Can Governments Deal with Pandemics?

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Abstract: While few economists dispute that governments should have some role in dealing with pandemics, the relevant institutional question is whether governments *can* deal with pandemics. In this article, we argue that there are trade-offs embedded within the provision of public health measures. States that are better able to deal effectively with pandemics require a great deal of capacity to implement coercive measures such as economic lockdowns or quarantines. Such capacity is associated with lower ability both to generate economic growth, and to harness the palliative effects of that growth with respect to other health dimensions. Since a nation's institutions come in "bundles" (i.e. one takes the wheat with the chaff), there are nations doomed to deal poorly with pandemics, at least in the short run. Despite the positive and normative case for government involvement in public health, effective measures may be outside the range of institutional possibilities.

1. INTRODUCTION

The spread of COVID-19 in the first half of 2020 sparked intense debates over government responses to the crisis. All involved parties implicitly accepted that the state needed to play a role.

Standard public economics suggests that when there are differences between social costs and private costs, the state has a corrective role to play (Pigou 1912). With the COVID-19 outbreak, one could argue that infected persons impose a negative externality upon others, while those who take precautions produce a positive externality which goes unrewarded. Even public choice theorists, who tend to be skeptical of the efficiency of government solutions to such problems, seem to share this viewpoint. For example, James Buchanan used the control of disease-carrying mosquitos as an example of a public good that would be somewhat underprovided absent a state (Buchanan 1968). Indeed, economic historians interested in the long run consequences of malaria eradication in the Americas point to large-scale government interventions as both a public good and a significant contribution to productivity (Troesken 2004; Bleakley 2010). Thus, there is something approaching a consensus among economists.

Although there are reasons to be skeptical of the ability of markets to deal effectively with such problems (Cheung 1973; Coase 1974; Carson 2016; 2020; Candela and Geloso 2018; 2019a, b), it is appropriate to leave those aside to first

ask another question of greater importance: even if governments *should* deal with the externalities posed by infectious diseases, is it really the case that they *can*?

In this paper, we argue that many states are unlikely to be able to deal with pandemics because of the trade-offs inherent to some institutional bundles. We say "bundles" because we deny the conviction held by many that institutional features can be picked individually. Any institutional feature comes bundled with other features. If government X can produce public good A, it is unable to produce public good B because A and B are mutually exclusive choices. Individuals are aware of the opportunity cost when they select the institutions that produce A (Allen 2011; 2013; Piano and Rouanet 2018; Leeson and Harris 2019).

This mutual exclusivity is particularly relevant in the case of dealing with infectious diseases. Their minimization and eradication require the use of a certain tools: quarantine, curfews, mandatory tests, mandatory vaccination, mandatory disclosure of health status, mandatory acquisition of certain items, etc. To employ these tools, coercion is required. While there is a case to be made for the use of coercion in this situation, a government that can use coercion for good can also use it for less enlightened purposes (Troesken 2015). When governments are less constrained in their ability to use coercion, they can use heavy-handed tools to act as predators (Buchanan 1975; Vahabi 2016); they can seize assets, erect barriers to entry to favor rent-seeking firms (and then share in the spoils), create legally sanctioned monopolies, impose heavier tax burdens, etc.

Governments that can do such things cannot foster economic growth and development as easily as those that are constrained from doing so, and they can also be expected to be less democratic and will more frequently be found violating human rights. For these reasons, we argue that—other things being equal—liberal democracies will have fewer available policy options for dealing with pandemics. As such, we can expect them to be less able to act on the public good/externality justifications suggested by standard public economics. While depressing at first sight, this fact should not be viewed as fatal since there are strong positive and normative cases that these conditions can generate superior outcomes.

Our aim with this paper is simple: to set the stage for research on the political economy of pandemic response. What we propose in the present paper is therefore laid out in an exploratory form to invite future research centered around the axes we define. We divide the paper into five sections. Section 2 illustrates our claim that institutions are bundles using the historical example of smallpox eradication in the United States provided by Troesken (2015). Section 3 shows how that example still carries to the present with regard to COVID-19. Section 4 highlights how the trade-offs associated with the different bundles are still preferable—even from a purely health-oriented perspective—and that there are ways to make those trade-offs less costly. Section 5 concludes.

2. INSTITUTIONS AS BUNDLES AND THE SMALLPOX EXAMPLE

To illustrate our contention that institutions are bundles that require taking the good with the bad, we employ the historical example of smallpox eradication in the nineteenth and early twentieth centuries. Economic historian Werner Troesken (2015) started from the simple observation that the United States was a rich country *circa* 1900. It was also a country with high rates of infection and death from smallpox, rates that were noticeably greater than those observed in poorer countries. In other words, America was rich *and* prone to smallpox, which appears paradoxical.

The argument that Troesken makes is simple once one understands how the interactions between smallpox and institutions generate incentives. To combat smallpox, given the tools and means of the time, significant efforts had to be deployed. Most notably, this meant large vaccination campaigns in which state officials could impose penalties on recalcitrant free riders. These were not costless endeavors, as there was considerable resistance from local populations.[1]

In the United States, the problem was that constitutional constraints on state and local governments frequently led courts to invalidate certain public health measures meant to deal with smallpox, with the re-

sult that these governments could do little to combat the disease. This led to high levels of mortality compared with countries like Prussia, France, Denmark, Sweden, and Norway (Troesken 2015, p. 99).

However, while tying the hands of local governments in the fight against smallpox, these constitutional restraints also limited their ability to encroach on property rights, significantly reducing their capacity to cater to distributional coalitions (i.e., rent-seekers, see Tullock 1967; Krueger 1974; Tollison 1982). Distributional coalitions expend resources to acquire rents stemming from redistribution of income towards their members (a part of which they then share with politicians). These rents are secured through a multitude of mechanisms: tariffs, entry barriers, subsidies, patronage, tax privileges, price controls, etc. All these mechanisms, however, reduce the pace of economic growth and development, and lead to a society which is poorer overall.

Thus, there was no paradox *because* institutions are bundles. The institutions that made Americans exceptionally rich *circa* 1900 (Lindert and Williamson 2016) by preventing collusion with distributional coalitions also made Americans more likely to be infected by (and to die from) smallpox.

In order to tie Troesken's smallpox example to more generalizable findings, we picture institutions as bundles of public goods and assume that the bundles are mutually exclusive so that as soon as a marginal input is allocated to one bundle, no input can go to producing elements of another. In other words, choosing bundle X produces public good A at the optimal level, but none of public good B, while bundle Y offers the opposite mix: only public good B and no public good A. For the sake of illustration, imagine that A is "secure private property rights" and B is "efficient smallpox mitigation." Finally, we also assume risk-neutral individuals. Obviously, both assumptions are exaggerations, but they are made for the purpose of simplification and our reasoning survives very well when they are moderated.[2]

In a society with very low probability of a smallpox outbreak, bundle X is more appealing because A is the preferred public good. However, an increase in the likelihood of infection leads to a marginal benefit from adopting bundle Y. In extremely contagious environments with recurrent outbreaks, bundle Y becomes far more appealing because of public good B, even though little or no A is produced.

This simple way of analyzing the choice between material wealth and smallpox infection explains a series of recent empirical findings very well, particularly those of Murray et al. (2013). Regions suffering from higher prevalence of disease-causing pathogens tend to have more authoritarian governments—something that is also reflected in the general attitudes of the population. In those regions, the greater risk of catching a disease makes bundle Y more appealing, despite the tradeoff that reduces production of public good A. Considering that the empirical literature on economic freedom and political freedom suggests a broadly positive relationship between these variables and development, selection of bundle Y—all else being equal—implies poorer societies.

This finding of Murray et al. (2013) should convince economists who have relied on the work of Acemoglu et al. (2001) regarding the colonial origins of development, as their structures essentially boil down to the same thing that Troesken (2015) and Murray et al. (2013) are stating. Acemoglu et al. (2001) proposed that high rates of settler mortality (mostly due to malaria) meant that colonizing powers adopted different institutions in their conquered realms. Where mortality was low, property rights were secured and governments were constrained in their ability to extract and share rents. Ultimately, this created wealthier societies that enjoyed faster growth. Where mortality was high, colonizing powers set up extractive institutions that were not conducive to development. To rephrase in the terms we use above, in low mortality societies, a different bundle of public goods was selected than in high-mortality societies. The choices, constraints and pay-offs are different, but the analytical framework is the same as in Troesken (2015) and Murray et al. (2013).

Analytically speaking, our argument about bundles can be translated in terms of the "rules versus discretion" debate. Think of bundle X as also coming with a commitment to rules imposing both *de jure* and *de facto* constraints on governments (which limit the room for discretion), while bundle Y offers rulers much more room to exercise discretion. When bundle X is selected and an exogenous shock such as a pandemic hits the economy, rulers are constrained in their ability to react. When bundle Y is selected and the same

exogenous shock hits the economy, rulers have more room to exercise discretion and respond to the shock. Keen readers will have noticed that bundle X can be relabeled as "liberal democracy" and bundle Y as "authoritarian/illiberal." Thus, the trade-off between them entails something of crucial importance: by their very nature, we should expect economically free democracies to be limited in the range of policy options available to deal with a pandemic, whereas illiberal regimes will have more options.

3. INSTITUTIONS AS BUNDLES AND THE COVID-19 OUTBREAK

Can we apply this reasoning to the COVID-19 outbreak? The answer is an emphatic "yes" if we consider the types of policy responses that are recommended to effectively deal with the outbreak. Lockdowns, curfews, limits on the size of assemblies, mandatory use of masks and contact tracing are the main methods advanced by health experts. All of these require significant quantities of resources to be deployed for enforcement, and there are important costs associated with each measure, as we have witnessed with the magnitude of the economic downturns and large government deficits that have followed their implementation. Because of these costs, there is bound to be some reluctance to comply from local populations, as some of the measures are quite intrusive and require a degree of heavy-handedness.

Thus, the countries that are able to take these steps easily can be expected, on average, to be less democratic and less free. Consider the countries whose responses were lauded in the early stages of the crisis for allocating tests and medical treatment: South Korea, Taiwan, Singapore, Vietnam and Germany. Of these, only two score ten points on the Polity Index (Germany and Taiwan) while two are considered politically unfree (Vietnam and Singapore) and one recently became a democracy (South Korea which had scores of below zero on the Polity Index pre-1987, and which is still not considered a "full" democracy since that requires a score of ten on the index).[3] This illustrates who is best able to use the tools suggested by health experts to deal with the pandemic: undemocratic regimes are better able to ignore political protestations, and due to their wider discretion, they have more policy options than full democracies.

On the economic freedom side, the main econometric effort available is provided by McCannon and Hall (2021) who tested whether stay-at-home orders were issued earlier in more economically unfree American states. Controlling for the timing of the first COVID-19 death and other factors that facilitated disease propagation, McCannon and Hall (2021) found that states that were less economically free issued their stay-at-home orders much faster than the freest states. This relationship held under different econometrics meant to account for partisan politics and less obvious factors determining the prevalence of the disease. Their reasoning is quite similar to the argument we have highlighted above: economically unfree states have already imposed barriers that infringe upon property rights to some degree. Thus, the marginal cost of an additional unit of infringement is relatively lower than elsewhere.

There is a way for us to expand on these elements using simple econometric tools. An illustration of our point can be seen in the simple regressions we use below. These are very basic ordinary least squares (OLS) which are essentially all we can do for now because many of the relevant variables for such an important test are not yet available since the final *dénouement* of the outbreak is still in the future at the time of writing. As there is bound to be some delay before more complete data allowing for more robust forms of testing becomes available, we are constrained to the simple methods for the time being.

Nevertheless, we examined the stringency index of policy response produced by OurWorldInData.org and how institutional variables such as the Polity index and the Economic Freedom of the World (EFW) index relate to it. The stringency index measures the strictness of the policies adopted by government, with zero being the total absence of action and 100 the most rigorous. We used the value of the stringency index for July 29, 2020.[4] We also included income per capita as measured by the Maddison Project Database as a control variable.[5]

Table 1, below, shows the descriptive statistics for this exercise, and Table 2 shows the results of the OLS. As can be seen, the results point in the direction we stipulate: both the Polity and EFW scores are

inversely related to the stringency index. Both are significant above the 10% level and EFW is significant above 5%.

Table 1: Descriptive statistics

VARIABLES	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Stringency Index	157	55.24	20.25	11.11	96.30
Log of GDP per capita	174	9.277	1.182	6.428	11.85
Economic Freedom	162	6.795	0.884	2.881	8.972
Polity Index	162	4.284	6.133	-10	10

Table 2: OLS regression of stringency index to COVID response and institutional measures

VARIABLES	(1) Stringency	(2) Stringency
Polity	-0.568*	
	(0.299)	
Economic Freedom		-8.285***
		(2.229)
Log of GDP per capita	-1.197	1.578
	(1.506)	(1.697)
Constant	68.72***	97.02***
	(13.87)	(14.48)
Observations	128	133
R-squared	0.038	0.109

Standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

While these results should be taken with a grain of salt, they suggest that Troesken's story of institutional trade-offs with respect to smallpox mitigation also applies to COVID-19 today. Economically free democracies are less able to apply stringent measures to deal with the outbreak in part because they are constrained from doing so. At first glance, this entails a depressing implication, i.e., that economically free democracies are doomed to fall short. The constraints that make them free and democratic also make it impossible (or unlikely) for them to apply the ideal solutions proposed by health experts.

4. AN ACCEPTABLE TRADE-OFF?

Our paper suggests, sadly, that economically free democracies have fewer options and will be unable to apply the ideal policies recommended by public health experts. One is tempted to sigh and just accept the idea that, *ceteris paribus*, liberal democracies are doomed to suffer higher mortality rates.

However, a closer look exposes that sigh as inappropriate. Despite the constraints and the resulting paucity of governmental options for fighting the disease, liberal democracies actually offer incentives that improve health outcomes in the aggregate.

First of all, there is another trade-off that takes place between the different types of health problems. Up to this point, the only trade-off we have considered is between faster economic growth and lower death rates. Readers will have realized that we were referring *only* to death rates in pandemics. But novel infectious diseases such as COVID-19 are not very sensitive to the incomes of the people they harm and kill.

Certain diseases, in contrast, are more easily combatted in situations of economic prosperity (either directly or indirectly) (Preston 1975; Harris 2004; Bloom and Canning 2007). This applies especially to water-borne diseases which require large capital outlays for water treatment—outlays that are more likely in more affluent societies. Another example is nutrition-related diseases, in which greater incomes lead to better nutrition and better overall health (Fogel 1994). The World Health Organization (WHO) refers to such maladies (to which we can also add dental decay, intestinal parasites, tuberculosis, cardiovascular diseases, and schistosomiasis) as "diseases of poverty," and their reduction is strongly related to economic growth (Deaton 2013). The WHO contrasts these "diseases of poverty" with the "diseases of affluence" that result from higher standards of living, cancer, diabetes and Alzheimer's being some good examples. However, although the prevalence of such diseases increases with income, it does so only for a limited time, as further increases in income allow for investment in new methods of treatment and care (see notably Lichtenberg 2014 on the role of pharmaceutical innovations in increasing life expectancy at 65). In other words, economic growth also has palliative effects.

Troesken (2015) again provides a good illustration. He highlights that while the United States had higher rates of disease from smallpox during the nineteenth century, the nation's constitutional and ideological constraints created an environment favorable to economic growth. This limited deaths from other diseases and created incentives to fight problems such as the water-borne typhoid fever. Troesken notes that the enshrinement of private property rights in the United States prevented cities from defaulting on their debts and, by virtue of reassuring financial markets, this encouraged numerous investments in water treatment facilities. In many cities, where franchise contracts for the privately-owned water companies were respected and not subject to political holdups, the incentives to filter water supplies were strong. This was the channel through which typhoid fever was combatted. Overall, this meant that the United States was efficient at combating this type of disease despite the trade-off in which its institutional framework afforded policy-makers fewer options in dealing with smallpox.

Thus, there is a second trade-off that happens, but this one occurs over time. Selecting bundle X (in which property rights are protected, but these same rules constrain discretion) implies higher incomes *in the future*. If these incomes later lead to improvements in health outcomes, the palliative effects will only materialize *even later* in the future. Thus, the value of bundle X depends on the discounted value of future income and health gains. Depending how far in the future, or how high the discount rate, bundle X might be shunned in favor of bundle Y (which includes more discretion for rulers in fighting pandemics) if it offers large and immediate gains in terms of reduced mortality.

This second trade-off is why we state that there is no reason to despair over the fact that economically free democracies are limited in terms of policy response. Sacrificing government's discretionary powers produces more wealth in the long run which, in turn, yields further improvements in health outcomes. It comes as no surprise to us that unfree regimes are better at combatting certain diseases, usually infectious, against which violence and coercion are comparatively superior tools, however, these are but a small subset

of all health problems. The Global Burden of Disease Study (GBD) 2017 provided estimates of cause-specific mortality for 282 causes in 195 countries from 1980 to 2017 (Roth et al. 2018). Non-communicable diseases accounted for the vast majority of fatalities (73.4% in 2017). Of the remaining deaths, a large share was attributable to other causes including violence, accidental injury, self-harm and maternal mortality. Most of the potential gains in life expectancy involve diseases that are inversely associated with economic growth. With this element in mind, it is easy to see that bundle X's disadvantage relative to bundle Y is minimal.

Moreover, it is important to point out that the granting of wider discretion to rulers to deal with pandemics does not necessarily map to effective use of that power. Indeed, up to this point in the article, we have implicitly assumed that rulers would use their discretionary powers wisely. This was because we wanted to highlight the limitations faced by liberal democracies in terms of policy options and we have saved consideration of "results" for the present section. However, relaxing this assumption shows that liberal democracies can perform just as well despite their policy limitations. The ability to use discretion to deal with pandemics, if it comes with wide latitude in other policy areas, makes it likely for an illiberal regime to be captured by distributional coalitions which, in turn, may prevent implementation of the best policies. Thus, discretionary powers and increased policy options of governments do not automatically produce better results.[6]

Finally, it is worth pointing out that economically free democracies are also the best placed to adapt to, and learn from, infectious disease shocks. There are three reasons for this.

The first relates to the work of Geloso and Bologna Pavlik (2021), which provides a good illustration of adaptation. The economic costs of influenza pandemics have been falling gradually between each episode. The flu pandemic of 1918 imposed economic costs equal to 6% of GDP (Barro et al. 2020). Direct estimates of the economic costs of the 1957 and 1968 flu pandemics are unavailable, but Keogh-Brown (2010) estimated that if these pandemics had happened in the twenty-first century, the cost would have represented 0.58% of GDP, which suggests a minimization of economic effects. The work of Geloso and Pavlik (2021) suggest that high levels of economic freedom are instrumental to this reduction in costs. They argue that pandemics are shocks to which economies must adjust by changing the allocation of resources. High levels of taxation and regulation make it harder to achieve this reallocation and thus extend and deepen the shock. When economic freedom is high (i.e., when regulation and taxation are low), reallocation is easier. Using the flu pandemic of 1918, they confirm econometrically that economic freedom mitigated the damage, thus supporting the hypothesis that freer economies adjust more easily to shocks.

The second reason is that we can expect richer economies to better cope with temporary shocks. Poorer societies with low incomes and limited wealth stocks can ill afford self-quarantine—the opportunity cost of avoiding the disease (i.e., *not* working) is too high. Thus, we ought to expect that poorer individuals will have little choice but to bear the risks of getting sick. Richer societies, where households can be expected to have greater wealth stocks to draw from in a shock, can better cope with not working. The cost of avoiding the disease in richer societies is thus lower. The global pace of economic growth over the twentieth century helps explain why death rates from influenza epidemics and influenza-related deaths (i.e., outside of epidemics) have also been falling over the period (Viboud et al. 2006; Potter 2001).

The third reason is that economically free democracies are better able to learn from pandemic episodes. This springs from the association of economic freedom with polycentrism, which arises from the relationship between political autonomy at the local level and commitment to market institutions (Weingast 1995). Such commitments have a cost: they reduce the ability to clamp down on pandemics. They also have benefits: the encouragement of innovation in policy responses, as well as provision of greater incentives and opportunities for public sector entrepreneurs to address policy problems while accounting for local conditions and constraints (Aligica 2018; Aligica, Boettke, and Tarko 2019).

The wealth-creating effects may undermine coercive suppression, but to the extent there is policy choice in an economically free democracy, polycentrism is likely to contribute to innovations that improve a society's response to the challenge. Pennington (2020) explains that the coronavirus pandemic is an example of what Hayek called a complex policy problem, with uncertainty arising from the epidemiology of the vi-

rus, its interaction with political, economic, and cultural arrangements that affect its spread, and the differing attitudes, time horizons, and belief systems that influence the spread of the disease. A consequence is the need for experimentation to address challenges. While economically free democracies may be less able to control the spread of pandemics, their advantages in experimentation promise to reduce the resulting ratchet effect (in which crises breed larger government), as well as to address the epistemic challenges by accepting the importance of modest experimentation in the generation of solutions.

5. CONCLUSION

The claim we put forward in this paper is simple enough: economically free democracies are bound to fall short of the ideal policy response to a pandemic. In order to secure political and economic freedoms, governments must be constrained in their ability to use coercion, yet coercion offers the most efficient tools for dealing with pandemics. As such, economically free democracies are institutionally designed to prevent the use of these tools.

In essence, we conceive institutions as bundles whose components cannot be separated. The notion of trade-offs between institutional bundles is something that is often missing in the existing literature. Two of the most comprehensive and sweeping economic histories of the modern world illustrate the importance of considering institutions as bundles. Greif (2006) suggests that adoption or non-adoption of the best institutions determines wealth or lack thereof. Kuran (2011) asks us to think of two economies, each with an institutional frontier—the regions (cities) where the institutions are most closely associated with creation of wealth. Economic development or underdevelopment depend on a comparison of those institutional frontiers. Each offers an insightful history, but something is missing: the institutional trade-offs. The same can be said for the great theories of extension of the franchise (Acemoglu and Robinson 2006), which reflect on economic inequality. Democracy too is a bundle; the very aspects of democracy that make it appealing, such as providing more people with opportunities to participate in collective decisions, create disadvantages in responding to pandemic disease. Thus, while Acemoglu and Johnson (2005) famously declared the importance of unbundling institutions, there is much to be gained in terms of understanding pandemics and how nations respond to them by bundling them up again.

Using the analysis of Werner Troesken (2015), we noted that, in the case of communicable diseases and their prevention, the institutional trade-off leads to a desirable result. Economically free democracies tend to enjoy faster economic growth which, in turn, leads to better health outcomes with respect to non-communicable diseases.

Thus, it is clear that the institutional frontier of economically free democracies is a bundle of institutions that have costs on certain margins, including fighting disease. The large-scale institutional changes that make nations rich make them less able to address communicable diseases, at least in the short run. Understanding these trade-offs is the first key to analyzing *any* pandemic.

NOTES

1   Michael Bliss (1991) provides a potent example of such reluctance in the case of the smallpox outbreak of 1885 in Montreal. There, French-Canadians were strongly resistant to vaccination drives which caused high mortality rates and the spreading of the disease elsewhere in the province of Quebec.

2   This type of argument regarding mutual exclusivity should not too surprising to economists as it embodies the crux of the argument that led to Ronald Coase's Nobel prize. In his Nobel address (1992), Coase explicitly mentions that institutions come with different costs, and thus we have institutional opportunity costs and institutional trade-offs associated with selecting one set of institutions over another in order to deal with problems of economic organization.

3   We downloaded the Polity Data from OurWorldInData.org

4   We selected this date because dates after this one are missing data for large countries such as Canada.

5   The results here are illustrative of the key relationships implied by a theory of institutional bundling. Other possibilities include individualistic cultures (less support for stringent measures), political decentralization (less ability to implement stringent measures), trust (less stringency because individuals are able to mitigate through behavioral change).

6   This point is particularly relevant when we consider the costs of individual pandemic policies. If a government selects a given policy that is suboptimal (assuming away institutions) because of pressures from interest groups, then the performance of illiberal regimes relative to liberal democracies worsens. We thank the editor for this point.

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