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October 2020

Working Paper
SERIES 2020:111
THE VARIETIES OF DEMOCRACY INSTITUTE

UNIVERSITY OF GOTHENBURG
DEPT OF POLITICAL SCIENCE

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* On the 2019 V-Dem Policy Day Conference in Gothenburg, Larry Diamond discussed the importance of researchers considering the "business case" for democracy. The title of this paper, as well as upcoming events organized by other V-Dem researchers on the business case for democracy, are inspired by this talk. Thanks to Vanessa Boese, Amanda Edgell, John Gerring, and Svend-Erik Skaaning for valuable comments and suggestions.

Abstract

I present a business case for democracy, focusing on the impact of democracy on economic growth. This relationship is widely studied, and results are less clear for growth than many other development outcomes such as literacy or infant mortality. I discuss four factors pertaining to data quality and modelling choices, suggesting that several previous studies have underestimated the growth-benefits of democracy. I also discuss the relationship between democracy and economic crises and variation in economic performance. By mitigating abysmal economic outcomes and ensuring more stable performance, democracy is generally of benefit to risk-averse entrepreneurs, investors, workers, and consumers alike.

Introduction

What would you pick if you had to choose between freedom and bread? Most people – I suspect – would choose bread. Several social scientists (and authoritarian leaders) have suggested that a similar trade-off, at the macro-level, pertains to the choice between autocracy and democracy. Democracy may ensure more extensive political rights and better protection of liberties for citizens, but autocracy presumably enables development-minded leaders to push through different policies and reforms that enhance economic growth.

A stylized version of this argument goes as follows: Development-minded autocrats can initiate large-scale infrastructure projects with fewer constraints from partisan wrangling and opposing interest groups. They can also take a longer time horizon than their myopic citizens and channel resources toward public and private savings rather than consumption, thereby achieving higher investment rates than what is viable in democracies. Political rights and civil liberties are, supposedly, luxury goods to be afforded sometime in the distant future once economic development has been achieved. Democracy and freedom may have intrinsic normative value, but – the argument goes – ensuring economic development is more important. Advocates of this argument often point to the development experiences of a handful of autocracies, with the extraordinary growth of the Chinese economy after its economic reforms in the late 1970s and 80s being a prime example.

Nevertheless, the trade-off between democracy and development is far from evident. Whether democracy helps or hinders economic development relative to more authoritarian regimes is, ultimately, an empirical question. As Amartya Sen noted more than twenty years ago:

> It is sometimes claimed that the denial of [political and civil] rights helps to stimulate economic growth and is "good" for economic development. Some have even championed harsher political systems – with denial of basic civil and political rights – for their alleged advantage in promoting economic development. This thesis … is sometimes backed by some fairly rudimentary empirical evidence.[1]

This assessment highlights the importance of systematic empirical evaluation, rather than simply postulating a relationship that can be used to justify the denial of rights to citizens under autocratic rule. Indeed, numerous scholars have responded to the call, producing hundreds of empirical studies. While empirical results were mixed in many of the earlier studies, the conclusions reached by most recent studies with careful research designs -- especially from the last 15 years -- is that democracy either has no clear effect, or that it tends to enhance GDP per

[1] Amartya Sen, Development as Freedom (Oxford: Oxford University Press, 1999), 15.

capita (p.c.) growth, on average.[2] Recent work shows that democracy does not even harm growth in poor countries where strong state institutions are missing, a context where many scholars have long believed that democracy is "premature" and unfit for generating development.[3]

Despite this strong evidence to the contrary, the idea that autocracy is better for economic development persists among policy makers and some academics. One likely reason is the stellar economic performances of certain, high-profile autocratic regimes. In the 1930s, Stalin's 5-year plans and Hitler's building of the German Autobahn received widespread admiration. Aided by regime propaganda and inflated statistics, these experiences were perceived as impressive economic accomplishments pushed through by "strong leaders". After WWII, the rapid growth of export manufacturing in authoritarian South Korea and Taiwan, fueled by high savings rates and creative industrial policies, were widely regarded as authoritarian success stories. More recently, the industrialization and fast growth of the Chinese economy has captivated policy makers and academics alike, spurring talk of an authoritarian Chinese developmental model, competing with that of the richer (but slower-growing) Western democratic economies.

Hence, there is a continued need to state the "business case" for democracy. This is perhaps especially true today, as authoritarian practices are replacing democratic governance in many large countries, from Turkey to Brazil to Poland, and where democratic principles are under pressure even in long-standing democracies such as India and the United States. In the following, I review existing evidence and point to often overlooked patterns in the data that indicate a clearer "business case" for democracy than what its detractors believe. I draw two important conclusions:

First, I propose that – the mixed results in the large, statistical literature notwithstanding – democracy likely carries a stronger positive relationship with economic growth than often concluded. Existing studies underappreciate the relationship due to seemingly technical matters such as controlling for important mechanisms through which democracy enhances growth and omitting autocracies with poor growth records. Moreover, autocracies often report biased data

[2] For an early meta-study, see Hristos Doucouliagos and Mehmet Ulubasoglu. "Democracy and Economic Growth: A Meta-Analysis," *American Journal of Political Science* 52(1 2008): 61-83. For a recent meta-study, comprising 2047 regression models from 188 studies, see Marco Colagrossi, Domenico Rossignoli and Mario A. Maggioni. "Does Democracy cause growth? A meta-analysis (of 2000 regressions)," *European Journal of Political Economy* 61(2020): 101824. Notably, this latter study finds (stronger) evidence of a positive effect of democracy once considering only the more recent studies after December, 2005.

[3] Haakon Gjerløw, Carl Henrik Knutsen, Tore Wig and Matthew C. Wilson. One road to riches? How state building and democratization affect economic development. (Cambridge: Cambridge University Press, forthcoming).

that exaggerate their performances. This pattern has received recent attention with the likely under-reporting of COVID19 deaths in autocracies from China to Russia to Iran, but pertains also to GDP statistics.

Second, I highlight how democracy works as a safety-net for avoiding the worst possible economic outcomes. Autocracies make up a very heterogeneous group of countries,[4] and this heterogeneity spills over also in their economic policies and performances. While some uncertainty surrounds the "average" effect, there is little reason to doubt that democracies have lower variance in their economic performances than autocracies, and are better at avoiding economic crises. Hence, democracy is a less risky proposition for citizens and investors alike.

To substantiate the latter point, I present descriptive patterns and results from analyses conducted on extensive data material. Autocracies dominate among the worst economic performances (at various points in modern history after 1800) and experience more frequent short-term economic crises. Further, they experience far more variation in growth patterns, both across countries and within countries, from year-to-year. I follow up these results by discussing explanations for the higher variation in autocracies, focusing on increased power concentrations of leaders and the vast differences in institutional features. In particular, the absence of institutionalized parties increases growth volatility in autocracies.

Why democracy is better for business than it first appears

Plausible theoretical arguments point in different directions concerning the economic benefits of democracy relative to autocracy.[5] The ability of autocrats to ignore demands from short-sighted, consumption-seeking electorates – and bulldoze over various interest groups – should increase savings (and thus investment) rates and allow for efficiency-enhancing economic reforms to be pushed through without delays.[6] This should boost growth in autocracies. Conversely, democratic leaders being accountable to wider constituencies strengthens incentives to spend on productivity-enhancing public goods and services that benefit the many, such as primary and secondary education, and dis-incentivizes predatory behavior.[7] Further, an open and inclusive

[4] See, e.g., Barbara Geddes, Joseph Wright and Erica Frantz How Dictatorships Work. (Cambridge: Cambridge University Press, 2018).

[5] For a review, see Carl Henrik Knutsen. "Democracy and Economic Growth: A Review of Arguments and Results," International Area Studies Review 15(4 2012): 393-415.

[6] See, e.g., Adam Przeworski and Fernando Limongi. "Political Regimes and Economic Growth" *Journal of Economic Perspectives* 7(3 1993): 51-69.

[7] See, e.g., Matthew A. Baum and David A. Lake. "The Political Economy of Growth: Democracy and Human Capital," *American Journal of Political Science* 47(2 2003): 333–347.

environment for critical debate and free exchange of ideas increases the dissemination of new technologies into and within democracies. Hence, democracies observe faster technological change, a primary driver of long-term economic growth.[8]

Early statistical studies mostly report a null relationship or that democracy is bad for growth, whereas more recent studies typically find either a positive or non-robust relationship.[9] Hence, the position that there is a "democracy advantage" in generating growth looks more plausible today than a few decades ago. Still, also several recent studies find a non-significant relationship. Notably, four measurement and research design characteristics seem to influence results; when accounting for them, there is stronger evidence of a positive relationship between democracy and growth:

First, studies on various outcomes from corruption to property rights protection suggest that it takes considerable time – up to a decade – before benefits of democratization are realized.[10] One study has shown that economic growth declines initially after democratization, before it increases, and then peaks and stabilizes after about three years.[11] It takes time from a regime changes to the new leaders being able to legislate new economic policies. Then, these policies must be implemented, and firms, consumers, and workers need time to respond and adjust their investments, purchases, and labor supply. Hence, analyses measuring democracy and growth with a time lag of, say, 3-5 years, are more credible than analyses measuring them concurrently, and the estimated growth-benefit of democracy is typically larger in the former specifications.[12]

Second, control variable selection matters for results. For example, Daron Acemoglu and co-authors discuss the importance of taking into account past dynamics in income, and report a strong, positive relationship between democracy and growth once doing so.[13] I have previously discussed how many studies actually "over-control" by holding constant factors such as access to education that enhance growth, but which are also clearly affected by democracy.[14] This practice

[8] See, e.g., Carl Henrik Knutsen. *The Economic Effects of Democracy and Dictatorship* (University of Oslo, PhD Thesis, 2011).

[9] See, e.g., Colagrossi et al.. Does Democracy cause growth? A meta-analysis (of 2000 regressions).

[10] For a closer discussion of these studies, and potential explanations, see Knutsen. *The Economic Effects of Democracy and Dictatorship*.

[11] Elias Papaioannou and Gregorios Siourounis. "Democratization and Growth," *Economic Journal* 118(532 2008): 1520-1551.

[12] Carl Henrik Knutsen. *The Economic Effects of Democracy and Dictatorship* (University of Oslo, PhD Thesis, 2011).

[13] Daron Acemoglu, Suresh Naidu, Pascual Restrepo and James A. Robinson. "Democracy does cause growth," *Journal of Political Economy* 127(1 2019): 47-100.

[14] Knutsen, Democracy and Economic Growth: A Review of Arguments and Results.

of "blocking off" relevant indirect effects often leads researchers to under-estimate the growth benefits of democracy. A meta-study of 84 studies on democracy and growth substantiates this point, finding that the studies that control for several policy or outcome variables, including inflation, economic freedom, education, and political instability, are less likely to find a positive relationship.[15] Controlling for such variables entails "blocking off" key indirect effects as theoretical arguments indicate that democracy should enhance growth through, for example, protecting property rights or improving access to education.

Third, measurement of democracy may influence results. For instance, the dichotomous measure used in the most widely cited study on the topic (by Przeworski and colleagues) seems to systematically underestimate democracy's effect on growth.[16] To be considered democratic, this measure requires alternation in government after multi-party elections. Young democracies with a high-growth record are then sometimes erroneously coded as dictatorships since their popular governments have yet to lose elections. Further, some studies show that taking into account a country's past experiences with democratic rule, in addition to the current level, strengthens the positive link with growth.[17] Most other studies on do not use measures that capture the influence of regime history.

Fourth, dictatorships more often fail to report or, alternatively, report less credible economic statistics than democracies. More specifically, missing GDP data is more common for autocracies, and especially low-performing autocracies such as North Korea under Kim Jong Il or Afghanistan under the Taliban.[18] Even when data are reported, systematic errors may lead researchers to underestimate the effect of democracy on growth. Politicized statistical agencies, and national and local leaders' expectations (or demands) that bureaucrats create advantageous production statistics, were features of the Soviet Union's planned economy. A more recent example of manipulated GDP numbers is China. Researchers have estimated that China's GDP growth was 1.7 percentage points below official numbers from 2008-2016, possibly because "local governments are rewarded for meeting growth and investment targets, [and therefore]

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[15] Hristos Doucouliagos and Mehmet Ulubasoglu. Democracy and Economic Growth: A Meta-Analysis.

[16] Carl Henrik Knutsen and Tore Wig. "Government Turnover and the Effects of Regime Type: How Requiring Alternation in Power Biases against the Estimated Economic Benefits of Democracy," *Comparative Political Studies* 48(7 2015): 882-914.

[17] John Gerring, Philip Bond, William T. Barndt and Carola Moreno. "Democracy and economic growth: A historical perspective," World Politics 57(3 2005): 323-364. See also Amanda B. Edgell, Matthew C. Wilson, Vanessa A. Boese and Sandra Grahn. "Democratic Legacies: Using Democratic Stock to Assess Norms, Growth, and Regime Trajectories". V-Dem Working Paper 100 (2020).

[18] Morton H. Halperin, Joseph T Siegle and Michael M. Weinstein. 2005. The Democracy Advantage: How Democracies Promote Prosperity and Peace (New York: Routledge, 2005, 33); Knutsen, The Economic Effects of Democracy and Dictatorship, 174-175.

have an incentive to skew local statistics".[19] The Soviet and Chinese examples are not exceptions. Using satellite nighttime light data as a yardstick, studies have estimated that autocracies systematically exaggerate their growth data, and the bias is sizeable: "annual GDP growth rates are estimated to be overstated by 0.5-1.5 percentage points in the statistics that dictatorships report to the World Bank".[20]

In sum, the observed relationship between democracy and growth depends on statistical modelling choices and data quality. A conservative conclusion is that the relationship between democracy and growth is not robust. While true, this conclusion should come with caveats: Many plausible statistical models, for example those not controlling for intermediate variables or measuring democracy a few years prior to the outcome, do find a positive (and rather sizeable) relationship. Indeed, this finding has become more prevalent in studies conducted over the last 15 years,[21] as sample sizes, data quality, and methodological sophistication have improved. These patterns indicate that a positive relationship may still be our "best guess".

Democracy as a safety-net: patterns in the data

The discussion above notwithstanding, it is valuable to dig deeper into why the democracy-growth relationship lacks robustness. One important explanation is that growth performances are very heterogeneous for regimes with similar levels of democracy, especially toward the autocratic end of the scale. Hence, analysis on the "average relationship" between democracy and growth may mask substantial heterogeneity. Put differently, some autocracies display very high GDP p.c. growth, at least for some time, whereas others preside over stagnant or even contracting economies. This observation has been made before,[22] but I revisit it to assess how it holds up across time and probe its robustness.

I start out by describing the distributions of growth rates, by regime type, for different periods across modern history. I utilize GDP p.c. data from the Maddison project and draw on Skaaning et al.'s Lexical Index of Electoral Democracy.[23] I first calculate the annualized

[19] Wei Chen, Xilu Chen, Chang-Tai Hsieh, Zheng Song. "A Forensic Examination of China's National Accounts," Brookings Papers on Economic Activity (1 2019): 77.

[20] Christopher S. Magee and John A. Doces. Reconsidering Regime Type and Growth: Lies, Dictatorships, and Statistics. International Studies Quarterly 59(2 2015): 223.

[21] Colagrossi et al.. Does Democracy cause growth? A meta-analysis (of 2000 regressions).

[22] E.g., Dani Rodrik. One Economics, Many Recipes: Globalization, Institutions, and Economic Growth (Princeton: Princeton University Press, 2008).

[23] Jutta Bolt and Jan L. van Zanden, J.L. "The Maddison Project: collaborative research on historical national accounts," Economic History Review 67(3 2014): 627–651. Svend-Erik Skaaning, John Gerring, Henrikas Bartusevičius. "A Lexical Index of Electoral Democracy," Comparative Political Studies 48(12 2015): 1491-1525. Regarding other data used in this paper, indices for Polyarchy, Party Institutionalization, Legislative Constraints, and Impartial Administration are from Michael Coppedge et al. "V-

percentage growth rate in GDP p.c. across a decade (e.g., 2000-2009), and measure regime type at the decade's beginning (e.g., in 2000). For this descriptive exercise, I dichotomize the mentioned democracy index so that countries with both competitive multi-party elections and suffrage for at least half of the adult population are coded as "democratic". Countries without competitive multi-party elections or with less extensive suffrage are coded as "autocratic".[24] To check for how consistent patterns are across time, I split the 1800-2009 period into five intervals. Given the fewer countries with data, and especially the paucity of democracies according to this categorization, early on, I consider the entire 19th century as one-time interval. The second interval covers 1900-39, i.e., four decades, whereas the third time interval covers three decades (1940-69). The two final periods (1970-89; 1990-2009) cover two decades each.

The plots in Figure 1 show that certain patterns appear in most periods. First, the typical growth rates for democratic observations (red, solid lines) are higher than for autocracies (black, dashed lines). Second, variation is higher for the autocratic distributions, which incorporate various political systems with diverse institutional arrangements. The larger variation is especially notable if we consider the distributions' "tails" – suggesting that more extreme (negative and positive) growth rates appear more frequently in autocratic contexts.

Dem [Country–Year/Country–Date] Dataset v10" (2020a). See also Coppedget et al. "V-Dem v10. Codebook" (2020b) and Pemstein et al "The V-Dem Measurement Model: Latent Variable Analysis for Cross-National and Cross-Temporal Expert-Coded Data". V-Dem Working Paper No. 21. 2020. Conflict data are from Meredith Reid Sarkees and Frank Wayman Resort to War: 1816 - 2007. (Washington DC: CQ Press, 2010). Natural resource data are from Michael K. Miller. "Democratic Pieces: Autocratic Elections and Democratic Development since 1815," British Journal of Political Science 45(3 2015): 501-530. Detailed results and additional analysis are presented in an accompanying Online Appendix.

[24] Results are quite robust to using alternative operational rules for dividing up the sample into relatively democratic and relatively autocratic countries, for instance when using the categorical measure by Anna Lührman, Marcus Tannenberg and Staffan I. Lindberg. "Regimes of the World (RoW): Opening New Avenues for the Comparative Study of Political Regimes," *Politics and Governance* 6(1 2018): 60-77 or the dichotomous measure by Carles Boix, Michael Miller, and Sebastian Rosato. "A Complete Dataset of Political Regimes, 1800-2007," *Comparative Political Studies* 46(12 2013): 1523-54.

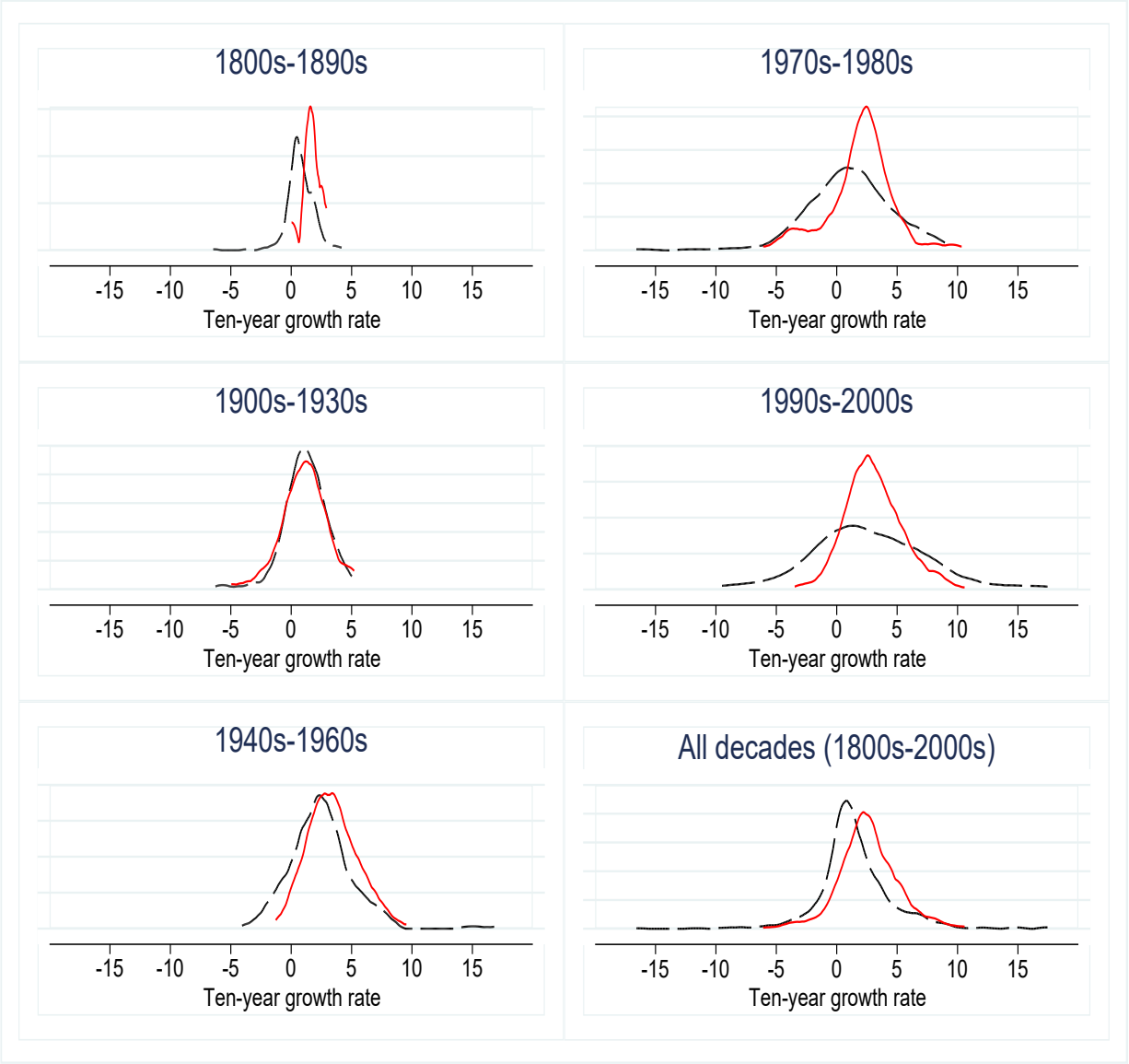

Figure 1: Economic growth rates for democracies (red, solid lines) and autocracies (black, dashed lines) in different time periods.

Note: All plots are so-called: Kernel density plots of ten-year growth rates, with country-decades as units of observation.

To be more specific, mean growth was considerably higher in democracies during all periods, except for 1900-1939, when several democratic economies were hit by World War I and struggled through the subsequent Great Depression. For instance, the mean GDP p.c. growth rate was 1.7 for democracies during the 19th century, compared to 0.8 for autocracies, and the corresponding numbers for 1970-89 were 2.0 and 1.0. Moreover, the variance in growth rates was also consistently higher for autocracies, again with the exception being 1900-39. The difference was particularly high during the 1990s and 2000s, with 5.5 in variance across 154 democratic country-decades and 23.1 in variance across 145 autocratic country-decades. Only 7.1

percent of democratic observations achieved negative growth rates and 0.6 percent exceeded +10 percent. For autocracies, 28.3 percent of observations experienced negative growth and 5.5 percent growth above +10 percent. When considering all "growth decades" from 1800-2009, the mean autocratic growth rate was 1.5 percent across 877 country-decades and the mean democratic one was 2.6 percent (364 country-decades). The respective variances were 9.4 and 6.0.

The higher variation among autocracies – especially the longer tails signifying more extreme observations – is also indicated by lists of "growth miracles" and "growth disasters", to use Przeworski et al.'s terminology. These authors used data from 1950-1990 and concluded that both lists "are populated almost exclusively by dictatorships".[25]

Table 1: Growth miracles and disasters from 1990-2016.

1990s		2000s		2010-2016	
Top ten, GDP p.c. growth rate					
Equatorial Guinea	17.3	Azerbaijan	17.4	Burma/Myanmar	10.4
Singapore	9.8	Turkmenistan	14.9	Kyrgyzstan	10.2
Ireland	8.3	Angola	14.5	Laos	8.9
Kuwait	7.3	Equatorial Guinea	12.6	Ethiopia	7.9
Qatar	7.1	Kazakhstan	12.0	Namibia	7.9
Malta	6.7	Iraq	11.6	Mongolia	6.8
Vietnam	6.5	Mongolia	10.6	Iraq	6.8
Lebanon	6.3	Jordan	10.5	Uzbekistan	6.1
South Korea	6.1	Zambia	9.7	Lithuania	6.1
Luxembourg	6.1	Georgia	9.3	Indonesia	6.1
Bottom ten, GDP p.c. growth rate					
Russia	-7.3	Israel	-0.2	Republic of Congo	-2.7
Iraq	-8.0	Burkina Faso	-0.2	Sierra Leone	-3.2
Moldova	-8.3	Guinea-Bissau	-0.2	Venezuela	-3.4
Ukraine	-8.4	Central African Republic	-0.5	Equatorial Guinea	-4.6
DR Congo	-9.5	Luxembourg	-0.9	Lebanon	-4.8
Afghanistan	-9.5	Haiti	-1.6	Central Afr. Rep.	-5.4
Kyrgyzstan	-11.2	Burundi	-2.5	Barbados	-5.7
Georgia	-11.5	Barbados	-3.5	Syria	-7.5
Azerbaijan	-12.0	United Arab Emirates	-5.7	Yemen	-10.8
Tajikistan	-12.9	Zimbabwe	-6.2	Libya	-20.2

Notes: Numbers indicate annualized growth rates as averages across periods. Regime category is measured the first year and indicated by color (green denotes democratic; orange denotes autocratic). Post-Soviet republics obtain the Soviet Union's 1990-autocracy coding.

Table 1 maps the worst and best performers per decade after 1990, when Przeworski et al's investigation ended. The patterns conform with those of earlier time periods. Autocracies

[25] Adam Przeworski, Michael E. Alvarez, José Antonio Cheibub, Fernando Limongi. Democracy and development: Political institutions and well-being in the world, 1950-1990. (Cambridge: Cambridge University Press, 2000), 178.

dominate the lists for top- and, especially, bottom performers. Autocracies – following the dichotomous categorization based on Skaaning et al.'s (2015) measure -- made up 6 of the 10 top-performing countries in the (relatively slow-growing) 1990s, but 9 of 10 in the (fast-growing) 2000s. From 2010-2016 (last year of the GDP data), autocracies made up 5 of 10 top performers. Concerning bottom performers, all 10 countries were autocracies in the 1990s and 7 of 10 countries were autocracies in the period from 2010-2016. The 2000s is the exception, as only 5 bottom achievers were autocracies -- this is, indeed, the lowest share in any decade with data.

When looking closer at these lists, some noticeable patterns indicate why autocracies vary more in growth than democracies. Surely, the top-10 list for the 1990s include persistent development miracles such as Singapore and more recent ones such as Vietnam. Yet, it also includes economies with oil-fueled growth booms such as Kuwait, Qatar, and Equatorial Guinea (which is also on the bottom-10 list after 2010, a period with decreasing oil prices). Considering the worst-performers of the 1990s, this list is dominated by post-Soviet republics – though not the more democratic ones in the Baltics – that experienced a sharp decline in their registered growth rates with the collapse of Soviet command economy (and its inflated GDP statistics). Inevitably, several post-Soviet republics experienced "rebound growth" after the disastrous early 1990s, and some figure among the top performers of the ensuing decade.

More generally, and as Przeworski et al. also observed, being a top performer in a particular decade often follows a disastrous economic performance in years prior. The very high growth volatility of autocracies – which I elaborate on below – thus "mechanically" ensures that some autocracies experience short periods of rapid growth. This holds also for regimes that experience rebound growth after devastating conflicts, such as Angola or Iraq in the 2000s. Insofar as regime type affects the likelihood of large-scale conflict, it also contributes to explain why 1990s-DR Congo or Afghanistan, 2000s-Burundi, or Assad's Syria, Gadhafi's Libya and Yemen from 2010-2016 are on the lists of growth disasters. Finally, the growth disasters include autocratic regimes with a well-documented track-record of economic mismanagement such as 2000s-Zimbabwe under Mugabe or Venezuela under Chavez and then Maduro, from 2010-2016. However, direct comparisons of growth rates across democracies and autocracies must be taken with a grain of salt; regimes differ systematically in other relevant regards. For example, initially poor countries are more often autocratic, and poor countries have higher potential for fast (catch-up) growth and inherently higher variation in growth performance. Hence, scholars working on democracy and growth typically run regression analysis, controlling for relevant confounders.

In Figure 2, I show results from some such regressions controlling for initial income level, time trends, and country-specific factors that may affect both regime type and growth. I do not include any additional controls, following the discussion above on the tendency of scholars to "over-control" for factors that are important intermediate variables such as education policies or investment rates. Since I am no longer discussing simple descriptive contrasts, and want to include as much information as possible, I employ V-Dem's continuous Polyarchy index of electoral democracy.[26] These analyses include data from more than 15,000 observations, spanning 163 countries and 223 years.

The first analyses, shown in the upper panel of Figure 2, consider the standard, "average" relationship between democracy and GDP p.c. growth. To account for the discussed time-lag in the effect, I measure growth five years after Polyarchy. One analysis models the time trends in growth with year-specific effects, whereas the other analysis allows for comparisons across time by rather including a fairly flexible (cubic) time trend. Both analysis indicate a positive relationship between democracy and growth, but the uncertainty is quite large and the significance of the relationship hinges on the particular model chosen. When I control for year-specific effects on growth, the relationship is statistically insignificant at conventional levels, but the more lenient control for time-trends in growth yields a substantially larger and statistically significant coefficient. To illustrate, going from the Polyarchy score of 2019-Venezuela (0.23) to that of 2019-Uruguay (0.86) increases the predicted growth rate in the latter statistical model by almost one percentage point, which is substantial: If two initially equal economies growth at different speeds, with the faster-growing having a one percent higher annual growth rate in GDP per capita, the faster-growing one will end up as twice as rich as the slower-growing one after about 70 years. What is more, this estimated difference may even be attenuated, since it does not account for the discussed over-reporting of GDP numbers in more autocratic regimes.

[26] Jan Teorell, Michael Coppedge, Staffan Lindbergand Svend-Erik Skaaning. "Measuring Polyarchy across the Globe, 1900–2017." Studies in Comparative International Development 54(1 2019): 71-95.

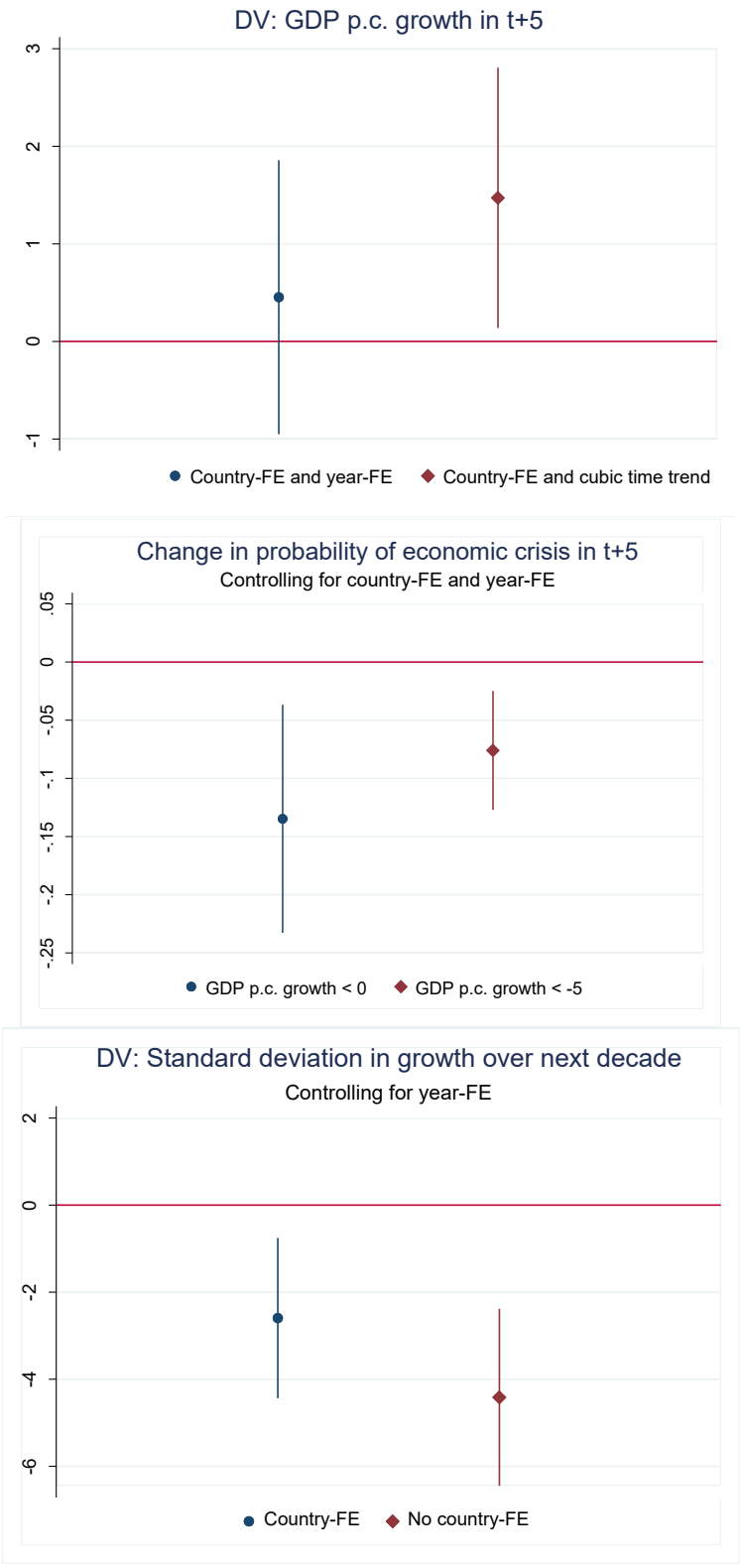

Figure 2: Results from analyses of relationships between democracy and economic growth (top), probability of experiencing economic crisis (middle), or growth volatility (bottom).

Notes: Coefficient plots, with 95% confidence intervals, for V-Dem's Polyarchy index, in OLS regressions with errors clustered by country. Dependent variables (DV) and controls vary as indicated by headings and legends, but all specifications control for initial income level (Ln GDP p.c.). Country-FE: Country-fixed effects. Year-FE: Year-fixed effects. T+5 indicates that the dependent variable is measured five years after Polyarchy.

The "average" relationship is thus sensitive to statistical modelling choices. In contrast, measures focusing on particular adverse economic outcomes or variability in economic performance yield more robust results. One illustration is the relationship between democracy and the probability of observing a subsequent economic crisis. Figure 2 (middle panel) presents results from two regressions where crisis is variously defined as experiencing negative growth rate in a year or growth below minus 5 percentage points. Overall, 28.6 percent of the 15,516 observations included in the analysis experience negative growth, whereas 8.8 percent experience growth below minus 5 percentage points. The predicted probabilities of experiencing such events are reduced by, respectively, 8.5 and 4.8 percentage points when going from Venezuela's 2019 Polyarchy level (0.23) to Uruguay's (0.86). These (statistically significant) results hold up even when controlling for various types of ongoing inter- and intra-state armed conflicts and fuel and mineral income as share of GDP, or when using alternative definitions of "crisis" and alternative GDP data.[27]

Democracy also reduces overall variability in economic growth. The analyses in Figure 2's bottom panel have a measure of overall variation -- the so-called "standard deviation" -- in GDP p.c. growth over the subsequent decade as the outcome. The rightmost estimate indicates that the variation is much higher in more autocratic regimes when allowing for comparisons across countries. The leftmost estimate shows that the variation is systematically higher for these regimes also when we control for country-specific factors, and thereby only consider changes within countries as they become more or less democratic over time. These results corroborate earlier findings, which have typically relied on far shorter time series.[28] Hence, countries that experience democratization can also expect less growth volatility in the future.

These results might reflect that many autocracies are fuel and mineral producers or that poor autocracies more often experience armed conflicts. Having an economy centered on production of particular fuels or minerals makes the economy sensitive to price fluctuations, increasing growth volatility. Armed conflicts are associated with destruction of capital stocks and reduced output, whereas post-conflict periods often observe high rebound growth. Hence, I re-ran the specifications in Figure 2, but controlling for fuel and mineral income as share of GDP and dummies registering inter- and intra-state conflicts. I actually find that controlling for ongoing armed conflicts and resource dependence barely alters the estimated difference in growth variability between regimes, which remains substantial in size and highly significant. One

[27] Carl Henrik Knutsen. "Autocracy and variation in economic development outcomes," in G Crawford and A-G Abdulai. [Eds.] Handbook on Democracy and Development. (Cheltenham: Edward Elgar, 2020).

[28] But, see Knutsen, "Autocracy and variation in economic development outcomes".

might argue that adding these controls is inappropriate, as the tendency to operate a non-diversified, resource-reliant economy or experience armed conflict are partly consequences of autocratic rule. This question notwithstanding, the conclusion is that more autocratic regimes have higher growth variability.

What explains the high growth variability in autocracies, and why growth variability matters

There are different plausible explanations for the large variation in growth performances among dictatorships, both when measured across countries but also within countries, over time. I will here briefly mention some such explanations centering on i) the individual autocrat, and ii) the different institutions that appear in the heterogeneous set of regimes that are grouped together due to their lack of democracy.

First, power is more concentrated with the leadership – and often with one particular leader -- in autocracies than democracies. Thus, the preferences and cognitive abilities of the top leader also matters more for which policies are selected, with downstream consequences for economic performance. Given the large variance in cognitive abilities and preferences of different individuals, this should contribute to the large growth variance in autocracies, also within regimes when one leader replaces another. For example, dictators who care primarily about their own private consumption likely pursue different redistributive and investment policies than autocrats primarily concerned with maximizing regime survival or their own control over society.[29]

The notion that the particular individual filling the role of autocrat is important for economic performance is backed up by stringent evidence. Jones and Olken consider natural deaths of leaders and study the subsequent impact on growth rates.[30] They find that leader deaths in autocracies are accompanied by a significant change in growth, and that the change is larger in autocracies with fewer constraints on executive power. In contrast, leader deaths do not systematically alter the growth rates of democracies.

In addition to personal characteristics of leaders varying across autocracies, there is vast variation in political institutions. How institutions are structured in autocracies shape which leaders are selected. Institutions also shape leaders' incentives to take a long-time horizon or be

[29] Ronald Wintrobe. *The Political Economy of Dictatorship* (Cambridge: Cambridge University Press, 1998).

[30] Benjamin F. Jones and Benjamin A. Olken. "Do Leaders Matter? National Leadership and Growth since World War II," Quarterly Journal of Economics 120(3 2005): 835-864.

myopic or to consider broad swaths of the population versus only the utility of a selected few when formulating economic policies. Such differences, ultimately, shape economic performance. Below, we consider three institutional features that could shape the economic performances of autocracies:

First, a literature on "developmental states" details how strong states with capable and effective bureaucracies -- especially in authoritarian contexts – promoted industrial- and other economic policies that, in turn, spurred economic development, especially in many Asian countries after WWII.[31] In contrast, studies on African countries have cast the "neo-patrimonial" African state, with its clientelistic ties and lack of meritocratic recruitment to the bureaucracy, as a primary culprit behind these countries' weak economic development records. Indeed, there are reasons to believe that the mix of low state capacity and autocracy is particularly toxic for growth, and, empirically, autocracy has a substantially larger negative effect on growth in Africa than elsewhere.[32] Possibly, the presence or absence of high-capacity state institutions might also contribute to explaining why some autocracies pursue economic policies that produce more or less volatile growth. The continuity and expectations-stabilizing role provided by a rule-following and competent bureaucracy may mitigate chances of sudden (negative) shifts in economic performance, and these bureaucratic features' role in limiting the discretionary powers of autocrats could contribute to the same outcome.

Second, other institutions that constrain the autocrat and standardize decision-making processes could also influence both average growth and growth volatility in autocracies. One study has found that legislatures that effectively constrain the autocrat enhance economic growth, and another study has presented evidence that more "institutionalized" autocracies -- especially those having both regime parties and legislatures -- have higher growth rates.[33] There is no general evidence on how autocratic legislatures affect growth volatility, but a recent study has found that stronger horizontal constraints on leaders imposed by legislatures reduce the impact of leadership turnover on changes to growth.[34]

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[31] E.g., Alice Amsden. Asia's Next Giant: South Korea and Late Industrialization. (Oxford: Oxford University Press, 1989).

[32] Carl Henrik Knutsen. "Democracy, State Capacity and Economic Growth," World Development 43 (2013): 1-18.

[33] Joseph Wright. "Do Authoritarian Institutions Constrain? How Legislatures Affect Economic Growth and Investment," American Journal of Political Science 52(2 2008): 322-343; Jennifer Gandhi. "Dictatorial Institutions and their Impact on Economic Growth," European Journal of Sociology 49(3 2008): 3-30.

[34] Gary W. Cox and Barry R. Weingast. "Executive Constraint, Political Stability, and Economic Growth," Comparative Political Studies 51(3 2018): 279-303.

Third, in previous work several colleagues and I have found clear evidence that institutionalized parties (overall, but also in autocracies, specifically) increase average growth.[35] Institutionalized parties prolong the time horizons of policy makers and broaden the constituencies to which leaders respond. The expanded time horizons and constituencies coming from more institutionalized parties should not only be conducive to higher average growth, but also make for more stable policies that are less prone to changes and reversals set in motion by any single actor. Hence, institutionalized parties – like democracy – should even reduce growth volatility. Indeed, studying both democracies and autocracies together, my colleagues and I have found that more institutionalized parties mitigate reduce growth volatility.[36] Below, I will investigate whether this pattern holds up in a subsample of autocratic regimes.

I conducted two types of tests to assess the different, plausible hypotheses on growth volatility in autocracies. First, I controlled for impartial and rule-following behavior by bureaucrats, party institutionalization, or legislative constraints on the executive, using indices or indicators from V-Dem, in the regressions from above on growth variability. Next, I split the sample into autocracies and democracies, using the Skaaning et al. measure, before analyzing how the different institutional measures correlated with growth volatility for each sub-sample. When including impartial administration, legislative constraints, or party institutionalization in the regression models on growth volatility, only the inclusion of the latter substantially alters the relationship between Polyarchy and growth volatility. More specifically, Polyarchy is reduced to about 2/3 of its original size after controlling for party institutionalization. However, also Polyarchy remains highly statistically significant. Hence, the higher variance in autocratic growth rates seems to be partly due to political parties often being less institutionalized in autocracies, but even when accounting for such differences autocracies display substantially higher variation.

Further, when separating democracies and autocracies, there is a clear relationship between party institutionalization and growth variability in autocracies. These results are reported in Figure 3. Going from the year-2010 value of Saudi Arabia (0.03) to China (0.74) on V-Dem's Party Institutionalization index reduces the so-called standard deviation in growth over the next decade by almost 3; autocracies with more institutionalized parties have considerably less over-time variation in their growth performances. Somewhat surprisingly, impartial administration and legislative constraints do not display a systematic relationship with growth volatility in

[35] Fernando Bizzarro, John Gerring, Carl Henrik Knutsen, Allen Hicken, Michael Bernhard, Svend-Erik Skaaning, Michael Coppedge and Staffan I. Lindberg. "Party Strength and Economic Growth," World Politics 70(2 2018): 275-320.

[36] Bizzarro et al. "Party Strength and Economic Growth".

autocracies, as displayed in Figure 3, but further analysis show that they do seem to mitigate growth variability in democracies.

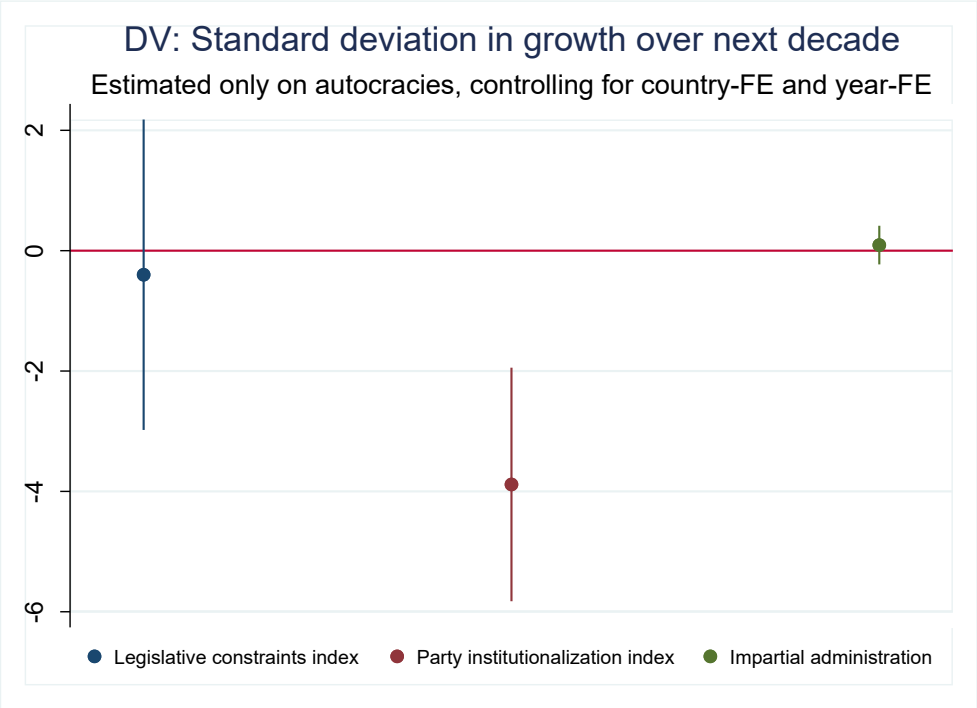

Figure 3: Results from analyses of relationships between different institutional features and standard deviation in growth over the next decade, for a sub-sample of autocracies.

Notes: Coefficient plots, with 95% confidence intervals, for various institutional measures from V-Dem, in a sub-sample of autocracies. The left specification includes V-Dem's Legislative Constraints Index as regressor, the middle specification includes the Party Institutionalization Index, and the right specification includes an indicator on rule-following and impartial public administration. All three specifications are OLS regressions with errors clustered by country. Dependent variable is standard deviation in GDP p.c. growth over the subsequent decade and controls include initial income level (Ln GDP p.c.), country-fixed effects, and year-fixed effects.

The higher variability in economic performance among autocracies (and especially regimes with weak or no parties) is not only of academic interest, but likely influences the actions and well-being of investors, entrepreneurs, and citizens trying to maneuver in these economies. High growth volatility, presumably following from high variability in the economic policies pursued by autocrats, may even have independent effects on future performance. A key part of the behavior of economic actors – from entrepreneurs to capital owners to prospective workers considering which education to pursue – is forming predictions about the future economic environment.

Assuming that many such economic actors are risk averse, high variability could deter different types of investments and other economic transactions with high expected future gains. Stability and predictability may be especially important for innovation-related activities that require a long-time horizon, or for actors who invest in asset-specific human and physical capital

(which allow for specialization and potentially have high returns to investment, but also entail higher risk). Hence, the desire to mitigate variability in policy and performance, and ensuring a stable, less risky environment, is a key part of the business case for democracy. For risk-averse workers and consumers, high growth volatility related to violent business cycles enhances the chances of outcomes that produce low utility, notably including increased chances of unemployment, which may be especially bad in autocratic systems where large groups of workers are often not covered by unemployment insurance.

Growth volatility thus matters for producers and consumers alike. While scholars studying democracy and growth have studied average growth over long periods of time, macro-economists from Keynes onwards have focused intensively on business cycles and how to mitigate them with fiscal and monetary policies. Especially after WWII, also many politicians have been concerned with constructing economic policies to counter business cycles, further signifying their importance. The results presented above suggest that one cure for violent business cycles is not merely a particular policy, but rather democratic features of the regime that, in turn, likely affect several policies with downstream implications for growth volatility.

Conclusion

I have laid out the business case for democracy, focusing on the relationship with economic growth. Existing studies have been more ambiguous about the benevolent effects of democracy on growth compared to other development outcomes such as infant mortality rates or literacy. Yet, I have discussed factors that make several previous studies underestimate the relationship between democracy and growth. For instance, autocracies seem to systematically over-report GDP numbers and many existing studies have controlled for relevant indirect effects such as access to education. Nonetheless, the average relationship between democracy and growth – while fairly strong and plausible – is not entirely robust, and hinges on specification choices.

In contrast, relationships between democracy and measures of variation in economic performance are robust. As such, democratic rule may present businesses and citizens alike with an important economic safety-net. Democracy mitigates the possibility for countries to experience truly tragic economic outcomes. The kind of growth disasters associated with Mao's Great Leap Forward in China or Mobutu Sese Seko's kleptocratic rule in Zaïre simply do not occur in democratic systems, presumably because voters will kick out leaders pursuing such economic policies. Further, democracies are less likely than autocracies to observe violent business cycles and high growth volatility. Avoiding very poor outcomes and economic instability is of great value to investors, workers and consumers living in democracies.

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