The pox of politics: Troesken’s tradeoff reexamined

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Abstract
In The Pox of Liberty, Werner Troesken details the tradeoff between liberal institutions and communicable disease. According to Troesken, individual freedom presents a danger to the public health in the face of infectious disease, while constitutional constraints restrict the government’s ability to implement effective policy. Contra Troesken, I argue that decision-makers, amidst a crisis of contagion, neglect intertemporal tradeoffs, thereby discounting long run costs while favoring short run policies. These policies, once implemented, are difficult to reverse due to the path dependent nature of political institutions. Irreversible and self-reinforcing growth in political institutions established to enhance health can have an unintended negative impact on health during future crises, where political agents must operate in a more cumbersome and error-prone institutional environment. Using events from the history of public health in the U.S. as support for my theory, I conclude that Troesken’s alleged tradeoff ought to be met with greater skepticism.

Keywords Public health · COVID-19 · Path dependence · Bureaucracy · Pandemics · Disease · Government growth · Crisis · Interest groups · Rent seeking · Government failure

JEL Classification D73 · H11 · H12 · H18

“The bad economist sees only what immediately strikes the eye; the good economist also looks beyond. The bad economist sees only the direct consequences of a proposed course; the good economist looks also at the longer and indirect consequences.”

Hazlitt (1996, pp. 3–4)

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1 Introduction

Liberal institutions are often justified on consequentialist grounds. A common presupposition is that institutional structures offering a high degree of individual autonomy combined with constraints on discretionary political power will, on net, generate beneficial systemic effects (Hayek, 2011). Infectious disease outbreaks, however, present a unique challenge to liberal institutions (Koyama, 2021). The inherently ‘public’ nature of communicable disease calls into question the virtues of both individual autonomy and government constraint (Dees, 2018; Gersovitz, 2011). The rapid onset of a pandemic supplies a pretext for the deliberate curtailing individual liberty in the name of protecting human health, effectively ‘trading off’ some of the former for more of the latter (Ansell & Lindvall, 2021; Porter, 1999).

Werner Troesken, in The Pox of Liberty (2015), presents a thorough, historical treatment of the tradeoff between liberty and infectious disease. Using qualitative and quantitative evidence, he shows that American institutions displayed mixed results with respect to health and disease prevention. On the one hand, “smallpox prevention in the continental United States was hindered by its commitment to federalism, the Due Process and Equal Protection Clauses, and popular access to a strong and independent judiciary” (p. 69). On the other, these same institutions “fostered investments in urban water systems and contributed to one of the most important public health initiatives in human history” (p. 103). Ironically, Troesken’s research reverses the standard explanation of disease typically portrayed as the result of poverty and deprivation…. [T]he American experience with smallpox… suggests that the United States had high smallpox rates not despite its being rich and free, but because it was rich and free” (p. 5).

In this paper, I cast doubt on the nature of Troesken’s tradeoff by calling attention to the path dependent nature of political institutions. By bringing inter-temporal dynamics to the analysis and accounting for systemic effects of government intervention, the tradeoff between liberty and health appears ambiguous, and at best fluctuates according to the conditions under which public health intervention is executed. Often, public health intervention expands under conditions of health crises. Within certain windows of institutional and epidemiological fragility, decision-makers face greater urgency and uncertainty with respect to risk (Congleton, 2005; Twigg, 2020). Policymakers, therefore, tend to discount long run costs and place a premium on rapid, short run policy adoption (Lothe, 2020). What follows from the crisis is a series of political contests over preferred policies. Existing interest groups and power holders retain status quo political advantage and can leverage their positions to gain or maintain further advantage. As crisis conditions recede, institutions regain their former durability. However, reforms that were initially contingent on crises circumstances become embedded, generating systemic institutional change and excess government growth over time. Subsequent health crises must then be met by an increasingly large public health apparatus, subject to inefficient or delayed reactions to unexpected disease outbreak.

1 Liberal institutions are characterized by constitutions that limit political discretion, uphold democratic elections, the rule of law, individual property rights, and some form of jurisdictional pluralism and competition.

2 “Public health” hereafter refers to any policies with the stated intention of combating disease or other social ills through the apparatus of the state.
This paper provides a point of connection between two distinct bodies of literature. The first explains institutional change over time through critical junctures and path dependence (Capoccia, 2015). Scholars in recent decades have emphasized the path dependent nature of choices made under various conditions, both in the market (Arthur, 1994; David, 1985), and in politics (Pierson, 2000). This work often highlights critical junctures as windows of time where institutions temporarily become more fluid, enabling more significant reform. Crises moments are studied as critical junctures, where enduring institutional changes are more likely to take hold. The trend of massive government growth observed worldwide in the late nineteenth and twentieth century has been explained using theories of path dependence (Higgs, 1987; Holcombe, 2005). I supplement this literature with specific application to health crises and the expansion of the public health domain of government.

Using insights from rational choice theory (à la Shepsle, 2006), I connect the literature on institutional change and path dependence with health and epidemiological economics. The latter, in orthodox fashion, routinely frame questions in terms of ‘optimal’ policies (Acemoglu et al., 2021; Alvarez et al., 2021; Bloom et al., 2022; Eichenbaum et al., 2021; Gersovitz & Hammer, 2004; Hall et al., 2020; Jones et al., 2021). When deducing optimal health policies and assessing the tradeoff between public health and individual liberty, epidemiological economists often relegate their range of study to the short run or implicitly assume that institutional structures remain constant. A shortcoming of the approach is that it sets a normative standard (optimality) which is static. What is considered ‘optimal’ within a short time horizon may not be ‘optimal’ when that horizon expands. Static approaches overlook the dynamics of government intervention, intertemporal tradeoffs, and the fragility of institutions amid crises. An additional critique, explored by Coyne et al. (2021), is that models used by economic epidemiologists derive policy conclusions from assumptions that stray too far from reality. For example, SIR models often assume a benevolent social planner whose aim is “to minimize a combination of total (excess) deaths during the pandemic, lives lost… and economic losses…” (Acemoglu et al., 2021, p. 492). Insofar as tradeoffs are considered, they are often presented in absence of more relevant institutional, behavioral, or inter-temporal constraints. Health economics could benefit from including in their conceptual framework the potential for more intertemporal effects on health, precipitated via institutional change.

In the following section, I explore the tradeoff between public health and individual liberty through a review of the literature on infectious disease and the state. Section 3 explains growth in political institutions through path dependence and critical junctures. In Sect. 4, I argue that crises moments exacerbate the tendency toward path dependent reforms, generating costly and excessive government expansion. Section 5 illustrates the nature of political path dependence through the historical development of U.S. public health and the obstacles created by embedded bureaucratic and political institutions during the COVID-19 pandemic. Section 6 concludes.

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3 A critical juncture is a marked turning point in history from which new trends are set, or “an event, prior to which a range of possibilities exist, but after which these possibilities will have mostly vanished” (Hogan, 2019, p. 173).

4 For more on the “Dynamics of Interventionism,” see Ikeda (1997) and Mises (2011).

5 A noteworthy exception can be found in Desierto & Koyama (2020).
2 Infectious disease, liberalism, and the state

Until recently, public choice has treated the field of public health with moderate neglect. Economic historians, meanwhile, have thoroughly charted the extent to which advances in sanitation, science, nutrition, and technology produced remarkable increases in life expectancy at the end of the nineteenth century (Costa, 2015; Harris & Hinde, 2019; McKeown & Record, 1962; Meeker, 1971).

Alongside these historical assessments came gradual advances in welfare economics. As such, public health came to be viewed as a public good and the role of public health intervention gained support from the theory of market failure (Carande-Kulis et al., 2007; Geoffard & Philipson, 1997; Hauck, 2018; Horne, 2019). Private markets are thought to over- or under-provide resources in the face of disease externalities. To correct these inefficiencies, government can step in to “guide the private market to a more efficient level of intervention” (Althouse et al., 2010, p. 1701). Childress et al. (2012) assert that “[g]overnment has a unique role in public health because of its responsibility, grounded in its political powers, to protect the public’s health and welfare, because it alone can undertake certain interventions, such as regulation, taxation, and the expenditure of public funds, and because many… public health programs are public goods that cannot be optimally provided if left to individuals or small groups” (p. 361).

Critics of that view counter with theories of government failure, which emphasize various epistemic (Coyne et al., 2021; Koppl, 2021; Storr et al., 2021) and incentive problems that plague public health (Anderson, 1989; Desierto & Koyama, 2020; Geloso & Murtazashvili, 2020; Goodman et al., 2020). Economists have also pointed out that the externalities created by disease are often better handled at more local or individual levels (Buchanan & Tullock, 1962; Congleton, 2021) so as to account for the variation in circumstances and to minimize the excess burden associated with taxation and government provision (Buchanan & Tullock, 1965). Government intervention to disease externalities, in general, can be costly relative to private responses, even when the latter are far from ideal (Leeson & Rouanet, 2021).

Such criticisms are challenged by pandemics, which embody major crises events and justify widespread government coercion to overcome collective action problems (Caselli et al., 2022; Cotula, 2021; Greer et al., 2020). Research from the COVID-19 pandemic adds vindication to public health intervention. Dave et al. (2022) find, for example, that counties in Texas that adopted lockdown policies at earlier dates than the state-wide policies in the spring of 2020 experienced a 19–26% decrease in growth rates of COVID in the two weeks following implementation. Similar results can be found in California (Friedson et al., 2020), and on a more international level by Hsiang et al. (2020). These benefits are augmented when delay is costly. Bolton and Farrell (1990) model the choice between “clumsy” centrally planned decisions and more efficient decentralized private decisions under emergency conditions. Centralized decision-making—though arbitrary and less

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6 Leeson & Thompson (2021) in this issue have provided a most useful summary of the research on public choice, political economy, and health leading up to the COVID-19 pandemic and McCartney et al. (2019) for a broad survey on institutions and health.

7 See Coase (1990, pp. 26–27): “The fact that governmental intervention also has its costs makes it very likely that most ‘externalities’ should be allowed to continue if the value of production is to be maximized.” And “If with governmental intervention the losses also exceed the gains from eliminating the ‘externality,’ it is obviously desirable that it should remain.”
efficient—may be preferable as a matter of expediency over decentralized responses. Along those lines, Loewenthal et al. (2020) find that delaying social distancing policies by just 7.49 days doubles the number of COVID deaths in a given country.

As a result, the ability of decentralized political systems to adequately implement and enforce public health policies has come under scrutiny (Huberfeld et al., 2020; Rhodes, 2021; Rocco et al., 2020). The United States and United Kingdom have each been indicted for their unpreparedness, with much of the blame being placed on fragmentation and ‘neo-liberalism’ (Maani & Galea, 2020; Mellish et al., 2020). Calls for greater investments in public health infrastructure abound, ranging in scale from local to global (Susskind & Vines, 2020). Research in America reinforces this presumption, showing slower and less strict pandemic policies in states with more economic freedom (McCannon & Hall, 2021), along with a lower likelihood to adopt social distancing, mask-wearing, and vaccination in areas with a history of cultural individualism (Bazzi et al., 2021; Bian et al., 2022).

In the past, liberal institutions faced similar challenges. During nineteenth-century disease outbreaks in cities like London and New York, reformers among the scientific intelligentsia called for heightened political authority to remove ‘miasmatic’ waste from urban environments. A series of legislation in New York City gradually increased the power of the local health board and the office of the City Inspector (Duffy, 2015), who appropriated from the courts the power to declare nuisances and issue formal charges against violators of various health codes. In Britain, the state became “increasingly interventionist” (Porter, 1999, p. 111), issuing quarantine laws and undertaking prodigal urban planning projects at the expense of taxpayers. Citizens endured these measures with reluctance and suspicion. Many viewed public health intervention “as a threat to local government autonomy and an unacceptable intervention by the central state in their affairs” (Porter, 1999, p. 111).

In many cases, however, centralization proved effective. Troesken’s analysis of smallpox provides historical perspective on centralization in Germany. Prior to unification in 1871, the country was largely fragmented, containing 27 states (including Prussia). Three years following unification and the centralization of the German administrative state, rates of smallpox fell sharply, bringing Prussia a 95% reduction in smallpox in a matter of years, due to a “strong mandatory vaccination law” (2015, p. 91). Similarly, when the U.S. extended its rule beyond the jurisdictional constraints of the Constitution, success in eradicating smallpox was rapid. “[I]n colonial settings, American public health officials were bound by no such [constitutional] constraints and, in fact, could make use of a strong military force to compel vaccination” (p. 100). Following the Spanish-American War of 1899, smallpox was eradicated in both Cuba and Puerto Rico within 5 years. The continental U.S. would have to wait a near half-century for that outcome.

Geloso et al. (2021) substantiate Troesken’s findings. Diseases more sensitive to income (e.g. typhoid) were comparatively lower in the U.S., while diseases more sensitive to mobility and commerce (e.g. smallpox) were higher. They frame Troesken’s thesis in terms of tradeoffs among different bundles of institutions. Institutions with the ability to contain viral outbreaks might include restrictions on economic freedom and therefore diminish rates of economic growth over time. In the long run, this bundle leaves citizens less vulnerable to diseases of mobility but more vulnerable to diseases of poverty, which account for the greatest fraction of total deaths in recent years (Roth et al., 2018).

Individual liberty, therefore, is not without benefit—even when it comes to public health and disease outbreak. Candela and Geloso (2021), for example, argue that countries with higher levels of measured economic freedom show smaller economic contractions and greater recoveries during early twentieth century influenza pandemics. Similarly, Geloso and Bologna Pavlik (2021) find that countries with higher levels of economic freedom
were able to mitigate the effects of the 1918 “swine” influenza in terms of lower death rates. This indicates a potential ‘robustness’ feature, whereby countries with more liberal institutions are able to respond to pandemics with more rapid, spontaneous adjustments, which translates into faster recoveries. Moreover, constitutional protections and limits on the degree of political intervention can prevent more pernicious government coercion in the name of public health, like the invasion of property rights or forced medical procedures (Gostin, 2008). The latter power was used to commit acts like forced lobotomies (Geloso & March, 2021; March & Geloso, 2020), as well as forced vaccination. Incremental expansions in legal and political authority over time set a precedent for further invasive medical procedures, eventually enabling adherents to racial and eugenic ideologies to carry out forced sterilization (Molly, 2017), and in some cases, unspeakable atrocities against entire races using the power state as a vehicle to achieve their goals (Porter, 1999, pp. 190–194).

3 Politics, path dependence, and critical junctures

Perhaps government policies can be crafted to separate the institutional “wheat” from the “chaff”, thereby leveraging the benefits of rapid state response to disease outbreak without undermining the spontaneous adjustments of private actors or unleashing a Leviathan state. To that end, economic epidemiologists have suggested a transitory method of pandemic response (Rampini, 2020). A rapid rise in the prevalence of disease would be met with state intervention (Laxminarayan & Malani, 2011), along with some private adjustments (Philipson, 2000). Together, public and private responses begin to reduce disease prevalence. Private individuals respond by scaling back their preventative behavior and (theoretically) government scales back its interventions. Eventually, the prevalence of disease increases and the cycle repeats (Bhattacharya et al., 2014, p. 453). If, however, policy reforms exhibit path dependence—as I argue below—then the prospects of a transitory policy response wane. Reductions in disease prevalence are unlikely to be met with reciprocal retrenchments in government intervention as policies intended to be transitory become embedded, along with the associated institutional apparatus (e.g. bureaucracy) which are harder to create than they are to abolish.

3.1 Politics and path dependence

Particular historical episodes introduce causal elements that go on to shape future institutions with greater force than more ‘ordinary’ events. Such moments of concentrated change have the capacity to generate long and enduring consequences. The “path dependent” approach to institutional change has yielded substantive intellectual advances in both economics (Krugman, 2009) and politics (Mahoney, 2001).

In economics, path dependence is related to the concept of increasing returns (Arthur, 1994). Goods subject to network effects or agglomeration economies are more prone to increasing returns, and thus more prone to path dependence. The extent to which enduring, systemic changes manifest within markets, however, is limited by temporal or geographical

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8 Philipson (2000, p. 1795), contrasting the economic approach with standard epidemiology, asserts that “[t]he economic approach yields the insight that public intervention often provides less benefit than predicted by epidemiology, because private incentives counteract its effects.”
upper bounds which, absent artificial barriers to entry, restrict the emergence of monopoly
firms or industries (Arthur, 1990). Political institutions, on the other hand, are uniquely
subject to path dependence in a way that produces enduring change across widespread
political-institutional nexus. This is due, first, to the fact that political institutions lack the
tight, negative feedback mechanisms found in market prices (Martin, 2010). Entrepreneur-
ial pursuit of profit and aversion to loss establishes a tendency toward market equilibrium
through recurrent discovery of and adjustment to error under constantly changing market
conditions (Kirzner, 1973). Political actors face similar epistemic problems, but “the com-
plexity of the goals of politics and the loose… links between actions and outcomes, renders
politics inherently ambiguous” (Pierson, 2004, p. 38). Political agents must therefore buttress
their weaker feedback with mental models subject to revision via methods of discov-
ery far more costly than market agents (Lavoie, 2015). In the absence of tight epistemic
feedback, political agents may pursue a set of policies until the errors accrued breach a
threshold and are brought to light in the midst of a critical juncture, wherein hitherto stable
institutional structures undergo drastic reform and a new course is set (Martin, 2010).

Second, a generally accepted role of the state includes the provision of public goods
related to coercion, including security, law, national defense, and public health. Such activ-
ities are, in themselves, characterized by economies of scale (Cowen, 1992; Nozick, 1974).
Collective action, more generally, is subject to a plethora of coordination problems. Equi-
librium solutions may fall short of the “optimal,” such that coordination around a particular
set of rules persists, despite the potential superiority of foregone paths (Carey, 2016). Still,
some coordination is preferable to none, and once established, equilibrium solutions are
relatively stable, as ‘switching’ often entails large coordination costs up front in exchange
for incremental short run gains (Hardin, 2006; Rose, 1990). Reversal from the status quo,
therefore, becomes increasingly unattractive over time as more individuals coordinate their
interaction around existing rules, despite the fact that “better” rules may exist and might be
feasible if only collective action problems could be overcome at lower costs.

3.2 Critical junctures and path dependence

The degree to which political institutions exhibit path dependence can shed light on their
role in the ongoing process of institutional change (North, 2005), in which critical junc-
tures play a vital role (Capoccia, 2015; Hogan, 2019). Path dependent theories of institu-
tional change imply that political institutions are durable and change-resistant over long
periods of time. What critical junctures demonstrate is that during moments of institutional
fluidity (e.g., crises), this durability breaks down and, for a period of time, the choices of
key actors and interest groups are highly influential (Capoccia, 2015; Coyne, 2011). Here-
tofore institutional ‘stickiness’ attenuates around the critical juncture as previously embed-
ded structures become ‘dislodged’ and replaced.

Critical juncture theories are not meant to offer exclusive accounts of institutional
change. Gradual institutional evolution (“drift”) is also at work (Salter & Furton, 2018).
For instance, public health bureaucrats and political leaders may exert disparate influence
during a pandemic, but their rule changes are subjected to judicial scrutiny (Gostin, 2008).
Legal institutions remain relatively insulated from sudden structural changes, undergoing
gradual change over longer periods of time (Hayek, 1973). It is important, therefore, to
clarify the particular conditions under which critical juncture theories are applicable (e.g.,
crises, regime change, etc…), and to emphasize that competing theories are not mutually
exclusive (Capoccia & Kelemen, 2006; Kingston & Caballero, 2009).
3.3 Critical junctures and political change

The process of institutional change via critical juncture is depicted in Fig. 1. Historical and institutional factors leading up to the critical juncture greatly determine future trajectories (stage 1). Hitherto continuous institutions represent an equilibrium point around which mutual coordination occurs. The distribution of rents that accrue to special interest groups through the political process, in Equilibrium I, is shaped by the structure of the existing rules (Buchanan, 1980). This distribution can be altered by institutional reform at the critical juncture.9 It is here where interest groups compete over their preferred policies (stage 2–4).

Bargaining power going into the institutional reform process (stage 2–4) is unlikely to be evenly distributed, and existing political power holders have disproportionate influence, from agenda-setting to implementation (Kerwin et al., 2010). Bureaucrats, for example, invest in forms of capital that are highly specific and thus non-transferrable outside the bureau (Downs, 1967).10 Asset specificity engenders bureaucratic dependency on political sponsors, but the latter may also become dependent on the former as their exclusive channel of policy execution. Bureaucrats are highly motivated to leverage this bilateral dependency to prevent competing interests from acquiring excessive political influence (Yazaki, 2018). In the process of institutional reform, rule selection favors the political status quo, who will be strongly incentivized and well-positioned to win reform contests (Asatryan et al., 2017; Dunleavy, 2019).

As events born of the critical juncture become more remote, reform contests see resolution (stage 5) as institutional patterns settle onto a new, continuous path (Equilibrium II). A full retrenchment (back to stage 1) of the political expansion generated during stage 2–4 is unlikely to occur in stage 5 (Higgs, 1987), as winners who emerge from the reform process will see little incentive alter the new status quo. Institutional change—according to critical juncture theories—occurs at a few concentrated moments in time. The effects of that change, however, leave permanent traces. Eventually, a new cycle of institutional change ensues with antecedent conditions (stage 1) comprised of larger or more powerful key players, poised for even greater leverage in successive reform contests.

4 Crises of contagion and time inconsistency

Why are reforms made amid crises more likely to produce permanent institutional changes than reforms made during periods of relative stability? Intuitively, economic theory suggests that individuals, over time, would learn from past experiences and institute prophylactic measures to counter the institutional fragility brought about by unexpected crises. Such measures may include constitutional constraints against the use of discretionary authority during times of emergency, or provisions meant to reduce the degree of political uncertainty during health crises.

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9 Olson (1984) explains the post-WWII miracles (Germany and Japan) as having benefited from these reforms, as they present a “clean institutional slate” (p. 225) from which “a free and stable legal order is established” (p. 75).
10 Forms of specific capital developed by bureaucrats can include professional networks, reputation, and expertise (Carpenter, 2001). Pierson (2004, p. 3) asserts that “[u]nder the right conditions, ambitious and entrepreneurial bureaucrats… develop strong networks of support among a range of social actors.”
One potential answer is that decision making amid crises is subject to *time-inconsistency* wherein decision-makers neglect the path dependent nature of politics and heavily discount the effects of long run, systemic institutional change. Crises are characterized by urgency, uncertainty, and extremely limited information (Congleton, 2005). At these critical junctures, small, short-term gains are demanded by voters and supplied by policymakers despite the creation of large, long-term losses (Lothe, 2020).

We can reduce time inconsistent choice amid crises to four factors. First, the policy maker’s time horizon is unlikely to extend far enough to witness the unfolding of systemic effects resulting from individual policy choices. The benefits from political tenure, however, are life-long and only loosely connected to the long run effects of past choices (Buchanan & Lee, 1982). Second, voters are rationally ignorant (Downs, 1957; Somin, 2013) and have short memories (Achen & Bartels, 2016), making it difficult to link systemic effects to specific causes, especially in the long run. The degree of complexity introduced by the crisis further severs these epistemic links between policy cause and effect (Are causes attributable to the crisis, per se? Or to the policies introduced in response? Or to the countless other adjustments triggered by the crisis?). Third, univariate policy goals may be sufficiently met in the short run (e.g. reduction in disease prevalence) as the state directs resources toward a single goal (Lavoie, 2015). The benefits of this technical reallocation, however, are concentrated in the short run,
while the economic costs are diffused over the long run. Finally, media and availability biases can cause “collective hysteria” which in turn leads voters to approve of policies with myopic prodigality (Bagus et al., 2021).

Figure 2 illustrates this time inconsistence problem by modeling path dependence as increasing returns to political intervention (Pierson, 2000). The vertical axis measures the net cost imposed on an individual member of society. This includes both the cost of the contagion as well as the cost of the public interventions directed against the contagion. The horizontal axis measures time. Curve D depicts the cost of infectious disease. It is a reciprocal function, indicating a high cost at the start of the epidemic that diminishes at a slower rate over time. Uncertainty and the rapid onset of novel disease imposes higher costs at the outset. These costs diminish as time passes and individuals mutually adjust their behaviors and expectations and discover new means of reducing their personal risk. Returns to behavioral adjustment fall as the potential threat of disease dissipates and marginal costs of risk reduction increase. $D'$ represents the cost scenario when political institutions are subject to increasing returns (path dependence). $D'$ falls at a slightly lower rate due to the unintended consequences of public health policies that make it more difficult to combat the current contagion. For example, pandemic lockdowns may reduce global trade, raising the cost of delivering vaccines and medication to other countries (Barlow et al., 2021).

Curves G and $G'$ both depict the net costs imposed by public interventions in response to the contagion. They include both immediate costs and costs that extend into the future. Immediate costs might include state-imposed isolation measures such as lockdowns, business closures, testing requirements, and so on. Also included are the costs of executing and enforcing these measures (taxation, paid administrators, and so on), along with the opportunity cost of resources, as productive capital and labor remain idle or under-employed. The final set of costs included in G and $G'$ are future costs on margins of health wholly distinct from the current contagion. If, for example, the political response to contagion includes hospital regulations designed to prioritize treatment of patients with the current disease over treating patients with other ills, then the costs borne by the latter group are included in G as an additional, health-related opportunity cost. Both curves are upward sloping, as costs accrue throughout the epidemic. G is depicted as linear, while the slope of $G'$ is increasing exponentially. The former indicates a constant returns process, while the latter indicates a government subject to increasing returns following the health crisis.

Point $t^*$ is the critical juncture, wherein policy responses to the disease are debated, implemented, and reshaped (see Fig. 1). The shaded portion of the diagram left of $t^*$ represents the short run, while the unshaded area to the right of $t^*$ is the long run. Notice that neither assumption—constant nor increasing returns—manifests in any short run cost differences. That is; neither D ($D'$) nor G ($G'$) diverge in the short run. It is only at $t^*$ that the divergence begins to reveal itself, as the long run effects of policies unfold.

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11 See Geloso et al. (2020) for a discussion of Cuban healthcare and univariate policy goals.
12 The cost of the public intervention may include taxation to fund public health efforts, as well as the opportunity cost of those policies (e.g., school closures, business closures, stay-at-home orders).
13 Maringe et al. (2020) estimate approximately 60,000 years of life lost or 3400 deaths as a result of delayed cancer screenings in the UK. Williams et al. (2021) find that excess mortality caused by lockdown policies offset the decrease in COVID-19 deaths during the first wave of the pandemic in England and Wales.
14 There’s no inherent reason (other than for visual clarity) for the non-linear depiction of $G'$ or D. Each curve could be drawn linear, with a ‘kinked’ G at $t^*$, with a steeper slope, and the conclusions would hold.
Summing each cost function vertically allows us to juxtapose the response to infectious disease under two separate assumptions (constant and increasing returns). In doing so, we are left with Fig. 3, which depicts two U-shaped curves, (D+G and D′+G′). The cost-minimizing point on each curve represents the combined effect of both the disease and the political response to the disease (X and X′), accounting for both long and short run effects. Note that the cost-minimizing response under the assumption of constant returns lies to the right of the cost-minimizing response under the assumption of increasing returns (X > X′) and that the net costs of the disease plus the net cost of political interventions are higher under the assumption of increasing returns (c′ > c). The key takeaway from this simple illustration is that a conceptual model which either precludes or underestimates the degree to which political institutions are subject to path dependence is liable to implement more costly and extensive policies—especially during a crisis.

5 The pox of politics

Patterns of institutional change can be extracted from the history of public health and the state response to infectious disease. In general, health crises prompt an expansion in public health and a restructuring of institutions so as to centralize political decision-making (Ansell & Lindvall, 2021; Hamlin, 1994; Porter, 1999). Below, I draw on a few historical episodes in the development of American public health that eventually came to influence the policy response to Covid-19. Figure 4 (adapted from Fig. 1, Sect. 3) depicts the cycle of path dependence that facilitated growth in U.S. public health bureaucracies. In the first cycle, political interest groups establish regulatory and bureaucratic agencies from which they derive short run, personal benefits. The bottom cycle depicts the COVID-19 crisis, where historically-inherited bureaucracies hindered initial response efforts, and rash
policy-decisions were made, stimulating further growth in the bureaucratic public health apparatus.\footnote{See Shughart (2006) for a similar analysis following Hurricane Katrina.}

5.1 The emergence and build-up of public health in the United States

Public health at the outset of the nineteenth century in the United States primarily was managed by local voluntary groups and municipal authorities (Duffy, 1990). Unlike Britain, constitutional federalism thwarted the establishment of centralized US public health institutions.\footnote{See Porter (1994) for comparisons.} Despite the lack of a national public health apparatus, local sanitarian movements throughout the nineteenth century, along with medical and technological advances like the germ theory of disease and municipal water and sewage, greatly improved the state of US health (Blake, 1948; Meeker, 1971).

Like most public goods, public health became a mix of both productive and redistributive contests; the latter benefiting politically privileged groups who relied on and competed for barriers to entry in their respective industries (Leeson & Thompson, 2021). Hamowy (2007) provides a ‘bootlegger and Baptist’ account (Yandle, 1983) of regulatory build-up in public health throughout the late nineteenth and early twentieth centuries, whereby puritan reformers provided moral and intellectual justification for awarding exclusive privileges to special interest groups engaged in rent-seeking. At that time, advances in manufacturing and chemistry created new targets for reformers, as “[n]ewly created ‘artificial’ foods prompted concern among citizens and professionals” (Hamowy, 2007, p. 111).\footnote{Stanziani (2007), investigating food regulation at the turn of the twentieth century in France, argues that adulteration concerns were a legal distinction and not a quality measure, competed over by interest groups. Indeed, food quality at the time was improving on many margins thanks to technological and manufacturing advancements.} Sanitarian

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig3.png}
\caption{Net cost comparison}
\end{figure}
reformers and chemists produced articles condemning glucose and oleomargarine as hazardous. These articles gained circulation in the press and popularity among concerned citizens, despite critical assessments of the scientific evidence (ibid, 2007).

Strong support for the regulation of glucose and margarine also came, unsurprisingly, from existing cane sugar manufacturers and dairy farmers. Each group made claims that new entrants were subjected consumers to unnecessary risk through adulteration of their products (Barkan, 2011). In 1848, Congress passed legislation to prevent patent medicines from entering the country. The law, which prohibited the importation of adulterated drugs, was pushed for “largely from the few professional druggists who sought to distinguish themselves from the large number of lesser trained dispensers of medications from the nation’s grocers and general-store owners who freely competed with apothecaries in selling medications” (Hamowy, 2007, p. 104). Regulation was also aided by puritan groups like “the women’s temperance movement… who saw in these ‘impure’ medications a dire threat to… puritan values” (ibid, p. 111).

Among the stakeholders tied to food and drug legislation were the professional chemists employed in the Department of Agriculture’s Bureau of Chemistry. This department was to oversee the quality of the U.S. food supply conditional upon the passage of new food and drug legislation. Chief chemist, Harvey Wiley, was a strong supporter of said legislation. Wiley spent two decades attempting to pass a national food and drug law but was repeatedly defeated by the Republican Congress (Carpenter, 2001, p. 2). In 1906, Wiley saw victory with the passage of the Pure Food and Drugs Act. In the following 6 years, the bureau went from “a staff of 110 and a budget of $155,000… to 546 employees and a budget of almost $1 million” (Hamowy, 2007, p. 137). The Pure Food and Drugs Act “authorized the

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18 For a similar analysis of protection against adulterated medicines in nineteenth century England, see Leeson et al. (2020).
19 Organized groups included the Woman’s Christian Temperance Union (WCTU), which lobbied heavily for legislation at the local, state, and federal level out of fear that impure foods, drugs, and alcohol were threats to puritan society.
regulation of food and pharmaceutical products now carried out by one of the nation’s most powerful federal agencies, the Food and Drug Administration [FDA]” (Carpenter, 2001, p. 2).

By the late twentieth century, the FDA had grown from an adolescent bureau under the USDA into a powerful, independent agency. After favorably mitigating back-to-back public crises of adulterated pharmaceuticals like elixir sulfanilamide—a drug that caused mass poisoning and was responsible for the deaths of 100 people across 15 states in 1937 (Kristin, 2012)—and thalidomide in 1960, the agency earned substantial reputation and renown. The FDA “received public credit for protecting the American public from the hazards of consumer goods” (Carpenter, 2001, p. 366). These events led to the passing of two momentous bills: the Food, Drug and Cosmetic Act of 1938 and the Kefauver-Harris Amendments of 1962. The latter granted the FDA authority to determine the safety and efficacy standards for drugs before entering the market (Hansen, 1995). Studies have found that the 1962 Amendments increased the costs and the time required to bring new drugs to market (Klein & Tabbarok, 2006), and delayed pharmaceutical innovation and the adoption of new technologies (Evans & Watson, 2015). The regulatory scope of the FDA continues to expand. Philipson et al. (2008) estimate that approximately 20% of total consumer spending falls under their regulatory purview.

5.2 The cost of bureaucratic vestiges in the COVID-19 pandemic

During the COVID-19 pandemic, similar patterns emerged, including a curious form of “mass hysteria”. Mass or collective hysteria is a social phenomenon wherein individuals share and spread inconsistent risk assessments (Rosi et al., 2021). Mass hysteria is amplified by availability heuristics, like media bias and activism (Kuran & Sunstein, 1998; Sunstein, 2006). Abel et al. (2021) find that young and middle-aged persons who report knowing a victim of COVID-19, live in areas with heightened exposure to the virus, and consume left-wing media, are more likely to overestimate their risk of infection and death, suggesting that exposure to COVID-related information can exacerbate these phenomena. Amid the pandemic, political leaders responded rationally, not to biological or epidemiological recommendations, per se, but to the concerns of their constituents, paying little regard to their potential biases (Desierto & Koyama, 2020; Pulejo & Querubín, 2021).

This, along with inherited bureaucratic obstacles, contributed to a delayed and clumsy response to coronavirus. A crucial component of defense against infectious disease is early testing and tracing. Regulations developed in 1976 by the FDA to regulate laboratory developed tests (LDTs) were bolstered in 2014 when new guidelines required more stringent compliance. Enforcement of the new rules began in 2017 (March, 2021a). In early 2020, private laboratories were unable to create, let alone distribute, the tests necessary to trace the viral outbreak. March (2021a, p. 1217) reminds us that “[l]aboratories that developed and administered Covid-19 tests without the FDA’s approval were ordered to discontinue testing even when evidence of communal spread was available.” Moreover, “[b] y March 5, 2020, about 5 weeks after the first confirmed case of COVID-19 in the United States, only 1235 patients nationwide were tested for COVID-19... Other countries were able to administer millions of tests over a similar period” (p. 1217).

Furthermore, best-treatment knowledge early on was limited. The drug remdesivir emerged as potentially effective (Spinner et al., 2020). Despite the promise shown in treating COVID patients, FDA policies hampered patient access to the drug. “As COVID-19 began spreading through the United States, clinicians were only able to access remdesivir
through the FDA’s expanded access program, which required applications for individual patients and the agency’s approval before treatment could be administered” (March, 2021a, p. 1219). Calls for deregulation eventually led the FDA to reduce the stringency of testing requirements and to issue Emergency Use Authorizations for drugs like remdesivir. A rapid expansion in US testing capacity and the use of remdesivir for treating patients soon followed (March, 2021a, 2021b).

Further suspensions were made across bureaucratic and political organizations. Occupational licensure laws were relaxed by executive fiat when cities like New York faced a bottleneck in the availability of medical staff. By the summer of 2020 most states had temporarily suspended or relaxed licensing laws in order to lubricate the labor market or circumvent the regulatory requirements for oncoming nurses and doctors (Bayne et al., 2020; Hentze, 2020; Yelowitz & Ingram, 2021). Governor Andrew Cuomo, beginning in March 2020, issued executive orders relaxing or suspending regulations in numerous sectors, revealing the immense build-up of red tape leading up to the crisis. They included:

- **Hospitals** Building codes suspended for constructing new facilities. State approval no longer necessary to make changes to their physical layout, such increasing bed capacity. Relaxing hospital minimum standards for record keeping.
- **Medical staff** Nurses allowed to perform COVID tests without supervision. Screening processes and credential checks relaxed for hospital applicants.
- **General health** Telemedicine laws suspended. Home health care rules relaxed. Approval process for using drugs not on the state’s list of ‘preferred drugs’ suspended.
- **Education and childcare** Laws mandating criminal background checks for childcare providers suspended. Capacity limits, age limits, and mandatory staffing minimums suspended for daycare facilities.21

### 5.3 Pandemic policy failure

While inherited bureaucratic power obstructed effective policy, it also expedited ineffectual policy and heightened our exposure to “expert failure” (Koppl, 2021). Privileged and exclusive powers granted to political authorities in the past reduced their exposure to competitive forces (Bylund & Packard, 2021). Arguably, this created an environment devoid of error discovery and lacking in the kind of epistemic feedback afforded by more competitive systems (Storr et al., 2021). Under these conditions, policymakers are more likely to adopt untested and ineffective policies. Moreover, they may persist in enforcing these policies over longer periods of time, unaware of the full measure of costs engendered.

Consider, for example, the fact that experts had very little meaningful or reliable information on which to base policy decisions early in the pandemic. Non-pharmaceutical interventions (“NPIs” i.e., mandatory business closures and home quarantines) lacked precedent in Western societies, suffering from untested effectiveness as well as arbitrary implementation and enforcement. Prior to March, 2020, epidemiologists regularly expressed skepticism over the efficacy of NPIs (e.g., Inglesby et al., 2006). As late as September 2019,
epidemiologists from Johns Hopkins University issued a report entitled “Preparedness for a High-Impact Respiratory Pathogen Pandemic”, asserting that “quarantine may be the least likely NPI to be effective in controlling the spread due to high transmissibility” (Nuzzo et al., 2019, p. 57). The report raises further concerns that NPI’s “such as travel restrictions and quarantine, might be pursued for social or political purposes by political leaders, rather than pursued because of public health evidence” (ibi. p. 73).

Despite skepticism among professional epidemiologists, NPIs became a preferred US policy tool and in countries across the global (Magness & Earle, 2021), influenced largely by Ferguson et al. (2020) at Imperial College London (ICL). The ICL model predicted dire outcomes for countries that failed to implement strict NPIs. For example, it predicted that the United States would suffer nearly 2.2 million deaths by July 30, 2020, without any NPIs. Under the most extreme NPIs, the model predicted half the number of deaths (1.1 million). The United States went on to implement a variety of NPIs throughout the Spring of 2020. Actual deaths by the end of July measured 152,747—an error ratio for the ICL (Imperial College London) model of 7.19 (Allen, 2021). One reason why the model was so inaccurate is that it omitted predictable economic behavioral assumptions. The infection rate was thought to remain constant—as if individuals would not respond to increased risks—and the supply of medical resources was assumed to be fixed—as if allocative adjustments would not be responsive to the medical needs of disease outbreak.  

Critical assessments since NPI implementation suggest that lockdown policies delivered marginal benefits and large costs (Allen, 2021). Beyond a certain level, more stringent lockdowns are not associated with lower mortality (Bjørnskov, 2021), and early studies using cell-phone locations found that voluntary isolation began prior to policy enforcement and explained the majority of behavioral changes (Goolsbee & Syverson, 2021). The costs, on the other hand, are significant, including the loss of GDP, effects on education and mental health, such as alcoholism, suicides, overdoses and drug dependency, domestic violence, and non-COVID-19 medical costs, including deaths from cardiovascular disease and delayed cancer screenings.23

On one hand, increasing the scope of bureaucratic reach through decades of regulatory build-up stifled the U.S. response to COVID-19 at a time when delay was costliest.24 On the other, it lubricated the implementation of NPIs. Political discretion gained during this most recent crisis remains well-preserved (Bjørnskov & Voigt, 2021). Lockdown policies persist in many places (Magness & Earle, 2021), and the growing public health bureaucracy show no signs of deceleration (see Fig. 5). Excluding 2020, expenditures on public health have grown an average of 10% since 1960 (panel B). Public health activities per capita (panel C) more than doubled in the first year of the pandemic, going from $320 to $680, while public health administration costs as a portion of total healthcare expenditures (private and public) continue to rise (panel F). The spike recorded in 2020 can be attributed to COVID-19, but—pursuant to path dependent theories of institutional change—we should not be surprised to see an incomplete retrenchment in the size and scope of public

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22 Atkeson (2021) offers a revised SIR model attempting to account for endogenous behavioral responses, revealing the highly sensitive nature of predicted outcomes to behavioral assumptions.

23 See Allen (2021) for a detailed overview of the research on these costs.

24 This is consistent with Kaplan et al., (2022, p. 478), who find that “[t]he high cost of adaptation to the pandemic is partially a result of underinvestment and preparation.”
health activities as the crisis becomes more and more remote. We likewise should not be surprised to see ineffectual public responses to the next health crises.

6 Conclusion

Public health and economic epidemiology aim to address how societies might effectively manage the threat of infectious disease in terms of optimality. Werner Troesken’s *Pox of Liberty* (2015) suggests an apparent tradeoff between liberalism and public health. The arguments I have made are by no means new and should come as no surprise to institutional and public choice economists. Still, I contend that the prevailing diagnoses remain static, ignoring intertemporal tradeoffs and the tendency for policy reform to generate path dependent institutional change. A crisis of contagion triggers policy reforms made under conditions of extreme urgency and uncertainty. Existing power holders and interest groups leverage the status quo to their benefit under crisis...
conditions. Once established, reforms are difficult to reverse. Over time, they can result in systemic changes that generate self-reinforcing government growth.

Consequently, the size and scope of public health—as a stand-alone political or quasi-political sector—has expanded its presumed role of supplying health related public goods or correcting market failures (Anomaly, 2011; Dees, 2018; Horne, 2019). Insofar as its practitioners are concerned, the scope of public health has seen tremendous growth. Powers and Faden, for example, write that, “everything from war, terrorism, and crime to genetic predisposition to disease… has been claimed as a public health problem” (2006, p. 83). The expansive role assumed by public health continues reshape the institutional structure of politics, encouraging wasteful rent seeking, corruption, and administrative bloat (Coyne et al., 2021). These embedded institutions harm future health by inadvertently curtailing efforts to mount a coordinated response to unexpected health crises (March, 2021b) and by increasing the likelihood of expert failure, whereby policy-makers—lacking exposure to competition and epistemic feedback—adopt costly and ineffectual policies (Koppl, 2021). Once due consideration is given to the long run, systemic effects of public health intervention, the alleged tradeoff between liberty and health ought to be met with greater skepticism.

References

Abel, M., Byker, T., & Carpenter, J. (2021). Socially optimal mistakes? Debiasing COVID-19 mortality risk perceptions and prosocial behavior. *Journal of Economic Behavior and Organization, 183*, 456–480.

Acemoglu, D., Chernozhukov, V., Werning, I., & Whinston, M. D. (2021). Optimal targeted lockdowns in a multigroup SIR model. *American Economic Review: Insights, 3*(4), 487–502.

Achen, C. H., & Bartels, L. M. (2016). *Democracy for realists: Why elections do not produce responsive government*. University Press.

Allen, D. W. (2021). Covid-19 lockdown cost/benefits: A critical assessment of the literature. *International Journal of the Economics of Business, 29*(1), 1–32.

Althouse, B. M., Bergstrom, T. C., & Bergstrom, C. T. (2010). A public choice framework for controlling transmissible and evolving diseases. *Proceedings of the National Academy of Sciences of the United States of America, 107*(SUPPL. 1), 1696–1701.

Alvarez, F., Argente, D., & Lippi, F. (2021). A simple planning problem for COVID-19 lock-down, testing, and tracing. *American Economic Review: Insights, 3*(3), 367–382.

Anderson, G. M. (1989). Parasites, profits, and politicians: Public health and public choice. *Cato Journal, 9*, 557.

Anomaly, J. (2011). Public health and public goods. *Public Health Ethics, 4*(3), 251–259.

Ansell, B. W., & Lindvall, J. (2021). *Inward conquest: The political origins of modern public services*. Cambridge University Press.

Arthur, W. B. (1990). ‘Silicon Valley’ locational clusters: When do increasing returns imply monopoly? *Mathematical Social Sciences, 19*(3), 235–251.

Arthur, W. B. (1994). *Increasing returns and path dependence in the economy*. University of Michigan Press.

Asatryan, Z., Heinemann, F., & Pitlik, H. (2017). Reforming the public administration: The role of crisis and the power of bureaucracy. *European Journal of Political Economy, 48*, 128–143.

Atkeson, A. (2021). A parsimonious behavioral SEIR model of the 2020 COVID epidemic in the United States and the United Kingdom (No. 28434). Cambridge, MA.

Bagus, P., Peña-Ramos, J. A., & Sánchez-Bayón, A. (2021). COVID-19 and the political economy of mass hysteria. *International Journal of Environmental Research and Public Health, 18*(4), 1376.

Barkan, I. D. (2011). Industry invites regulation: The passage of the pure food and drug Act of 1906. *American Journal of Public Health, 75*(1), 18–26.
Barlow, P., van Schalkwyk, M. C., McKee, M., Labonté, R., & Stuckler, D. (2021). COVID-19 and the collapse of global trade: Building an effective public health response. *The Lancet Planetary Health, 5*(2), e102–e107.

Bayne, E., Norris, C., & Timmons, E. (2020). A primer on emergency occupational licensing reforms for combating COVID-19. Merecus special edition policy brief. Elsevier.

Bazzi, S., Fiszbein, M., & Gebresilasse, M. (2021). “Rugged individualism” and collective (in)action during the COVID-19 pandemic. *Journal of Public Economics, 195*(104357), 1–20.

Bhattacharya, J., Hyde, T., & Tu, P. (2014). *Health economics*. Palgrave Macmillan.

Bian, B., Li, J., Xu, T., & Foutz, N. Z. (2022). Individualism during crises. *The Review of Economics and Statistics, 104*(2), 368–385.

Bjørnskov, C., & Voigt, S. (2021). This time is different?—On the use of emergency measures during the corona pandemic. *European Journal of Law and Economics, 54*(1), 1–19.

Bjørnskov, C. (2021). Did lockdown work? An economist’s cross-country comparison. *Cesifo Economic Studies, 67*(3), 318–331.

Blake, J. B. (1948). The origins of public health in the United States. *American Journal of Public Health and the Nations Health, 38*(11), 1539–1550.

Bloom, D. E., Kuhn, M., & Pretten, K. (2022). Modern infectious diseases: Macroeconomic impacts and policy responses. *Journal of Economic Literature, 60*(1), 85–131.

Bolton, P., & Farrell, J. (1990). Decentralization, duplication, and delay. *Journal of Political Economy, 98*(4), 803–826.

Buchanan, J. M. (1980). Rent seeking and profit seeking. In J. M. Buchanan, R. D. Tollison, & G. Tullock (Eds.), *Toward a theory of the rent seeking society* (pp. 3–15). Texas A&M University Press.

Buchanan, J. M., & Lee, D. R. (1982). Politics, time, and the laffer Curve. *Journal of Political Economy, 90*(4), 816–819.

Buchanan, J. M., & Tullock, G. (1962). *The calculus of consent: Logical foundations of constitutional democracy*. University of Michigan Press.

Buchanan, J. M., & Tullock, G. (1965). Public and private interaction under reciprocal externality. In J. Margoli (Ed.), *The public economy of urban communities* (pp. 52–73). Resources for the Future.

Bylund, P. L., & Packard, M. D. (2021). Separation of power and expertise: Evidence of the tyranny of experts in Sweden’s COVID-19 responses. *Southern Economic Journal, 87*(4), 1300–1319.

Candela, R. A., & Geloso, V. (2021). Economic freedom, pandemics, and robust political economy. *Southern Economic Journal, 87*(4), 1250–1266.

Capoccia, G. (2015). Critical junctures and institutional change. In J. Mahoney & K. Thelen (Eds.), *Advances in comparative-historical analysis* (pp. 147–179). Cambridge University Press.

Capoccia, G., & Kelemen, R. D. (2006). The study of critical junctures: Theory, narrative, and counterfactuals in historical institutionalism. *World Politics, 59*(369), 341.

Carande-Kulis, V. G., Getzen, T. E., & Thacker, S. B. (2007). Public goods and externalities: A research agenda for public health economists. *Journal of Public Health Management and Practice, 13*(2), 227–232.

Carey, J. M. (2016). Parchment, equilibria, and institutions. *Comparative Political Studies, 33*(6), 735–761.

Carpenter, D. P. (2001). The forging of bureaucratic autonomy: Reputations, networks, and policy innovation in executive agencies, 1862–1928. Princeton University Press.

Caselli, F., Grigoli, F., & Sandri, D. (2022). Protecting lives and livelihoods with early and tight lockdowns. *B.E. Journal of Macroeconomics, 22*(1), 241–268.

Childress, J. F., Faden, R. R., Gaare, R. D., Gostin, L. O., Kahn, J., Bonnie, R. J., et al. (2012). Public health ethics: Mapping the terrain. In S. Holland (Ed.), *Arguing about bioethics* (pp. 361–373). Routledge.

Coase, R. H. (1990). *The firm, the market, and the law*. University of Chicago Press.

Congleton, R. D. (2021). Federalism and pandemic policies: Variety as the spice of life. *Public Choice, 1–28*.

Congleton, R. D. (2005). The political economy of crisis management: Surprise, urgency, and mistakes in political decision making. In P. Kurridl-Klingaard (Ed.), *Dynamics of intervention: Regulation and redistribution in the mixed economy* (advances in Austrian Economics, Volume 8) (pp. 183–204). Emerald Group Publishing Limited.

Costa, D. L. (2015). Health and the economy in the United States from 1750 to the present. *Journal of Economic Literature, 53*(3), 503–570.

Cotula, L. (2021). Towards a political economy of the COVID-19 crisis: Reflections on an agenda for research and action. *World Development, 138*, 105235.

Cowen, T. (1992). Law as a public good: The economics of anomaly. *Economics and Philosophy, 8*(2), 249–267.
Coyne, C. J. (2011). Constitutions and crisis. *Journal of Economic Behavior and Organization, 80*(2), 351–357.

Coyne, C. J., Duncan, T. K., & Hall, A. R. (2021). The political economy of state responses to infectious disease. *Southern Economic Journal, 87*(4), 1119–1137.

Dave, D., Friedson, A., Matsuzawa, K., Sabia, J. J., & Safford, S. (2022). JUE Insight: Were urban cowboys enough to control COVID-19? Local shelter-in-place orders and coronavirus case growth. *Journal of Urban Economics, 127*, 103294.

David, P. A. (1985). Clio and the economics of QWERTY. *American Economic Review, 75*(2), 332–337.

Dees, R. H. (2018). Public health and normative public goods. *Public Health Ethics, 11*(1), 20–26.

Desierto, D., & Koyama, M. (2020). Health vs. Economy: Politically optimal pandemic policy. *Journal of Political Institutions and Political Economy, 1*(4), 645–669.

Downs, A. (1957). *An economic theory of democracy.* Harper & Row.

Downs, A. (1967). *Inside bureaucracy.* Little, Brown, and Company.

Duffy, J. (1990). *The sanitarians: A history of american public health.* University of Illinois Press.

Duffy, J. (2015). *History of public health in New York City, 1625–1866.* Russell Sage Foundation.

Dunleavy, P. (2019). “The bureaucracy” as an interest group. In R. D. Congleton, B. Grofman, & S. Voigt (Eds.), *The Oxford handbook of public choice* (Vol. 1, pp. 566–584). Oxford University Press.

Eichenbaum, M. S., Rebelo, S., & Trabandt, M. (2021). The macroeconomics of epidemics. *The Review of Financial Studies, 34*(11), 5149–5187.

Evans, J. P., & Watson, M. S. (2015). Genetic testing and FDA regulation: Overregulation threatens the emergence of genomic medicine. *JAMA, 313*(7), 669–670.

Ferguson, N. M., Laydon, D., Nedjati-Gilani, G., Imai, N., Ainslie, K., Baguelin, M., et al. (2020). *Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand.*

Friedson, A. I., Mcnichols, D., Sabia, J. J., & Dave, D. (2020). *Did california's shelter-in-place order work? Early coronavirus-related public health effects* (No. 26992). Cambridge, MA.

Geloso, V., & Murtazashvili, I. (2020). *Can governments deal with pandemics?* (No. 21–23). SSRN Electronic Journal. Elsevier.

Greer, S. L., King, E. J., da Fonseca, E. M., & Peralta-Santos, A. (2020). The comparative politics of COVID-19: The need to understand government responses. *Global Public Health, 15*(9), 1413–1416.

Hall, R. E., Jones, C. I., & Klenow, P. J. (2020). Trading off consumption and COVID-19 deaths (No. 27340). Cambridge, MA.

Hardin, R. (2006). Constitutionalism. In D. A. Wittman & B. R. Weingast (Eds.), *The Oxford handbook of political economy* (pp. 289–311). Oxford University Press.

Harris, B., & Hinde, A. (2019). Sanitary investment and the decline of urban mortality in England and Wales, 1817–1914. *The History of the Family, 24*(2), 339–376.
Hauck, K. (2018). The economics of infectious diseases. In J. H. Hamilton, A. Dixit, S. Edwards, & K. Judd (Eds.), Oxford research encyclopedia of economics and finance. Oxford University Press.

Hayek, F. A. (1973). Law, legislation and liberty volume 1: Rules and order. University of Chicago Press.

Hayek, F. A. (2011). The constitution of liberty: The definitive edition. In R. Hamowy (Ed.), The collected works of F.A. Hayek: 17. University of Chicago Press.

Hazlitt, H. (1996). Economics in one lesson (50th Anniv.). Laissez Faire Books.

Hentze, I. (2020, October 30). COVID-19: Occupational licensing during public emergencies. National Conference of State Legislatures. Retrieved April 24, 2022, from https://www.ncsl.org/research/labor-and-employment/covid-19-occupational-licensing-in-public-emergencies.aspx

Higgs, R. (1987). Crisis and leviathan: Critical episodes in the growth of American government. Oxford University Press.

Hogan, J. (2019). The critical juncture concept’s evolving capacity to explain policy change. European Policy Analysis, 5(2), 170–189.

Holcombe, R. G. (2005). Government growth in the twenty-first century. Public Choice, 124(1–2), 95–114.

Horne, L. C. (2019). Public health, public goods, and market failure. Public Health Ethics, 12(3), 287–292.

Hsiang, S., Allen, D., Annan-Phan, S., Bell, K., Bolliger, I., Chong, T., et al. (2020). The effect of large-scale anti-contagion policies on the COVID-19 pandemic. Nature, 584(7820), 262–267.

Huberfeld, N., Gordon, S. H., & Jones, D. K. (2020). Federalism complicates the response to the COVID-19 health and economic crisis: What can be done? Journal of Health Politics, Policy and Law, 45(6), 951–965.

Ikeda, S. (1997). Dynamics of the mixed economy: Toward a theory of interventionism. Routledge.

Inglesby, T. V., Nuzzo, J. B., O’Toole, T., & Henderson, D. A. (2006). Disease mitigation measures in the control of pandemic influenza. Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science, 4(4), 366–375.

Jones, C., Philippon, T., & Venkateswaran, V. (2021). Optimal mitigation policies in a pandemic: Social distancing and working from home. The Review of Financial Studies, 34(11), 5188–5223.

Kaplan, S., Lefler, J., & Zilberman, D. (2022). The political economy of COVID-19. Applied Economic Perspectives and Policy, 44(1), 477–488.

Kerwin, C., Furlong, S. R., & West, W. (2010). Interest groups, rulemaking, and American bureaucracy. In R. F. Durant (Ed.), The Oxford handbook of American bureaucracy (pp. 590–611). Oxford University Press.

Kingston, C., & Caballero, G. (2009). Comparing theories of institutional change. Journal of Institutional Economics, 5(2), 151–180.

Kirzner, I. M. (1973). Competition and entrepreneurship. University of Chicago Press.

Klein, D. B., & Tabbarok, A. (2006). Is the FDA safe and effective? The Independent Institute. Retrieved April 24, 2022, from https://www.fdaleview.org/

Koppl, R. (2021). Public health and expert failure. Public Choice, 1–24.

Koyama, M. (2021). Epidemic disease and the state: Is there a tradeoff between public health and liberty? Public Choice, 1–23.

Kristin, J. (2012). Regulatory history: Elixir Sulfanilamide. Journal of GXP Compliance, 16(3), 12–14.

Krugman, P. (2009). The increasing returns revolution in trade and geography. American Economic Review, 99(3), 567–571.

Kuran, T., & Sunstein, C. R. (1998). Availability cascades and risk regulation. Stanford Law Review, 51, 683–768.

Lavoie, D. (2015). Rivalry and central planning. Mercatus Center at George Mason University.

Laxminarayan, R., & Malani, A. (2011). Economics of infectious diseases. In S. Glied & P. C. Smith (Eds.), The Oxford handbook of health economics (pp. 189–205). Oxford University Press.

Leeson, P. T., & Thompson, H. A. (2021). Public choice and public health. Public Choice, 1–37.

Leeson, P. T., King, M. S., & Fegley, T. J. (2020). Regulating quack medicine. Public Choice, 182(3–4), 273–286.

Leeson, P. T., & Rouanet, L. (2021). Externality and COVID-19. Southern Economic Journal, 87(4), 1107–1118.

Loewenthal, G., Abadi, S., Avram, O., Halabi, K., Ecker, N., Nagar, N., et al. (2020). COVID -19 pandemic-related lockdown: Response time is more important than its strictness. EMBO Molecular Medicine, 12(11), 1–8.

Lothe, S. (2020). Hyperbolic discounting and COVID-19 policy responses (No. 77). Social Impact Research Experience (SIRE)

Maani, N., & Galea, S. (2020). COVID-19 and underinvestment in the public health infrastructure of the United States. The Milbank Quarterly, 98(2), 250.
Magness, P. W., & Earle, P. C. (2021). The origins and political persistence of COVID-19 lockdowns. *Independent Review, 25*(4), 503–521.

Mahoney, B. (2020). Here’s every law and regulation cuomo had suspended during coronavirus crisis. *POLITICO*. Retrieved April 24, 2022, from https://www.politico.com/states/new-york/albany/story/2020/03/19/evvery-law-and-regulation-suspended-by-cuomo-during-the-coronavirus-crisis-1268180

Mahoney, J. (2001). Path-dependent explanations of regime change: Central America in comparative perspective. *Studies in Comparative International Development, 36*(1), 111–141.

March, R. J. (2021a). The FDA and the COVID-19: A political economy perspective. *Southern Economic Journal, 87*(4), 1210–1228.

March, R. J. (2021b). Flatten the bureaucracy: Deregulation and COVID-19 testing. *The Independent Review, 87*(4), 1210–1228.

March, R. J., & Geloso, V. (2020). Gordon Tullock meets Phineas Gage: The political economy of lobotomies in the United States. *Research Policy, 49*(1), 103872.

Maringe, C., Spicer, J., Morris, M., Purushotham, A., Nolte, E., Sullivan, R., et al. (2020). The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England, UK: A national, population-based modelling study. *The Lancet Oncology, 21*(8), 1023–1034.

Martin, A. G. (2010). Emergent politics and the power of ideas. *Studies in Emergent Order, 2*(3), 212–245.

McCannon, B. C., & Hall, J. C. (2021). Stay-at-home orders were issued earlier in economically unfree states. *Southern Economic Journal, 87*(4), 1138–1151.

McCartney, G., Hearty, W., Arnot, J., Popham, F., Cumbers, A., & McMaster, R. (2019). Impact of political economy on population health: A systematic review of reviews. *American Journal of Public Health, 109*(6), E1–E12.

McKeown, T., & Record, R. G. (1962). Reasons for the decline of mortality in England and Wales during the nineteenth century. *Population Studies, 16*(2), 94.

Meeker, E. (1971). The improving health of the United States, 1850–1915. *Explorations in Economic History, 9*(C), 353–373.

Mellish, T. I., Luzmore, N. J., & Shahbaz, A. A. (2020). Why were the UK and USA unprepared for the COVID-19 pandemic? The systemic weaknesses of neoliberalism: A comparison between the UK, USA, Germany, and South Korea. *Journal of Global Faultlines, 7*(1), 9–45.

Mises, L. von. (2011). *Interventionism: An economic analysis*. In B. B. Greaves (Ed.), Indianapolis, IN: Liberty Fund.

Molly, L.-T. (2017). *Fixing the poor: Eugenic sterilization and child welfare in the twentieth century*. Johns Hopkins University Press.

North, D. C. (2005). *Understanding the process of economic change*. Princeton University Press.

Nozick, R. (1974). *Anarchy, state, and utopia*. Basic Books.

Nuzzo, J. B., Mullen, L., Snyder, M., Cicero, A., Inglesby, T. V., Adalja, A. A., & Connell, N. (2019). Preparedness for a high-impact respiratory pathogen pandemic. Baltimore, MD.

Olson, M. (1962). *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. Yale University Press.

Philipson, T. (2000). Economic epidemiology and infectious diseases. In A. J. Culyer & J. P. Newhouse (Eds.), *Handbook of health economics* (Vol. 1, pp. 1761–1799). Elsevier.

Philipson, T., Berndt, E. R., Gottschalk, A. H. B., & Sun, E. (2008). Cost-benefit analysis of the FDA: The case of the prescription drug user fee acts. *Journal of Public Economics, 92*(5–6), 1306–1325.

Pierson, P. (1994). Increasing returns, path dependence, and the study of politics. *American Political Science Review, 88*(2), 251–267.

Pierson, P. (2004). *Politics in time: History, institutions, and social analysis*. Princeton University Press.

Porter, D. (1994). *The History of public health and the modern state*. In D. Porter, (Ed.), Atlanta, GA: Editions Rodopi B. V.

Porter, D. (1999). *Health, civilization and the state*. Routledge.

Powers, M., & Faden, R. R. (2006). *Social justice: The moral foundations of public health and health policy*. Oxford University Press.

Pulejo, M., & Querubín, P. (2021). Electoral concerns reduce restrictive measures during the COVID-19 pandemic. *Journal of Public Economics, 198*, 104387

Rampini, A. A. (2020). Sequential lifting of COVID-19 interventions with population heterogeneity (No. 27063). Cambridge, MA.

Rhodes, M. (2021). ‘Failing forward’: A critique in light of covid-19. *Journal of European Public Policy, 28*(10), 1537–1554.

Rocco, P., Béland, D., & Waddan, A. (2020). Stuck in neutral? Federalism, policy instruments, and counter-cyclical responses to COVID-19 in the United States. *Policy and Society, 39*(3), 458–477.

Rose, R. (1990). Inheritance before choice in public policy. *Journal of Theoretical Politics, 2*(3), 263–291.
Rosi, A., van Vugt, F. T., Leccce, S., Ceccato, I., Vallarino, M., Rapisarda, F., et al. (2021). Risk perception in a real-world situation (COVID-19): How it changes from 18 to 87 years old. *Frontiers in Psychology, 12*, 528.

Roth, G. A., Abate, D., Abate, K. H., Abay, S. M., Abbafati, C., Abbari, N., et al. (2018). Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: A systematic analysis for the global burden of disease study 2017. *The Lancet, 392*(10159), 1736–1788.

Salter, A. W., & Furton, G. L. (2018). Emergent politics and constitutional drift: The fragility of procedural liberalism. *Journal of Entrepreneurship and Public Policy, 7*(1), 34–50.

Shepsle, K. A. (2006). Rational choice institutionalism. In R. A. W. Rhodes, S. A. Binder, & B. A. Rockman (Eds.), *The oxford handbook of political institutions* (pp. 23–38). Oxford University Press.

Shughart, W. F., II. (2006). Katrinanomics: The politics and economics of disaster relief. *Public Choice, 127*(1), 31–53.

Somin, I. (2013). *Democracy and political ignorance: Why smaller government is smarter*. Stanford University Press.

Spinner, C. D., Gottlieb, R. L., Criner, G. J., Arribas López, J. R., Cattelan, A. M., Soriano Viladomiu, A., et al. (2020). Effect of Remdesivir vs standard care on clinical status at 11 days in patients with moderate COVID-19: A randomized clinical trial. *JAMA, 324*(11), 1048–1057.

Stanziani, A. (2007). Negotiating innovation in a market economy: Foodstuffs and beverages adulteration in nineteenth-century France. *Enterprise and Society, 8*(2), 375–412.

Storr, V. H., Haeffele, S., Lofthouse, J. K., & Grube, L. E. (2021). Essential or not? Knowledge problems and COVID-19 stay-at-home orders. *Southern Economic Journal, 87*(4), 1229–1249.

Sunstein, C. R. (2006). The availability heuristic, intuitive cost-benefit analysis, and climate change. *Climate Change, 77*(1), 195–210.

Susskind, D., & Vines, D. (2020). The economics of the COVID-19 pandemic: An assessment. *Oxford Review of Economic Policy, 36*(Supplement_1), S1–S13.

Timmons, E., & Norris, C. (2022). Potential licensing reforms in light of COVID-19. *Health Policy, 3*(100062), 5.

Troesken, W. (2015). *The pox of liberty: How the constitution left Americans rich, free, and prone to infection*. University of Chicago Press.

Twigg, J. (2020). COVID-19 as a ‘critical juncture’: A scoping review. *Global Policy, 6*, 20.

Williams, S., Crookes, A., Glass, K., & Glass, A. J. (2021). COVID-19 mortalities in England and Wales and the Peltzman offsetting effect. *Applied Economics, 53*(60), 6982–6998.

Yandle, B. (1983). Bootleggers and baptists—The education of a regulatory economists. *Regulation, 7*, 12–16.

Yazaki, Y. (2018). The effects of bureaucracy on political accountability and electoral selection. *European Journal of Political Economy, 51*, 57–68.

Yelowitz, A., & Ingram, S. J. (2021). How does occupational licensing affect entry into the medical field? An examination of emergency medical technicians. *Southern Economic Journal, 1–24*.

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