative and strongly significant throughout: −1.048 in the Weibull model, −1.091 in the log-logistic model, and −1.005 in the log-normal model. Thus, once entry conditions and entry period are controlled, autocratic spells have substantially shorter predicted duration. The similarity of the estimates across the three distributions indicates that this result is not driven by the assumed functional form.

The complete-case sample contains 243 spells, compared with 420 in the principal Cox models. The difference is driven mainly by the availability of GDP per capita in the year of spell entry: this variable is missing for 216 of the 468 spells, chiefly among spells beginning in the early decades of the panel. Omitting GDP per capita while retaining the remaining entry covariates increases the sample to 433 spells. Because countries may contribute more than one spell, inference is based on a country-level cluster bootstrap.²

² The parametric models in Table A2 serve as distributional robustness checks; the three distributional families yield substantively identical coefficient estimates, confirming that the results are not driven by functional form.

Table A2. Parametric Survival Models: Regime Persistence Comparison

	Weibull	Log-Log	Log-Norm
Autocracy (1=Aut)	-1.048***	-1.091***	-1.005***
	(0.264)	(0.223)	(0.216)
Polarization at entry	-0.007	-0.088	-0.110
	(0.102)	(0.110)	(0.128)
ln(GDP per capita) at entry	0.256	0.214	0.176
	(0.164)	(0.138)	(0.133)
Fiscal capacity at entry	0.164	0.255**	0.275**
	(0.115)	(0.116)	(0.116)
Regional dem. share at entry	0.354	0.416	0.393
	(0.391)	(0.389)	(0.336)
Interwar entry	0.279	-0.112	-0.020
	(0.460)	(0.358)	(0.352)
Cold War entry	0.668*	0.482	0.398
	(0.385)	(0.334)	(0.323)
Post-Cold War entry	-0.298	-0.485**	-0.506*
	(0.347)	(0.233)	(0.281)
Spells	243	243	243
Countries	109	109	109
<i>Accelerated failure-time coefficients; positive values indicate longer predicted duration. Spell-level models with all covariates measured in the year of spell entry and the full set of entry-period indicators; prewar and wartime entry constitute the omitted category. Standard errors are obtained from a country-level cluster bootstrap. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.</i>			

Table A3. Parametric Robustness: Non-Monotonic Repression

	Weibull	Log-Log	Log-Norm
Repression at entry	0.446***	0.475***	0.484***
	(0.073)	(0.078)	(0.074)
Repression squared at entry	-0.143***	-0.152***	-0.150***
	(0.048)	(0.038)	(0.042)
Regional dem. share at entry	-1.615***	-1.968***	-1.909***
	(0.456)	(0.429)	(0.395)
Interwar entry	-0.215	-0.451	-0.408
	(0.407)	(0.364)	(0.336)
Cold War entry	-1.068***	-1.296***	-1.301***
	(0.274)	(0.291)	(0.286)
Post-Cold War entry	-0.745*	-0.837**	-0.810**
	(0.401)	(0.326)	(0.329)
Spells	277	277	277
Countries	179	179	179
Accelerated failure time coefficients; autocratic spells only, covariates measured at spell entry with the full set of entry-period indicators. A positive linear and negative squared coefficient indicate the non-monotonic pattern. Standard errors from a country-level cluster bootstrap with 200 replications. *p < 0.10, **p < 0.05, ***p < 0.01.			

Table A4 collects the duration-robustness exercises discussed in Section 4.1. The first panel re-estimates the persistence comparison after dropping the 120 spells already under way in 1900, which are left-censored because their true start dates precede the panel. The second reports specifications that relax proportional hazards for the autocracy indicator.

Table A4. Left-Censoring and Proportional-Hazards Robustness

Specification	Autocracy HR	Spells	Events or Notes
Baseline: bivariate, all spells	0.809* (0.098)	468	285 exits
Baseline: covariates and periods, all spells	2.211*** (0.404)	420	250 exits
Excluding 1900-origin spells: bivariate	1.366** (0.175)	348	204 exits
Excluding 1900-origin spells: covariates	1.770*** (0.301)	308	177 exits
Excluding 1900-origin spells: covariates and periods	1.729*** (0.290)	308	177 exits
Autocracy $\times$ log(duration)	2.505*** (0.838)	420	interaction 0.939 (0.141)
Piecewise Cox: 1–10 years	2.200*** (0.459)		51 democratic / 67 autocratic exits
Piecewise Cox: 11–25 years	2.071 (1.229)		25 democratic / 21 autocratic exits
Schoenfeld test, autocracy indicator	$\rho = 0.054$		$\chi^2(1) = 0.73, p = 0.393$
Hazard ratios with standard errors in parentheses, clustered by country. The 1900-origin exclusion drops 120 spells (115 autocratic, 5 democratic). Piecewise models estimate the autocracy coefficient separately within duration bands. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.			

Table A5 lists the source series, provenance, scale and timing of every variable used in the analysis, together with panel summary statistics.

Table A5. Variable Definitions, Sources and Summary Statistics

Variable	Source Series	Provenance	Scale and Timing	N	Mean (SD)
Autocracy indicator	v2x_regime	V-Dem v15	1 if Regimes of the World < 2; constant within spell	19,581	0.59 (0.49)
Political polarization	v2cacamps	V-Dem v15	IRT scale, approx. -3 to 3; lagged 1 year	19,099	-0.18 (1.38)
Repression	v2csreprss, sign-reversed	V-Dem v15	IRT scale; higher = more repression; lagged 1 year	19,581	-0.11 (1.51)
Fiscal capacity	v2stfisccap	V-Dem v15	IRT scale; lagged 1 year	18,283	0.47 (1.39)
Ln GDP per capita	e_gdppc	Fariss et al. latent estimate	natural log; lagged 1 year	15,478	2.23 (1.12)
Ln population	e_pop	Fariss et al. latent estimate	natural log; lagged 1 year	15,494	6.43 (1.71)
Regional democracy share	e_regiongeo (19 regions)	V-Dem v15	share of other countries in region that are democracies; lagged 1 year	19,572	0.26 (0.34)
Institutional quality	mean of v2x_jucon and v2xlg_legcon	V-Dem v15	0-1 each, averaged then standardized; lagged 1 year	16,815	0.50 (0.28)
Liberal Democracy Index	v2x_libdem	V-Dem v15	0-1; contemporaneous (outcome)	19,355	0.25 (0.25)
Summary statistics computed over the full country-year panel, 1900–2024. Polarization, repression, fiscal capacity and institutional quality are standardized over the whole panel where used in standardized form. All duration-model covariates enter lagged one year.					

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