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ABSTRACT

Studies of income and regime type typically contrast democracies and autocracies, ignoring heterogeneity in the character of authoritarian regimes. We focus on the consequences of personalist rule, where power is concentrated in an individual or small elite. Extending the dynamic panel strategy of Acemoglu, Naidu, Restrepo, and Robinson (2019), we estimate the differential growth performance of democracies, institutionalized autocracies, and personalist autocracies. Across eight GDP series, eight autocracy codings, and six measures of personalism, we observe a consistent pattern: Whenever an "autocratic penalty" emerges, it is concentrated in personalist regimes. The growth performance of institutionalized dictatorships, in contrast, is statistically indistinguishable from that of democracies. We document evidence that the "personalist penalty" is driven by some combination of low private investment, poor public-goods provision, and conflict. These findings emphasize the analytic payoff of unpacking autocracy and highlight the different incentives facing leaders with narrow and broad bases of power.

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1 Introduction

How do political institutions shape policy choices and economic performance? For decades, the literature has focused on comparing income growth in democracies and autocracies.[1] The challenge with such comparisons is that nondemocratic institutions are far more diverse than democratic ones. There are vast differences, for example, in the nature of authoritarian rule in such institutionalized autocracies as Mexico under the Institutional Revolutionary Party (PRI) or Singapore under the People's Action Party (PAP), versus the personalist dictatorships of Mobutu Sese Seko (Zaire) or Saddam Hussein (Iraq). With a few early exceptions, discussed below, studies of economic growth have ignored this heterogeneity.

This paper focuses on the growth consequences of personalist rule, where power is concentrated in an individual ruler or small elite. The question is of more than academic interest. Depending on the measure, a few dozen autocratic regimes are currently personalist dictatorships. In recent years, two of the world's most powerful autocrats—Vladimir Putin of Russia and Xi Jinping of China—have systematically removed institutional checks and balances to rule by personal influence and decree.[2] The economic effects of such power consolidation are of critical concern for global stability and development.

There are numerous reasons to expect personalist autocracies to underperform institutionalized regimes. Public goods provision may be worse and incentives for private investment weaker when power is concentrated in a narrow elite or single individual. Conflict may also be more likely under personalist rule. Personalist dictators may make decisions with limited information and be surrounded by incompetent subordinates. For all these reasons, institutional variation within nondemocratic regimes could matter as much or more than the

[1] Generally speaking, early contributions failed to find a robust difference in growth rates between the two, and sometimes found a weak adverse effect of democracy (Barro, 1996; Przeworski and Limongi, 1993; Gerring et al., 2005). However, more recent work using panel-data methods has concluded that democratic transitions are associated with accelerations in growth, whereas authoritarian reversals hinder development (Rodrik and Wacziarg, 2005; Persson and Tabellini, 2006; Papaioannou and Siourounis, 2008; Acemoglu et al., 2019). We return to this foundational question below, using various measures of democracy and autocracy.

[2] Postcommunist Russia's autocracy has never been as institutionalized as China's, but the direction of change is the same.

autocracy–democracy distinction for economic growth.

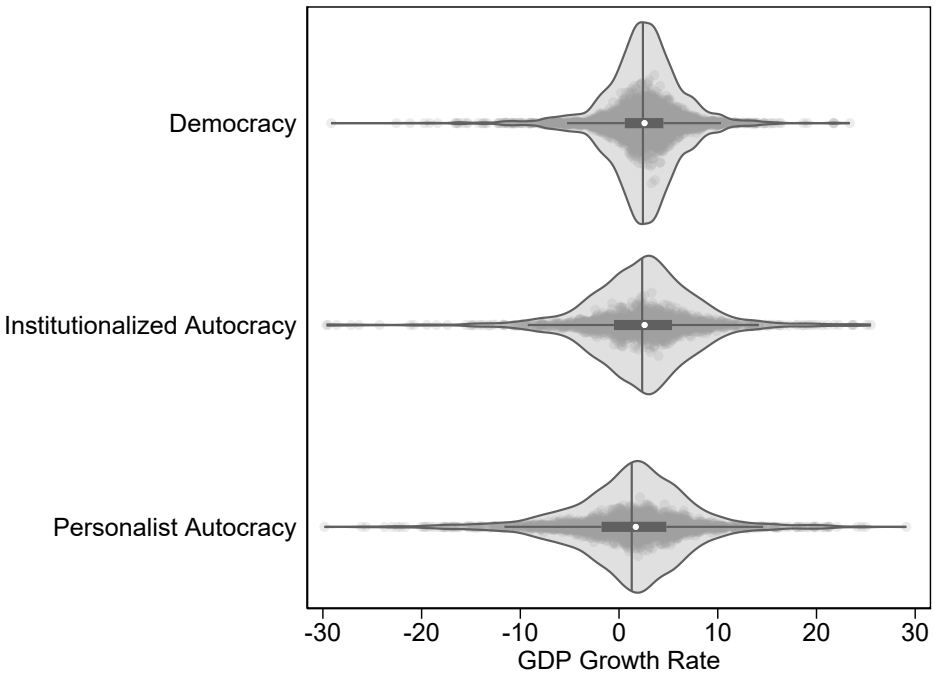
To illustrate, Figure 1 plots annual growth rates from 1961 to 2010 in 176 countries by regime type, using a democracy/autocracy indicator by Cheibub, Gandhi and Vreeland (2010) and a measure of power concentration within autocracies by Gandhi and Sumner (2020).[3] Both types of autocracy exhibit substantially higher variance than democracies, but personalist autocracies stand out for their lower average growth performance: 2.4 percent for democracies, 2.31 percent for institutionalized autocracies, and 1.37 percent for personalist autocracies. Although this difference may seem subtle against the huge spread of growth rates, it is substantial—compounded over fifty years, a one-percentage-point increase in the growth rate corresponds to 64 percent higher income.

The central question is whether this "personalist penalty" holds in a well-specified model and, if so, whether it reflects a causal relationship. When it comes to estimating the effect of institutional arrangements on country development, there is no perfect strategy, but recent work provides a path forward. For a panel of countries from 1960 to 2010, we regress log income per capita on indicators for autocracy and personalist autocracy, as well as country and year fixed effects. As in Acemoglu et al. (2019), we also include lags of the dependent variable sufficiently rich to account for the tendency of political transitions to accompany economic downturns. The coefficients in this dynamic two-way fixed effects (TWFE) model have a simple interpretation: the conditional mean difference in growth rates between regime types, adjusting for pre-transition income dynamics. Under the additional assumption of sequential exogeneity—the standard assumption in dynamic panel models, the plausibility of which depends on getting the lag structure right—these estimates are interpretable as the causal effect of a transition from one regime type to another.

Using this empirical strategy, we examine numerous indicators of regime type and various changes in specification and sample. The results broadly mirror the pattern in Figure 1. Across most measures, authoritarian regimes have lower average GDP growth than democra-

[3]Classifications of regime type differ along various dimensions, with advantages and disadvantages to each. In what follows, we explore numerous indicators of autocracy and personalism.

Figure 1: Mean and distribution of growth rates by regime type



Notes: The vertical line represents the median and the white dot the mean. The horizontal bar spans the 25th to 75th percentiles, and the horizontal line the 5th to 95th percentiles. This figure uses annual GDP growth rates from the April 2012 vintage of the World Development Indicators (WDI). We classify regime types using the measures of autocracy and power consolidation by Cheibub, Gandhi and Vreeland (2010) and Gandhi and Sumner (2020), respectively.

cies; where such differences arise, they are generally isolated to personalist regimes. There is no robust difference in growth rates between democracies and institutionalized autocracies. Put succinctly, if one believes in the autocratic growth penalty, one should also believe that it is concentrated in regimes where power is held by a single individual or small elite.

To understand the sources of any personalist growth penalty, we explore a range of intermediate political and economic outcomes. Consistent with the conceptual framework that we present below, we find that personalist regimes are characterized by lower total factor productivity and some combination of low private investment, poor public-goods provision, and conflict, broadly defined. In contrast, we observe no robust difference in the incidence of inflation crises, economic openness, or economic reform.

We are not the first to note that some autocracies are high-performing (Easterly, 2011;

Luo and Przeworski, 2019). Indeed, some of history's most famous episodes of development happened under nondemocratic regimes—from Britain's industrial revolution to the "miracle" decades of growth in China, Singapore, and Thailand (Besley and Kudamatsu, 2007). What examples like these share is some institutionalization of power, whether through a regime party, a corporate military structure, or legislative checks on monarchical rule.

Our analysis also builds on long-running efforts to unpack regime characteristics in nondemocracies (e.g., Geddes, 1999; Hadenius and Teorell, 2007; Gandhi, 2008; Goemans, Gleditsch and Chiozza, 2009; Cheibub, Gandhi and Vreeland, 2010; Svolik, 2012; Geddes, Wright and Frantz, 2018). Much of the empirical work in this literature has focused on the effects of personalism on political repression, conflict, and collapse (e.g., Choi, 2010; Weeks, 2012; Chin, Song and Wright, 2023; Frantz et al., 2020). Gandhi (2008) and Wright (2008) do examine differential growth rates in autocracies with more and less institutionalization, while Wright (2008) and Gehlbach and Keefer (2012) do the same for domestic investment, but since that early work there has been surprisingly little research on how the concentration of power in autocracies shapes growth and development. That is the question we take up in this research note.

2 Conceptual framework

Many theories link political institutions to economic performance. To organize these, consider the classic augmented production function (Mankiw, Romer and Weil, 1992):

$$Y = K^{\alpha} H^{\beta} (AL)^{1-\alpha-\beta}.$$

Understood from this perspective, the concentration of political power and strength of formal institutions in autocratic regimes may affect growth through one or more of the four inputs into production: physical capital (K), human capital (H), technology (A), and labor (L).

A familiar argument is that dictators with a narrow base of power may prioritize targeted transfers over public goods (Bueno de Mesquita et al., 2003; Besley and Kudamatsu, 2007).

To the extent this is the case, economic growth can suffer from underinvestment in human capital and technology, broadly defined.

Highly concentrated political power may also discourage private investment in physical capital. Gehlbach and Keefer (2011, 2012) argue that competitively elected legislatures and institutionalized ruling parties deter autocrats from expropriating politically connected elites. Such checks and balances can also encourage policy stability (Gandhi, 2008)—another prerequisite for private investment. These constraints are weak or absent in personalist regimes, where parties or legislatures are enfeebled, functioning primarily to reward and punish elites, or are absent entirely (Wright, 2008). Personalist regimes may also face shorter time horizons (e.g., Svolik, 2012; Geddes, Wright and Frantz, 2018), which can encourage expropriation of private capital (Olson, 1993).

Personalist rulers may also be more likely to provoke civil unrest and war. When it comes to waging war on other states, unconstrained autocrats arguably internalize fewer of the costs of conflict, and they potentially reap more of the benefits.[4] Internally, personalist regimes could also struggle to maintain stability. The absence or impotence of formal institutions in autocracies, for example, can complicate efforts to co-opt rivals before open conflict emerges (Gandhi and Przeworski, 2006; Svolik, 2012). Personalist dictators may also struggle to commit to rewarding those who protect them in times of crisis (Myerson, 2008).

To the extent that personalist regimes are more prone to conflict, this would further discourage growth. Wars destroy physical capital and reduce labor and human capital through disruptions of schooling, casualties, conscription, and emigration (Blattman and Miguel, 2010). Although these factors of production can reaccumulate over time, the impact on national income tends to be large and persist for at least a decade (Mueller, 2012). Such effects may be most pronounced when accompanied by a deterioration in institutional quality—say,

[4]See Bueno de Mesquita et al. (2003), Jackson and Morelli (2007), and Blattman (2022) for the theoretical case and Weeks (2012) for evidence. A parallel literature examines the personalism and stability of regimes that come to power through revolution and rebellion, arguing variously that revolutionary regimes are more personalized (Colgan and Weeks, 2015), more institutionalized and stable (Levitsky and Way, 2022; Meng and Paine, 2022; Clarke, 2023), or either, depending on the nature of the revolutionary coalition (Geddes, Wright and Frantz, 2018; Clarke, Meng and Paine, 2025).

a reduction in constraints on executive behavior (Cerra and Saxena, 2008).

Finally, personalist autocrats may simply make worse policy decisions than their institutionalized counterparts—pursuing ill-conceived investment projects, for example, or invading a neighbor based on poor understanding of likely resistance. Wintrobe (1998) suggests the presence of a "dictator's dilemma," in which self-censorship for fear of reprisal deprives the autocrat of information needed for his survival (see also Gehlbach et al., 2025). Although personalist dictatorships are not necessarily more repressive than institutionalized autocracies, any tendency to tell the ruler what he wants to hear can be aggravated when the ruler makes decisions alone or in a small group. A related idea is that personalist autocrats may be more likely to surround themselves with loyal rather than competent subordinates (Egorov and Sonin, 2009; Zakharov, 2016; Egorov and Sonin, 2023). "Monocratic" rulers may also be more susceptible to influence from special interests (Gehlbach and Malesky, 2010), and they may be less flexible in their decision making than actors in more "polycentric" systems (Vincent Ostrom, 1997; Elinor Ostrom, 2010).

3 Empirical strategy

Estimation

To examine the heterogeneous effect of autocracy on economic growth, we estimate the following dynamic two-way fixed effects (TWFE) model on a cross-country panel of autocracies and democracies:

$$y_{ct} = \beta_A A_{ct} + \beta_P P_{ct} + \sum_{j=1}^{J} \gamma_j y_{ct-j} + \alpha_c + \delta_t + \epsilon_{ct}. \tag{1}$$

Following Acemoglu et al. (2019), our dependent variable, y_{ct}, is log GDP per capita in constant 2000 U.S. dollars for country c in year t from the April 2012 vintage of the World Bank's World Development Indicators (WDI).[5] We introduce two measures of regime type: A_{ct} is an indicator for autocracy, whereas P_{ct} is an indicator for personalist autocracy. The latter variable is nested in the former, so the coefficient on A_{ct} measures the average difference

[5]We explore robustness to other data series below.

in log GDP between democracies and institutionalized autocracies, whereas the coefficient on P_{ct} captures the growth penalty (or bonus) of personalism relative to institutionalized autocracy. The variables α_c and δ_t are country and year fixed effects, respectively, while ϵ_{ct} is an idiosyncratic error term. The J lags of the dependent variable control for pre-transition income dynamics. Throughout, we report heteroskedasticity-robust standard errors that correct for arbitrary correlation at the country level.

The TWFE approach is conventional in the literature on growth performance and regime type. Equation 1, which includes lags of the dependent variable, follows Acemoglu et al. (2019), who estimate the effect of democracy (D_{ct}) on growth. Our estimate of the "autocratic penalty," which we establish as a baseline, is identical to their specification, but with $A_{ct} = 1 - D_{ct}$:

$$y_{ct} = \beta A_{ct} + \sum_{j=1}^{J} \gamma_j y_{ct-j} + \alpha_c + \delta_t + \epsilon_{ct}. \tag{2}$$

Dichotomization

As in nearly all work on regime type and economic growth, we use a binary measure of autocracy (democracy). Extending this specification to include an indicator for personalist autocracy, as in Equation 1, relaxes the assumption of a homogeneous effect of autocracy by partitioning authoritarian regimes into their institutionalized and personalist varieties.

A potential cost to this dichotomization is that it discards theoretically and empirically relevant information. The institution or personalization of power can be a gradual process that is not captured by a knife-edge threshold. These thresholds, moreover, likely vary from variable to variable, given that the underlying measures from which we construct most of our indicators for personalism have no natural scaling. Nonetheless, there are advantages to this approach.

First, at a conceptual level, it is natural to assume that regimes come in types (Cheibub, Gandhi and Vreeland, 2010), with institutionalized autocracies (for which $A_{ct} = 1$ and $P_{ct} = 0$) and personalist autocracies ($A_{ct} = P_{ct} = 1$) constituting two distinct categories.

Second, at a minimum, the coefficients β_A and β_P have a clear descriptive interpretation: the conditional mean difference in log income per capita between regime types, adjusting for pre-transition income dynamics. This simplifies interpretation and facilitates comparison to canonical papers. Third, and related, the specification of binary treatments aligns our work with existing panel methods and associated identification assumptions.

Identification

Causal claims from cross-country panel regressions must obviously be treated with caution. As in Acemoglu et al. (2019), the key assumption is sequential exogeneity:

$$\mathbb{E}\left[\epsilon_{ct} \mid A_{ct} \ldots, A_{c1}, P_{ct} \ldots, P_{c1}, y_{ct-1}, \ldots, y_{c1}, \alpha_c, \delta_t, \ldots, \delta_1\right] = 0, \ \forall t \geq 1. \tag{3}$$

This assumption, which is weaker than strict exogeneity, says that shocks to income are uncorrelated with past and present values of the right-hand-side variables, including regime type and lags of the dependent variable. The plausibility of this assumption relies on having the "correct" lag structure, such that the dynamics of GDP per capita are fully specified. As discussed below, we find that the lag structure identified by Acemoglu et al. (2019) is the same when including an indicator for personalist autocracy.

Beyond sequential exogeneity, identification relies on stationarity; following Acemoglu et al. (2019), we report p-values from a Levin-Lin-Chu test for unit roots. In principle, the presence of lagged outcomes in a model with unit fixed effects generates "Nickell bias," though as our panel is fifty years long, this is likely to be minimal. Finally, we bracket the issue of "inappropriate comparisons" in staggered difference-in-differences designs, where the literature has yet to catch up to multiple binary treatments (here, autocracy and personalist autocracy).[6]

[6]For a reanalysis of the single binary treatment in Acemoglu et al. (2019) that addresses this concern, see Imai, Kim and Wang (2023).

Table 1: Income differences between autocratic and democratic regimes

	Outcome: Log GDP per capita							
	(1) CGV	(2) GWF	(3) FH	(4) Polity	(5) ANRR	(6) BMR	(7) PS	(8) V-Dem
Autocracy	−0.609**	0.059	−0.604***	0.095	−0.796***	−0.512**	−0.727**	−0.124
	(0.271)	(0.267)	(0.228)	(0.228)	(0.225)	(0.252)	(0.315)	(0.241)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5869	5117	5481	5539	6385	6299	5121	5984
Countries	175	142	177	157	177	177	168	164
Country & year FE	✓	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Using eight different indicators for autocracy, the regressions in this table estimate income differences using the dynamic panel model in Equation 2, adjusting for income dynamics and conditioning on common shocks and time-invariant country characteristics. In parentheses, heteroskedasticity-robust standard errors that correct for arbitrary correlation at the country level. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

4 The autocratic penalty

Although our focus is on personalism, for transparency we first re-estimate the autocratic penalty using eight common measures. Data on autocracy and personalism are generally available from 1960 to 2010 in up to 179 countries. We focus on this period, using dichotomoized measures of regime type from Cheibub, Gandhi and Vreeland (2010) [CGV]; Geddes, Wright and Frantz (2014) [GWF]; Freedom House (2023) [FH]; Polity (Marshall and Gurr, 2020); Acemoglu et al. (2019) [ANRR]; Boix, Miller and Rosato (2013) [BMR]; Papaioannou and Siourounis (2008) [PS]; and V-Dem (Coppedge et al., 2024, where we use the `v2x_polyarchy` variable).[7]

Table 1 reports results from the dynamic panel model of Equation 2, adjusting for income dynamics and conditioning on common shocks and time-invariant country characteristics.[8] (Here and below, we multiply the estimated coefficients on the regime indicators by 100 to simplify presentation.) For five of the eight measures of regime type, the point estimate on autocracy is statistically significant and substantively meaningful, ranging from a decline in GDP in the first year of transition of one-half of a percent (BMR) to eight-tenths of a

[7] We include summary statistics for these and other variables in Table A1. We lead all GWF measures by one period to reflect the coding of those variables as of January 1, versus December 31 for other measures, where that is explicit.

[8] As in Acemoglu et al. (2019), we find that including four lags of income is sufficient to control for income dynamics. Results are qualitatively similar if we use eight rather than four lags (Table A2).

percent (ANRR).

Although the general pattern is similar to that documented in other work, the autocratic penalty varies across indicators of regime type.[9] There are many sources of difference. The two most important are sample coverage and coding rules.

First, with respect to sample, in addition to omitting small countries, GWF and Polity have a substantial number of coding gaps in large countries that cannot be accounted for by political transitions or stability.[10] These sample differences explain some of the variation across measures. If we restrict the sample for other datasets to that of smaller ones, such as GWF or Polity, the size and significance of the autocratic penalty both decline (Table A3). Likewise, extending the Polity and GWF samples by imputing missing values from CGV restores the autocratic penalty, although statistical insignificance remains (Table A4).

Second, coding practices differ, with correlations between measures varying from 0.73 to 0.92 (Table 2). The main differences arise in how democracy is defined and in how it is coded. For example, following Przeworski et al. (2000), CGV and BMR employ a minimalist and arguably objective coding rule: democracies have popular, multiparty elections for the legislature and chief executive (or, as in parliamentary regimes, the chief executive is elected by such legislature).[11] Conversely, Polity, Freedom House, GWF, and V-Dem aggregate up to regime type from multiple component measures, drawing on the judgment of internal or external experts.[12] ANRR and PS, in turn, combine Polity and Freedom House to reduce measurement error, with ANRR also using CGV and BMR to fill in missing values. There

[9]For these various measures, the point estimates are similar to those reported in Appendix Table A6 of Acemoglu et al. (2019), with the exception of CGV, where we use the updated dataset provided by Gandhi and Sumner (2020). In particular, the estimate for ANRR differs slightly from that in Acemoglu et al. (2019) due to the apparent omission in the latter of GDP data for the United Arab Emirates (1975–2010) and Serbia & Montenegro (1990–2010). Acemoglu et al. (2019) do not examine GWF or V-Dem.

[10]For example, of the 726 country-year observations missing in Polity but present in CGV and our GDP data, there are eleven additional transitions between democracy and autocracy (versus 95 in the Polity sample). Three of these transitions are in nations with 2023 population under one million (a cutoff for both GWF and Polity but not other datasets). The other eight reflect significant events in larger countries. Only five percent of Polity's missing observations, and three of the transitions, are accounted for by civil war.

[11]CGV also require prior alternation in power under current electoral rules. BMR drop this alternation rule and code "autocoups"—when a democratic leader dismantles electoral institutions—as autocratic transitions.

[12]Whether to refer to various measures as "objective" or "subjective" is itself the subject of some debate. See, e.g., Little and Meng (2024) and Knutsen et al. (2024).

Table 2: Correlations among autocracy measures

	CGV	GWF	FH	Polity	ANRR	BMR	PS	V-Dem
CGV	1.000							
GWF	0.923	1.000						
FH	0.745	0.730	1.000					
Polity	0.801	0.868	0.765	1.000				
ANRR	0.864	0.873	0.725	0.847	1.000			
BMR	0.900	0.896	0.771	0.864	0.887	1.000		
PS	0.815	0.840	0.785	0.830	0.902	0.839	1.000	
V-Dem	0.798	0.817	0.801	0.833	0.800	0.842	0.846	1.000

Note: The correlations in this table reflect pairwise deletion of missing observations.

is no obvious relationship between coding approach and the autocratic penalty. As Table 1 shows, we observe lower autocratic growth among measures that are narrow and broad, comparatively subjective and objective (though of the four more subjective measures, only FH has a substantively large and statistically significant effect).

Of course, many political systems combine elements of autocracy and democracy. Opposition parties and semi-competitive elections are characteristic features of many authoritarian regimes, as is some semblance of media freedom. Table 1 codes these "hybrid" regimes as autocratic, using conventional cutoffs between democracy and nondemocracy for polychotomous and continuous measures of regime type (FH, Polity, and V-Dem). Depending on the measure, this is a meaningful coding decision, as the autocratic penalty loses magnitude and significance if hybrid regimes are excluded (Appendix Table A5).[13]

Ultimately, rather than trying to identify the "correct" threshold to distinguish between autocracy or democracy, we find it more productive to classify regimes based on specific traits, such as personal rule, and to ask whether any growth penalty is concentrated within one type of autocracy or another.

[13]ANRR classify an observation as democratic if it has a positive Polity score and FH rates it as Free or Partly Free, but when examining FH alone they use the definition we employ in Table 1 (see their Appendix Table A6 and replication data).

5 A personalist penalty?

Measurement

Personalist rule is characterized by the consolidation of power and decision making in a small group of elite decision makers, often organized around a single person. Definitionally, personalist autocracies are not institutionalized. Moreover, personalism is not synonymous with being more autocratic. Some "hard" autocracies are relatively institutionalized, such as the post-Stalin USSR or China after Mao. Conversely, some "mixed" regimes have highly concentrated rule, including Turkey under Tayyip Erdoğan (especially after the failed coup of 2016) and Venezuela under Hugo Chávez and Nicolás Maduro.

To compare growth performance under personalist and institutionalized autocracies, we draw on a range of potential proxy measures, which we convert to dichotomous indicators. Some of these measures explicitly capture the concentration of power in authoritarian regimes; by construction, they are nested in one of the autocracy indicators used in Table 1.

- Gandhi and Sumner (2020) provide a measure of **Power Consolidation** for the autocratic observations in CGV, which they update. This variable, which is time-varying within leaders, exploits observable variation in control over political office and freedom from military and party constraints.[14] The Bayesian item response theory (IRT) model on which the measure is based smooths observations within leaders. We dichotomize this variable at zero, the median of the diffuse prior.
- Geddes, Wright and Frantz (2014) classify regimes (not leaders) as personalist, military, dominant-party, or monarchic. We create the indicator **Categorical Personalism**, which equals one if a regime is coded as personalist or "hybrid" personalist (military-personal, party-personal, or party-personal-military).
- Geddes, Wright and Frantz (2018), in turn, develop a within-leader measure of **La-**

[14]Examples of the former include the number of positions held by the ruler and whether any immediate family members hold political office, whereas examples of the latter include the presence and origin of parties associated with the ruler.

tent Personalism from an IRT model that uses proxies for the ruler's connection to security forces, the relationship to the ruling party, and the role of the military.[15] We dichotomize this measure at the sample median.

Other measures are not specific to autocracies but are nonetheless plausible proxies for the concentration of power in authoritarian regimes.

- Polity's measure of **Executive Constraints** (`xconst`) reflects institutionalized constraints on the power of the chief executive by various "accountability groups," the identity of which depends on the nature of the regime.
- V-Dem's measure of **Presidentialism** (`v2xnp_pres`) captures the concentration of political power in members of the executive, with an emphasis on legal constraints.[16]
- Henisz's (2000) measure of **Veto Players** (`POLCONV`) counts the branches of government with veto power over policy change, taking into consideration the alignment of preferences across and within branches.

Again, we construct indicators of personalism by dichotomizing the underlying variables.[17]

These measures are much less correlated with each other than are the autocracy indicators. Restricting the sample to autocracies alone, pairwise correlations range from 0.12 to 0.46, with most correlations around 0.2 (Table 3).[18] Figure 2 illustrates the similarities and differences across indicators for eight illustrative countries. There is broad agreement

[15]Relative to GS Power Consolidation, there is more emphasis on coercive power, which receives less attention in the literature but may be consequential for economic growth. Unlike GS Power Consolidation, GWF Latent Personalism does not allow for smoothing within leader episodes.

[16]V-Dem's Presidentialism index is constructed from expert-coded indicators of executive respect for the constitution, non-legislative (e.g., comptroller general, general prosecutor, or ombudsman) oversight of the executive, legislative financial independence and demonstrated ability to investigate the executive, higher and lower court independence, compliance with high-court and other judicial decisions, and autonomy of electoral management.

[17]For Executive Constraints, we follow the Polity codebook (Marshall and Gurr, 2020, p. 62), which states, "Personalist dictatorships are typically coded" `xconst` = 1, though our results are similar (i.e., small and insignificant) if we also code `xconst` = 2 as personalist. We dichotomize Presidentialism and Veto Players at the sample median of `v2xnp_pres` and `POLCONV`, respectively; the latter indicator partitions the sample between the 75 percent of autocratic observations for which `POLCONV` is equal to zero and the 25 percent for which it is not.

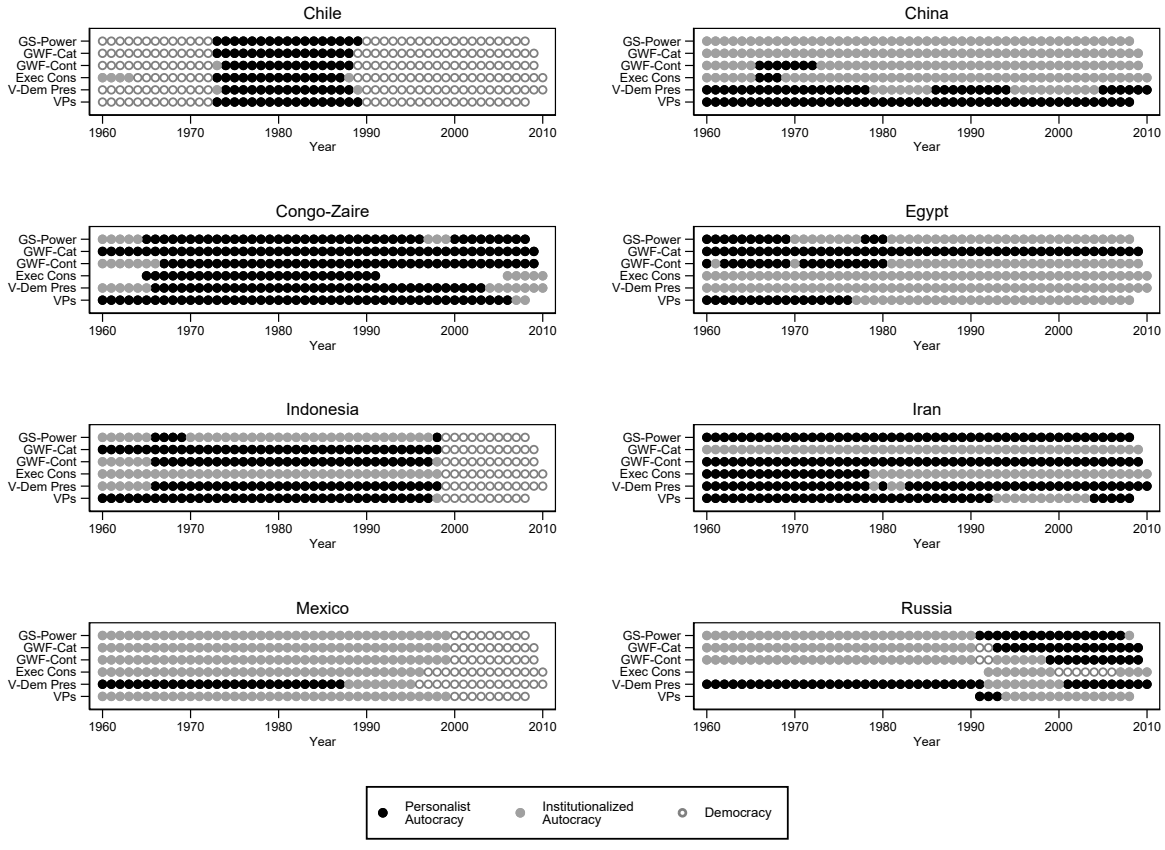
[18]Even in the aggregate, as Table A6 shows, the measures differ substantially in transition rates between regime types.

Table 3: Correlations among personalism measures

	GS Power Consolidation	GWF Categorical Personalism	GWF Latent Personalism	Polity Executive Constraints	V-Dem Presidentialism	Veto Players
GS Power Consolidation	1.000					
GWF Categorical Personalism	0.253	1.000				
GWF Latent Personalism	0.125	0.432	1.000			
Polity Executive Constraints	0.205	0.190	0.124	1.000		
V-Dem Presidentialism	0.118	0.212	0.226	0.144	1.000	
Veto Players	0.246	0.258	0.166	0.464	0.197	1.000

Note: The correlations in this table reflect pairwise deletion of missing observations on the sample of autocracies.

Figure 2: Alternative personalism codings in eight illustrative countries



that Augusto Pinochet's Chile was a personalist dictatorship, for example, although the six measures differ slightly in the timing of entry to and exit from that state. In contrast, the period of Mao's rule is inconsistently coded as personalist or institutionalized, and there is disagreement (even comparing the two GWF measures) as to the nature of autocratic rule in Iran under both the Shah and the ayatollahs. There are also different patterns of missingness: Polity assigns no values for Congo–Zaire in the years immediately following independence in 1960 and for the period of state collapse and war during the 1990s and early 2000s, while neither Polity nor Veto Players code Russia during the Soviet period.[19]

Results

The regressions in Table 4 estimate Equation 1, which includes indicators for both autocracy and personalist autocracy; the latter variable is nested in the former.[20] In no case is the coefficient on autocracy significantly different from zero. We cannot reject the claim, in other words, that institutionalized autocracies and democracies have similar growth performance. Personalist autocracies, in contrast, significantly underperform democracies in some specifications—and when that is the case, they also underperform institutionalized autocracies. Put simply, to the extent that there is an autocratic growth penalty, it is concentrated in personalist regimes.

[19]Data for CGV/GS extend through 2008. Further, as discussed above, we lead all GWF measures by one period, which shrinks the panel for those variables by a year. Appendix Figures A1–A8 plot the underlying continuous measures and leader transitions for the same six countries.

[20]We pair veto players with CGV, as Henisz (2000) provides no additional measure of regime type.

Table 4: Income differences between personalist and institutionalized autocracies

	Outcome: Log GDP per capita						
	(1) CGV	(2) ANRR	(3) GWF	(4) GWF	(5) Polity	(6) V-Dem	(7) CGV
Autocracy	0.031	−0.050	0.394	0.004	0.082	−0.202	−0.037
	(0.345)	(0.340)	(0.337)	(0.326)	(0.242)	(0.274)	(0.319)
GS Power Consolidation	−0.993***	−1.102***					
	(0.341)	(0.377)					
GWF Categorical Personalism			−0.638				
			(0.436)				
GWF Latent Personalism				0.120			
				(0.338)			
Polity-Executive Constraints					0.062		
					(0.275)		
V-Dem Presidentialism						0.231	
						(0.392)	
Veto Players							−0.859***
							(0.314)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	5869	6073	5117	5117	5539	5984	5712
Countries	175	175	142	142	157	164	172
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Notes: Using six different indicators for personalist autocracy, each paired with one or more indicators of autocracy, the regressions in this table estimate income differences using the dynamic panel model in Equation 1, adjusting for income dynamics and conditioning on common shocks and time-invariant country characteristics. Indicators for personalist autocracy, ordered such that higher values imply fewer constraints, are nested in indicators for autocracy. In parentheses, heteroskedasticity-robust standard errors that correct for arbitrary correlation at the country level. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

We first consider the three indicators of personalism expressly created to measure institutional variation in autocracies: GS Power Consolidation (paired with CGV or ANRR), GWF Categorical Personalism, and GWF Latent Personalism. For the first two indicators (Columns 1–3), the estimated income difference between personalist and non-personalist autocracies is negative, with a point estimate that is substantively meaningful, but larger and statistically significant for GS Power Consolidation. Examining the linear combination of autocracy and personalism at the base of the table, only when GS Power Consolidation is paired with CGV or ANRR is income in personalist dictatorships significantly lower than in democracies. In these specifications, a transition from democracy to personalist autocracy is associated with a decline in GDP of close to one percentage point in the first year of transition.

In Columns 5 to 7, we examine the three indicators not specific to autocracies. We find inconsistent results: a small and insignificant effect of Polity Executive Constraints, a somewhat larger but still insignificant effect of V-Dem Presidentialism, and a negative and significant effect of Veto Players (paired with CGV, as Henisz [2000] does not provide any additional measure of regime type). Again, the difference between personalist and institutionalized autocracies is significant if and only if the difference between personalist autocracies and democracies is—here, when personalism is measured as Veto Players.

These results are broadly robust to changes in measurement, sample, and specification. In the Online Appendix, we show that the coefficient estimate for each of the personalism indicators is similar in sign, magnitude, and precision if we: drop extreme growth episodes (Table A7), restrict the sample to that for other autocracy/personalism pairs (Table A8), exclude planned economies (Tables A9 and A10), include eight rather than four lags of GDP (Table A11, though here the negative estimated effect of GWF Categorical is statistically significant), account for the fact that regime transitions often coincide with leadership turnover (Table A12), and—accounting for the tendency of established leaders to adjust policy as they learn their "affinity" for coalition members (Bueno de Mesquita and Smith, 2024)—control

for the leader's tenure (years in power, Table A13). Following the analysis in Martinez (2022), we also show that there is no consistent evidence that GDP growth is systematically underreported in personalist autocracies (Table A14). Most consequential is the particular income series used for the dependent variable (WDI vintage, Penn World Tables), though here too the basic story is largely unchanged.[21]

6 Mechanisms

Guided by the conceptual framework above, we examine various mechanisms by which personalism could affect economic growth, including, but not only, those outcomes explored by Acemoglu et al. (2019). Table 5 measures autocracy and personalist autocracy, respectively, using CGV and GS Power Consolidation. Appendix Tables A16 and A17 do the same for ANRR/GS and CGV/Veto Players, the other two pairs of institutional measures for which we robustly find a personalist growth penalty. We restrict attention to outcomes with wide sample coverage, thus bracketing mechanisms consistently measured only for democracies and institutionalized autocracies. Following Acemoglu et al. (2019), we include country and year fixed effects, four lags of GDP, and four lags of the outcome in all regressions.

[21] The World Bank regularly updates the WDI based on reports from national statistical agencies. Among other consequences, this introduces different patterns of missingness from one vintage to the next (Goes, 2023). Across seven alternative data series (Table A15), including the Penn World Tables, there are two non-trivial differences from the results reported in Table 4. First, for GWF Categorical, the (negative) difference between institutionalized and personalist autocracies is consistently larger and typically statistically significant. Second, for V-Dem Presidentialism, the better growth performance of personalist (relative to institutionalized) autocracies is greater than reported in Table 4, although the point estimate is statistically significant only in three cases, while the difference between personalist autocracies and democracies is never significant.

Table 5: Potential mechanisms

Panel A: Economic Variables	Investment			Public Goods			Other Economic Variables	
	(1) Log Private Investment	(2) Log Public Investment	(3) Log TFP	(4) Log Primary Enrollment	(5) Log Secondary Enrollment	(6) Log Child Mortality Rate	(7) Log Tax to GDP	(8) Inflation Crisis (0-1)
CGV Autocracy	−0.003	−0.038*	1.013***	−0.372	−0.498	0.095	−2.460	0.014
	(0.022)	(0.020)	(0.338)	(0.419)	(0.761)	(0.089)	(1.651)	(0.020)
GS Power Consolidation	−0.045**	0.006	−1.276***	−0.610	−0.271	0.096	−0.566	−0.014
	(0.018)	(0.018)	(0.449)	(0.403)	(0.651)	(0.083)	(1.465)	(0.015)
Autocracy + Personalism	−0.048**	−0.032	−0.262	−0.982**	−0.769	0.191***	−3.026*	−0.000
	(0.019)	(0.022)	(0.356)	(0.382)	(0.625)	(0.068)	(1.672)	(0.016)
Mean of Outcome Variable	6.571	5.500	-3.753	452.870	396.148	350.192	-181.774	0.145
Observations	5586	5586	3655	3462	2696	5644	4496	5870
Countries	164	164	108	165	156	172	131	175

Panel B: Conflict Variables	Civil Unrest		Civil Conflict			Civil War		
	(1) Log Protests	(2) Riots (0-1)	(3) Incidence (0-1)	(4) Onset (0-1)	(5) End (0-1)	(6) Incidence (0-1)	(7) Onset (0-1)	(8) End (0-1)
CGV Autocracy	0.060	−0.001	0.020	−0.006	−0.071	0.003	0.010	−2.645**
	(0.060)	(0.028)	(0.017)	(0.016)	(0.081)	(0.013)	(0.008)	(0.937)
GS Power Consolidation	0.092	0.094***	−0.009	0.009	0.037	−0.000	−0.003	1.887*
	(0.079)	(0.026)	(0.019)	(0.019)	(0.091)	(0.014)	(0.011)	(0.932)
Autocracy + Personalism	0.152**	0.093***	0.010	0.004	−0.034	0.003	0.007	−0.758***
	(0.067)	(0.024)	(0.015)	(0.017)	(0.060)	(0.009)	(0.006)	(0.245)
Mean of Outcome Variable	-4.827	0.251	0.151	0.021	0.076	0.039	0.008	0.283
Observations	2874	5259	5805	4356	500	5805	5218	60
Countries	159	170	175	169	40	175	175	14

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome. In parentheses, heteroskedasticity-robust standard errors that correct for arbitrary correlation at the country level. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.10$.

The regressions using GS Power Consolidation to measure personalism tell a somewhat different story from those using Veto Players, although there are commonalities. Consistent with the theoretical framework of Gehlbach and Keefer (2011, 2012), in Table 5 (CGV/GS) and Table A16 (ANRR/GS), personalist autocracy is associated with lower private but not public investment. Total factor productivity (TFP) is also lower in personalist than institutionalized autocracies, though roughly similar to that in democracies. The TFP result carries over to CGV/Veto Players, but otherwise the results in Table A17 mirror the emphasis in Bueno de Mesquita et al. (2003) and Besley and Kudamatsu (2007) on public goods, with lower primary and secondary enrollment and higher child mortality in personalist autocracies than institutionalized ones. Consistent with these results, the ratio of tax revenue to GDP is also lower in personalist regimes.

Personalist autocracies also appear to experience more conflict, though the particular relationship depends on whether we measure personalism using GS Power Consolidation or Veto Players. In the former case, a transition to personalist rule is associated with more riots, though also a greater likelihood of conflict termination. In the latter, the incidence and onset of civil war are more likely in personalist than institutionalized regimes.[22]

Together, these results provide suggestive evidence that personalized autocracies suffer from some combination of low private investment, poor public goods provision, and conflict—all conditions negatively associated with productivity and economic growth.

7 Conclusions

The dangers of personal rule have been apparent for centuries. In *Discourses on Livy*, Niccolo Machiavelli contrasted personalist princes to other forms of autocratic rule—oligarchies and elite-ruled republics. A government of well-organized people, he argued, rules more prudently and more stably than that of a prince, who is more prone to tyranny and wickedness

[22]In Tables A18–A20, we additionally explore a measure of state capacity from Hanson and Sigman (2021) and used in a similar exercise in Wang and Xu (2018), an indicator for hyperinflation constructed from various sources, and two remaining potential mechanisms from Acemoglu et al. (2019). Across all four measures, there is little apparent difference between personalist and institutionalized autocracies.

(Machiavelli, Bondanella and Conaway, 1531/1997; McCormick, 2018).

Our analysis of regimes from 1960 to 2010 provides cautious support for Machiavelli's observations. To the extent that we observe an autocratic growth penalty, it is concentrated in unchecked regimes where power is more concentrated. In contrast, there is no evidence that institutionalized autocracies perform worse—or better—than democracies. With respect to mechanisms, personalist autocracies appear to suffer from some combination of lower private investment, worse public goods, and greater conflict, all of which are consequential for productivity and growth.

Our broader point, however, is that it is time for the study of economic growth to move beyond comparisons of autocracy and democracy. There are many dimensions of regime type: recent work on the economic performance of populist leaders provides an example of what else can be done (Funke, Schularick and Trebesch, 2023). Autocracies in particular are highly heterogeneous, and the measures used here weigh underlying characteristics differently. Isolating the most important sources of variation can provide further insight into economic growth and the various penalties of autocratic governance.

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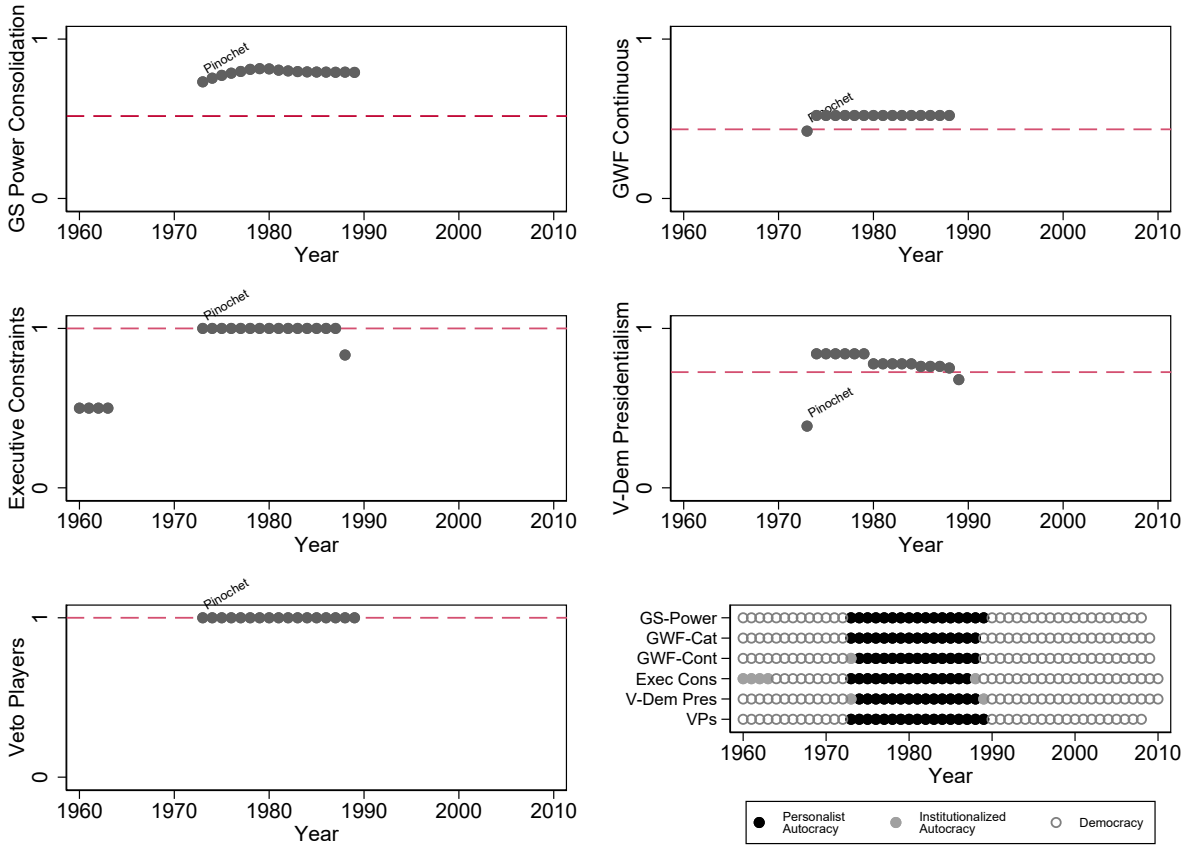
The Personalist Penalty: Online Appendix

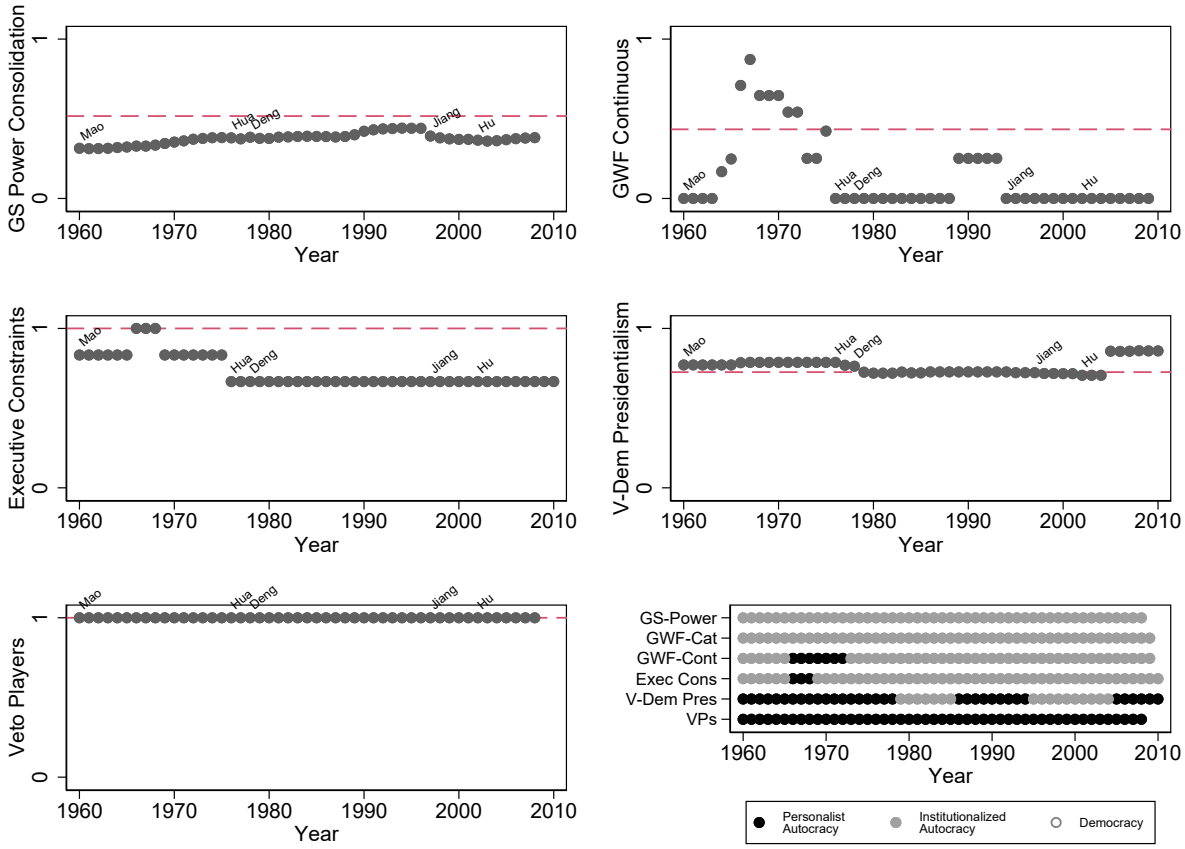
Contents

Figure A1: Personalism measures for Chile



Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A2: Personalism measures for China



Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A3: Personalism measures for Congo-Zaire

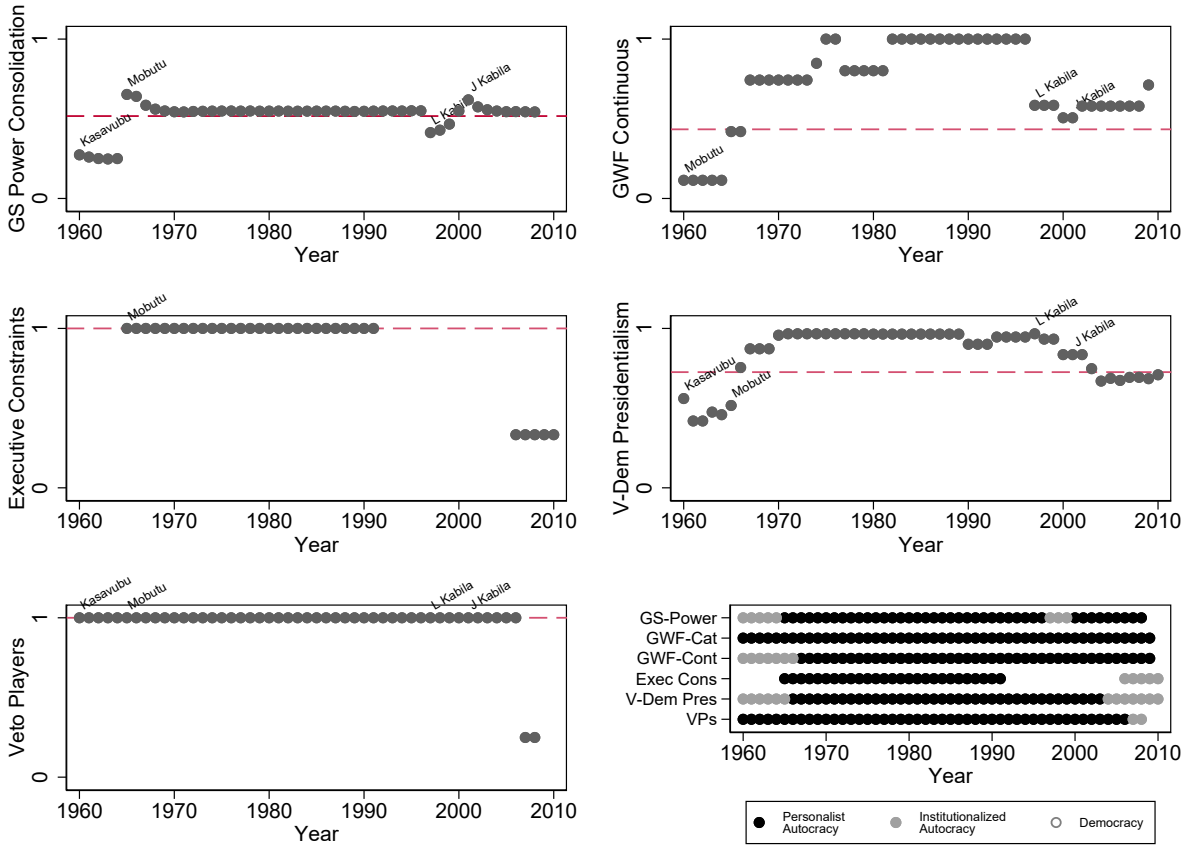


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Figure A4: Personalism measures for Egypt

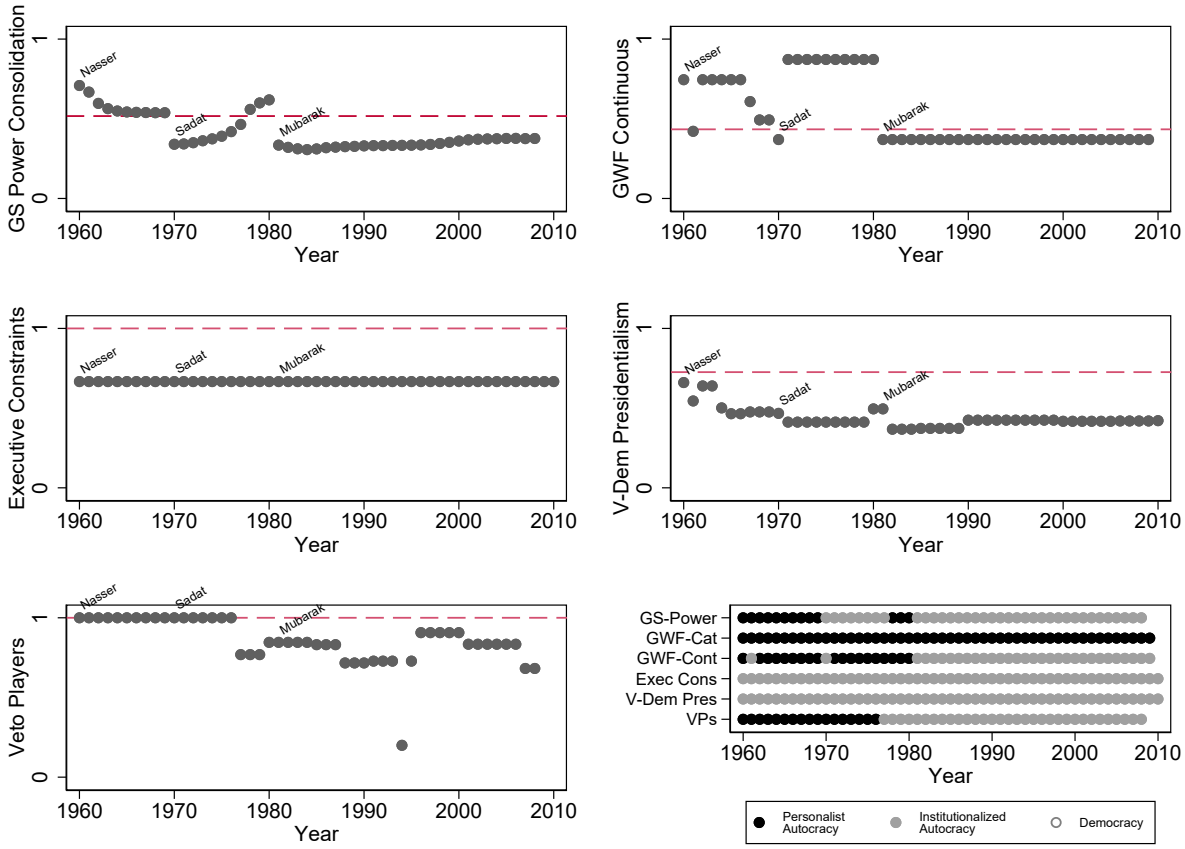

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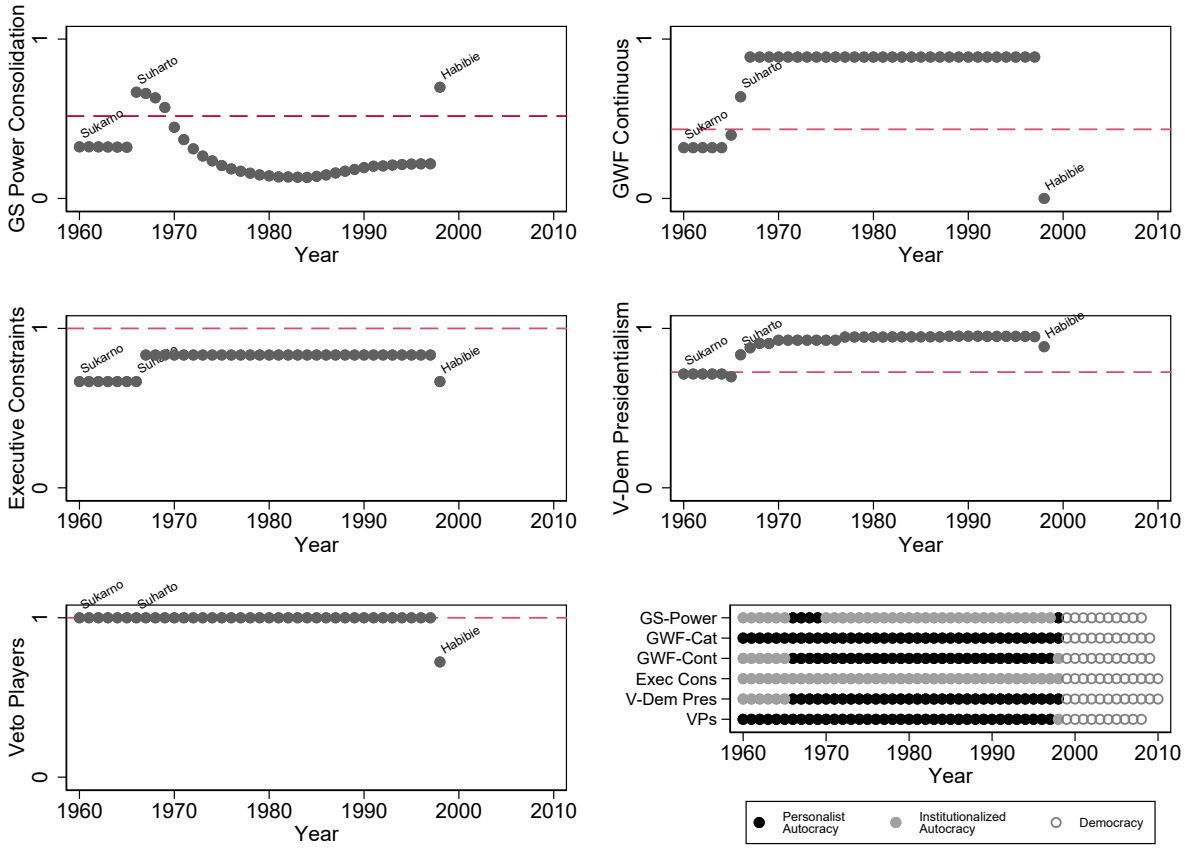
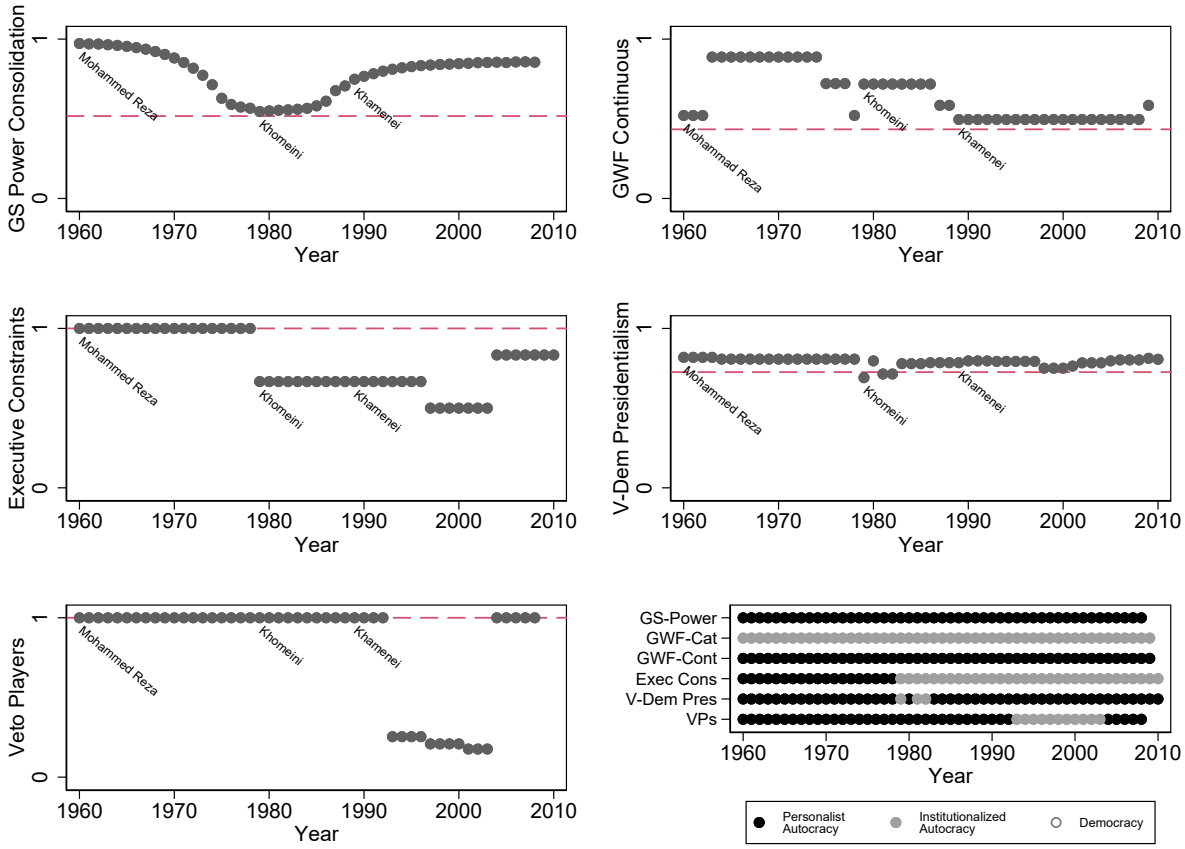
Figure A5: Personalism measures for Indonesia



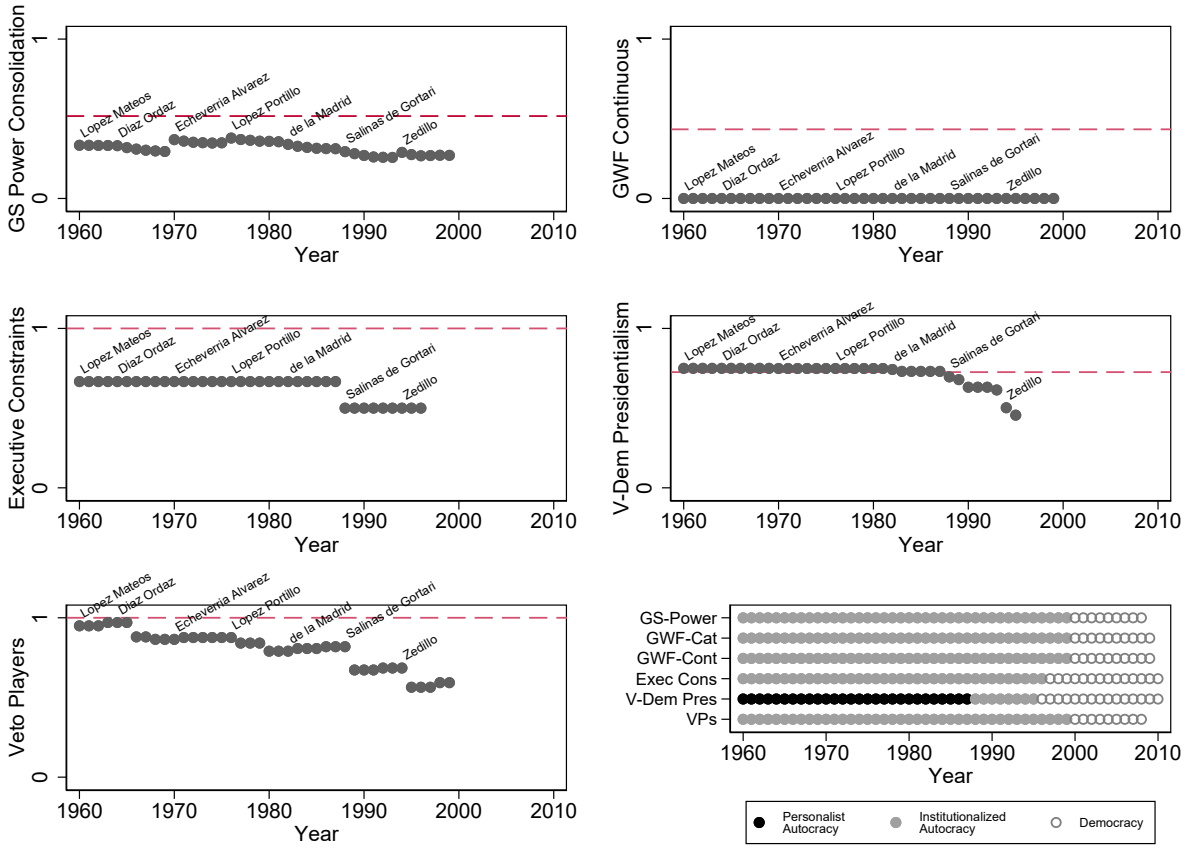
Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A6: Personalism measures for Iran



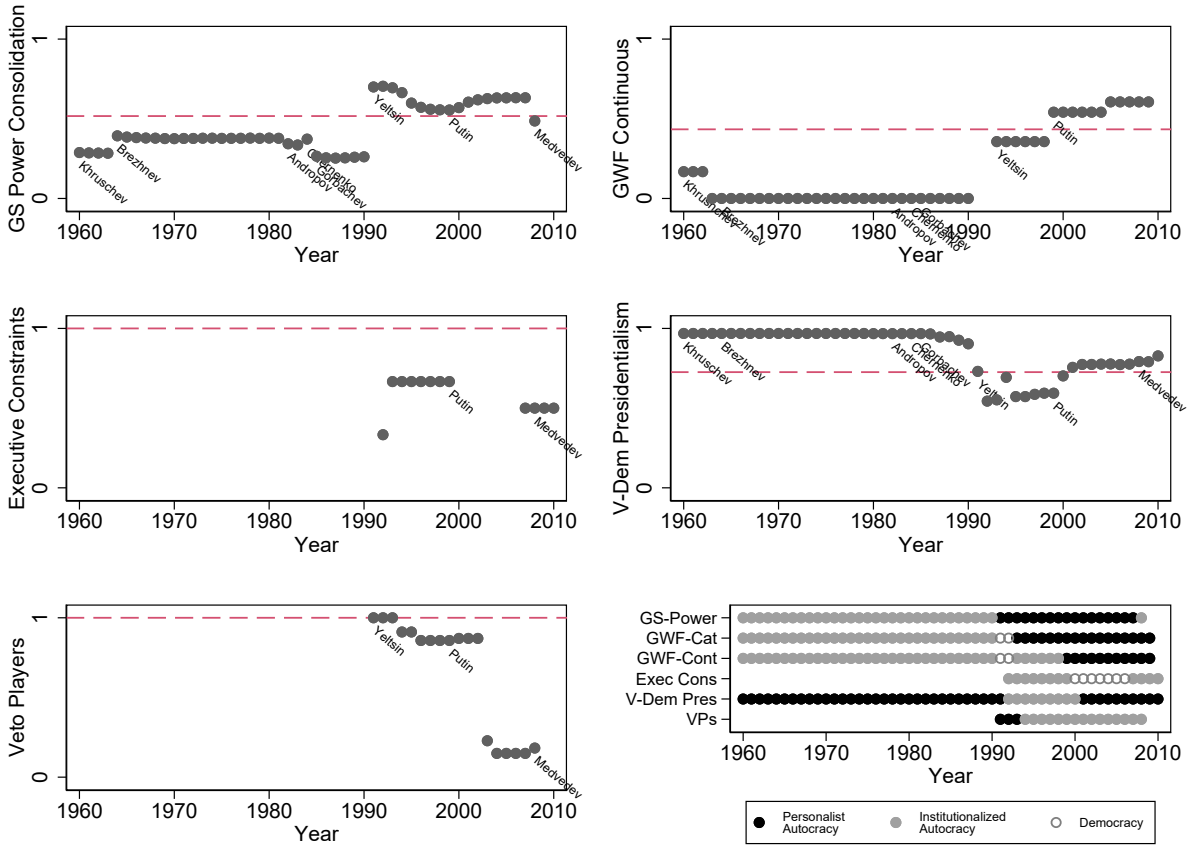
Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A7: Personalism measures for Mexico



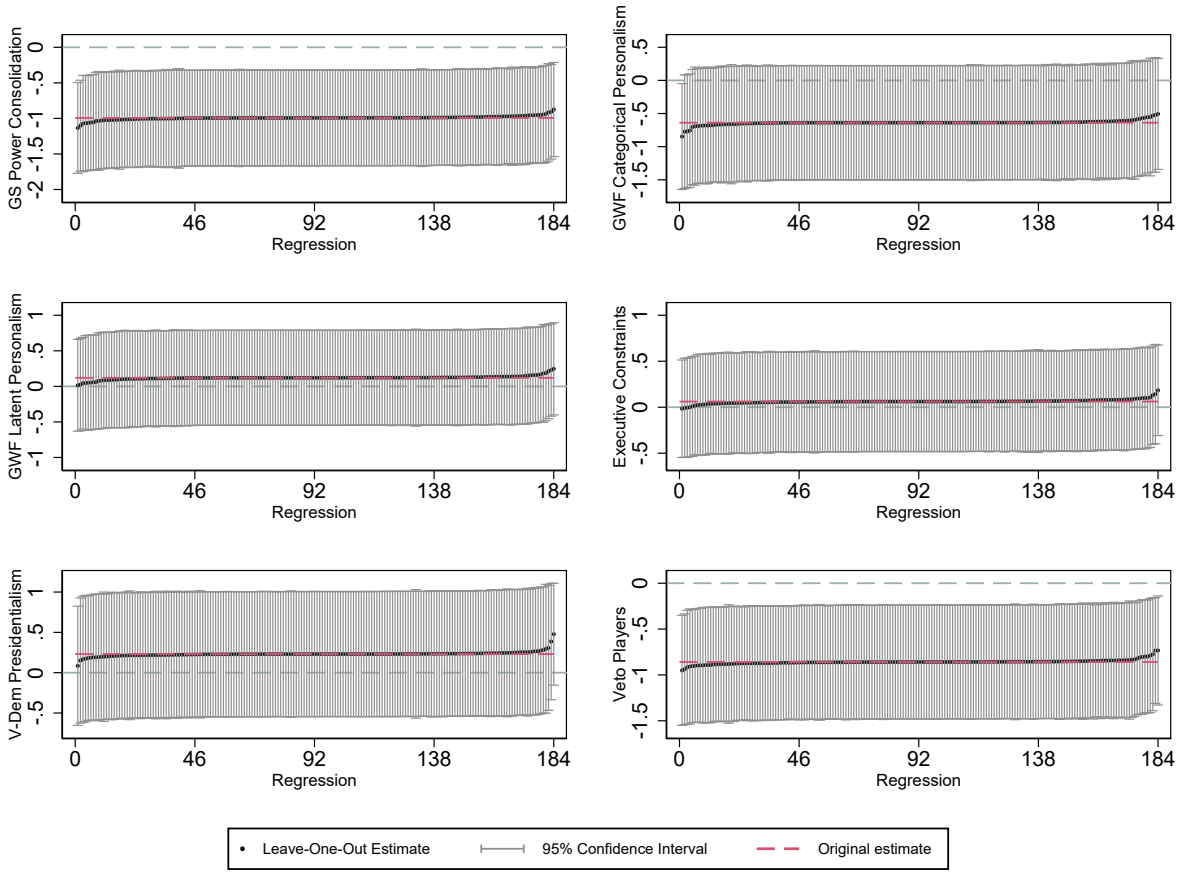
Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A8: Personalism measures for Russia



Notes: For purposes of presentation, all variables are placed on a common unit interval and ordered such that higher values indicate fewer constraints. The red dotted line indicates the threshold used to create an indicator for personalist autocracy: see text for further details.

Figure A9: Leave-one-out personalism estimates at country level for the baseline growth regressions



Notes: This figure plots the estimated coefficients on Personalism from Table 4, excluding the country with code identified on the horizontal axis. The red dashed lines mark the original coefficients from 4.

Table A1: Summary Statistics

	N	Mean	SD	Min	Max
Panel A: Autocracy					
CGV Autocracy	7,477	0.575	0.494	0	1
GWF Autocracy	6,429	0.588	0.492	0	1
Freedom House Autocracy	6,375	0.621	0.485	0	1
Polity Autocracy	6,914	0.603	0.489	0	1
ANRR Autocracy	8,733	0.568	0.495	0	1
BMR Autocracy	8,006	0.563	0.496	0	1
PS Autocracy	7,623	0.654	0.476	0	1
V-Dem Autocracy	7,975	0.646	0.478	0	1
Panel B: Personalism					
GS Power Consolidation	7,477	0.328	0.470	0	1
GWF Categorical Personalism	6,429	0.264	0.441	0	1
GWF Latent Personalism	6,429	0.287	0.452	0	1
Polity-Executive Constraints	6,914	0.217	0.412	0	1
V-Dem Presidentialism	7,975	0.323	0.467	0	1
Veto Players	7,206	0.424	0.494	0	1
Panel C: GDP					
Log GDP per capita	7,200	750	154	406	1,102
Log GDP per capita (April 2014)	7,152	779	156	391	1,138
Log GDP per capita (February 2016)	7,084	779	156	424	1,138
Log GDP per capita (February 2018)	7,045	810	150	475	1,164
Log GDP per capita (February 2020)	7,129	812	149	489	1,166
Log GDP per capita (February 2022)	7,006	809	143	497	1,163
Log GDP per capita (October 2023)	7,025	810	143	497	1,164
Log GDP per capita (PWT 10.01)	7,634	875	123	551	1,223
Panel D: Mechanisms					
Log Private Investment	8,547	6.416	1.711	-5.394	10.961
Log Public Investment	8,547	5.408	1.543	-4.593	10.565
Log TFP	4,662	-4.717	25.632	-143.647	167.058
Log Primary Enrollment	5,824	451	36	103	554
Log Secondary Enrollment	5,068	383	89	-171	509
Log Child Mortality Rate	8,130	363	104	64	560
Log Tax to GDP	6,047	-189	62	-626	-35
Inflation Crisis	9,384	0.125	0.331	0	1
Log Protests	4,807	-4.782	0.686	-7.511	0
Riots	7,378	0.254	0.435	0	1
Civil Conflict Incidence	8,258	0.150	0.357	0	1
Civil Conflict Onset	6,864	0.030	0.171	0	1
Civil Conflict End	1,211	0.159	0.365	0	1
Civil War Incidence	8,258	0.047	0.213	0	1
Civil War Onset	7,687	0.015	0.122	0	1
Civil War End	388	0.296	0.457	0	1
Hyperinflation	9,384	0.025	0.155	0	1
Index of Market Reforms	6,527	34.907	28.200	0	100
Log Trade	6,791	413	64	-103	607
State Capacity	7,180	0.481	0.181	0	1
Log Nighttime Lights	3,454	-0.051	2.070	-6.467	4.142

Table A2: Autocracy vs. democracy: Controlling for eight lags of income

	Outcome: Log GDP per capita							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Autocracy measure →	CGV	GWF	FH	Polity	ANRR	BMR	PS	V-Dem
Autocracy	-0.564*	0.034	-0.609**	0.055	-0.934***	-0.651**	-0.938***	-0.269
	(0.297)	(0.292)	(0.244)	(0.245)	(0.247)	(0.264)	(0.354)	(0.248)
p-value, lags 5-8	0.557	0.022	0.560	0.213	0.561	0.457	0.515	0.319
Observations	5255	4598	5214	4985	5729	5668	4453	5357
Countries	175	141	177	157	177	177	166	164
Country & year FE	✓	✓	✓	✓	✓	✓	✓	✓
Eight GDP lags	✓	✓	✓	✓	✓	✓	✓	✓

Table A3: Autocracy vs. democracy: Various sample restrictions

	Outcome: Log GDP per capita							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Autocracy measure →	CGV	GWF	FH	Polity	ANRR	BMR	PS	V-Dem
	Panel A: CGV Sample							
Autocracy	−0.609**	0.066	−0.693***	0.145	−0.858***	−0.494*	−0.930**	−0.132
	(0.271)	(0.278)	(0.238)	(0.238)	(0.281)	(0.275)	(0.401)	(0.238)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5869	4924	5043	5164	5868	5848	4899	5533
Countries	175	142	175	156	175	175	167	163
	Panel B: GWF Sample							
Autocracy	−0.340	0.059	−0.336	0.173	−0.512*	−0.204	−0.631	0.128
	(0.288)	(0.267)	(0.260)	(0.245)	(0.288)	(0.290)	(0.424)	(0.267)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	4924	5117	4329	4950	5115	5115	4279	5099
Countries	142	142	142	141	142	142	141	142
	Panel C: FH Sample							
Autocracy	−0.549*	0.040	−0.604***	0.080	−0.939***	−0.479*	−0.855**	−0.110
	(0.311)	(0.307)	(0.228)	(0.262)	(0.295)	(0.280)	(0.426)	(0.261)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5043	4329	5481	4772	5480	5460	4128	5117
Countries	175	142	177	157	177	177	168	164
	Panel D: Polity Sample							
Autocracy	−0.108	0.158	−0.357	0.095	−0.291	−0.082	−0.214	0.236
	(0.252)	(0.257)	(0.240)	(0.228)	(0.237)	(0.255)	(0.346)	(0.248)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5164	4950	4772	5539	5539	5539	4469	5538
Countries	156	141	157	157	157	157	154	157
	Panel E: ANRR Sample							
Autocracy	−0.602**	0.059	−0.601***	0.095	−0.796***	−0.507**	−0.751**	−0.123
	(0.271)	(0.265)	(0.228)	(0.228)	(0.225)	(0.252)	(0.323)	(0.237)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5868	5115	5480	5539	6385	6298	5031	5938
Countries	175	142	177	157	177	177	168	164
	Panel F: BMR Sample							
Autocracy	−0.632**	0.051	−0.604***	0.095	−0.889***	−0.512**	−0.920**	−0.127
	(0.268)	(0.266)	(0.227)	(0.228)	(0.251)	(0.252)	(0.375)	(0.238)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5848	5115	5460	5539	6298	6299	4946	5933
Countries	175	142	177	157	177	177	168	164
	Panel G: PS Sample							
Autocracy	−0.641*	0.140	−0.622**	0.223	−0.664**	−0.506	−0.727**	−0.024
	(0.329)	(0.308)	(0.280)	(0.277)	(0.273)	(0.317)	(0.315)	(0.296)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	4899	4279	4128	4469	5031	4946	5121	4813
Countries	167	141	168	154	168	168	168	160
	Panel H: V-Dem Sample							
Autocracy	−0.595**	0.061	−0.546**	0.097	−0.868***	−0.496*	−0.914**	−0.124
	(0.268)	(0.268)	(0.230)	(0.228)	(0.257)	(0.253)	(0.378)	(0.241)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000
Observations	5533	5099	5117	5538	5938	5933	4813	5984
Countries	163	142	164	157	164	164	160	164

Notes: In each panel, we restrict the regression to non-missing observations for the dataset listed in the panel heading. Observations and countries may still vary across columns because of additional missing data in that column's dataset. All regressions include country and year fixed effects and four GDP lags.

Table A4: Autocracy vs. democracy: Imputing missing values with CGV

	Outcome: Log GDP per capita	
	(1) GWF	(2) Polity
Autocracy	−0.251	−0.256
	(0.243)	(0.228)
p-value, unit root test	0.000	0.000
Observations	6062	6244
Countries	175	176
Country & year FE	✓	✓
Four GDP lags	✓	✓

Note: We impute missing values for GWF and Polity, respectively, using data from CGV.

Table A5: Autocracy vs. democracy: Classifying "hybrid" regimes as democratic

	Outcome: Log GDP per capita		
	(1) FH: NF	(2) Polity: 0	(3) V-Dem: 0.25
Autocracy	−0.317	0.017	0.320
	(0.503)	(0.229)	(0.228)
p-value, unit root test	0.000	0.000	0.000
Observations	5481	5539	5984
Countries	177	157	164
Country & year FE	✓	✓	✓
Four GDP lags	✓	✓	✓

Notes: In Table 1, we code an observation as autocratic if, respectively, Freedom House codes the country as Partly Free or Not Free, Polity ≤ 5, and V-Dem ≤ 0.50. In this table, we instead code an observation as autocratic if, respectively, Freedom codes the country as Not Free, Polity ≤ 0, and V-Dem ≤ 0.25.

Table A6: Regime Transitions

	Democracy	Institutionalized	Personalist
	CGV–GS Power Consolidation		
Democracy	2667	6	34
Institutionalized	20	1216	43
Personalist	56	34	1616
	ANRR–GS Power Consolidation		
Democracy	3184	7	38
Institutionalized	21	975	35
Personalist	54	27	1532
	GWF–GWF Categorical Personalism		
Democracy	2234	18	21
Institutionalized	37	1387	10
Personalist	20	12	1215
	GWF–GWF Latent Personalism		
Democracy	2234	32	7
Institutionalized	42	1260	65
Personalist	15	47	1252
	Polity–Polity Executive Constraints		
Democracy	2352	22	14
Institutionalized	47	1886	41
Personalist	8	61	903
	V-Dem–V-Dem Presidentialism		
Democracy	2399	42	3
Institutionalized	80	1743	50
Personalist	6	60	1437
	CGV–Veto Players		
Democracy	2667	10	28
Institutionalized	23	786	44
Personalist	50	64	1864

Note: Period $t-1$ is listed along the left side and period t along the top.

Table A7: Personalist vs. institutionalized autocracy: Omitting extreme values

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	0.081	−0.052	0.330	0.067	0.074	−0.172	0.030
	(0.338)	(0.325)	(0.298)	(0.280)	(0.214)	(0.258)	(0.283)
GS Power Consolidation	−0.995***	−1.020***					
	(0.332)	(0.350)					
GWF Categorical Personalism			−0.565				
			(0.388)				
GWF Latent Personalism				−0.073			
				(0.298)			
Polity-Executive Constraints					−0.160		
					(0.251)		
V-Dem Presidentialism						0.263	
						(0.250)	
Veto Players							−0.879***
							(0.283)
Autocracy + Personalism	−0.914***	−1.072***	−0.235	−0.007	−0.086	0.090	−0.849***
	(0.289)	(0.288)	(0.306)	(0.272)	(0.284)	(0.267)	(0.312)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	5848	6053	5105	5105	5524	5962	5695
Countries	175	175	142	142	157	164	172
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Note: The samples in this table exclude observations with GDP per capita growth less than or equal to –30 percent or greater than or equal to 30 percent.

Table A8: Personalist vs. institutionalized autocracy: Various sample restrictions

Autocracy → / Personalism →	(1) CGV GS	(2) ANRR GS	(3) GWF GWF-Cat	(4) GWF GWF-Cont	(5) Polity Exec Cons	(6) V-Dem Pres	(7) CGV VP
	Panel A: CGV–GS Sample						
Autocracy	0.031	−0.012	0.403	0.009	0.128	−0.207	−0.037
	(0.345)	(0.355)	(0.358)	(0.339)	(0.254)	(0.282)	(0.319)
Personalism Measure	−0.993***	−1.020**	−0.629	0.123	0.073	0.202	−0.859***
	(0.341)	(0.394)	(0.457)	(0.352)	(0.291)	(0.435)	(0.314)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	5869	5796	4924	4924	5164	5533	5712
Countries	175	175	142	142	156	163	172
	Panel B: ANRR–GS Sample						
Autocracy	−0.041	−0.050	0.270	−0.082	0.195	−0.140	−0.028
	(0.331)	(0.340)	(0.317)	(0.321)	(0.240)	(0.272)	(0.305)
Personalism Measure	−0.905***	−1.102***	−0.609	0.089	0.030	0.112	−0.911***
	(0.332)	(0.377)	(0.430)	(0.344)	(0.280)	(0.431)	(0.309)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	5796	6073	4983	4983	5356	5717	5639
Countries	175	175	142	142	156	163	172
	Panel C: GWF Sample						
Autocracy	0.170	0.097	0.394	0.004	0.179	−0.025	0.188
	(0.392)	(0.389)	(0.337)	(0.326)	(0.260)	(0.316)	(0.348)
Personalism Measure	−0.809**	−0.859**	−0.638	0.120	−0.025	0.401	−0.822**
	(0.361)	(0.395)	(0.436)	(0.338)	(0.296)	(0.373)	(0.372)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	4924	4983	5117	5117	4950	5099	4869
Countries	142	142	142	142	141	142	142
	Panel D: Polity Sample						
Autocracy	0.540*	0.540*	0.369	0.084	0.082	0.088	0.325
	(0.307)	(0.308)	(0.332)	(0.320)	(0.242)	(0.298)	(0.306)
Personalism Measure	−1.010***	−1.089***	−0.409	0.165	0.062	0.419	−0.648*
	(0.287)	(0.304)	(0.416)	(0.337)	(0.275)	(0.324)	(0.342)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	5164	5356	4950	4950	5539	5538	5077
Countries	156	156	141	141	157	157	156
	Panel E: V-Dem Sample						
Autocracy	0.017	−0.052	0.397	0.006	0.083	−0.202	−0.045
	(0.339)	(0.332)	(0.337)	(0.327)	(0.242)	(0.274)	(0.313)
Personalism Measure	−0.949***	−1.054***	−0.639	0.122	0.063	0.231	−0.837***
	(0.335)	(0.371)	(0.436)	(0.338)	(0.275)	(0.392)	(0.312)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	5533	5717	5099	5099	5538	5984	5400
Countries	163	163	142	142	157	164	161
	Panel F: CGV–Veto Players Sample						
Autocracy	0.045	0.003	0.381	−0.013	0.176	−0.197	−0.037
	(0.352)	(0.363)	(0.364)	(0.346)	(0.261)	(0.292)	(0.319)
Personalism Measure	−1.030***	−1.060***	−0.589	0.176	−0.013	0.184	−0.859***
	(0.347)	(0.405)	(0.473)	(0.366)	(0.295)	(0.445)	(0.314)
Autocracy + Personalism	−0.962***	−1.152***	−0.244	0.124	0.144	0.029	−0.896***
	(0.303)	(0.327)	(0.351)	(0.306)	(0.297)	(0.361)	(0.323)
Observations	5712	5639	4869	4869	5077	5400	5712
Countries	172	172	142	142	156	161	172

Notes: In each panel, we restrict the regression to non-missing observations for the dataset listed in the panel heading. Observations and countries may still vary across columns because of additional missing data in that column's dataset. All regressions include country and year fixed effects and four GDP lags.

Table A9: Personalist vs. institutionalized autocracy: Excluding planned economies

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	−0.036	−0.068	0.299	−0.160	0.008	−0.311	−0.110
	(0.362)	(0.355)	(0.353)	(0.324)	(0.244)	(0.280)	(0.321)
GS Power Consolidation	−1.006***	−1.129***					
	(0.350)	(0.380)					
GWF Categorical Personalism			−0.593				
			(0.449)				
GWF Latent Personalism				0.287			
				(0.327)			
Polity-Executive Constraints					0.188		
					(0.272)		
V-Dem Presidentialism						0.380	
						(0.395)	
Veto Players							−0.924***
							(0.313)
Autocracy + Personalism	−1.042***	−1.196***	−0.294	0.127	0.196	0.069	−1.034***
	(0.301)	(0.317)	(0.350)	(0.315)	(0.304)	(0.371)	(0.333)
Observations	5765	5974	5013	5013	5435	5872	5608
Countries	174	174	141	141	156	163	171
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Note: The samples in this table exclude the period of state planning in the (former) Soviet republics, (former) Yugoslav republics, (former) Czechoslovakia, Albania, Bulgaria, Hungary, Mongolia, Poland, Romania, Cuba, China, and Vietnam.

Table A10: Personalist vs. institutionalized autocracy: Excluding countries that were ever planned

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	0.021	−0.093	0.204	−0.118	0.009	−0.598**	−0.007
	(0.294)	(0.295)	(0.345)	(0.316)	(0.248)	(0.275)	(0.290)
GS Power Consolidation	−1.033***	−1.069***					
	(0.331)	(0.344)					
GWF Categorical Personalism			−0.497				
			(0.443)				
GWF Latent Personalism				0.118			
				(0.298)			
Polity-Executive Constraints					0.086		
					(0.282)		
V-Dem Presidentialism						0.528	
						(0.420)	
Veto Players							−0.993***
							(0.297)
Autocracy + Personalism	−1.012***	−1.162***	−0.294	−0.001	0.095	−0.069	−1.000***
	(0.289)	(0.281)	(0.358)	(0.309)	(0.309)	(0.347)	(0.304)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	5265	5452	4489	4489	4897	5306	5119
Countries	144	144	112	112	127	133	142
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Note: The samples in this table exclude the (former) Soviet republics, (former) Yugoslav republics, (former) Czechoslovakia, Albania, Bulgaria, Hungary, Mongolia, Poland, Romania, Cuba, China, and Vietnam.

Table A11: Personalist vs. institutionalized autocracy: Eight GDP lags

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	0.019	−0.204	0.486	0.015	−0.018	−0.341	−0.058
	(0.383)	(0.361)	(0.378)	(0.350)	(0.260)	(0.273)	(0.329)
GS Power Consolidation	−0.891**	−0.993**					
	(0.403)	(0.424)					
GWF Categorical Personalism			−0.842*				
			(0.492)				
GWF Latent Personalism				0.040			
				(0.335)			
Polity-Executive Constraints					0.329		
					(0.327)		
V-Dem Presidentialism						0.213	
						(0.412)	
Veto Players							−0.783**
							(0.337)
Autocracy + Personalism	−0.872***	−1.197***	−0.355	0.056	0.311	−0.127	−0.840**
	(0.338)	(0.370)	(0.381)	(0.321)	(0.347)	(0.390)	(0.356)
p-value, lags 5-8	0.534	0.769	0.022	0.022	0.210	0.322	0.549
Observations	5255	5472	4598	4598	4985	5357	5122
Countries	175	175	141	141	157	164	172
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Eight GDP lags	✓	✓	✓	✓	✓	✓	✓

Table A12: Personalist vs. institutionalized autocracy: Controlling for leader changes

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	−0.162	−0.176	0.267	−0.103	0.023	−0.159	−0.234
	(0.351)	(0.337)	(0.348)	(0.334)	(0.247)	(0.273)	(0.326)
GS Power Consolidation	−0.953***	−1.062***					
	(0.335)	(0.371)					
GWF Categorical Personalism			−0.704				
			(0.437)				
GWF Latent Personalism				0.005			
				(0.336)			
Polity-Executive Constraints					0.074		
					(0.274)		
V-Dem Presidentialism						0.165	
						(0.397)	
Veto Players							−0.830***
							(0.310)
Leader Change	−1.075***	−1.124***	−0.964***	−0.948***	−0.777***	−1.016***	−1.073***
	(0.242)	(0.225)	(0.214)	(0.211)	(0.206)	(0.197)	(0.246)
Autocracy + Personalism	−1.115***	−1.239***	−0.438	−0.098	0.097	0.006	−1.064***
	(0.312)	(0.330)	(0.357)	(0.311)	(0.298)	(0.365)	(0.331)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	5572	5750	5047	5047	5465	5800	5415
Countries	164	164	140	140	154	159	161
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Notes: The specifications in Columns 1, 2, and 7 use Archigos for democracies (as coded) and CGV leadership data for autocracies. Colums 3 and 4 use Archigos for democracies and GWF leadership data for autocracies. Columns 5 and 6 use Archigos for both democracies and autocracies.

Table A13: Personalist vs. institutionalized autocracy: Controlling for leader tenure

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	−0.065	−0.149	0.336	−0.029	0.028	−0.250	−0.123
	(0.341)	(0.320)	(0.341)	(0.330)	(0.248)	(0.274)	(0.323)
GS Power Consolidation	−0.950***	−1.044***					
	(0.333)	(0.364)					
GWF Categorical Personalism			−0.651				
			(0.437)				
GWF Latent Personalism				0.060			
				(0.340)			
Polity-Executive Constraints					0.072		
					(0.277)		
V-Dem Presidentialism						0.227	
						(0.403)	
Veto Players							−0.864***
							(0.307)
Leader Tenure	0.021	0.026*	0.014	0.013	0.016	0.020	0.024
	(0.016)	(0.015)	(0.016)	(0.016)	(0.014)	(0.014)	(0.016)
Autocracy + Personalism	−1.015***	−1.193***	−0.315	0.032	0.100	−0.023	−0.987***
	(0.310)	(0.331)	(0.366)	(0.322)	(0.302)	(0.373)	(0.326)
p-value, unit root test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	5572	5750	5047	5047	5465	5800	5415
Countries	164	164	140	140	154	159	161
Country & year FE	✓	✓	✓	✓	✓	✓	✓
Four GDP lags	✓	✓	✓	✓	✓	✓	✓

Notes: The specifications in Columns 1, 2, and 7 use Archigos for democracies (as coded) and CGV leadership data for autocracies. Colums 3 and 4 use Archigos for democracies and GWF leadership data for autocracies. Columns 5 and 6 use Archigos for both democracies and autocracies.

Table A14: Personalist vs. institutionalized autocracy: Differential misreporting of GDP

	Outcome: Log GDP per capita						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autocracy measure →	CGV	ANRR	GWF	GWF	Polity	V-Dem	CGV
Autocracy	1.312	8.814	9.128**	4.070	2.917	−3.277	−2.006
	(5.651)	(6.410)	(4.283)	(3.707)	(2.717)	(2.510)	(3.231)
Personalism	−4.579	−7.042	−11.758*	−6.009	6.241	7.435	−0.446
	(7.098)	(8.410)	(6.007)	(5.991)	(8.367)	(5.033)	(2.649)
ln(NTL)	18.278***	15.660***	19.598***	19.540***	18.520***	18.462***	20.191***
	(5.228)	(5.060)	(4.002)	(4.076)	(5.078)	(4.734)	(3.686)
Autocracy × ln(NTL)	−0.237	1.900	2.365	1.210	−1.975	−0.469	−2.702
	(2.945)	(2.551)	(2.499)	(1.961)	(1.574)	(1.091)	(2.222)
GS power consolidation × ln(NTL)	−1.772	−2.164					
	(3.044)	(2.989)					
GWF Categorical Personalism × ln(NTL)			−4.506				
			(2.966)				
GWF Latent Personalism × ln(NTL)				−4.082			
				(2.666)			
Polity-Executive Constraints × ln(NTL)					−0.658		
					(1.803)		
V-Dem Presidentialism × ln(NTL)						1.070	
						(2.637)	
Veto Players × ln(NTL)							1.553
							(1.034)
Observations	2845	3086	2478	2478	2817	3050	2764
Countries	172	174	142	142	157	164	169
Country & year FE	✓	✓	✓	✓	✓	✓	✓

Notes: The regressions in this table follow Martinez (2022) in allowing the nighttime light elasticity of GDP to vary with regime type.

Table A15: Personalist vs. institutionalized autocracy: WDI vintage and Penn World Tables

Autocracy measure →	(1) CGV	(2) ANRR	(3) GWF-Cat	(4) GWF-Cont	(5) Polity	(6) V-Dem	(7) CGV
	Panel A: April 2014						
Autocracy	−0.057	−0.005	0.534	0.099	0.026	−0.243	−0.030
	(0.360)	(0.358)	(0.365)	(0.327)	(0.254)	(0.283)	(0.325)
Personalism Measure	−0.928***	−1.095***	−0.759*	0.090	0.161	0.244	−0.898***
	(0.343)	(0.387)	(0.448)	(0.344)	(0.290)	(0.399)	(0.323)
Observations	5815	6025	5101	5101	5489	5936	5657
Countries	176	176	142	142	156	165	173
	Panel B: February 2016						
Autocracy	−0.063	−0.177	0.325	−0.109	−0.137	−0.449	−0.161
	(0.361)	(0.355)	(0.399)	(0.361)	(0.270)	(0.311)	(0.332)
Personalism Measure	−1.048***	−1.125***	−0.740	0.101	0.296	0.414	−0.877**
	(0.370)	(0.411)	(0.499)	(0.374)	(0.338)	(0.431)	(0.340)
Observations	5776	5993	5028	5028	5478	5894	5613
Countries	176	176	142	142	156	165	173
	Panel C: February 2018						
Autocracy	0.015	−0.092	0.478	−0.045	0.054	−0.414	−0.096
	(0.360)	(0.355)	(0.395)	(0.357)	(0.258)	(0.304)	(0.336)
Personalism Measure	−1.206***	−1.313***	−1.085**	−0.071	−0.052	0.413	−1.020***
	(0.365)	(0.403)	(0.503)	(0.396)	(0.312)	(0.427)	(0.344)
Observations	5744	5963	5001	5001	5446	5855	5581
Countries	176	176	142	142	156	165	173
	Panel D: February 2020						
Autocracy	−0.132	−0.212	0.445	−0.038	−0.034	−0.453	−0.063
	(0.369)	(0.354)	(0.381)	(0.335)	(0.241)	(0.294)	(0.335)
Personalism Measure	−0.812**	−0.921**	−0.943*	−0.006	0.139	0.689**	−0.868**
	(0.370)	(0.407)	(0.508)	(0.395)	(0.292)	(0.348)	(0.347)
Observations	5816	6035	5079	5079	5506	5947	5653
Countries	176	176	143	143	156	165	173
	Panel E: February 2022						
Autocracy	−0.123	−0.224	0.445	−0.021	−0.003	−0.402	−0.035
	(0.386)	(0.356)	(0.385)	(0.337)	(0.245)	(0.304)	(0.349)
Personalism Measure	−0.787**	−0.896**	−0.935*	−0.024	0.155	0.663*	−0.889**
	(0.374)	(0.404)	(0.491)	(0.379)	(0.279)	(0.359)	(0.345)
Observations	5691	5913	4944	4944	5416	5822	5528
Countries	176	177	143	143	156	165	173
	Panel F: October 2023						
Autocracy	−0.097	−0.217	0.414	−0.071	−0.015	−0.443	−0.041
	(0.386)	(0.360)	(0.385)	(0.336)	(0.245)	(0.301)	(0.349)
Personalism Measure	−0.833**	−0.942**	−0.951*	0.001	0.129	0.697*	−0.878**
	(0.374)	(0.407)	(0.484)	(0.373)	(0.276)	(0.357)	(0.345)
Observations	5710	5932	4963	4963	5435	5841	5547
Countries	176	177	143	143	156	165	173
	Panel G: Penn World Tables						
Autocracy	0.344	0.177	0.742*	0.414	0.213	−0.270	0.528
	(0.393)	(0.391)	(0.402)	(0.328)	(0.264)	(0.342)	(0.415)
Personalism Measure	−1.078***	−1.168***	−0.890*	−0.256	0.034	0.646	−1.322***
	(0.392)	(0.436)	(0.475)	(0.328)	(0.313)	(0.397)	(0.423)
Observations	6364	6577	5522	5522	5992	6587	6179
Countries	169	169	141	141	154	161	167

Notes: The first six panels in this table use the earliest vintage of the World Development Indicators in a given year. Panel G uses real GDP from national accounts (`rgdpna`) from the Penn World Tables 10.01.

Table A16: Potential Mechanisms: ANRR/GS Power Consolidation

Panel A: Economic Variables	Investment			Public Goods			Other Economic Variables	
	(1) Log Private Investment	(2) Log Public Investment	(3) Log TFP	(4) Log Primary Enrollment	(5) Log Secondary Enrollment	(6) Log Child Mortality Rate	(7) Log Tax to GDP	(8) Inflation Crisis (0-1)
ANRR Autocracy	−0.007	−0.044**	1.080***	−1.256**	−2.202**	0.189**	−3.355*	0.016
	(0.019)	(0.021)	(0.388)	(0.482)	(0.855)	(0.090)	(1.739)	(0.020)
GS Power Consolidation	−0.048***	0.007	−1.300***	−0.016	0.986	0.027	0.231	−0.013
	(0.018)	(0.023)	(0.479)	(0.414)	(0.790)	(0.090)	(1.853)	(0.017)
Autocracy + Personalism	−0.055***	−0.037*	−0.220	−1.272***	−1.216*	0.215***	−3.124*	0.003
	(0.018)	(0.020)	(0.395)	(0.406)	(0.698)	(0.067)	(1.681)	(0.014)
Mean of outcome variable	6.601	5.526	-3.660	453.462	398.959	346.873	-181.360	0.139
Observations	5782	5782	3777	3605	2818	5849	4469	6077
Countries	164	164	108	165	157	172	131	175

Panel B: Conflict Variables	Civil Unrest		Civil Conflict			Civil War		
	(1) Log Protests	(2) Riots (0-1)	(3) Incidence (0-1)	(4) Onset (0-1)	(5) End (0-1)	(6) Incidence (0-1)	(7) Onset (0-1)	(8) End (0-1)
ANRR Autocracy	0.049	0.015	0.047**	0.006	−0.167***	0.033**	0.015*	−2.514**
	(0.073)	(0.034)	(0.018)	(0.015)	(0.047)	(0.014)	(0.008)	(0.947)
GS Power Consolidation	0.131	0.077**	−0.036	0.000	0.142**	−0.021	−0.006	1.611
	(0.091)	(0.034)	(0.022)	(0.021)	(0.061)	(0.016)	(0.012)	(0.981)
Autocracy + Personalism	0.179***	0.093***	0.011	0.006	−0.025	0.013	0.008	−0.903***
	(0.064)	(0.024)	(0.016)	(0.016)	(0.067)	(0.010)	(0.006)	(0.162)
Mean of outcome variable	-4.832	0.243	0.146	0.020	0.078	0.038	0.008	0.288
Observations	3082	5468	6020	4570	503	6020	5436	59
Countries	163	170	175	169	40	175	175	14

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome.

Table A17: Potential Mechanisms: CGV/Veto Players

Panel A: Economic Variables	Investment			Public Goods			Other Economic Variables	
	(1) Log Private Investment	(2) Log Public Investment	(3) Log TFP	(4) Log Primary Enrollment	(5) Log Secondary Enrollment	(6) Log Child Mortality Rate	(7) Log Tax to GDP	(8) Inflation Crisis (0-1)
CGV Autocracy	−0.037	−0.032	0.755**	−0.003	1.055*	0.039	−1.389	0.010
	(0.024)	(0.023)	(0.366)	(0.450)	(0.622)	(0.077)	(1.538)	(0.020)
Veto Players	0.009	−0.006	−0.836*	−1.261***	−2.709***	0.174***	−2.291*	−0.002
	(0.017)	(0.017)	(0.430)	(0.429)	(0.580)	(0.060)	(1.161)	(0.017)
Autocracy + Personalism	−0.028	−0.039*	−0.081	−1.264***	−1.654**	0.214***	−3.681**	0.008
	(0.018)	(0.020)	(0.329)	(0.372)	(0.669)	(0.068)	(1.726)	(0.018)
Mean of outcome variable	6.571	5.491	-3.845	453.213	396.908	349.610	-181.821	0.148
Observations	5453	5453	3623	3374	2643	5494	4381	5713
Countries	162	162	108	162	154	169	129	172

Panel B: Conflict Variables	Civil Unrest		Civil Conflict			Civil War		
	(1) Log Protests	(2) Riots (0-1)	(3) Incidence (0-1)	(4) Onset (0-1)	(5) End (0-1)	(6) Incidence (0-1)	(7) Onset (0-1)	(8) End (0-1)
CGV Autocracy	0.121**	0.038	0.006	−0.006	0.006	−0.015	−0.001	−0.662
	(0.056)	(0.029)	(0.016)	(0.016)	(0.102)	(0.010)	(0.005)	(0.384)
Veto Players	−0.040	0.025	0.014	0.012	−0.062	0.028***	0.014***	0.000
	(0.049)	(0.024)	(0.015)	(0.012)	(0.092)	(0.009)	(0.005)	(.)
Autocracy + Personalism	0.082	0.064***	0.020	0.007	−0.056	0.013	0.013**	−0.662*
	(0.059)	(0.023)	(0.015)	(0.017)	(0.056)	(0.009)	(0.006)	(0.384)
Mean of outcome variable	-4.827	0.254	0.155	0.022	0.076	0.040	0.008	0.283
Observations	2854	5128	5652	4213	500	5652	5070	60
Countries	157	167	172	166	40	172	172	14

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome.

Table A18: Additional mechanisms: CGV/GS Power Consolidation

	(1) Hyperinflation (0-1)	(2) Index of Market Reforms	(3) Log Trade	(4) State Capacity
CGV Autocracy	−0.006	−0.851	−0.122	−0.010***
	(0.010)	(0.537)	(0.908)	(0.002)
GS Power Consolidation	0.001	0.523	−1.233	−0.001
	(0.007)	(0.394)	(0.767)	(0.002)
Autocracy + Personalism	−0.005	−0.328	−1.355*	−0.010***
	(0.008)	(0.428)	(0.753)	(0.002)
Mean of outcome variable	0.029	42.447	414.101	0.500
Observations	5870	4569	5342	5174
Countries	175	149	171	156

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome.

Table A19: Additional mechanisms: ANRR/GS Power Consolidation

	(1) Hyperinflation (0-1)	(2) Index of Market Reforms	(3) Log Trade	(4) State Capacity
Autocracy	−0.003	−0.761	−0.274	−0.009***
	(0.010)	(0.467)	(0.850)	(0.002)
GS Power Consolidation	0.002	0.451	−0.856	0.000
	(0.008)	(0.406)	(0.763)	(0.002)
Autocracy + Personalism	−0.002	−0.311	−1.130	−0.009***
	(0.008)	(0.328)	(0.756)	(0.002)
Mean of outcome variable	0.027	42.608	415.473	0.505
Observations	6077	4539	5542	5363
Countries	175	149	171	156

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome.

Table A20: Additional mechanisms: CGV/Veto Players

	(1) Hyperinflation (0-1)	(2) Index of Market Reforms	(3) Log Trade	(4) State Capacity
Autocracy	−0.001	−0.564	−0.852	−0.007***
	(0.010)	(0.542)	(0.852)	(0.002)
Veto Players	−0.005	0.044	−0.257	−0.005***
	(0.010)	(0.396)	(0.698)	(0.002)
Autocracy + Personalism	−0.007	−0.520	−1.109	−0.012***
	(0.009)	(0.452)	(0.804)	(0.002)
Mean of outcome variable	0.030	42.944	413.450	0.503
Observations	5713	4492	5200	5076
Countries	172	148	168	155

Notes: All regressions include country and year fixed effects, four lags of GDP, and four lags of the outcome.