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Do democracies perform worse during pandemics? Evidence from 2020

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Abstract

Existing evidence in the emerging literature studying the performance of different political regimes in handling the Covid-19 pandemic is mixed and inconclusive. This paper contributes new insights by using a country-level difference-in-differences estimation strategy to study the effects of democracy on different socio-economic outcomes during the first year of the pandemic. We find that democracies suffered stronger reductions in GDP growth rates and larger increases in unemployment rates than autocracies. However, the better performance of autocracies in these economic indicators does not seem to translate into higher levels of citizens' self-reported happiness. Unlike previous studies, we find that both types of political regimes featured similar increases in mortality rates, on average, in 2020.

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1. Introduction

A large body of literature argues that democracy leads to better economic, health, and social outcomes, because it tends to feature more informed and accountable policy-making processes than autocratic forms of governance (Besley and Kudamatsu 2006, Justesen 2012, Kudamatsu 2012, Fujiwara 2015, Acemoglu et al. 2019, Bollyky et al. 2019). However, the very same features are also thought to constrain the speed and incisiveness of democratic decision-making, thus impeding a fast and strong response during the early stages of a crisis such as Covid-19. For example, recent studies find that democratic governance has been associated with a narrower policy scope and higher number of deaths during the onset of the Covid-19 pandemic (Cepaluni et al. 2020, Narita and Sudo 2021). At the same time, the evidence in the emerging literature studying the performance of different political regimes in handling the Covid-19 pandemic is mixed and largely inconclusive. For example, Karabulut et al. (2021) show that while Covid-19 infection rates were higher in more democratic countries, the case fatality rates were lower. Frey et al. (2020) find that while autocratic regimes succeeded in imposing more stringent lockdowns, the less-stringent measures introduced by democratic governments were 20% more effective in reducing geographic mobility. Cronert (2020) finds that school closures were in fact more quickly implemented in countries with democratic governments (not in autocratic regimes). Another limitation of the recent literature in this context is that many of the applied methods do not allow for a causal interpretation of the results, so that it is often unclear whether the identified empirical relationships are indeed driven by differences in political regimes or by other confounding factors.

This paper contributes to addressing these gaps in the literature by using a quasi-experimental method based on a difference-in-difference approach to study the performance of democracies and autocracies in handling the Covid-19 pandemic. In line with previous studies, we find that democracies suffered stronger reductions in GDP growth rates and larger increases in unemployment rates than autocracies. However, there is no evidence that the better performance of autocracies in these economic indicators translated into higher levels of perceived happiness. If anything, our results suggest that citizens in autocracies experienced stronger declines in self-reported happiness than citizens in democracies. Finally, according to our data and analysis, both types of political regimes featured similar increases in mortality rates, on average, in 2020.

The rest of the paper is structured as follows. Section 2 explains the estimation strategy. Section 3 describes the underlying data. Section 4 presents the results. Section 5 concludes.

2. Estimation strategy

Our estimation strategy is based on a difference-in-differences (DiD) approach. This methodology is commonly applied to estimate the impacts of an event or treatment (e.g., a change in policy) by comparing the difference in outcomes before and after the event for units of observations which were affected by the event, with the respective difference in outcomes for units which were not affected (or systematically less affected). In our context, the treatment is the onset of the Covid-19 pandemic which occurred at the beginning of 2020.¹ To make use of the DiD strategy, we consider countries with a democratic political system as the treatment group and countries with a non-democratic (autocratic) system as the comparison group. This approach corresponds to the hypothesis described in the Introduction that democracies were especially strongly affected by the

¹ To keep the analysis simple, we abstract from the fact that countries were hit at slightly different times by the pandemic.

pandemic because their governments featured less centralized power to establish and enforce the social-distancing measures needed to reduce the spread of the virus.

The regression equation of the DiD estimator can be written as

$$Y_{it} = \beta_0 + \beta_1 Post_t + \beta_2 Democracy_i + \beta_3 (Post_t \times Democracy_i) + X_{it}\gamma + \varepsilon_{it}, \quad (1)$$

where Y_{it} is the outcome of country i in year t . $Post_t$ is a dummy time variable that equals 1 for the time after the onset of the pandemic (2020) and 0 for the time before (2019). $Democracy_i$ is a dummy variable that equals 1 for countries classified as democracies, and 0 otherwise. The variables $Post_t$ and $Democracy_i$ are interacted to generate the coefficient β_3 , which is the main coefficient of interest. X_{it} is a vector of control variables. The estimated coefficients from the model in equation (1) can be interpreted as follows. The coefficient β_1 captures the general time trend component; that is, the average change in outcome Y between 2019 and 2020 shared by all countries, regardless of democratic status during the pandemic. The coefficient β_2 captures the average difference in the level of Y between democracies and autocracies. The coefficient of interest is β_3 which captures the *difference in the change* in Y between democracies and autocracies. If the assumptions underlying the DiD approach hold (as we discuss below), then β_3 can be interpreted as the average effect of being a democracy during the pandemic on the outcome Y over the considered time period.

Our DiD approach relies on the assumption that any pre-existing differences in outcomes between democracies and autocracies would be constant over time in the absence of the pandemic (“parallel trends assumption”). One of the advantages of DiD is that it can account for systematic differences between the treatment and comparison group that prevailed before the start of the studied event. The existence of such differences is to be expected in our context, because the type of political system is endogenous to many other factors and certainly not randomly allocated across countries. The estimation of the coefficient β_3 in equation (1) will be robust as long as these differences are constant over time in the absence of the studied event, i.e., as long as in the absence of the pandemic democracies would have featured comparable time trends with autocracies. There is no statistical test to verify (or reject) this assumption. However, a notion in the literature is to use data on the time before the start of the studied event to visually verify whether trends appear to be parallel. Since data on our outcome variables are available at an annual basis across several years, we are able to follow this approach in our analysis below.

3. Data

All data used in this study are publicly available from the sources described in Table I. We consider two alternative approaches commonly used in the literature to classify countries as either democratic or autocratic. The first approach is based on the Center for Systemic Peace’s Polity 5 Project, which assigns to each country a Polity Score on a scale from -10 (autocracy) to 10 (democracy). Our dummy variable *Democracy (Polity Score)* equals 1 for countries with a nonnegative Polity Score in 2019, and 0 otherwise. The second approach is based on the Freedom House Foundation’s classification of countries as “free”, “partially free”, and “not free”. Our dummy variable *Democracy (Freedom Score)* equals 1 for countries rated as “free” in 2019, and 0 otherwise. The outcomes we study are the GDP growth rate, unemployment rate, mortality rate, and average self-reported happiness in each country. As controls we include the logarithm of per-capita GDP and a set of region dummies. For most of the variables, data are available annually for

the years up to (and including) 2020. Due to missing values in some variables, the sample sizes vary across specifications, ranging from 79 to 175 countries in our main DiD regressions.

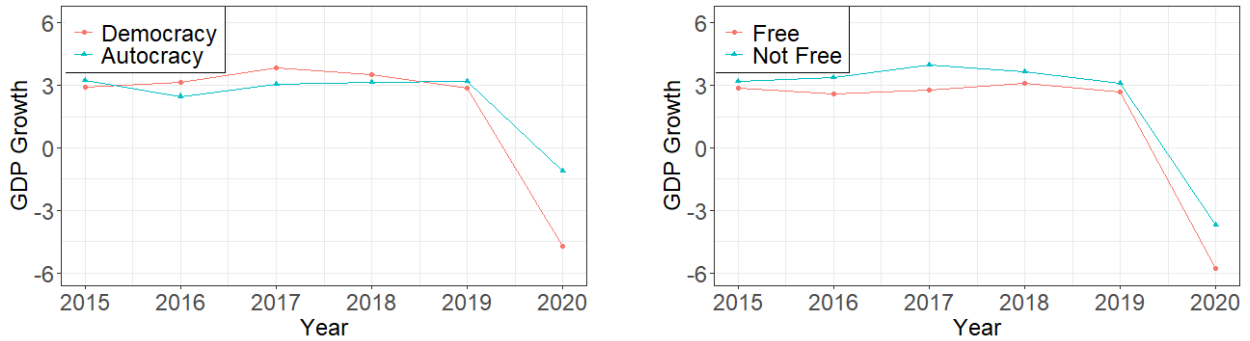
Table I. List of Variables and Data Sources

Variable	Description	Source
Democracy (Polity Score)	Dummy variable based on the Polity2 Score which classifies countries on a scale from -10 (autocracy) to 10 (democracy). Our dummy variable equals 1 for nonnegative values in 2019, and 0 otherwise.	Center for Systemic Peace, Polity5 Project
Democracy (Freedom Score)	Dummy variable based on the Global Freedom Score which classifies countries as “free”, “partially free”, and “not free”. Our dummy variable equals 1 for “free” in 2019, and 0 otherwise.	Freedom House Foundation, Freedom in the World 2020
GDP growth	Annual percentage growth rate of GDP at market prices based on constant local currency	World Bank, World Development Indicators
Unemployment	Unemployment, total (% of total labor force)	World Bank, based on data from the International Labor Organization
Mortality	Deaths per 1,000 Population	World Mortality Dataset (Karlinsky and Kobak 2021) and World Bank
Happiness	Average individual happiness (perceived) measured on a scale from 0 (very unhappy) to 10 (very happy)	World Happiness Report 2021
Log GDP p.c.	Logarithm of GDP per capita, PPP (constant 2017 international \$)	World Bank, World Development Indicators
Region Dummies	Set of dummy variables for geographical region	Authors’ computation based on World Bank classification

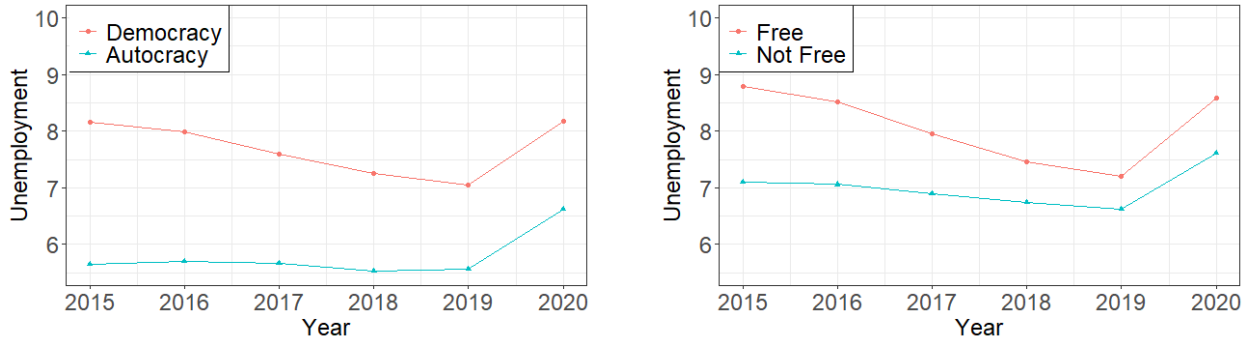
Source: Authors’ compilation.

Figure 1: Time Trends of Outcomes in Democracies and Autocracies Classified Based on Polity Score (Left) and Freedom Score (Right)

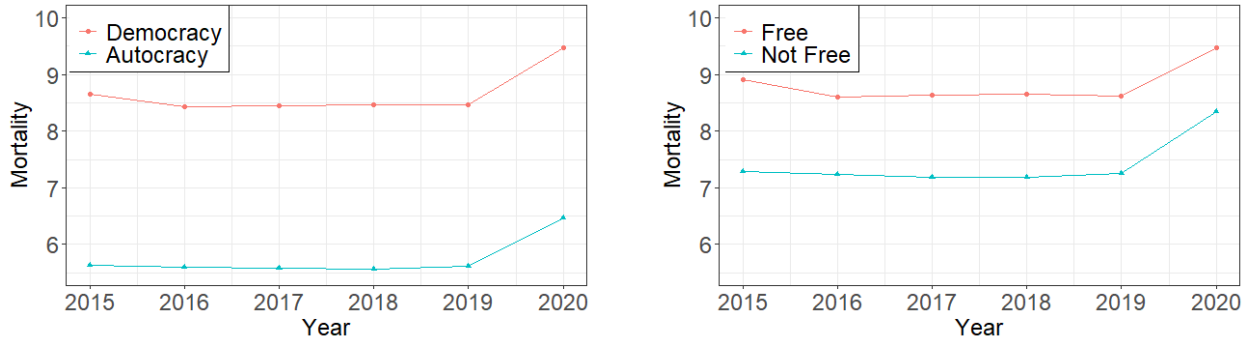
Panel A: GDP Growth



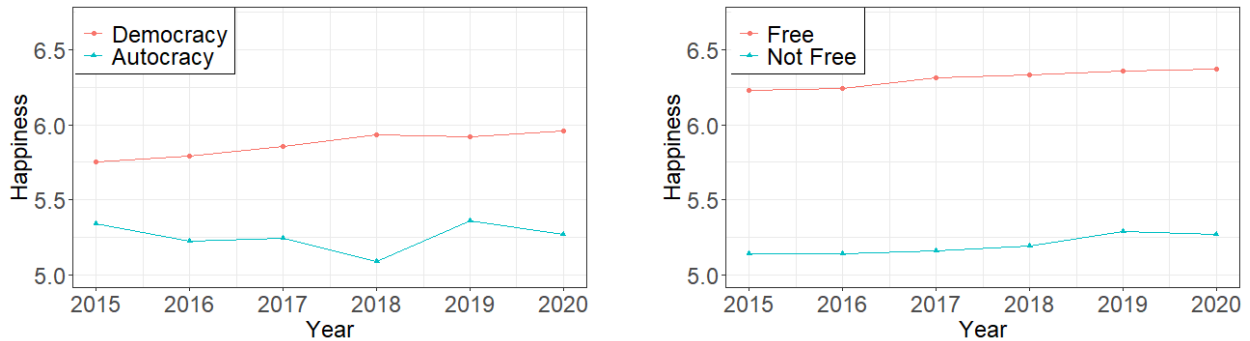
Panel B: Unemployment



Panel C: Mortality



Panel D: Happiness



Source: Authors' analysis using the data described in Table I.

4. Results

Figure 1 shows the time trends of the four considered outcome variables prior to 2020 in democracies and autocracies (classified based on the Polity Score and the Freedom Score, respectively). From eyeballing these graphs, trends appear to be approximately parallel for most of the variables prior to 2020. At the same time, there are considerable differences between democracies and autocracies in the *level* of some of these variables. As discussed above, these differences are to be expected in the context we study because the type of political system is not randomly allocated across countries. This also suggests that simple ordinary least squares (OLS) regressions of aggregate outcomes on the democracy indicators would suffer from endogeneity, since the democracy indicator would be correlated with (unobserved) factors that also affect the considered outcomes. Therefore, in estimating the role of democracy in determining the considered outcomes during the Covid-19 pandemic, a method such as DiD that can account for the differences in levels (subject to the parallel trends assumption) is to be preferred.

Table II. Difference-in-Differences Estimation Results

	GDP Growth		Unemployment		Mortality		Happiness	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post x Democracy	-1.491 (0.175)	-3.333*** (0.000)	0.499*** (0.007)	0.297* (0.097)	-0.303 (0.165)	0.035 (0.903)	0.039 (0.670)	0.169* (0.090)
Post	- 6.828*** (0.000)	-4.342*** (0.000)	0.911*** (0.000)	0.855*** (0.000)	1.133*** (0.000)	0.981*** (0.000)	0.015 (0.844)	-0.081 (0.335)
Democracy (Freedom Score)	0.346 (0.545)		0.533 (0.565)		1.065 (0.118)		0.200 (0.224)	
Democracy (Polity Score)		0.041 (0.954)		1.327 (0.180)		2.603** (0.010)		-0.065 (0.759)
Log GDP p.c.	-0.205 (0.556)	-0.554 (0.100)	-0.063 (0.864)	0.260 (0.511)	0.012 (0.985)	0.144 (0.771)	0.744*** (0.000)	0.829*** (0.000)
Region Dummies	yes	yes	yes	yes	yes	yes	yes	yes
Observations	350	304	340	307	173	158	180	172
R-squared (within)	0.540	0.556	0.522	0.477	0.510	0.531	0.020	0.040
R-squared (overall)	0.363	0.369	0.120	0.125	0.407	0.493	0.683	0.687

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. p-values in parentheses. Standard errors are clustered at the country level. All regressions include a constant.

Source: Authors' analysis using the data described in Table I.

Table II presents the results of the DiD regressions specified in equation (1) for the four outcome variables *GDP Growth*, *Unemployment*, *Mortality*, and *Happiness*. In columns (1), (3), (5), and (7), the democracy indicator is based on the global Freedom Score. In columns (2), (4), (6), and (8), the democracy indicator is based on the Polity Score. The interaction term (*Post x Democracy*) is constructed using the respective democracy indicator specified in each column.

The coefficients of the interaction term in columns (1) and (2) are negative, indicating that democracies suffered stronger reductions in GDP growth rates than autocracies during the 2020 pandemic (only the coefficient in column (2) is statistically significant). The coefficients of the interaction term in columns (3) and (4) are positive and significant, indicating that democracies featured larger increases in unemployment rates than autocracies. The insignificant coefficients of the interaction term in columns (5) and (6) suggest that both types of political regimes featured similar increases in mortality rates, on average. Moreover, according to the results in column (8), citizens in democracies did not report the same reduction in happiness that citizens living in countries with autocratic regimes reported (while the point estimate of the interaction term in column (7) is positive, it is not statistically significant).

These results are qualitatively the same if log per-capita GDP or the region dummies are dropped from the regressions. When we estimate a more general DiD model based on annual data for the period 2015-2020 (controlling for country and year fixed effects), the results for *GDP Growth* and *Mortality* remain robust, whereas the coefficients on *Unemployment* and *Happiness* become statistically indistinguishable from zero at standard levels of significance.

5. Conclusion

Although a considerable body of research investigates the relationship between political regime type and public health policy responses during the Covid-19 crisis, there is so far no conclusive evidence on the overall effect of democracy on socio-economic outcomes during this pandemic. We contribute new insights by investigating the impacts that democracy had on economic indicators, health outcomes, and perceived happiness during the first year of the pandemic. We find that democratic countries suffered stronger reductions in GDP growth rates and larger increases in unemployment rates than autocracies. However, the better performance of autocracies in these economic indicators does not seem to be translated into higher levels of perceived happiness. Unlike previous studies (e.g., Cepaluni et al. 2020, Narita and Sudo 2021) we find that both types of political regimes featured similar increases in mortality rates, on average, in 2020.

It should be noted that categorizing countries by their level of democracy is not straightforward and, in the context of our analysis, further impeded by the fact that many countries with democratic regimes experienced a worsening of democratic institutions, with populism playing a central role in the reactions of many governments to Covid-19 (Niburski and Niburski 2020, Bojanic 2021, Guriev and Papaioannou 2022). Future research may find it interesting to examine how these changes in institutions, and the role of populism in the response to Covid-19, affected democratic countries over the course of the pandemic and beyond.

References

- Acemoglu, D., Naidu, S., Restrepo, P., and Robinson, J. A. (2019) "Democracy does cause growth" *Journal of Political Economy* **127**, 47-100.
- Besley, T. and Kudamatsu, M. (2006) "Health and democracy" *American Economic Review* **96**, 313-318.
- Bojanic, A. N. (2021) "Accounting for the Trump factor in modeling the COVID-19 epidemic: The case of Louisiana" *Big Data and Information Analytics* **6**, 74-85.
- Bollyky, T. J., Templin, T., Cohen, M., Schoder, D., Dieleman, J. L., and Wigley, S. (2019) "The relationships between democratic experience, adult health, and cause-specific mortality in 170 countries between 1980 and 2016: An observational analysis" *Lancet* **393**, 1628-1640.
- Cepaluni, G., Dorsch, M., and Branyiczki, R. (2020) "Political Regimes and Deaths in the Early Stages of the COVID-19 Pandemic" *Journal of Public Finance and Public Choice* **37**, 27-53.
- Cronert, A. (2020) "Democracy, State Capacity, and COVID-19 Related School Closures" *APSA Preprints*. doi:10.33774/apsa-2020-jf671-v4.
- Frey, C. B., Chen, C., and Presidente, G. (2020) "Democracy, culture, and contagion: Political regimes and countries responsiveness to Covid-19" *Covid Economics* **18**, 1-20.
- Fujiwara, T. (2015) "Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil" *Econometrica* **83**, 423-464.
- Guriev, S., and Papaioannou, E. (2022) "The Political Economy of Populism" *Journal of Economic Literature* **60**, 753-832.
- Justesen, M. K. (2012) "Democracy, Dictatorship, and Disease: Political Regimes and HIV/AIDS" *European Journal of Political Economy* **28**, 373-389.
- Karabulut, G., Zimmermann, K. F., Bilgin, M. H., and Doker, A. C. (2021) "Democracy and COVID-19 outcomes" *Economics Letters* **203**, 109840.
- Karlinsky, A. and Kobak, D. (2021) "Tracking excess mortality across countries during the COVID-19 pandemic with the World Mortality Dataset" *eLife* **10**, e69336.
- Kudamatsu, M. (2012) "Has democratization reduced infant mortality in Sub-Saharan Africa? Evidence from micro data" *Journal of the European Economic Association* **10**, 1294-1317.
- Narita, Y. and Sudo, A. (2021) "Curse of Democracy: Evidence from 2020" *Working paper*.
- Niburski, K., and Niburski, O. (2020) "Impact of Trump's Promotion of Unproven COVID-19 Treatments and Subsequent Internet Trends: Observational Study" *Journal of Medical Internet Research* **22**, e20044.