

**THE POLITICAL ECONOMY OF PANDEMIC POLICY,
COVID-19 AND CLIMATE CHANGE**

**Why Market Fundamentalism and the Trump Administration
Fail to Protect Public Health and the Economy**

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EXECUTIVE SUMMARY

This paper makes a simple point about the U.S. response to the COVID-19 pandemic and its implications for many spheres of life in the 21st century.

- The U.S. had one of the worst policy responses in the world to the pandemic, certainly among the large, high-income democracies, including Asian (e.g. South Korea), European (e.g. Germany), and other nations (e.g. Australia).

That response was driven by a view of political economy that rejects the idea that society can impose social responsibility on its members, even under the most dire of circumstances. This political economy rests on a belief that markets perform perfectly when government gets out of the way and the pursuit of individual interests is synonymous with the public good. Currently called market fundamentalism, it was known as *laissez faire* economics and social Darwinism for well over a century.

The paper refers to the Trump administration and its supporters. Although the overwhelming majority of Trump administration supporters were Republicans, some were not. Indeed, a few were very vocal about it, like Larry Hogan, the Republican Governor of Maryland and the Chairman of the National Governors' Association. Hogan's critique outlined many of the key facts about the Trump administration response to the pandemic that will be documented and demonstrated in this paper. In typical fashion Hogan's comments were dismissed by the Trump administration, but Hogan defended himself.

He argued that the Trump administration was

- 1) slow to act,
- 2) failed to take implement policies that could have saved many lives,
- 3) downplayed the importance of the virus,
- 4) pressed to reopen the economy too soon,
- 5) focused on "his reelection plans,
- 6) disregarded the science,
- 7) ignored the facts and data presented by its own experts,
- 8) made misleading statements about the state of testing,
- 9) competed with the states for medical equipment,
- 10) flip-flopped on who was responsible for the response,
- 11) incorrectly placed the blame on Obama,
- 12) attacked the South Koreans, who actually had a much better policy response.
- 13) Trump he said was his own worst enemy and
- 14) failed to understand that controlling the virus first was the key to reopening the economy

The report integrates over 140 detailed studies prepared in the past six months, embodying significant resources expended by four types of institutions.

- Official documents of multinational and national public health and economic institutions,
- academic publications and papers,
- trade and issue specific press and association reports, and

- detailed accounts from investigative journalism

The paper integrates these longer studies is 115 shorter articles by 100 journalists representing 50 news organizations. The mid-July disputes between the Trump administration and Governor Hogan, and Dr. Andrew Fauci are used to anchor the analysis in the paper. Hogan may be the exception that proves the rule, but the evidence reviewed in this report shows he was right and Trump was wrong. I believe that the expression “the Trump Administration and its supporters” is fair and accurate for both COVID-19 and climate change. As a result, it is clear that the U.S. policy was too slow, too weak and too short.

Examining over 140 recent historical and contemporary case studies, results of epidemiological and econometric models, and investigative analyses, this paper shows that more effective public health policy would also have been good economic policy and had better political results because the public would have been reassured and the economy could have been opened sooner. Ultimately, the costs of this policy failure can only be described as catastrophic, imposing unnecessary harms in three areas.

Public Health, at least

- 120,000 deaths,
- half a million hospitalizations, and
- 2.5 million infections.

Economic, likely to be

- \$7 trillion in lost output.
- Trillions of dollars increased debt, and
- Hundreds of millions of dollars of lost employment

Political:

- Continuing resistance by the vast majority of the public to engaging in the activities the administration seems to value most
- A preference for local officials to set policy
- A collapse of public confidence in the administration to deal with the problem, and
- A dramatic reduction in support for and the electability of the administration and its supporters.

The policy response to the COVID-19 pandemic highlights and magnifies a much broader weakness. This paper concludes with a brief analysis of a parallel the knee-jerk, market fundamentalist response – to climate change. The 19th century view of political economy cannot cope with the challenges of the contemporary global community of over seven billion individuals in 200 nations interconnected in the biosphere (pandemic,) the atmosphere (climate change) and the economic sphere (financial, trade and recessionary meltdowns, and technology diffusion). The analysis of the climate challenge and the other global spheres where policy must be made in the face of great uncertainty points to an approach that emphasizes precaution, science, information gathering, flexibility, and cooperative governance and that recognizes both the importance and limitations of policy making authorities at the international, national, state and local levels. These are the exact opposite of the approach taken in the U.S.

1. INTRODUCTION

POLITICAL SPIN V. REALITY

With the six-month anniversary of the first cases of COVID-19 virus in nations like the United States and South Korea approaching, this is an important moment to assess where things stand. It has become clear that the U.S. has had the least effective policy response to the pandemic of any of the large, high income, democracy and very close to the worst response in the world. The cost is huge. Compared to the nations that did much better, this paper shows that the unnecessary burden is immense:

Public Health

- 120,000 deaths,
- half a million hospitalizations, and
- two million infections.

Economic losses

- approaching \$7 trillion.
- increasing budget deficits by trillions of dollars.

With so many others doing so much better, the question is, how did this happen?

This paper shows that the answer is a deeply ingrained political and economic philosophy, that was unsuited and incapable of rising to the challenge

The paper shows that the response to the pandemic reflected a deep seeded ideological belief in a political economy,¹ currently called market fundamentalism. This has been referred to in earlier and more general terms as *Laissez Faire* economics, in which markets are assumed to do everything perfectly, and Social Darwinism, in which only the strong (and rich) thrive, or even survive, cannot address a planet of over seven billion people living in a highly interconnected world. It adheres to “minimum interference by government in the economic affairs of individuals and society.” As a result, the U.S. response was too slow, too weak and too short-lived to minimize the public health harm or the economic cost of the pandemic.

The political and economic theory embraced by the administration is important not simply because of the huge public health and economic costs of the pandemic, but because the 19th century political economic theory it embraces, espouses, and has tried to implement is completely out of touch with the 21st century economy.

Embracing *laissez faire* economics has led to the market guiding action rather than using public health data and the science to inform policy choices. This attack on science and the failure to pursue science based policies is part and parcel of market fundamentalism. The pandemic is a moment that magnifies the disconnect between the ideology and reality, but it is a disconnect that is inherent in market fundamentalism.

The implementation of market fundamentalism has led to extensive public health failures as epitomized by front page headlines from the June 27, 2020 *Washin*

Texas, Florida walk back reopenings”

“Pence puts a positive spin on pandemic response.”

These headlines reflect that due to the lack of guidelines and policy from the administration, states including Texas and Florida have not incorporated CDC advice on the conditions for opening but instead, focused on “reopening,” which was also urged by the administration. The next day, after a surge in cases had eliminated any doubt that the peak in early June was not the single peak, both the *New York Times* and the *Washington Post*, had front page headlines noting the failure of U.S. policy.

Cases Soaring as Leadership on Virus Fails,²

(New York Times, June 28, 2020)

Major surge in infections exposes U.S. Failures,³

(Washington Post, June 28, 2020).

The end of June is a significant moment in the life cycle of the pandemic because it provides strong evidence for a second surge, or more likely, a powerful first surge in places that had not adopted recommended policies or had lifted policy interventions too soon. To capture these effects, I refer to a second wave. The administration was all for reopening and very mixed on the necessary policies and conditions to make it effective. Moreover, the second wave also makes it clear that failure was not just the failure to recognize the virus and its implications early on. The failure was not just February or even March. The failure was continuous. As one front line doctor put it, “There has to be a clear coherent sustained communications, and that has absolutely not happened. We’ve had exactly the opposite and now it hard to unring a whole series of bells.”⁴

COVID-19, CLIMATE CHANGE AND POLICY

While the bulk of the paper focuses on COVID-19, the final chapter is devoted to the parallel with climate change and I offer observations on similarities between the two throughout the analysis. The “cookie-cutter” ideology driven response to tough challenges was not limited to the response to the pandemic COVID-19. This paper shows that it can be found in the response to climate change, a similar global challenge,⁵ and it shows there are lessons to be learned for both of the challenges, the challenge in the biosphere (COVID-19) and in the atmosphere (climate change). Here it is interesting to note that the first definition of pandemic, as an adjective, in the *Merriam Webster Online Dictionary* does not mention a disease as the cause:

Pandemic: occurring over a wide geographic area and affecting an exceptionally high proportion of the [population](#).

Interestingly, a simple search, without specifying Merriam Webster, returns the adjectival form first, that puts a disease in parenthesis adjective:

pandemic: (of a disease) prevalent over a whole country or the world.

The difference between a pandemic and an epidemic, as explained in the first paragraph of the Wikipedia entry is also instructive. First, the Greek origins focus on the scope of the impact, not the cause of the problem. It also points out why the flu is an epidemic rather than a pandemic. .

A **pandemic** (from [Greek](#) *πᾶν*, *pan*, "all" and *δῆμος*, *demos*, "people") is an [epidemic](#) of an [infectious disease](#) that has spread across a large region, for instance multiple [continents](#) or worldwide, affecting a substantial number of people. A widespread [endemic](#) disease with a stable number of infected people is not a pandemic. Widespread endemic diseases with a stable number of infected people such as recurrences of [seasonal influenza](#) are generally excluded as they occur simultaneously in large regions of the globe rather than being spread worldwide.⁶

Thus, it is correct to say that COVID-19 is a pandemic disease in the biosphere. Climate change is a pandemic challenge in the atmosphere. Not only is the outcome of these two challenges similar, incommensurable, uncertain, intergenerational, but also the administration's policy reaction was similar. It makes policy by disregarding science, undervaluing lives and the environment, failing to conduct proper cost-benefit analysis, and rejecting international cooperation and multinational institutions.

There will be spin, there always is, – blame the Democrats and the Chinese, while attacking the strong scientific consensus. However, in both COVID-19 and climate change, a strong majority of the public (“almost two-thirds”⁷) disagree with the view taken by the Trump administration and its supporters.

Throughout this paper I use the term Trump Administration and its supporters for two reasons.

First, the problem was not only the result of a unique individual. Trump's idiosyncratic personality may have made things worse, but there were many others who supported him, actively and loudly in some cases, silently by inaction in others. There were too many who supported his policy or refused to oppose it to attribute it to the individual. The supporters generally adhered to the same view of political economy as the president.

Second, while the overwhelming majority of supporters were Republicans, some were not. A few were very vocal about it, like Larry Hogan, the Republican governor of Maryland and the Chairman of the National Governors' Association. Hogan's critique, coming from a member of the party Trump was counting on, pitching to, was devastating.

Hogan outlined many of the key facts about the Trump administration response to the pandemic that will be documented and demonstrated in this paper.⁸ In typical fashion Hogan's comments were dismissed by the Trump administration as “revisionist history.”⁹ Hogan defended his op-ed and concluded that defense with a telling response, making points that are included in the list below in italics.¹⁰

- 1) The Trump administration was slow to act, “so it was clear that waiting around for the president to run the nation’s response was hopeless; if we delayed any longer, we’d be condemning more of our citizens to suffering and death.”
- 2) It failed to implement policies that could have saved lives: “So many nationwide actions could have been taken in those early days but weren’t. While other countries were racing ahead with well-coordinated testing regimes, the Trump administration bungled the effort.”
- 3) The president was downplaying the importance of the virus. ““We have it totally under control,” Trump [responded](#) unhesitatingly... And off the president went for the next eight weeks. The rest of January and February were peppered with cheerful or sarcastic comments and tweets, [minimizing](#) the outbreak’s severity and the need for Americans to do much of anything.
- 4) Pressing to reopen the economy “Acting like a man more concerned about boosting the stock market
- 5) and focused on “his reelection plans.”
- 6) The presentations were clear and factual, “jarring, the huge contrast between the experts’ warnings and the president’s public dismissals. Weren’t these the people the White House was consulting about the virus? What made the briefing even more chilling was its clear, factual tone.”
- 7) disregarding the science and ignoring the facts and data presented by its own experts. “It was a harrowing warning of an imminent national threat, and we took it seriously.”
- 8) The president had been misleading about the state of testing, “Anybody that wants a test can get a test,” President Trump had [declared](#) the previous month. In reality, only 2,252 Americans had been tested at that point in March.”
- 9) Competing with the states for medical equipment. “Then a caravan of Maryland National Guard trucks escorted by the Maryland State Police drove the tests from the airport to a refrigerated, secure warehouse at an undisclosed location. The federal government had recently seized [3 million](#) N95 masks purchased by Massachusetts Gov. Charlie Baker. We weren’t going to let Washington stop us from helping Marylanders.”
- 10) Flip-flopping on who was responsible for the response, taking charge when it looked like the problem would not be serious, blaming the governors when it became clear that things were worse than the administration thought. “We expected something more than constant heckling from the man who was supposed to be our leader... Trump soon disabused us of that expectation. On April 6, he [declared](#) that testing wasn’t Washington’s responsibility after all. “States can do their own testing,” he said. “We’re the federal government. We’re not supposed to stand on street corners doing testing.”
- 11) Incorrectly placing the blame on Obama: “But the president was all over the place. He [avowed](#), falsely, that “anybody” could get a test, even as my fellow governors were [desperately pleading](#) for help on testing. Then he shifted from boasting to blame. “We inherited a very obsolete system” from the Obama administration, [he claimed](#), conveniently ignoring the fact that his own CDC had [designed](#) the troubled U.S. testing system and that his own Food and Drug Administration had [waited](#) a full month before allowing U.S. hospital labs to develop their own tests.
- 12) Attacking the South Koreans who actually had a much better policy response. “we’d tested [far fewer per capita](#) than the Koreans had — 1,048 tests per million people vs. South Korea’s 6,764 per million — and of course that was the only figure that mattered. During one White House briefing in late March, Trump [said](#) the issue had been dealt with. “I haven’t heard about testing for weeks,” the president insisted.

13) *Trump is “his own worst enemy”*

14) who needed some simple advise: “the way to get the economy back on track....It’s like no shirt, no shoes, no mask, no service. People feel safer and they feel more able to go out and get back to their normal lives and spend money on the economy, which we desperately need as well.

Hogan may be the exception that proves the rule. Andrew Fauci, who had been through a particularly bruising attack by the Trump Administration summed up the sentiment simply: “let’s stop this nonsense.”¹¹ Thus, I believe that the expression “the Trump Administration and its supporters” is fair and accurate for both COVID-19 and climate change. The failure to protect the public health is inextricably linked to the economic failure.

A NOTE ON DATA SOURCES

In the midst of a highly politicized election, the spin to create a fog that hides the reality will be particularly intense. Fortunately, the vast body of analyses conducted in the past six months, reviewed in this paper (see Table 1), contradicts the political spin put on the COVID-19 pandemic. Those analyses flatly reject the claims, the spin, and the failure to rely on science. Facts, data, and analysis, in short, science, are the antidotes that enhance our understanding of the problem, that should underpin policy, and that should cut through the fog of political spin.

The response to the pandemic has been highly politicized and it has become a partisan issue. An intense two-sided debate about sources develops as a result. On one side are those who characterize all contradictory evidence as meaningless: as “fake news,” “political hit jobs,” and biased data from institutions “captured” by the “enemies of the administration.” On the other side are public health institutions and experts, academics, major journalistic enterprises, and trade organizations who are in strong agreement about the facts and data.

This analysis relies on the latter, as described in Table 1. The Table identifies 16 major issues and about 140 primary sources on which the analysis is based. The specific studies that make up Table 1 are identified by number in the bibliography. The sources identified in Table 1 represent over half of the citations in the Bibliography. They embody significant resources and common practices used to produce analysis contained in:

- official documents of multinational and national public health and economic institutions,
- academic publications and papers,
- trade press and association reports, and
- detailed accounts from investigative journalism

The sources of these studies include 12 institutions, 27 universities, 16 trade publications, and 20 articles of extensive investigative journalism (without duplication, which suggests that the institutions authored, on average, 2 documents each).

In addition to the major pieces of analysis described in Table 1, this paper reflects 115 shorter pieces written by about 100 journalists working at 50 news organizations. These sources are more fully reflected in Figure 10 of Chapter 3.

In total, these 250+ piece represent an extremely large body of analysis and reporting conducted in a very short time. This reflects the extreme impact and importance of the COVID-19 pandemic. While there is not unanimity among all of the sources cited, they agree on the

directionality of the pandemic and the value of responses. They point in a direction that is the antithesis of the market fundamentalist claims and the political spin of the Trump administration and its supporters.¹²

TABLE 1: MAJOR RESEARCH INTO ISSUES AFFECTING THE RESPONSE TO COVID-19

Issue Areas	Specific issue with examples of sources	# of Sources
The Virus		
Spread	1. Raw data	6
Modelling	2. Modelling spreads with and without policy	2
Impacts	3. General	10
	4. Specific measures	10
	5. History	7
Policy Development		
	6. Timelines	10
	7. Science and Comparative Analyses	12
	8. Preparedness	4
Cost - Economic		
	9. General	12
	10. GDP	18
	11. Jobs: Institutional: OECD Journalistic: Bloomberg, PEW	5
	12. Other, Inequality, Consumer Attitudes, Market Failure	8
Cost – Political		
	13. Polls: 538,	11
Link to Climate Change		
	14. General Similarities	6
	15. Learning about cost-benefit analysis	11
	16. Cross Fertilization of practical learning	8
Types of Sources:		
	Institutions	12
	Academic	27
	Trade	16
	Investigative Journalism	20

This paper applauds these efforts to understand the pandemic life cycle and the public health impact of policies. It seeks to emphasize three points about the U.S. response that need more attention.

- First, it shows that the U.S. response to the pandemic was a major failure from the public health **and** economic points of view.
- Second, a consideration of equal, if not more, importance is how policy choices reflect the philosophy of political economy to which policy makers adhere.
- Third, the influence of the core philosophy of political economy deeply affects other fundamental policy issues.

This analysis uses four dates and periods as focal points.

The first focal point is early April, which was the end point of data for two of the most prominent academic (Columbia and U Cal Berkeley)¹³ estimates of the impact of policy. In the

two months leading up to this date, market fundamentalists downplayed the importance of the pandemic.

The second focal point is the end of May. This marked the moment where the U.S. passed two grim thresholds.¹⁴ In this period market fundamentalists acknowledged the pandemic but debated the seriousness of the pandemic in public and vacillated wildly on policies, ending up with a very weak response and a rush to reopen.

The third focal point is late June/early July (up to July 15). At this point the explosion of infections was undeniable, but the market fundamentalists were stuck with a rush to reopen the economy, disregarding the guidelines offered by the CDC. The states were scrambling to respond.¹⁵

The fourth focal point is the projection of when the pandemic would end and what the bottom line cost would be. The period began with the “final” flip-flop, walk back by the administration. In a speech honoring Independence Day, President Trump further espoused market fundamentalism when he declared that Americans “would have to learn to live with it.”¹⁶ He did so at a moment that some states were struggling with new surges, (some for the first time, e.g. Arizona, Texas, Florida, or a resurgence, e.g. California) or struggling to hold onto gains they had made (e.g. New York, New Jersey, and Massachusetts).

Thus, the failure of the U.S. pandemic response reflected a strong commitment by market fundamentalists in the Trump administration to a model of political economy that was unsuited for and incapable of handling the pandemic response.

CUTTING THROUGH THE SPIN WITH DATA

In the context of the political/policy debate in the U.S., it is not surprising that the Columbia Study,¹⁷ elicited an immediate attack from President Trump as a “political hit job,”¹⁸ from “a liberal institution” (in a city and state with whom he had been doing battle over the handling of the pandemic).¹⁹ The study opened up and elevated one aspect of what is certain to be a lengthy and loud debate over the Trump administration’s response to the COVID-19.

I say “opened up and elevated” because, not only is the Columbia study one epidemiological model of which there are already many others and the public health analysis unfolding along many avenues shows that the Columbia study is a solid starting point for the analysis of how much difference, good or bad, policy could have and can make. In fact, several other analyses, including contemporary international comparisons and historical studies, can shed considerable light on this important public health question, and suggest that more aggressive and consistent responses could have avoided 95% of fatalities and cases.²⁰

I say “one aspect” of the debate for two reasons. First, the attitude toward science is extremely important. The disregard for data and science that is pervasive among market fundamentalists has a particularly severe cost when it comes up against a public policy involving an incommensurable outcome,²¹ i.e. mortality rates. Many of the prior attacks on science and data seem to involve “trivial” outcomes (e.g. merely money and politics) compared to deaths. Second, the ultimate question is not only what specific policy was chosen, but also why. Here

we enter the realm of political economy. The bottom-line cost of failing to respond in light of the number of cases, hospitalizations and lives lost is staggering

Thus, understanding the nature of this U.S. policy failure is important, not only to help other nations make better choices, as in the detailed study of policy responses from UCal Berkeley study, but also to block and to minimize efforts to actively promote the ineffective U.S. policy to other nations. That understanding is not limited to COVID-19. The conclusion in this paper points out other, similar policies where we observe an attack on scientific consensus and extreme, unilateral responses, rejected by virtually all other nations. It uses climate change as the analogy to underscore the importance of the issues being mishandled by the market fundamentalism of this administration and its supporters.

OUTLINE

The paper is divided into four chapters after this introduction.

Chapter 2 examines the impact of policy on the negative effects of the pandemic and the U.S. response. It starts by examining the impact of policy on rates of death and infection. It then describes the response of the Trump administration to the pandemic that was not directed by science.

Chapter 3 begins by examining the clash of the market fundamentalist political spin cycle with the reality of the pandemic life cycle. This clash inevitably led to a deficient framework for responding to a pandemic.

Chapter 4 begins by examining the reality of the economic impact, in contrast to the optimistic perceptions and predictions of the Trump administration and its supporters. Hoping the pandemic was under control (or would disappear), the primary concern was to push for reopening of the economy. This chapter then describes the heavy economic and political cost that resulted.

Chapter 5 briefly notes the strong similarity between the pandemic and other biological, climatological, economic, and technological structures of the interconnected 21st century global ecology. The clash between reality and the political economy of market fundamentalism as the basis for policy ensures that the response will be ineffective. It uses climate change as a second example of the “cookie cutter” approach.

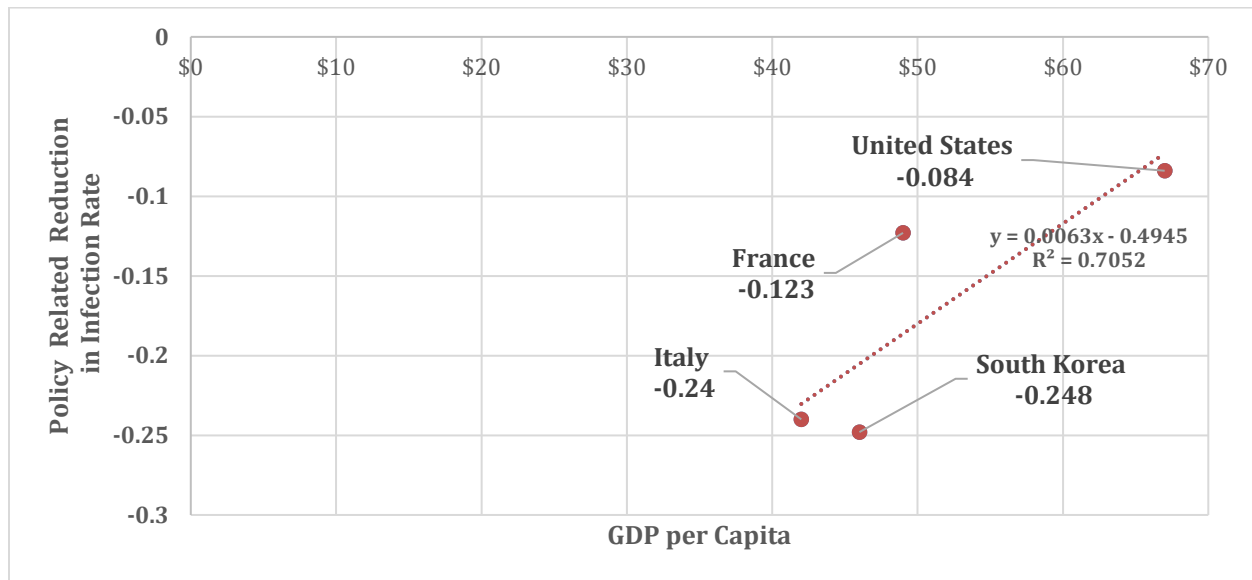
2. THE PANDEMIC AND THE FAILURE OF THE U.S. RESPONSE

THE IMPORTANCE OF POLICY AND THE MAGNITUDE OF THE U.S. FAILURE

The Berkeley Study

One of the first academic papers to evaluate the effects of specific policies on the spread of the COVID-19 virus argued that it was important to study some of the nations that suffered the pandemic's earliest impacts in order to inform the rest of the world (see Figure 1).

FIGURE 1: POLICY EFFECTIVENESS AND INCOME: THE U.S. IS RICHEST & WORST



Sources: Solomon Hsiang, et al., "Policy Effectiveness: The effect of large-scale anti-contagion policies on the COVID-19 pandemic," *Nature*, June 8, 2020.; Income from IMF, *Wikipedia*.

The conclusion that the U.S. response was relatively ineffective, compared to other large, high income, democracies, based on the observation of deaths, infections and income is supported by an econometric study from the University of California at Berkeley.

Here, we compile new data on 1,717 local, regional, and national non-pharmaceutical interventions deployed in the ongoing pandemic across localities. We then apply reduced-form econometric methods, commonly used to measure the effect of policies on economic growth... to empirically evaluate the effect that these anti-contagion policies have had on the growth rate of infections. In the absence of policy actions, we estimate that early infections of COVID-19 exhibit exponential growth rates of roughly 38% per day.... We estimate that across these six countries, interventions prevented or delayed on the order of 62 million confirmed cases, corresponding to averting roughly 530 million total infections. These findings may help inform whether or when these policies should be deployed, intensified, or lifted, and they can support decision-making in the other 180+ countries where COVID-19 has been reported.²²

While the study found strong support for active policy to fight the pandemic, it also showed that the U.S. policy was the least effective of the six nations studied in reducing the spread of the virus.²³ As shown in Figure 1, the study included four nations— South Korea, France, Italy, and the U.S.— that are analyzed in detail in this paper. Of the national policies studied, U.S. policy had the worst impact on reducing infections. Adding in the high U.S. national income, which presumably should provide the resources for a better public health response makes the U.S. response seem more inferior.²⁴ “we estimate that all policies combined slowed the average growth rate of infections by...– 0.248... in South Korea, ... –0.24 in Italy, ... -0.123 in France, and –0.084... in the US.”²⁵

Thus, the paper starts from the premise that worst outcome can be avoided, it raises the equally important question, how can the best outcome be achieved. When the stakes are so high, the latter is a policy question of great importance. Moreover, the data available through early April, was a moment when the difference between the U.S. and the other nations was about to become much larger. At the time of analysis, the U.S. already had the least effective response, in terms of preventing a surge of cases compared to all the nations studied, and its relative performance would decline dramatically over the next several months as the infection rate remained high.

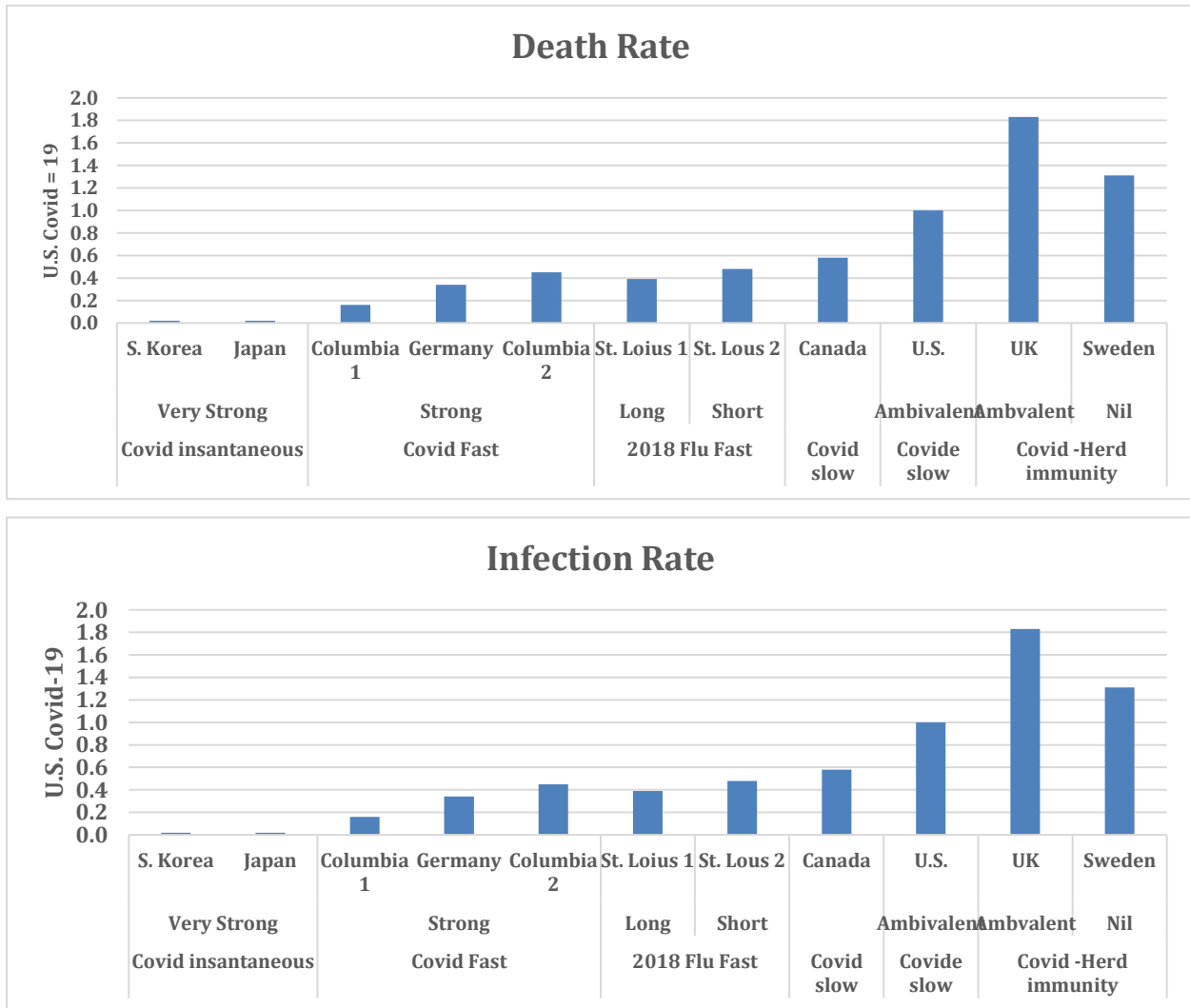
While this study was unique in the sense that it modeled individual policies and offered precise econometric estimates of the effect of policies, its findings were far from unique. The earlier academic study from Columbia University took a similar approach to modeling the impact of a virus, but simpler approach to assessing policy. Both the Berkeley and Columbia studies use a standard approach to modeling the spread of the virus, known as an SIR (susceptible, infected, and recovered individuals) over the course of an infectious disease outbreak, as do many of the other studies cited below. They then model the spread of the pandemic under different policies, with the ability of those policies to reduce spread based on historical and (occasionally) econometric assessments of policies in past epidemics. While the Berkeley study was based on econometric estimates of the impact individual policies, the Columbia study analyzed the spread of the virus under different assumptions about the rate of infection – high without policy, lower with policy. The rates are based on historical and contemporary data describing the observed spread of a virus.

The Columbia and Historical Studies

The Columbia study quantified the impact of the weak U.S. response in simple terms of measures of outcomes (see Figure 2). The fact that it found that more timely and aggressive responses in the U.S. could have reduced the mortality rate by between 55% and 84% is eye-catching. Modeling the public health policy at a fairly early date in the lifecycle of the pandemic, the Columbia study found that about two months in with “only” 65,000 deaths, a lower mortality rate could have been achieved with a more vigorous response which would have lowered the total number of deaths by between 35,000 and 54,000. The impact of policy on infection rates closely follows the impact of policy on mortality rates. The infections potentially avoided would have been between 704,000 and 960,000.²⁶ Contemporary, comparative evidence suggests that even better outcomes could be achieved.

The stakes are obviously huge and, given the early date of the modeled impact, likely to be much larger. These numbers could change as the pandemic unfolds, but as shown in Figure 2, they are consistent with analyses built on different types of data. By the end of June, the second “milestone” date used in this paper, the deaths from the pandemic would have been twice as large.

FIGURE 2: DEATH RATES, INFECTIONS AND PUBLIC POLICY RESPONSES



Sources: COVID, calculated by author from Sen Pei, Sasikiran Kandula, Jeffrey Shama, “Differential Effects of Intervention Timing on COVID-19 Spread in the United States, medRxiv, May 20, 2020, authors at the Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University. St. Louis and Philadelphia are from Richard J. Hatchett, Carter E. Mecher, and Marc Lipsitch, “Public health interventions and epidemic intensity during the 1918 influenza pandemic” *PNAS* May 1, 2007 104 (18). The COVID data is from the Johns Hopkins data base.

DEATH RATES, INFECTIONS AND PUBLIC HEALTH RESPONSES

In constructing Figure 2, I have used global pandemic statistics available as of May 28, two and a half weeks later than the data used in the Columbia study and about a month more data

than the Berkeley study. I use May 28 as the end point for this analysis because it represents two “grim” thresholds: 100,000 deaths and 40 million unemployed.

The adjectives I use to describe the responses are subjective, but consistent with the texts describing the responses. Perhaps it would be better to avoid adjectives altogether, but the adjectives used to describe the administration’s policy response have been extremely positive, while derogatory adjectives have been used to describe other approaches. Thus descriptive words are necessary to set the record straight.

Figure 2 includes a small number of representative nations that are generally comparable to the U.S. – large, high income democracies. I choose to focus on these types of nations for purposes of comparison to ensure “apple-to-apples” comparisons. If I compared U.S. policy to small, low income dictatorships, the argument would be that those important national traits account for differences in policy. I will expand the group of large, high income, democracies below and explore the dynamics of the pandemic in these nations.

Implicit in this group of nations, and discussed below, I will add culture, to size, income and governance, as a factor that does not “explain” differences in policy or their outcomes. The studies in Figure 2 not only cover a range of responses, but they also bracket the two different kinds of studies (epidemiological and historical) that provide analytic perspectives for the current epidemic.

As noted above for the contemporary pandemic, a description of South Korea provides a sharp contrast as a point of comparison and shows how effective an instantaneous and strong response could be (see Figure 3).²⁷ The U.S. and South Korea experienced their first confirmed COVID case at about the same time (Jan. 20/21). South Korea took the threat very seriously; the U.S. did not. Nine weeks later, the U.S., with six times the population of South Korea, had 15 times the number of deaths and hundreds of times the number of cases. South Korea had administered 30 times more tests and engaged in a number of other measures that the Center for Strategic and International Studies described as follows:

Now, two months after the first confirmed case, South Korea is commended for its efforts to contain the outbreak. Though the response was not without its flaws, the South Korea case is distinct in several respects.

Early: An early and almost immediate response after the first case on January 20.

Speed: A premium on moving as quickly as possible in setting up a testing regime.

Transparency: Real-time and frequent information dissemination to the public.

Public-Private sector: Enlisting companies with needed resources in a private-public sector response.

National organization: Organized as a national effort rather than at the city, provincial, or local levels.

Through timely development and approval of a functioning diagnostic test, frequent dissemination of information and public resources, heightened border control, and meticulous contact mapping through patient questionnaires and GPS-

based mobile applications, South Korea’s efforts to “flatten the curve” are seemingly working.²⁸

FIGURE 3: THE FAILURE OF THE U. S. TO ACT SWIFTLY AND FIRMLY “CAUSED” (FAILED TO PREVENT) A MAJORITY OF THE IMPACT
Ucal Data

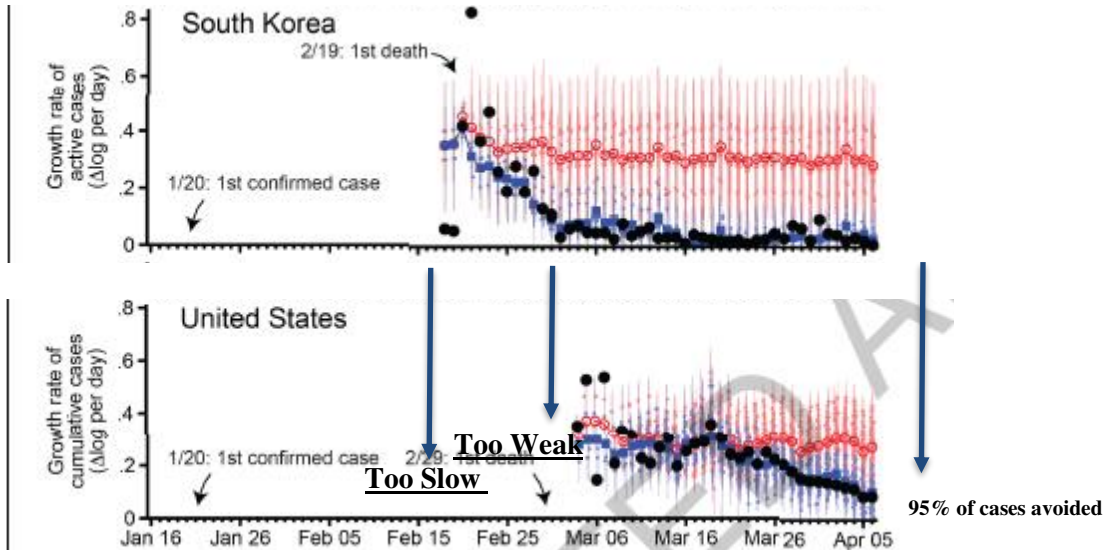


Fig. 3 | Estimated infection growth rates based on actual anti-contagion policies and in a “no policy” counterfactual scenario. Predicted daily

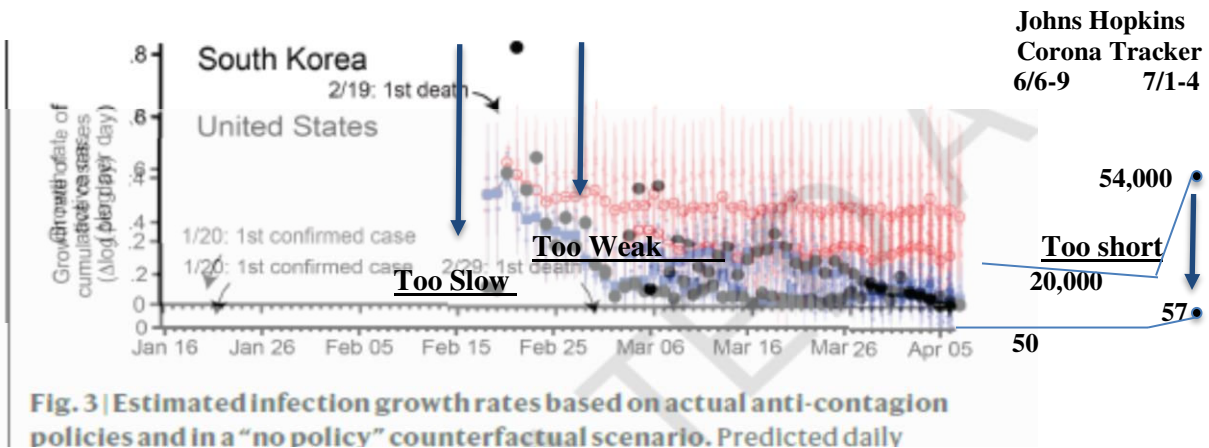


Fig. 3 | Estimated infection growth rates based on actual anti-contagion policies and in a “no policy” counterfactual scenario. Predicted daily

Sources: Solomon Hsiang, et al., “Policy Effectiveness: The effect of large-scale anti-contagion policies on the COVID-19 pandemic,” *Nature*, June 8, 2020, Figure 3.

By the end of January, the South Korean government announced “an all-out war to control the spread of the Novel Coronavirus.”²⁹ In the U.S., a month later President Trump minimized the seriousness of the coronavirus and suggested it was a Democrat hoax.³⁰ More than three months after Korea had clearly flattened the curve, the U.S. had not. The first month of lost opportunity had become almost five months of dithering and vacillation. The upper two

graphs in Figure 3, taken from the Berkeley study of policy responses, provide striking graphic evidence of the difference between the U.S. and South Korea, which we express as a 95% difference in cases. The U.S. response was too slow and too weak. In simple terms, the South Koreans were “finished” with an effective policy response before the U.S. even began a weak and failing policy. This becomes especially apparent when we factor in the lower graph.

In the lower graph I add the problem that the response was too short. The U.S. rushed to reopen and got a huge surge. As noted, the primary driver was a first surge in states where the virus had been slow to develop, amped up by the decision of officials not to lockdown and individuals to behave in ways that spread the virus. There was also a second wave in some states. The mix of these causes or the spread argues for a second wave.

The raw numbers are striking, South Korea was experiencing 50 – 60 new cases at the beginning of June. By the beginning of July, U.S. cases had increased almost 2.5 times, adding over 20,000 per day, while South Korea had added less than 10. Since the U.S. is about 6.5 times as large, we should convert these to the rate per capita. In the beginning of April, the U.S. infection rate was about 60 times Korea. By the beginning of July, after the reopening and the second wave became clear, the U.S. infection rate was 150 times that of Korea. This is the basis for concluding that it was too weak in some places and opening was too soon.

At the other end of the gamut of responses were those that adopted a “herd immunity” approach, arguing that allowing the infections to spread would be a strategy that would create an immunity that would control the problem.³¹ In the case of the UK, that decision was reversed, when the severity of pandemic, measured in lives lost, became apparent.³² The confusion and flip flop were duly noted in the press.³³ Sweden stayed the course on herd immunity and experienced a linear increase in deaths.³⁴

There are a range of outcomes and policy responses between the South Korean and Swedish approaches. Germany appears to fit between the two scenarios considered in the Columbia pandemic model. The analysis of the 1918 influenza epidemic suggests health impacts and policy effects consistent with the Columbia model. The other large, high income democracies, experienced flattening or declines in deaths and infections, but the U.S. did not.

History: The 1918 Flu Epidemic

In the analysis of the 1918 influenza epidemic, while the early decision to take aggressive non-pharmaceutical responses appeared to be quite effective, the decision to relax the constraints caused concern. Comparing the two diametrically opposite reactions to the 1918 flu epidemic yields the same conclusion as the Columbia study. Philadelphia dithered for two weeks and wound up with a much higher death rate. St. Louis acted quickly and had a much lower rate. However, it relaxed early and suffered a bounce in deaths. The upper graph in Figure 4 shows that I derive the measure of the impact of policy in the St. Louis “Quick and Long,” scenarios by extending the level of the death rate in the two weeks prior to the decision to ease the non-pharmaceutical policies to the end of the epidemic outbreak. The following summarizes these experiences about policy, i.e. it matters a great deal.

The difference in response times between the two cities (≈ 14 days, when

measured from the first reported cases) represents approximately three to five doubling times for an influenza epidemic. The costs of this delay appear to have been significant; by the time Philadelphia responded, it faced an epidemic considerably larger than the epidemic St. Louis faced. Philadelphia ultimately experienced a peak weekly excess pneumonia and influenza (P&I) death rate of 257/100,000 and a cumulative excess P&I death rate (CEPID) during the period September 8–December 28, 1918 (the study period) of 719/100,000. St. Louis, on the other hand, experienced a peak P&I death rate, while NPIs (nonpharmaceutical interventions) were in place, of 31/100,000 and had a CEPID during the study period of 347/100,000. Consistent with the predictions of modeling, the effect of the NPIs in St. Louis appear to have had a less-pronounced effect on CEPID than on peak death rates, and death rates were observed to climb after the NPIs were lifted in mid-November.³⁵

Figure 4 illuminates two other issues in the response to the 1918 flu that resonate in the current debate. The middle graph shows the lifecycle of the pandemic in Denver, which was the example, *par excellence*, of on-again,-off-again policy. The second peak was about 40 percent higher than the first peak. The second wave in the U.S. COVID-19 pandemic is rising to a similar increase over the first. The on-again, off-again mistake was the essence of the response of the administration.

While the experience is exactly 100-years old, the analytic studies that illuminate it are just ten years old and the model of the epidemic on which it rested, the SIR model is the cornerstone of contemporary thinking, shared by all the key analyses on which this paper relies. Thus, policy makers had either failed to look, or they had rejected the science because it was inconvenient. A recent study from the American Enterprise Institute, which will be examined in more detail below, supports this observation about inconsistent policy. It imposes more economic harm.

Finally, the often proposed on-off suppression policy is less economically efficient than a continuous suppression regime imposed at the beginning of an outbreak.... if the lockdown is lifted and then re-imposed sometime later, it will need to be kept in place for a longer total duration to achieve the same reduction in the attack rate as a one-time lockdown instituted at the beginning of the outbreak. Hence, the on-off policy is less economically efficient.³⁶

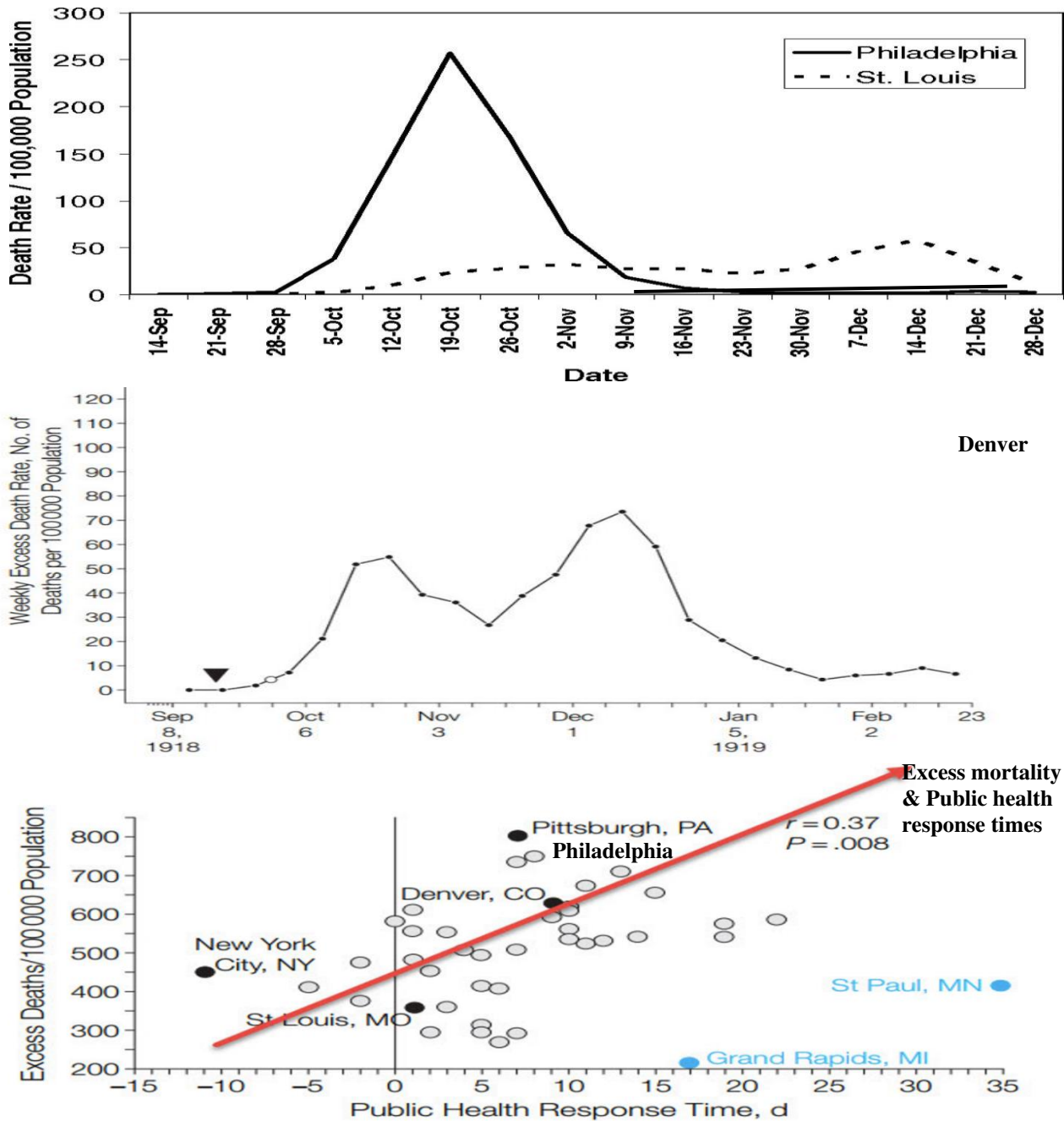
The lower graph shows the clear correlation between the speed of policies to control the pandemic and outcomes. Public health officials experienced the reality a century ago. These studies systematically documented it a decade ago.

Additional Estimates of Public Health Impacts

Figure 5 shows a CDC calculation of unexpected and statistically estimated excess deaths, i.e. deaths above the average at a level of significance of 95%. The end-date here is similar to the Columbia study. The unexpected and statistically excessive deaths estimates stop in early May because of the long lag times in reporting. The CDC data indicates 45,000 to 55,000 deaths in the time frame of the Columbia study (close to the 36,000 – 54,000). By mid-

May, the unexpected/excessive deaths are in the range of 58,000 to 70,000, and there was a strong current of opinion that deaths were being underreported.³⁷

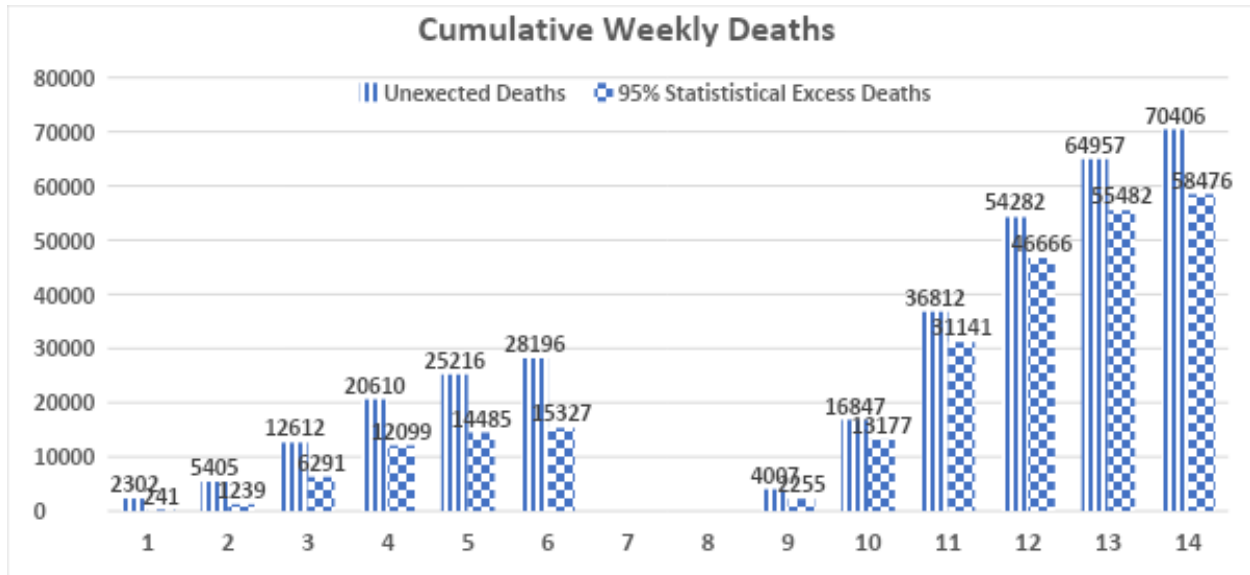
FIGURE 4: RESPONSES TO THE 1918 INFLUENZA PANDEMIC



Source: Tony Puevo, Coronavirus: Why You Must Act Now Politicians, Community Leaders and Business Leaders: What Should You Do and When? *Medium*, March 10, 2020; Alex Tabarrok, What Worked in 1918-1919? *Marginal Revolution*, March 7, 2020; Richard J. Hatchett, Carter E. Mecher, and Marc Lipsitch, "Public health interventions and epidemic intensity during the 1918 influenza pandemic" *PNAS* May 1, 2007 104 (18), Howard Markel, et al., "Nonpharmaceutical Interventions Implemented by US Cities During the 1918-1919 Influenza Pandemic, et al *JAMA*. 2007.

This estimate of a high level of unexpected/excess deaths is consistent with, but only the starting point for, the additional deaths suggested by the better responses among large, high income, democracies around the globe. The “perfect” response was obviously by South Korea and Japan, where fewer than 2,000 deaths occurred. This comparison easily supports the conclusion that 86,000 lives could have been saved.

FIGURE 5: U.S. UNEXPECTED AND EXCESSIVE DEATHS



Source: CDC Covid-19, update. Day 1 = January 20

Moving closer to home, nations like Germany and Canada have achieved lower death rates and higher recovery rates than the U.S. If their responses are the benchmark, then there would have been at least 50,000 fewer U.S. deaths expected. Moreover, since the U.S. response continued to be deficient, the ultimate number of excessive deaths continued to grow, as did infections.

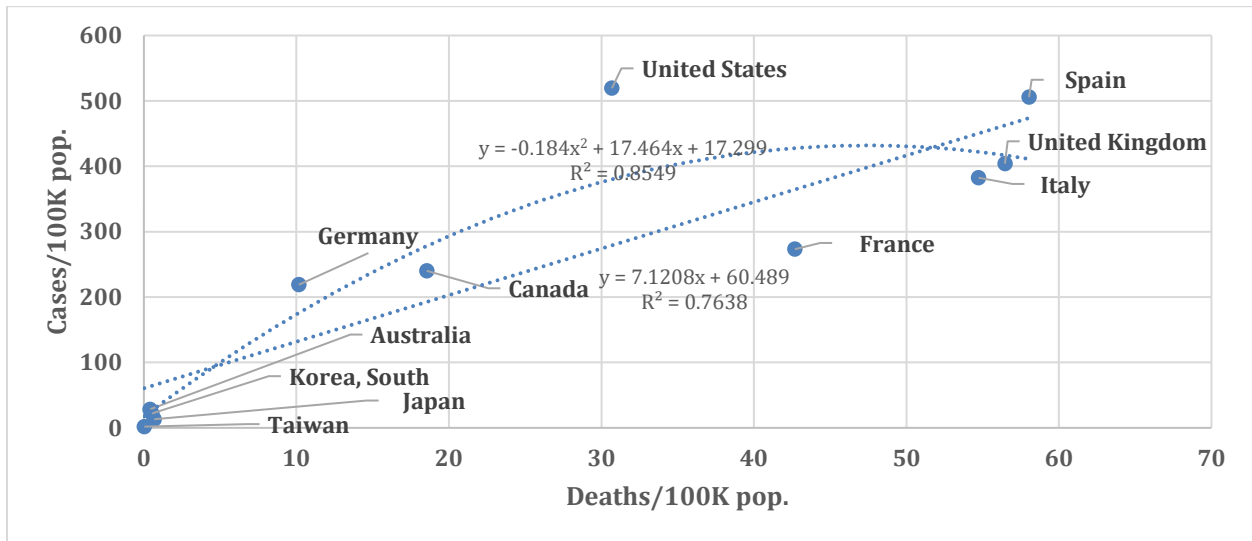
While the death rate is the focal point of attention, since it measures the “incommensurable” outcome, costly medical treatment, long periods of inactivity, and increasing evidence of long-term side effects make the infection rate important, as well. In many respects the decline in infections is seen as the key indicator that the danger is passing and the link to economic reopening, as reflected in the analyses discussed below. Figure 6 presents a cross tabulation of death and infection rates in a larger group of large, high income democracies. The U.S. infection rate was higher than all other nations, except for Spain. Had the U.S. suppressed its infection rate to the level of South Korea, Taiwan, Australia, and Japan, it would have seen 1.4 million fewer cases. Had the U.S. suppressed its infection rate to the level of Germany and Canada, it would have seen almost 800,000 fewer cases.

Sweden pursued the most extreme form of inaction (herd immunity), but its death rate is lower than the UK, which started with herd immunity but changed course. The major difference between Sweden and the other nations is that it is a small place – about 10 million people. It has about one-sixth the population of the UK, one quarter the population of the next smallest nation on the list of large democracies, and about one-tenth the population of the average of the others.

On the other hand, urbanization rates are very similar across these nations, running generally in the 75% to 95% range and all have relatively high incomes.

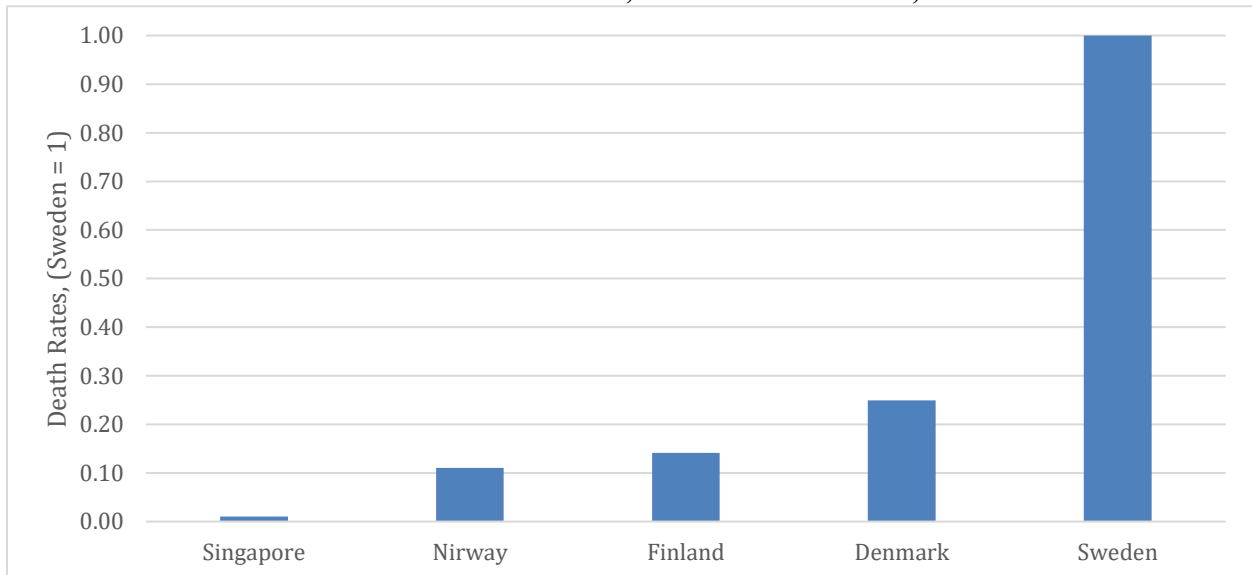
Addressing the one clear “anomaly” in Figure 2 (Sweden) adds further depth to the discussion of public policy and pandemic impact (See Figure 7). Given its small size, one way to put Sweden in perspective is to compare it to other small nations, especially the other Nordic nations of substantial size. Figure 7 lists the four Nordic nations with 5 million or more people located on the European mainland (thereby excluding small island nations also considered to be Nordic).

FIGURE 6: PANDEMIC RESPONSE POLICY IN LARGE, HIGH INCOME DEMOCRACIES



Sources: See Figure 1.

FIGURE 7: COVID-19 DEATH RATES IN SMALL, HIGHLY URBANIZED, HIGH INCOME NATIONS



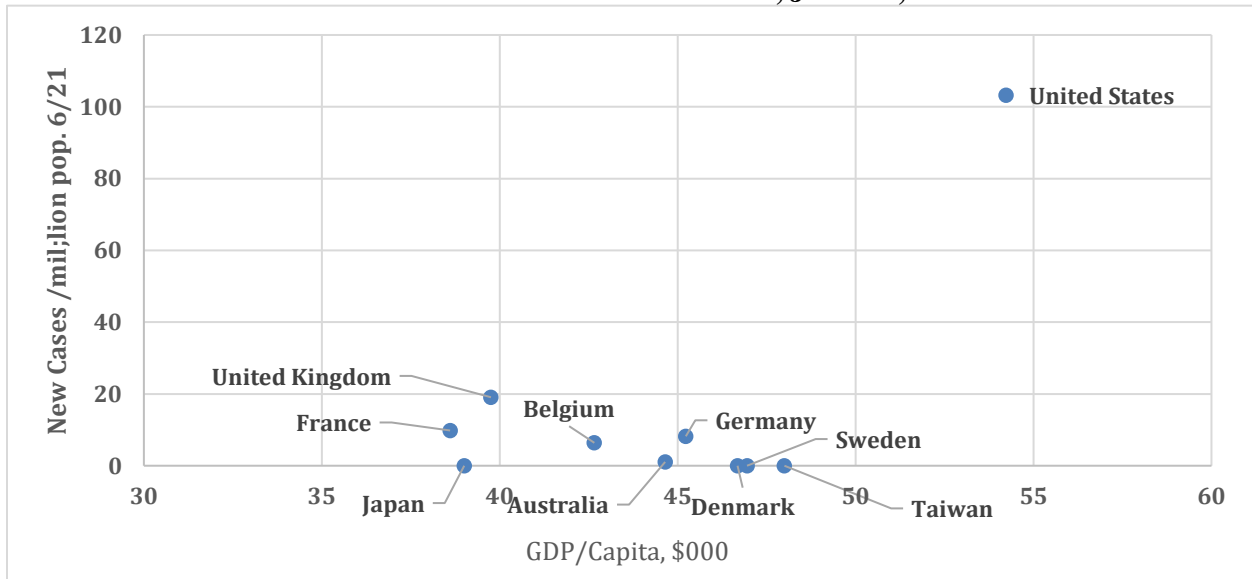
Sources: See Figure 1.

I have included Singapore, which has a population of about 5 million and a high income, but it also reacted very aggressively, as did the other Asian nations. This comparison reinforces the message of all of the earlier analyses. The failure to respond aggressively resulted in a very high death rate and it is possible that with a very aggressive policy a very low infection and death rate could have been achieved.

CONCLUSION: WHERE DO WE STAND AND WHERE ARE WE HEADED?

In general, where does the U.S. stand? The answer, as shown in Figure 8 is simple, the other countries had done a much better job than the U.S. at controlling the spread of the virus. If we use Germany as the standard, the U.S. had almost thirteen times as many new cases, so it had a long way to go to match these nations and get on with reopening. Compared to the average of the other nations mentioned, the U.S. would have to lower its infection rate by 95% to be on the same level. As discussed in the next chapter, it was exactly that failure to respond quickly, strongly and to maintain it, which cost the economy so much. The U.S. was definitely not on a path to nineteen weeks of lockdown/rigorous mitigation, which an AEI study estimated would have captured the benefits. That is 133 days, which would have put the end at around Labor Day.

FIGURE 8: NEW CASES PER MILLION, JUNE 21, 2020



Source: Johns Hopkins for infection rates

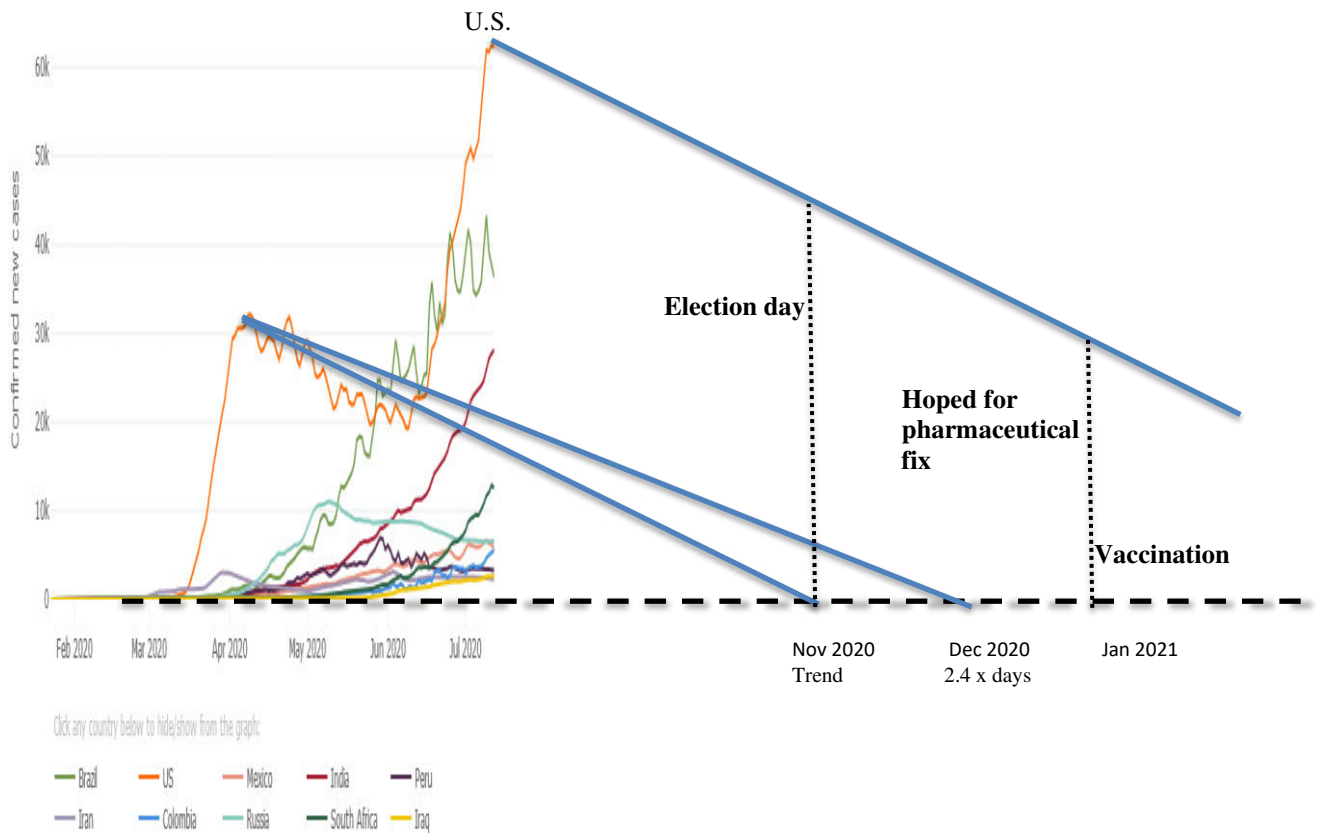
Figure 9 shows three possible more likely paths for the U.S. The first two paths assumed a peak in April and then made two projections. The first extends the rate of change in total cases and puts the end in early November. That adds well over 60 days, or about half of the original period. The second estimates the end, assuming that the slow response up to the peak added 2.4 times as many days. This puts the end in December. It should be noted that in this early July graph of the top 10 COVID-19 nations, the U.S. is the only large, high income democracy. All of the others had gotten their infection rates to a very low level.

Moreover, the “peak” in April appears to have been far from a peak, given the premature opening. If we apply the “same” trend of decline that some thought we were observing in April

– June to the new peak, the end is in February 2021, which is, in theory, past the administration’s target date for a pharmaceutical response.

The fact that most of the states that had opened too soon are driving the new peak became clear. Closing after reopening is difficult, so they are caught between a rock and a hard place, damned if you do (shift to aggressive lockdown and mitigation policy after making a host of arguments that individual freedom trumps public health responsibilities of the individual) or damned if you don’t (stand pat on non-response, blame the increase on testing and hope sick people don’t notice (or care) and don’t turn up in the hospitals, which is contradicted by the data). The fact that the evidence supporting the conclusion that reopening too soon could be seen in a state that had locked down (e.g. California) yields the same result that had been observed a hundred years earlier during the 1918 flu. It also suggests the need for aggressive action, to impose the social obligation on individuals who do not internalize the public health externality. The second wave also supports the vigorous efforts of states that had suffered the worst, but controlled the outbreak (New York, New Jersey, Massachusetts and other states in the Northeast), to preserve their gains by imposing strong policies on visitors, who came from places that did not have such policies.

FIGURE 9: THE UNRAVELING OF A WEAK, POLITICIZED RESPONSE; WHEN WILL IT END?
5-day moving average confirmed new cases: 10 most affected countries July 13, 2020



Source: John Hopkins for cases

For purposes of describing the failure of the U.S. response, I use 90%.³⁸ The Berkeley analysis was very early (April 6), but by May 28th, a 90% difference was roughly 1.6 million

cases and by July 1, it was 2.5 million cases. Even if the impact of aggressive and vigorous policy were half this large (the size of the low end of Columbia and roughly equal to Germany), the effect would be huge.

Public Health, at least

- 120,000 deaths,
- half a million hospitalizations, and
- 2.5 million infections.

An obvious question that can be asked is, can you expect Americans to behave in this way? Culture may matter somewhat, but culture does not negate the strong evidence that the U.S. could have done much better. This leads to a number of questions.

- 1) If there is such a difference, whose behavior is right?
- 2) Could policy have changed behavior or influenced behavior?
- 3) Why were there were many non-Asian, large, high income democracies that did much better?
- 4) Historically, why was there was a dramatic difference between U.S. cities in response to the 1918 Flu epidemic?

In sum, this analysis highlight severe extremely important factors that determine the outcome. First, policy matters a great deal, account for as much as 95% of the harm. Second, neither size, income, democratic governance, nor culture appear to determine the outcome. The next chapter shows that the U.S. reliance on a market fundamentalist political economy was the cause of the policy failure.

3. A POLITICAL ECONOMY THAT FAILED TO PROTECT PUBLIC HEALTH AND THE ECONOMY

MAJOR CAUSE OF THE US. FAILURE: MARKET FUNDAMENTALISM

Core Principles

The response and the spin put on the pandemic in the U.S. was highly political. It was driven by (part and parcel of) a framework (a mindset and ideology) that dictated both the response and spin. The belief that markets perform extremely well (if not perfectly) without policy interventions and government policy can only make matters worse, even in the face of a pandemic, was undergirded by the belief that social obligations should not be imposed on individuals. The role of government was assumed to be to liberate individuals to pursue their interests with the expectation (hope) that the exercise of individual responsibility would further the social good.

The governor of South Dakota made this point, in defending a campaign event to be held on federal land – Mount Rushmore.

We told those folks that have concerns that they can stay home, but those who want to come and join us, we'll be giving out free face masks, if they choose to wear one. But we will not be social distancing,... State officials have told the people of South Dakota "to focus on personal responsibility," said Noem, adding, "Every one of them has the opportunity to make a decision that they're comfortable with."³⁹

The assumption that individual actions would protect the public was severely strained by the unfolding of the pandemic in the surge of infections in states that had reopened too soon, or never imposed measures to reduce the spread of the virus.

Thus the three core principles of market fundamentalism, unflinching faith in the market to do everything, equally unflinching belief that government can do little if anything to solve problems, and a belief that individual responsibility is all that is needed for social responsibility, is joined by a fourth principle that was prominent in the pandemic policy of the administration, the belief that economic interests are all that matter. Policy choices reflect a trade-off between public health and economic growth in which economic aspirations always come first.

This principle of the supremacy of economic interest had been called into question during the financial melt-down that preceded the Great Recession. As Allen Greenspan put it in congressional testimony, the great moderation hypothesis that assumed one could rely on the pursuit of individual interests to create stability in markets had failed:

Those of us who looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief. Such counterparty surveillance is a central pillar of our financial markets state of balance...

If it fails, as occurred this year, market stability is undermined...

I made a mistake in presuming that the self-interests of organizations, specifically banks and others, were such that they were best capable of protecting their own shareholders and their equity in the firms.⁴⁰

The mistake Greenspan made in assuming that stockholder, banks and others, is the same mistake that market fundamentalist made in presuming that individual responses would take care of the pandemic.

The parallel in the thinking of market fundamentalists that undermines their ability to respond to these challenges among those who influenced the Trump administration and its supporters most is crystal clear. Roger Epstein, in a Hoover Institute paper was dead wrong on COVID-19, first putting the number of deaths at 500, in an article circulated by the Trump administration, then raising it to 5,000.⁴¹ That figure was too low by 96% as of July 14, when the Trump administration proposed a radical change in the handling of pandemic data.

Epstein was also a climate denier, paralleling the position of the Trump administration, claiming in another Hoover piece a few months earlier, that “The professional skeptics are right, there is today no compelling evidence of an impending climate emergency.” He was also an adherent to “a restrained federal government that respect private property,” in which “the public commands have led to a crash in the stock market, and a only save a small fraction of the lives that are at risk. “

The claim was that individual action would take care of the problem “as the virus becomes more apparent, adaptive responses long before government gets involved become clear... its clear that people will start to evolve away from these things so that the rate of transmission will start to go down.... I’m willing to bet a great deal of money on it.” “Look at the evolutionary theory and explain why a principle of natural selection does not apply here... I’m talking standard Darwinian economics – standard evolutionary theory out of Darwin -- and applying it to this particular case” I will be, shall we say, much more compromised if we start to see a continuing explosion of deaths going from week two to week three, But if the numbers start to level off, the curves will start to go down.”

It proved to be a very bad bet, but it was made with other people’s lives. At week 6 (4 weeks after the interview), there was a peak of almost 5,000 deaths. After a decline, there was a second peak at week twelve (10 weeks after the interview) of approximately 2,500. A gain there was a decline, but at week 15 (11 weeks after the interview), deaths were on the rise again, at almost 1,000.

The Epstein world view was not only circulated by the Trump administration, it was reflected in the work of the Council of Economic Advisors, who sought to explicate things by showing a versions of the model with deaths going to zero by the middle of May.⁴² The Trump administration insisted that models predicting high number of deaths (100,000) were not taking his mitigation measures into account and “quickly transitioned” to reopening the economy, but reopening meant “a relaxation of distancing measures aimed at restarting economic activity.” The projection of zero deaths was off by 2,000 per day and the cumulative total was over 100,000 too low, in large measure because the mitigation was too slow and too weak, which led to reopening too soon was about to cause another wave.

The epidemiologists were much closer to the mark. More importantly, when there is a clash of models, when it is a debate about assumption and curve fits, the scientific principle is to favor precaution when outcomes are incommensurable. The market fundamentalist view of the world is biased against, any sense of precaution and social responsibility. If policy had done a good job, a very bad outcome would have been avoided. Needless to say, a world view that cannot take precaution when faced with very large, near-term costs, like the COVID-19 pandemic, is particularly ill-suited for longer-term challenges, like climate change.

Market fundamentalism as an ideology of political economy has been thoroughly rebutted in the economic literature,⁴³ and I will not devote attention to that critique, having discussed it in other, earlier analyses.⁴⁴ However, introducing the broader concept as the guiding framework for policy choices is important for several reasons, beyond the fact that many members of the Trump Administration and its supporters fully embraced or remained silent about the president's approach.⁴⁵

Policy makers who believe that "government is the problem" and advocate for tax cuts and extreme deregulation to liberate and stimulate the private sector encounter a major challenge in which government must be a large part of the solution (like the public health impact of a pandemic), not to mention the massive increase in debt that it entailed. This clash between belief and reality is cataclysmic. Confronting the pandemic from the market fundamentalist policy perspective all but guaranteed critical errors, outlined by Hogan's op-ed cited above and described in Figure 10. While Hogan pointed to Trump's misleading complaint about the Obama administration, Table 1 above shows much more preparation that the Obama administration had done, which was denied, ignored, or undone by the Trump administration.

THE CAUSE OF THE PUBLIC HEALTH NIGHTMARE: EXTREME DITHERING IN POLICY

The econometric, epidemiological, and comparative analysis indicate that something was very wrong with the U.S. response. The historical analogy to the 1918 flu pandemic also points to the important role of quick policy action. The description of the U.S. response will be an intense source of debate for decades (judging from the recent look back at the response to the 1918 influenza epidemic).⁴⁶ That it was "slow" is clear from the above analysis. By some accounts, the delay was a lot more than the one to two weeks in the Columbia model.

However, shortcomings extend beyond reaction speed, including the lack of intensity in committing to and implementing control policies (as suggested by Figure 10). Indeed, the *Washington Post* identified 54 times that Trump downplayed the pandemic up until June 20th. That is an average of two-and-a-half times a week for the five months after the first U.S. case. And, given the intense battle over what the president said and when he said it, the *Washington Post* documented every example of downplaying the virus with a link to a video or audio record. The VOX/IPR timeline which has a large number of additional entries also offers links to Trump administration statements to support every event.

Figure 10 identifies the conflicting claims, made many times by various members of the administration, locating them when they were generally first made. In a Sunday front page story on March 29, 2020, a *New York Times* headline described "The Lost Month" as follows:

But as the deadly virus spread from China with ferocity across the United States between late January and early March, large-scale testing of people who might have been infected did not happen — because of technical flaws, regulatory hurdles, business-as-usual bureaucracies and lack of leadership at multiple levels... The result was a lost month, when the world’s richest country — armed with some of the most highly trained scientists and infectious disease specialists.

President Trump retreated on Sunday from his desire to relax coronavirus guidelines by Easter, announcing instead that all Americans must continue to avoid nonessential travel, going to work, eating at bars and restaurants, or gathering in groups of more than 10 for at least another month and perhaps until June. The grim recommendation, which the president made in the White House Rose Garden, came just a day before the end of a two-week period in which the world’s largest economy has largely shut down with staggering consequences: businesses shuttered, schools and colleges emptied, and social life all but suspended.⁴⁷

While the growing challenge was dawning on the administration, it continued to be ambivalent and send mixed messages about policy.

Mr. Trump said repeatedly last week that he wanted to reverse such drastic measures soon, perhaps by Easter, on April 12, in the hopes of restarting the economy. But public health experts — including his own advisers — had warned that trying to return to normal life too quickly risked allowing the virus to — squandered its best chance of containing the virus’s spread. Instead, Americans were left largely blind to the scale of a looming public health catastrophe...

Other countries that had mobilized businesses were performing tens of thousands of tests daily, compared with fewer than 100 on average in the United States, frustrating local health officials, lawmakers and desperate Americans.

At the start of that crucial lost month, when his government could have rallied, the president was distracted by impeachment and dismissive of the threat to the public’s health or the nation’s economy. By the end of the month, Mr. Trump claimed the virus was about to dissipate in the United States, saying: “It’s going to disappear. One day — it’s like a miracle — it will disappear.”

By early March, after federal officials finally announced changes to expand testing, it was too late. With the early lapses, containment was no longer an option. The tool kit of epidemiology would shift — lockdowns, social disruption, intensive medical treatment — in hopes of mitigating the harm.⁴⁸

The next day the *Times* noted the delayed and grudging recognition of the severity of the problem and the change of direction, under the headline, “After a Grim Forecast, Trump Extends Limits: Giving Up on a Goal of Reopening the U.S. by Easter.”⁴⁹

The president finally appeared on Sunday to acknowledge the possibility of deaths on a large scale and back down from weeks of insisting that the threat from the virus might be overblown. In the past month, Mr. Trump has vacillated

between accepting the need for aggressive action to limit the pandemic and complaining that such moves will harm the economy.⁵⁰

REJECTING SCIENCE AND EXPERTS LEADS TO BAD POLICY

The period of dithering and vacillation played out in the daily drama of COVID-19 briefings which were in reality press conferences featuring the president. Long before the pandemic of 2020, the Trump administration had made it clear that it had little use for science and even less for multinational institutions.⁵¹ Two personalities became the focal point of this debate: on one side, the president and, on the other, Dr. Fauci, Director of the National Institute of Allergy and Infectious Diseases, who was demonized by Trump's supporters.⁵²

Dr. Fauci played the role of scientist and public servant fastidiously. He emphasized that science does not produce certainty and unanimity, it produces more compelling explanations and consensus. He was waiting for more evidence, but also advocating the precautionary principle in science and social policy. A pandemic involves values that are incommensurable and outcomes that are highly uncertain, which strongly supports the application of the precautionary principle and restricts the applicability of simple economic analysis. Science and policy making are deeply affected by the principle which argues that the precaution must prevail to minimize the possibility of such severe negative outcomes.⁵³

The principle has become an underlying rationale for a large and increasing number of international treaties and declarations in the fields of sustainable development, environmental protection, health, trade and food safety, although at times it has attracted debate over how to accurately define it and apply it to complex scenarios with multiple risks.⁵⁴

The demonization of Fauci and the effort to blame the policy failure on the CDC is more political spin that came after the president's participation in the briefings had proven to be a disaster. Fauci expressed the healthy skepticism of a scientist waiting for data and evidence. President Trump offered unsupported, excessively optimistic conclusions. When the data and evidence came into view, Dr. Fauci argued for aggressive non-pharmaceutical policies - lockdown and testing - reflecting the increasingly strong understanding based on science. President Trump rejected this view, but vacillated on key issues like testing, first claiming they were critically important, then criticizing them, then returning to their importance. Ultimately, the sound advice given by the CDC was rejected by the administration.

The breach at the White House in early May, with three staffers testing positive,⁵⁵ one of a continuous stream of embarrassments that got in the way of the political spin, elicited criticism of testing from Trump and his complete rejection of science and expert advice.⁵⁶ A number of high visibility actions in the U.S. contradicted the strongest public health advice: the need to avoid large, close crowds and an increasingly awkward refusal by members of the Trump administration to wear masks. The result was some rejection of presidential visits.⁵⁷ Meanwhile, the South Koreans, along with the Japanese and Taiwanese, redoubled their efforts.

The attack on science and on Dr. Fauci, because they did not have specific answers, is based on a misinterpretation of how science works. The scientific reaction to ambiguity for

outcomes from events like the pandemic is precaution until information improves knowledge. As an opinion piece in one of the journalistic sources included in Table 1 (*The Guardian*) put it:

Science and reason are in a battle with conjecture and instinct to determine public policy in this time of a pandemic. Partisanship and economic interests are playing their part, too. Meanwhile, misinformation and falsehoods are routine. At a time like this, an independent news organisation that fights for data over dogma, and fact over fake, is not just optional. It is essential.⁵⁸

THE POLITICAL SPIN CYCLE V. THE PANDEMIC LIFE CYCLE

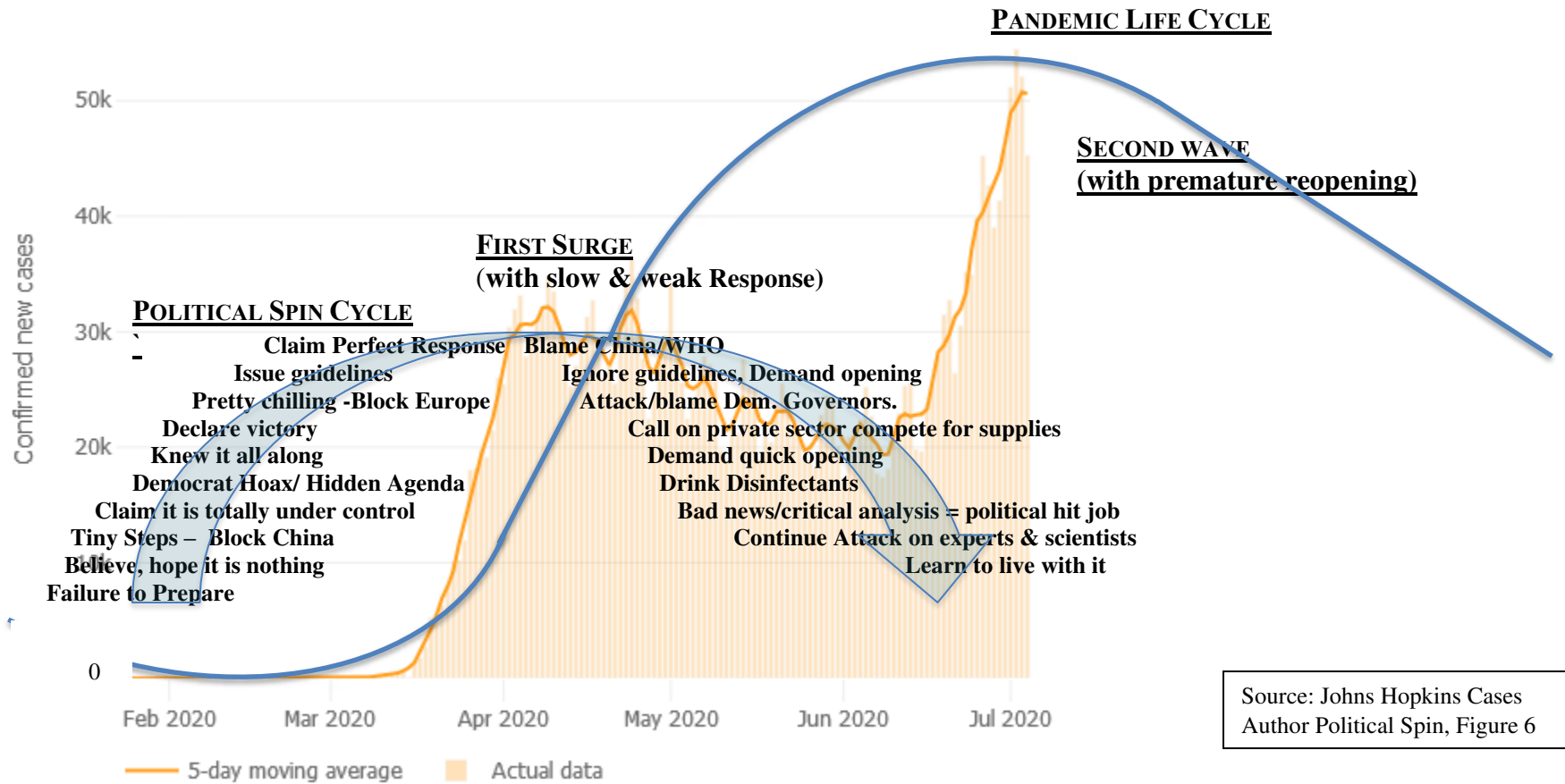
The statements and actions described in Figure 10 fit into a different, larger pattern, as outlined in Figure 11. The political spin cycle was quite different from, and in conflict with the pandemic life cycle. The moment that the Trump administration seemed to accept the proposition that the pandemic was bad and likely to cause hundreds of thousands of deaths was very brief, and the President quickly began pushing to reopen the economy, returning to the economic political spin and plan that he had articulated previously.

Getting back on message brought the pandemic response more and more into conflict with the scientific evidence and expert advice. The attack on social distancing, rejection of masks, were the repeated messages, until the second wave, when many indoor events were cancelled.

The clash of the political spin cycle and the pandemic life cycle is most evident in Figure 12. The top two graphs show the movement of new cases over the life cycle of the pandemic in high impact nations. The bottom graph shows key states singled out by President Trump. Paul Krugman points out that three states that had vigorous policies,⁵⁹ Minnesota, Michigan and Virginia were singled out for Trump's call to "liberate" these states. Krugman contrasts these three states with Arizona, Texas and Florida, which were open (especially over the Memorial Day weekend). Krugman sees this call to arms by Trump as the moment to force the Democrat governors of swing states to abandon the aggressive policies and reopen their economies as the turning point at which the policy response became overwhelmingly political. It was certainly a revealing moment, but there was plenty of evidence before and after that suggested political considerations were in the driver's seat.

At the end of May, as shown in the upper graph of Figure 12, all of the nations with high death rates and low public health outcomes that cluster around the U.S. (Italy, France, Spain and the UK) missed the early opportunity to act. In the period from mid-March to mid-April, although the number of U.S. cases was high, the infection rate was somewhat higher in these four nations. In this period, the administration was constantly claiming total control, talking about opening up, bad mouthing the experts, and fighting with the most deeply impacted states, which happened to have Democratic governors.

FIGURE 11: THE POLITICAL SPIN CYCLE V. THE PANDEMIC LIFE CYCLE



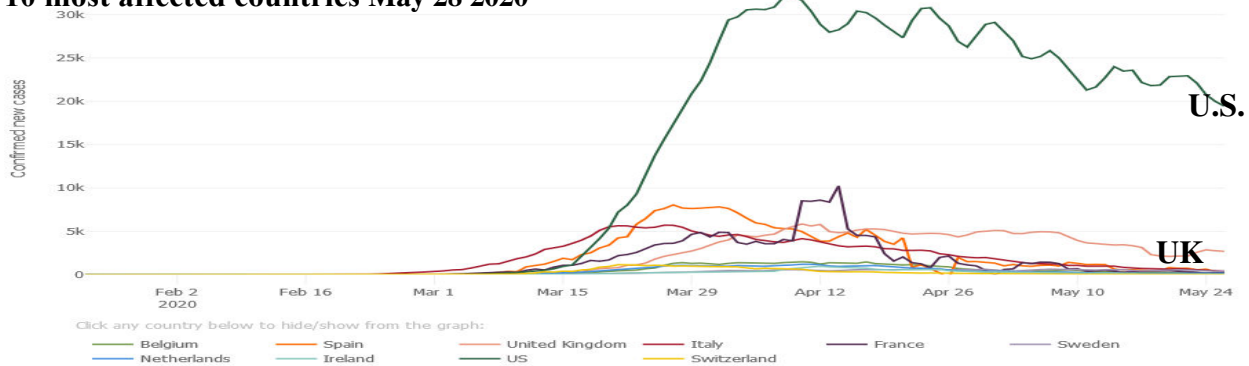
Source: Johns Hopkins Cases
 Author Political Spin, Figure 6

As the upper graph shows, by the “grim” end of May, the other large, high income democracies had reduced their increase in cases to a very low level (double digits), while the U.S. was still around 20,000. Two weeks later, the U.S. was still in that range, while the others remained quite low, even adjusted for population.

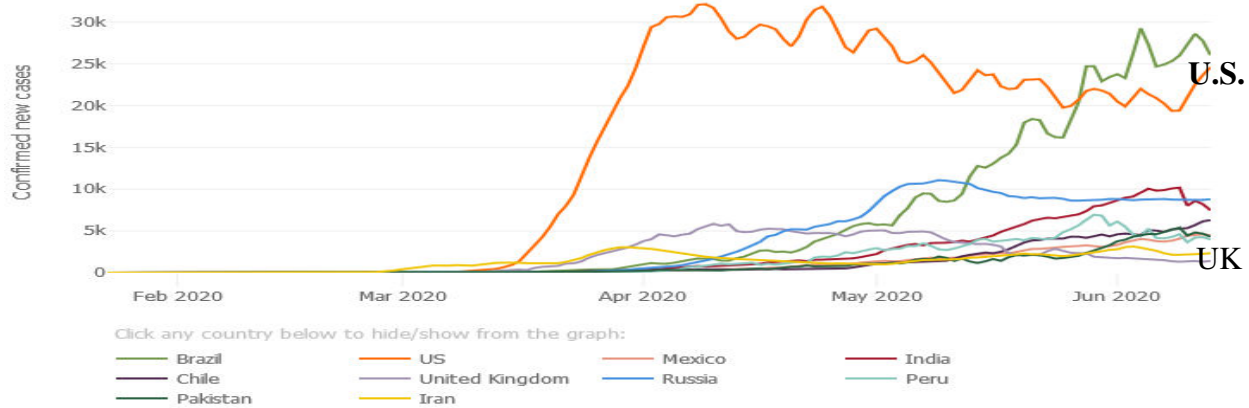
As discussed below, the U.S. was also on the cusp of a second wave that would carry it to record highs, while the other large, high income democracies remained low. Two weeks later, as shown in the lower graph of Figure 12, all of the European nations, except the UK had exited the top ten and the UK was on the way out. The U.S continued at the same pace; it was now second to Brazil, which had experienced an extremely rapid rise, fueled by a total rejection of non-pharmaceutical measures.

FIGURE 12: THE UNRAVELING OF A WEAK, POLITICIZED RESPONSE
5-day moving average confirmed new cases:

10 most affected countries May 28 2020



10 most affected countries, June 14, 2020



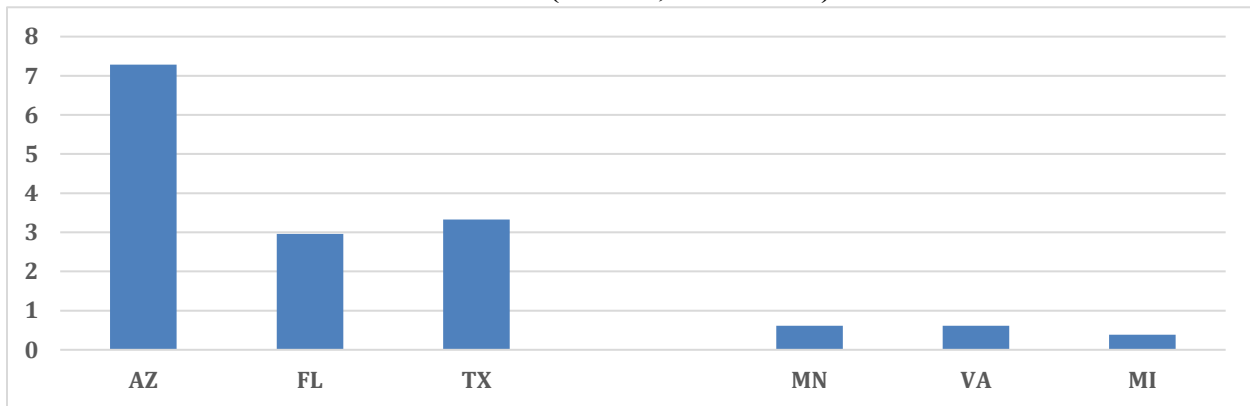
Source: John Hopkins COIVID Tracker

By the end of May, all of the G-7 nations, except the U.S. had infection rates close to zero. The U.S. was still running about 20,000 new cases per day, which was 1.5 times as large as the UK on a population weighted basis. The UK had not yet recovered from its early error to pursue a “herd immunity” policy, but it was still performing better than the U.S., despite the Trump administration’s claim of a “perfect” response. When members of the G-7 indicated they might not attend to deal with the pandemic (especially in Germany, but also in Canada and

France) Trump declared the G-7 an obsolete organization. He suggested that a later meeting should include four other nations.⁶⁰

A similar problem or the administration's argument afflicted the states (as shown in Figure 13). The governors of Minnesota, Michigan and Virginia refused and held their ground. History and analysis predicted the remarkable difference good policy makes. Needless to say, this was a key moment in mid-April as identified in the political spin cycle. But, as a practical matter, market fundamentalists within the administration were calling the shots early on, to be joined by political consultants later on. Policy reflected this bias from day one.

FIGURE 13: STATE INFECTION RATES (PER100,000 PEOPLE)WEEK ENDING EARLY JULY 7



Source: Johns Hopkins COVID Portal, Top 10 Nations; States, Krugman, *New York Times*, July 7

Here I note that Maryland had an infection rate that was about the average of MN, VA and MI in that week. In the week leading up to Hogan's op-ed, state had an uptick in cases, but is was still about one-quarter of AZ, FL, TX, and things would soon get much worse in those three states.

The link between the basic market fundamentalism and the bungled response to the COVID-19 pandemic is easy to make. The core tenets of market fundamentalism are reliance on corporations to solve all problems through the market and hostility to government action.⁶¹ The response to the pandemic was an extension of these principles. The administration and its supporters were not inclined to believe the science, even though they were apparently alerted about a potential problem early on, but the "economic and financial guys"⁶² were influencing the response, hoping that presidential denial could "calm" markets.⁶³ When that failed, they shifted to urgent calls to reopen the economy. The Trump administration proposed to double down on trickle-down with more tax cuts and more extreme deregulation.⁶⁴

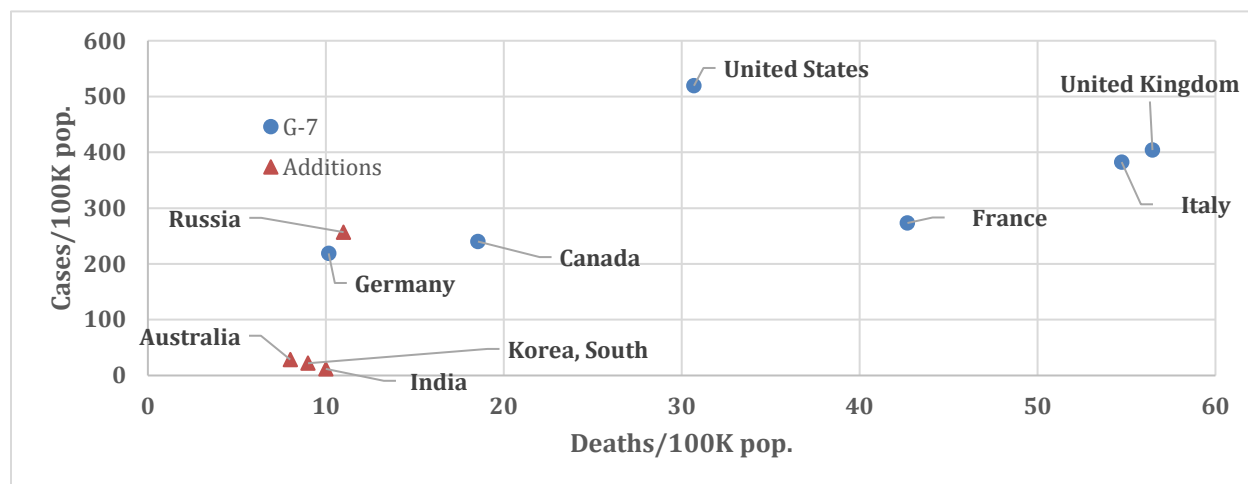
Rules were written that allowed giant corporations to take huge bites out of stimulus funding intended to cushion the economic slowdown set off by the pandemic with the Department of the Treasury, momentarily declaring it would not identify the beneficiaries of half a trillion dollars of assistance. Trickle-down tax cuts and deregulation would be claimed (incorrectly) as the key to creating the greatest economy before the pandemic. A final grand trickle-down tax cut and deregulation was proposed to finish the job and get the economy going again. Immunity from liability was demanded for the worst offenders in the protein processing industries,⁶⁵ while workers were pressured to go back to work by the termination of unemployment insurance, with unemployment still at record high levels.

BRINGING IN THE INTERNATIONAL DIMENSION

The dispute with the G-7 nations which occurred at the time of the two “grim” thresholds underscores the two key aspects of the U.S. response emphasized in this paper, its weakness and rapid politicization, as shown in Figure 14.

As shown in Figure 14, two nations (South Korea and Australia) that President Trump proposed for his “G-11” have been included among the large, high income democracies analyzed above. Two others (Russia and India) were of a different ilk, being lower in income and in some respects questionable as democracies. Including these four, does not improve the U.S. standing in the distribution of pandemic outcomes. Ironically, President Trump’s G-11 were all members of the G-20, but so was China, the object of his increasingly cold political and trade war (see Figure 14).

FIGURE 14: TRUMP’S G-11 ONLY MAKES THE U.S LOOK WORSE



Source: Figure 1 and press accounts

At this moment President Trump formally withdrew from the WHO, claiming it had been captured by China. The G-20 did not share Trump’s highly polarizing view and no one else withdrew. In fact, several stepped up to fill the void let by U. S. Moreover, expanding the framework to the full G-20, with or without China only made the U.S. response look worse (see Figure 15).⁶⁶

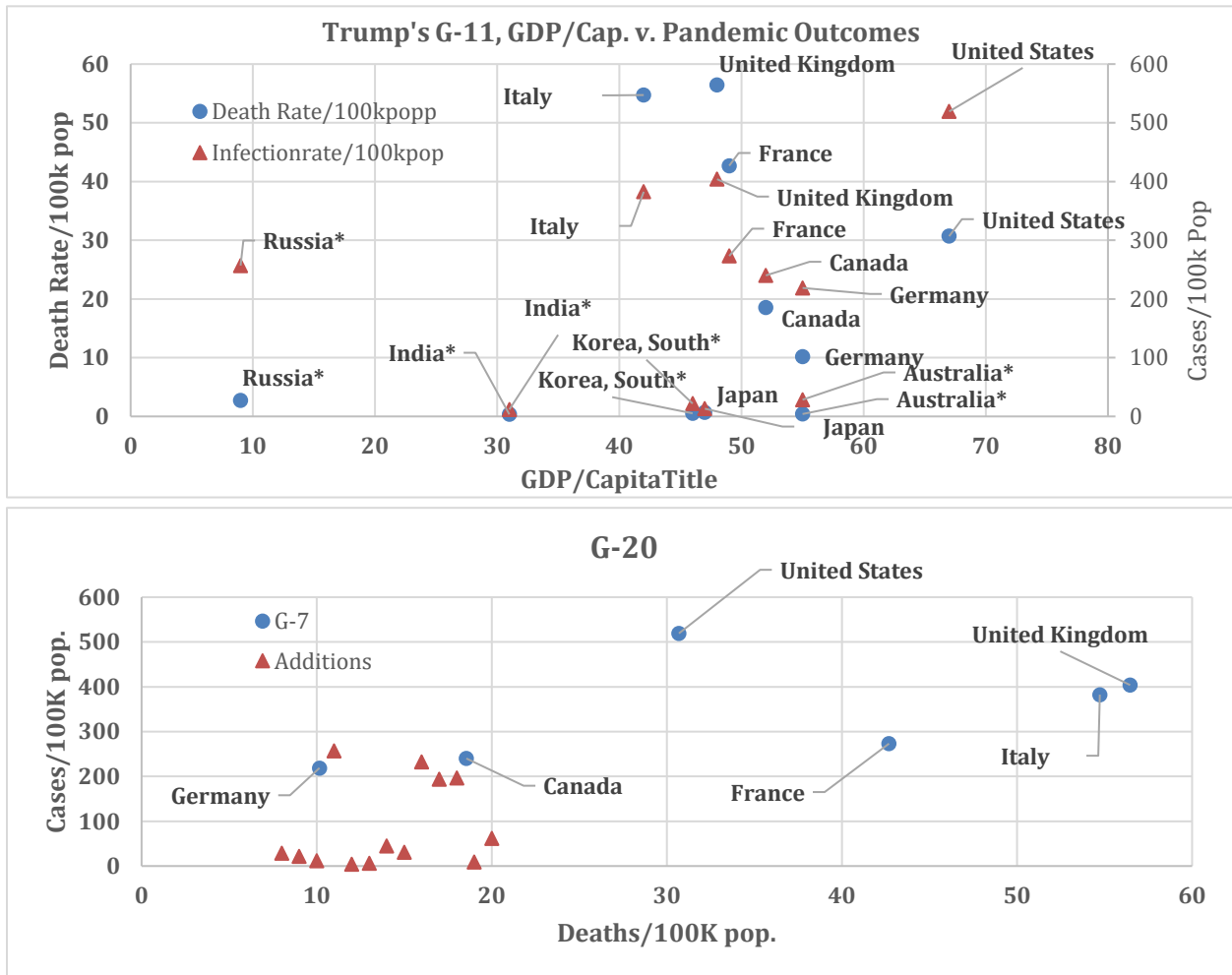
POLITICAL SPIN COULD NOT KEEP UP WITH REALITY

The frantic spin cycle was never ending, and real-world data did not successfully contradict the spin. While examples abound, the debate over whether to hold part of the Republican convention in Florida was a perfect example.⁶⁷ While testing had been touted early on by the administration (and effective in Korea), Trump and Pence had turned on it.

“Our testing is so much bigger and more advanced than any other country (we have done a great job on this!) that it shows more cases,” Trump [tweeted in the morning](#). “Without testing, or weak testing, we would be showing almost no cases. Testing is a double-edged sword - Makes us look bad, but good to have!!!”

“If we stop testing right now,” the president [added](#) during an event for seniors at the White House, “we’d have very few cases, if any.”

FIGURE 15: LEADING THE WORLD FROM THE REAR



Source: Figure 1 for COVID, IMF for GDP.

And according to a report in the *New York Times*, Vice President Mike Pence echoed Trump’s argument during a call Monday with governors, urging them “to continue to explain to your citizens the magnitude of the increase in testing” in order to “encourage people with the news that we’re safely reopening the country.”⁶⁸

The press account of these comments pointed out that this is nonsensical, ‘if-a-tree-falls-in-the-forest’ suggestion that somehow coronavirus infections would cease to exist if we stopped trying to detect them is dangerously deluded, and saying so only contributes to a sense of complacency that threatens to further accelerate the spread of the virus.

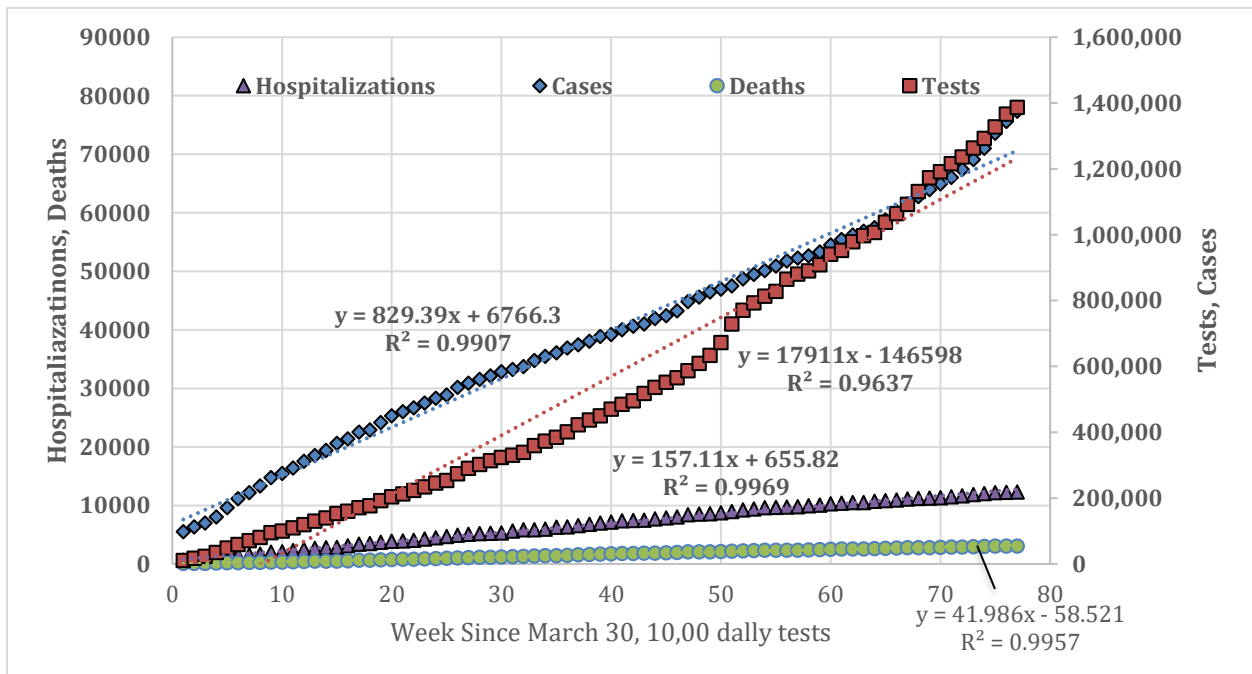
It doesn’t take advanced math to debunk Trump’s claim. Just look at Florida, where Republican Gov. Ron DeSantis, one of the president’s staunchest allies, has recently been brushing off questions from reporters with a similar line.

“As you’re testing more, you’re going to find more cases,” DeSantis said Thursday.

In other words, the number o tests conducted per day in Florida was unchanged, while average cases more than doubled. And so, Trump and De Santis are incorrect: Testing doesn’t explain Florida’s recent increase in infections.⁶⁹

Actually, a close look at the Florida data shows that it is worse than nonsensical, it is backwards and likely to extend the harm of the pandemic, as shown in Figure 16. The upper graph is based on cumulative tests, infections, hospitalizations, and deaths. Obviously, one could do the analysis with marginal values, but “bending the curve,” which was presented as a cumulative value, received a great deal of attention. The total number of tests received a great deal of attention from the administration, until it realized it simply could not get up to the coverage that other countries had achieved. At the moment the President and Vice President bad mouthed testing, Florida had tested less than 5 percent of the population.

FIGURE 16: THE TRUMP ADMINISTRATION MISINTERPRETS THE TESTING DATA: FLORIDA
Time is the Best Predictor by Far: Tests, Deaths and Cases



Source: Florida COVID Tracker.

Figure 16 shows that time is an extremely powerful predictor of cases, hospitalizations, and deaths. Pandemics are about time – the length of time it takes for more and more people to come into contact with those who are infected and become infected. This is the hypothesis of the SIR model of the impact of the pandemic used in the studies referenced in this paper.

Non-pharmaceutical interventions found to be effective, testing among them, are intended to slow the spread by cutting down on contact and the behaviors that facilitate spread. Testing is only one element that is important when combined with other actions. We would expect all three

indicators of the virus, cases, hospitalization and deaths to grow over time, even as testing increases, until the point where all the policies finally slow the spread.

We observe the early phase of this process in Florida. Testing does not appear to affect the trend of these three measures of the pandemic. It certainly does not seem to increase the number of cases. The data shows a clear break in the testing trend when it was ramped up in late May. After May 15, 80% of the days had more than 15,000 tests a day and 20% had more than 30,000 tests per day. Before May 15, less than 25% of the days had more than 15,000 tests and none had more than 30,000.

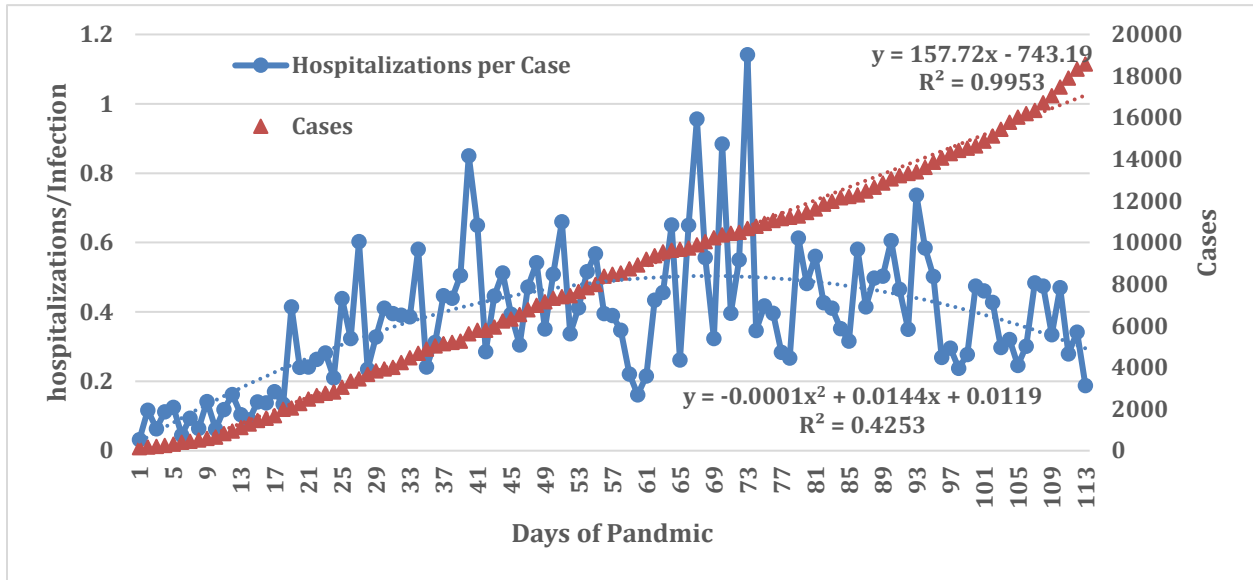
May 15 is also a useful break point because it separates the before and after Memorial Day potential infections. A statistical test for the ramp up in testing (controlling for the cumulative number of tests), shows that the increase in the impact of the pandemic slowed after the ramp up. While hospitalization and deaths show a slowing, they are not statistically significant. The market fundamentalists in the Trump administration and its supporters, most notably the governor of Florida, got it exactly backwards.

When president Trump pivoted for the final time away from controlling the pandemic to the “live with it” message he took a new tack, claiming that 99% of the time the infection was nothing.⁷⁰ If infection did not matter to 99% of the people, why not open? Initially, no one in the administration would defend the 99% claim, which was dead wrong,⁷¹ as shown in Figure 17. Aside from the fact that the death rate was about to increase, the hospitalization rate in Florida had been about 15% of the cases, and hospitalization was a very serious outcome in the case of COVID-19.

When testing ramped up, the rate of hospitalizations per test did change direction and begin to decline slightly. While it can be argued that the dramatic increase in testing had uncovered less severe infections, the change was not so dramatic as to suggest that the problem of hospitalization was done. They were still growing substantially. Moreover, testing might have elicited changes in behavior.

Why would the knowledge that you are infected lower the rate of hospitalization? Before you know, you assume you are not contagious and your behavior does not matter. Once you know you are infected, you consider who among your friends and family you might infect. Once science tells you that you are infected, and you do not feel well, some members of society act in a responsible manner and internalize the externality of how their behavior might affect others. They worry about the vulnerable individuals in their set of interactions. Recognizing it is not “just the flu,” and certainly not like a cold,⁷² they take better care of themselves to avoid going to the hospital.

FIGURE 17: HOSPITALIZATIONS ACROSS THE PANDEMIC LIFE CYCLE IN FLORIDA



Source: Florida COVID Tracker

4. THE BOTTOM LINE: THE ECONOMIC AND POLITICAL COSTS OF A CATASTROPHIC, PUBLIC POLICY FAILURE

AN OVERHYPED RECOVERY TO AN OVERHYPED ECONOMY

The political spin put on the recession that would be the inevitable result of the pandemic stood on two legs. First, the claim that the pre-COVID-19 economy was the best in U.S. history, was a claim that cannot stand close scrutiny, as briefly discussed below and elaborated in a forthcoming paper.⁷³ Second, claims that the recovery from the recession would be the fastest in U.S. history, are incorrect, in part because the dramatically different causes and consequences of the recession do not allow such comparisons and in part because it does not fit the facts of the recovery and ignores the second wave. Political needs dictated both the spin and the policy.

The claims about the performance of the pre-COVID-19 economy have been thoroughly criticized and rejected not only because the failure of the administration's policy to alter the course of the economy,⁷⁴ but also because of the previous failures of trickle-down tax cuts and extreme deregulation by the two previous market fundamentalist administrations.⁷⁵ The immediate economic reaction to the Trump administration's policies implemented in 2017-2018 did not improve the economy and they made it worse in several ways.

There was no pop in the capital drivers of economic performance. The tax cut dramatically increased profit, but that did not increase investment. Debt and depreciation (that constitute the major components of investment), allowed investment to continue while the bump in profits was put to other uses (dividends and stock buybacks).⁷⁶ There was no pop in the expansion of GDP. In fact, the historic increase in budget deficits that followed the tax cut, accounted for one-third of the increase in GDP.⁷⁷ Without the deficit spending, GDP would have lagged behind the Obama administration.⁷⁸

Since the tax cut failed to generate the economic growth promised, it deteriorated into budget deficits and ultimately in cuts to programs that hurt the very people trickle-down was supposed to help. This included cuts in spending to pandemic institutions leaving the U.S. unprepared to respond quickly and strongly to COVID-19. Caught between ideology and reality, two issues were certain to be center stage in the post-COVID recovery.

A central economic issue that was certain to be prominent in the debate leading up to the election was "how bad would the COVID-19 -induced recession be and how quick and what would the recovery from it look like. Here it is critical to recognize that the pandemic and its economic impact were unique events. Simple economic analysis was in uncharted territory, to say the least.

THE COVID-19 RECESSION

How Low and How Long?

The aggressive response to the virus discussed in the previous chapter is primarily a public health response, intended to reduce infections. There is no doubt that the "lockdown" has severe economic implications. However, there are also potential benefits, since an effective

effort to control the virus all not only reduces infections, hospitalization and deaths, but it also allows the economy to open sooner.

Goldman Sachs's analysis is a perfect example of this uncertainty. It started by predicting a small recession with a slow recovery, but later shifted to a deep short-term (one quarter) impact followed by a snap-back recovery.⁷⁹ Even with this recovery, by the end of the year, GDP was projected to be down by 3.8 percent. The first projection of a more modest recession with a more modest initial snap back, put the long-term economy about 3% below the business as usual projection. On the other hand, Bloomberg Economics, started with a modest recession and a slow recovery and generally stuck with it.⁸⁰ Its projection of reduced revenue as a result of lower economic activity was about 3%, similar to the initial Goldman Sachs estimate.⁸¹

More importantly, as the second wave was coming into view, Goldman Sachs concluded that if a single policy was adopted, mandatory mask wearing, that increased mask utilization by 15%, could cut the infection rate by two-thirds.⁸² If this policy could avoid a second lockdown and allow a more rapid opening of the economy, the result would be to reduce the recessionary impact by 5% of GDP, or about \$1 trillion dollars. There are obviously a lot of “if,” “and,” or “but” assumptions underlying this analysis, but it recognizes the fact that reducing spread is not just a public health policy, it is a positive economic policy.

Two caveats are in order. First, the policies that are so effective in the Berkeley and Columbia studies, and in the 1918 flu studies, are generally lockdown policies. Second, even the reduced infection rate hypothesized by Goldman is pretty high, thousands in the U.S. compared to hundreds in Germany and around 50 in Korea. Given that the second wave was real, the situation was probably more like the AEI base case scenario. That is, another lockdown was necessary to control the spread, followed by mitigation, in which masks and testing play important parts. Having been wrong for so long, the political spin cycle could not tolerate this message: the “live with it” message was preferable.

Other institutional analysts and economists had a much more pessimistic view of the recovery than Goldman Sachs or Bloomberg throughout. The Chairman of the Federal Reserve predicted year-end unemployment rate of 9.5% and a GDP decline for 2020 of 5.7%. Unemployment in 2021 was put at 6.5% with GDP growth of only 4%, leaving the economy almost 2% smaller than it before the pandemic. These projections were consistent with a survey of economists by Bloomberg. They were also consistent with the projections of the IMF and the OECD.⁸³ President Trump rejected this negative evidence, declaring, “We will have a very good Third Quarter, a great Fourth Quarter, and one of our best ever years in 2021.”⁸⁴

Black Unemployment

As support, President Trump pointed to the increase in employment in the first week of June, proclaiming the start of a snap back. This was clouded by a variety of definitional uncertainties that intensified the fog of analysis. In addition to the short-term weakness of the snap back for Black and Hispanic Americans, which was glossed over by the Trump administration and its supporters, people who were “absent” or furloughed and called back, may not (perhaps should not) have been considered unemployed. Those who had been discouraged

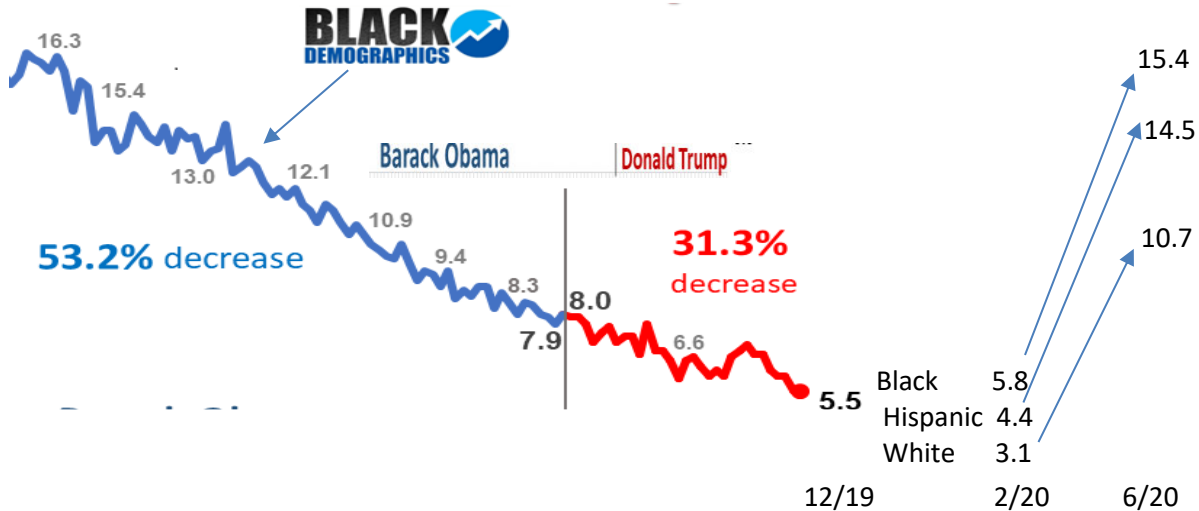
and stopped looking for work were also gray areas. The role of the stimulus, which was expiring with the Trump administration resisting any extension, was also important.

The slow awakening of the American economy from its pandemic lockdown helped provide what on Friday became the first positive jobs headline of the summer as millions of workers furloughed temporarily started their return to work in May. Yet that also masked a grim reality for the millions still waiting to go back to work, still waiting for benefits, or losing their jobs more permanently in places like Sturtevant, Wisconsin, where Evinrude engines are made.

“The temporary furloughs in the tens of millions are just swamping any other signals right now,” says Adam Ozimek, chief economist at online talent agency Upwork. “For the next few months, we’re just going to see millions of jobs come back online that were never really gone, that were just on temporary furlough. And we’re going to have to look through this noise to try see where the economic damage is still happening.”⁸⁵

Since the reduction of Black unemployment had become a central pre-COVID-19 economic claim of the Trump administration policy, the uptick in employment in May was claimed as a benefit for Blacks. The administration pointed to the increase in employment to suggest that Blacks should be encouraged, deserves careful attention, as shown in Figure 16.

FIGURE 16: MINORITY UNEMPLOYMENT: LAST HIRED, FIRST FIRED



Sources: Bureau of Economic analysis, *Gross Domestic Politics, Corporate Profit*, database; White House, *2020 Economic Report of the President*, February 20, 2020, Bureau of Labor Statistics, June 4, 2020

The rate of decline in Black unemployment was actually larger under Obama, once the Great Recession had ended (2011-2016), than it was under the pre-COVID Trump administration (2017-2019). While the Trump administration took its victory lap with the first month that the national average unemployment rate declined, it did not acknowledge that it remained flat for the Black population. The increase in unemployment among Black Americans had been more than

twice the national average and the June decline in unemployment was less. The premature posturing for political purposes was clearly in evidence here.

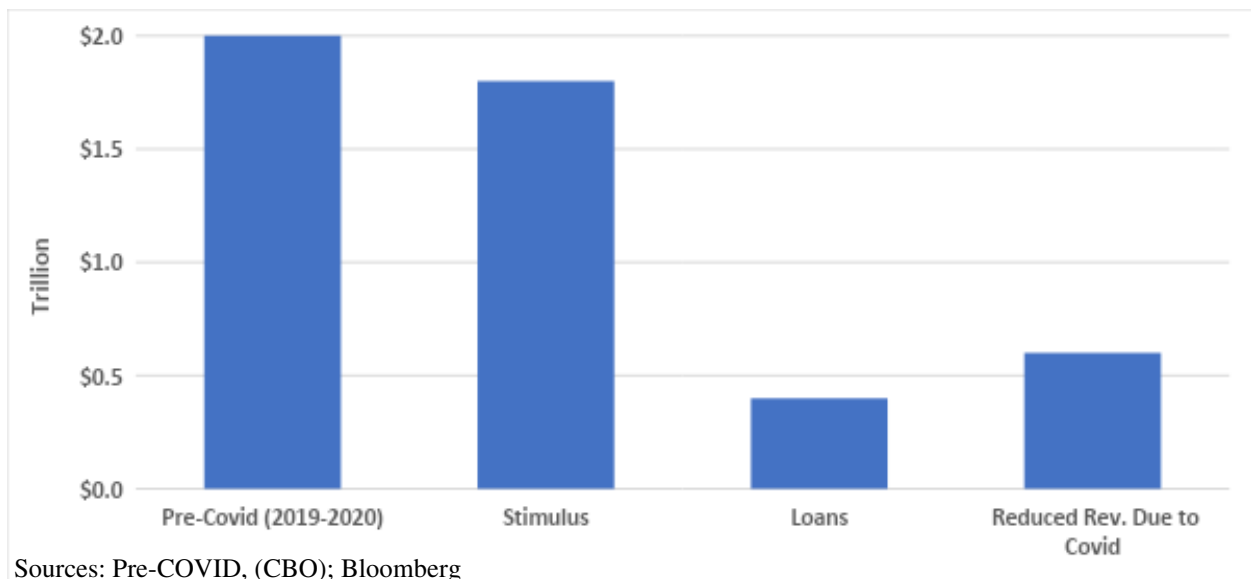
In addition to having jumped the gun on employment in claiming that Blacks should be rejoicing over the “purported” snap back of the economy in the recovery from the pandemic, Trump ignored another, even more important point. Blacks and Hispanics suffered disproportionately from the public health harm because they were much more likely to lack health insurance, exhibit health factors that placed them at risk, which reflected their continuing lower income, lack of education, etc.⁸⁶ All of these factors which meant they bore a heavier burden, had been the targets of Trumps effort to shrink the role of government, e.g. eliminating the Affordable Care Act, imposing work requirements on recipients of public assistance.

Deficits

Deficit reduction was certain to be a second, central concern in the post-COVID-19 recovery, as it had been after every prior trickledown tax cut after they failed to produce the promised economic “pop.” Bloomberg Economics introduced the deficit issue by noting that the U.S. was headed toward the largest level of debt compared to GDP in history.

As shown in Figure 17, Bloomberg started with a Congressional Budget Office estimate which put the pre-COVID-19 2020 deficit at just over \$1 trillion.⁸⁷ While Bloomberg did not include the record \$1 trillion deficit for 2019, that deficit was already on the books and it was part of the record to which Bloomberg was referring. It is also very much the result of the Trump administration’s trickle-down tax cuts. Bloomberg added three COVID related impacts to this base by decomposing the overall budgetary impact into three components.⁸⁸ First, it added about \$1.8 trillion of stimulus spending. Second it included a \$0.6 trillion reduction in revenue due to the impact of the CCOVID recession. Finally, it identified \$0.445 trillion of loans that were expected to be paid back within five years.

FIGURE 17: TRICKLEDOWN DEFICITS V. PANDEMIC STIMULUS



Thus, Figure 17 shows that the record pre-COVID increase in deficit of the Trump administration (2019-2020) was actually 10% larger than the stimulus. Blaming deficits on the virus was, at best a half truth and CBO projected trillion-dollar deficits for the entire decade, which would make the stimulus about one-sixth of the total deficit over the decade.

THE CONNECTION BETWEEN THE PUBLIC HEALTH RESPONSE AND ECONOMIC HARM

Declining GDP

Efforts to “evaluate” policies are fraught with complexities. When did they start? How firm were they and for how long? These questions are as important as the specific measures chosen. Nevertheless, given the nature of the pandemic and its immense impact, these projections will be put forward.

One such early effort is the matrix created by Politico, which scores nations qualitatively on two dimensions (see the upper graph of Figure 18). The qualitative analysis offered by Politico strongly supports many of the main conclusions of this paper. There is clearly a wide range of public health outcomes in the large, high income democracies included in the Politico analysis and the focal point of this paper. There is a strong relationship between public health outcomes and economic outcomes. All of the large, high income democracies have and will suffer economically. The U.S. is a poor performer on both public health (8 of 11) and economic outcomes (9 of 11).

The lower graph presents quantitative evidence on these issues by cross tabulating the IMF projection of the recessionary impact of the pandemic by the number of infections discussed earlier. To make the estimates comparable across countries, I show the net impact of the recession in terms of the reduction of GDP growth from the pre-COVID growth in 2019. Since all of the values are negative, I show the origin at the upper right as zero. This “standardizes” the comparison for underlying growth rates. I show the projections for 2020 and 2021 separately. The pattern of the relationships and the positions of the nations is similar to the qualitative analysis.

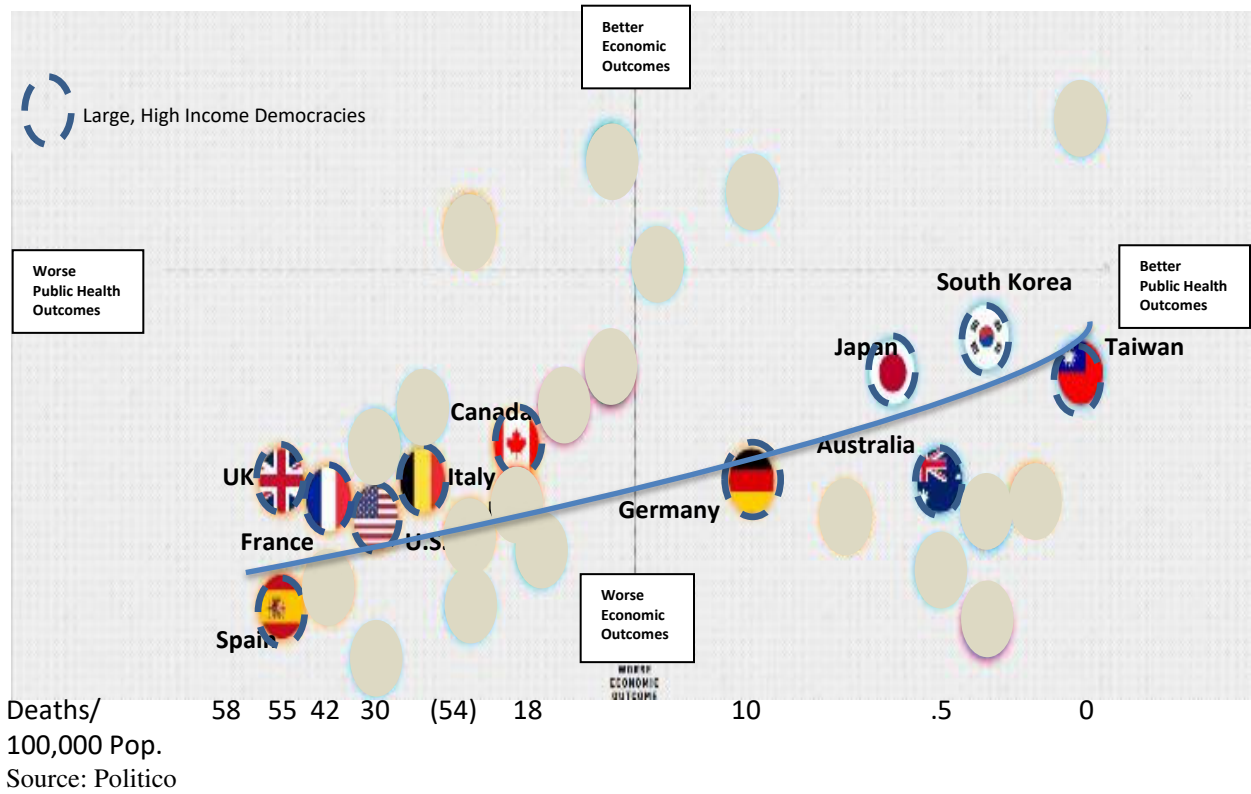
As discussed below, the main thrust of the Trump administration’s push for relaxing social distancing and its belated and weak non-pharmaceutical response is an economic claim that the public health benefit of controlling the pandemic (lockdown) is not worth the economic harm (i.e. severe recession). Despite having called for benefit-cost analysis, the administration did not provide rigorous evaluations of the costs and benefits. Wildly optimistic projections of almost no deaths or a nearly instantaneous end of the mortality,⁸⁹ and a quick end to the pandemic,⁹⁰ were used to justify reopening, but they were far off the mark.

COST-BENEFIT ANALYSIS

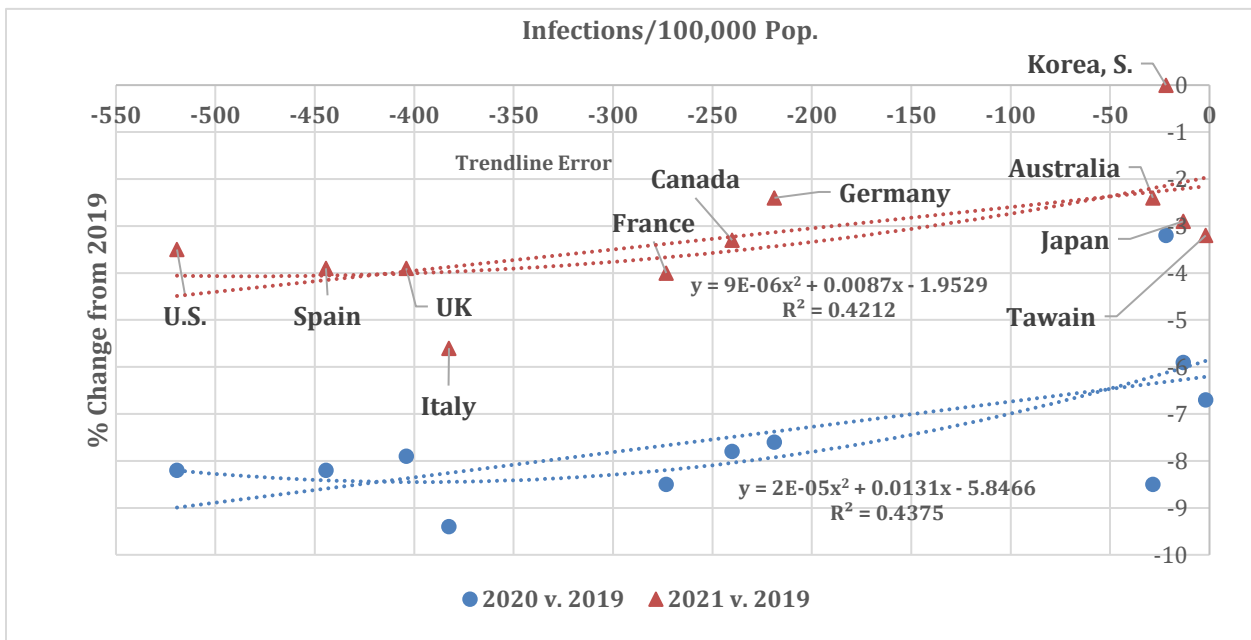
There were a number of studies that showed failing to respond quickly and aggressively imposed a huge cost on the economy. These studies recognized the cost of COVID-19 induced recession, which were inevitable, but asked whether there would be offsetting benefits in terms of lives saved and a quicker return to economic activity, had economic opening been dictated by concern for public health. The answer was overwhelmingly in the positive. Taking aggressive policy actions to reduce the impact of the pandemic lowered the net economic costs.

**FIGURE 18: THE CORRELATION BETWEEN PUBLIC HEALTH & ECONOMIC OUTCOMES
(Large, High Income, Democracies)**

Qualitative: *Politico*



Quantitative: IMF Recession Projections and Infection Rate



Source: IMF, G-20 SURVEILLANCE NOTE, G-20 Finance Ministers and Central Bank Governors' Meetings, *International Monetary Fund*, April 15, 2020, Johns Hopkins Database.

A late May study from the University of Wyoming estimated the net savings of closing the economy while addressing public health concerns at \$5.2 trillion, which was over 25% of 2019 GDP.⁹¹ The gross cost of failing to act was put at \$13 trillion. While this study received the *pro forma* “political hit job” dismissal from the president, these estimates were consistent with numerous others published in the previous three months, above all the AEI study. While this study and many others considered a range of alternative assumptions, there were few, if any, scenarios under which “no action” made sense. As one of the earliest and simplest studies put it: “Saving more lives was the right decision. . . . For me the analysis was comforting. I feared that the cost of a recession might be far greater than the lives saved... [O]thers came to the same conclusion.”⁹²

The Berkeley study mentioned earlier reached a similar conclusion. Here we get into the sticky problem of how to value a life. However, using the lowest and highest estimate used by the above author (\$2.4 million to \$10 million), with 60 million lives saved, the economic value was at least as large as global GDP and perhaps four times as large.

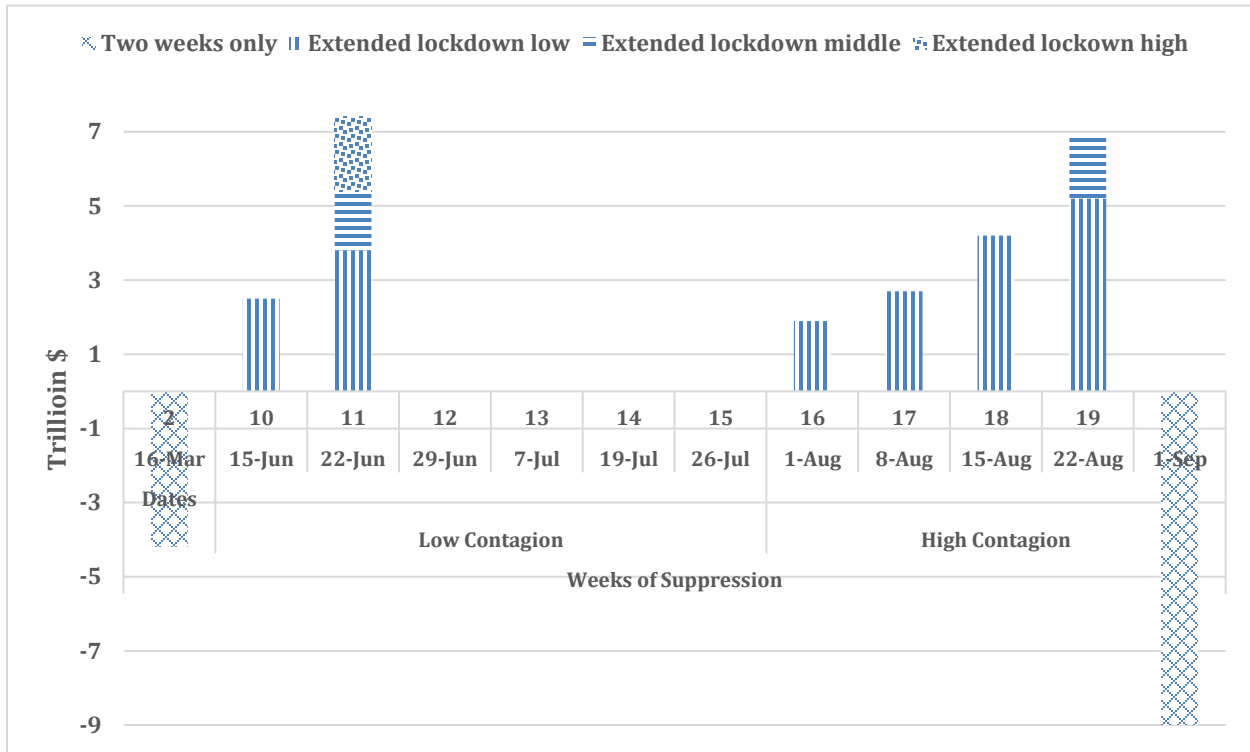
There were other studies that asked more complex questions: “How long should the lockdown response last to minimize the net cost to society?” The American Enterprise Institute (AEI) published such a study, which assumed a two-week lockdown (suppression) followed by a rigorous monitoring approach.⁹³ The definitions in the AEI study are clear and in sharp contrast to the policy position of the Trump administration and its supporters.

In the absence of a vaccine or effective drug treatments, a nonpharmaceutical intervention is paramount. Such an intervention helps in two respects. First, by reducing the virus transmission rate, it lowers the total number of illnesses and fatalities. Second, it shifts the peak of the pandemic curve further out in time, and by then pharmaceutical treatments may become available.⁹⁴

The AEI study considered two phases of non-pharmaceutical action to be kept in place until a pharmaceutical (vaccine and/or medication) could be found (see Figure 19). AEI combined two weeks of suppression (lockdown) with a long period of strong mitigation.

We assume that a non-pharmaceutical intervention will start with a suppression policy followed by a mitigation policy until drug treatments or a vaccine become available.... Suppression can be achieved by restricting travel, closing schools and nonessential businesses, banning social gatherings, and asking citizens to shelter in place. These measures, often referred to as a “lockdown,” are highly restrictive on social freedoms and damaging to the economy. In contrast, a mitigation policy “focuses on slowing but not necessarily stopping epidemic spread.” Mitigation measures may involve discouraging air travel while encouraging telecommuting, requiring companies to provide physical separation between workers, banning large gatherings, isolating the vulnerable, and identifying and quarantining contagious individuals and their recent contacts. This paper analyzes the optimal duration of the suppression phase before it is replaced by the mitigation phase; in turn, the mitigation phase is assumed to last until a vaccine becomes available 18 months later.⁹⁵

FIGURE 19: THE ECONOMIC VALUE OF AN EFFECTIVE RESPONSE



Source: Scherbina, Anna, Determining the optimal duration of the COVID-19 suppression policy: A cost-benefit analysis, AEI Economics Working Paper 2020-03, May 2020.

The lesson of history and the contemporary epidemic are crystal clear. Policy could and should have used aggressive non-pharmaceutical interventions to control the spread of infections until a pharmaceutical intervention is developed. The Trump administration and its supporters missed the first step and it never supported the strong mitigation phase that was needed. It was shooting for 2 months, not 18.

Treating the sunk costs as water under the bridge, the AEI study asked the classical marginal, cost-benefit question. Going forward, when would the public health costs of responding to the pandemic exceed the economic benefits? The results are striking, as shown in Figure 19 above. The AEI put the ultimate cost of letting the virus run its course, waiting for a pharmaceutical solution at a total of \$13 trillion (about 65% of 2019 GDP). This is similar to the Wyoming study. The cost was \$4.2 trillion already incurred on “day 0” and \$9 trillion yet to go. This is also consistent with the Wyoming study.

Depending on the assumptions about the spread of the virus, the lockdown period should have been between 11 and 19 weeks. The net cost of not following through on policy was put at \$9 trillion, consistent with the early analysis. The benefits of taking aggressive action total about \$7 billion, close to the earlier estimates from noted above.

However, the AEI study uses April 20 as “Day 0.” This is 90 days after the first case and 90 days after the Day 0 used by the large, high income Asian democracies. In other words, well over three quarters of a million cases and over 37,000 deaths are considered “sunk costs” by the AEI study. The dollar cost of those sunk costs was put at \$4.2 trillion, which is over 20% of the 2019 GDP. Given the ability of other nations to control the virus much faster, a significant part of these costs could have been avoided or recouped in a much faster reopening when the virus was controlled.

There were a range of optimistic and pessimistic cases considered, that reflect the uncertainty of the lifecycle of the virus and the ability of non-pharmaceutical measures to slow its spread. This put the “end” date, with vigorous non-pharmaceutical measure sometime between early summer (early-July, optimistic) and late summer (early-September, pessimistic). In addition to these inherent uncertainties, there was clearly some question about whether the Trump administration and its supporters ever actually implemented or supported the type of rigorous protocol the AEI modelled, so that one could have easily added weeks, if not months to the “end” date.

In fact, a University of Texas study found that one day of delay added 2.4 days to the impact of the pandemic. If one uses the AEI “Day 0” as the starting point, there had been 90 days, about 3 months, or almost 13 weeks of delay. This puts the “end” date (no new infections) of the virus right around election day with a non-pharmaceutical response. Looking back at the trend of cases and deaths in the top 10 countries, including all of the European nations that were hardest hit early on, we see that by the AEI “Day 0,” most of the European nations were moving rapidly to zero new cases, except for the UK. In the week after “Day 0,” the week after March 28, which is the date I have used for analyzing the pandemic life cycle, the U.S. was still averaging about 20,000 cases and almost 1,000 deaths per day. Consistent with an inconsistent non-pharmaceutical policy, the Trump administration and its supporters were hoping for a year-end pharmaceutical solution, although the actual vaccination of the population would take additional months.

THE BOTTOM LINE

Public Health and Economics

Given the severe and intentional politicization of public health policy, it not possible to achieve consensus, but strong majorities did appear to oppose the re-opening for the types of business that receive the most attention in the media. Putting a dollar figure on the policy failure is difficult, due to all of the assumptions underlying the estimates and the alternatives standards that can be used to assess the impact. But the difficulty should not obscure one very basic and fundamental truth, the magnitude is quite large.

First, we have seen that that it was possible to avoid between 85% and 95% of the impact with “perfect” responses.

Second, there was an initial sunk cost that many nations failed to avoid, although we have seen that some did. The dollar value of the sunk cost in the AEI study was \$4.2 trillion. About 90% of that, over \$3.5 trillion could have been avoided.

Third, the net benefits of the aggressive response against the bad virus case, which clearly fits the ongoing developments in the U.S. was at \$7.2 trillion. Using 90% again, the dollar value of that is a \$6.5 trillion. That whole figure cannot be claimed because the U.S. did respond, albeit very ineffectively.

Assuming a longer period to be done with the virus – the 2.4 days for each day of delay – would move the end-point to December and increase the foregone net benefit. Using the estimate that each day of delay cost 2.4 days, we could argue that almost 60% of the economic costs were avoidable ($1 - (1/2.4) = .59$). Some of the sunk costs would have been reduced by the value of saved lives, fewer hospital costs, and less loss of productivity of those infected. Some of the later costs would have been saved by an earlier opening. This would be at the low end of the econometric and historical studies of deaths avoided. The high end observable in the contemporary pandemic for deaths avoided is above 90%. However, those may come at a high economic cost. The best performers on the spread of the infection have experienced second waves, but have quickly re-imposed lockdowns to successfully regain control of the virus.

Thus, a cautious way to summarize the bottom line on very good policy is a 60% reduction in economic costs and a 90% reduction in public health impacts. The bottom-line economic cost of failing to respond and the number of lives lost/affected is likely to be staggering:

Economic

- \$2.5 trillion before the seriousness of the problem was admitted.
- \$4.3 trillion as a result of a weak response and a rush to end mitigation measures, for a total cost of close to
- \$7 trillion.
- Trillions of increased debt that will have to be, made up with budget cuts, particularly if the post-COVID-19 economy produced below historical growth, as the pre-COVID performance suggested..

Political Costs

As difficult as it is to put a figure on the public health and economic cost of the failed U.S. response, it is even more difficult to put a political figure on it. In public health (infections, hospitalizations, deaths) and economics (GDP, unemployment) we have quantifiable metrics, although the outcome estimates rely on many assumptions and the quality of the data. We do not have such a simple measure in the polity. Is it really necessary to estimate the political costs? I believe it is for two reasons.

First, I have argued in Footnote 1 that there is no such thing as “simple” economics. The discipline to study this phenomenon must be political economy. Any alternative approach, will have to take politics into account. The world view and the politics driving policy choice will be different, but they will be political.

Second, it is quite clear the political considerations drove many of the actions of the Trump administration and its supporters.

Third, the public health failure is clear at this stage and economic failure appears to be equally clear. Public health and economic failure have political consequences that cannot be avoided. While we are still four months from the ultimate arbiter of political consequence in a democracy (the election), the initial political impact seems equally clear.

Thus, the measure to which analysts frequently, even routinely, turn and the one I use here is polling data. After all, elections are polls, conducted under special circumstances. Here we have the added problem that one aspect of the contemporary political economy that the Trump administration and its supporters disparage more than fact, the press and science, is public opinion polls. Although Trump's claim that polls should not command respect because they got it wrong in 2016, a claim that has been thoroughly rebutted by the premier analyst of polling data.⁹⁶ Here I turn to polling data as the measure of cost, which seems to have actually penetrated the mindset of the supporters of the Trump administration,⁹⁷ if not the administration itself. While there is a myriad of qualitative examples of the recognition of the cost of catastrophic failure, I turn to polling data as a more systematic measure of the political costs.

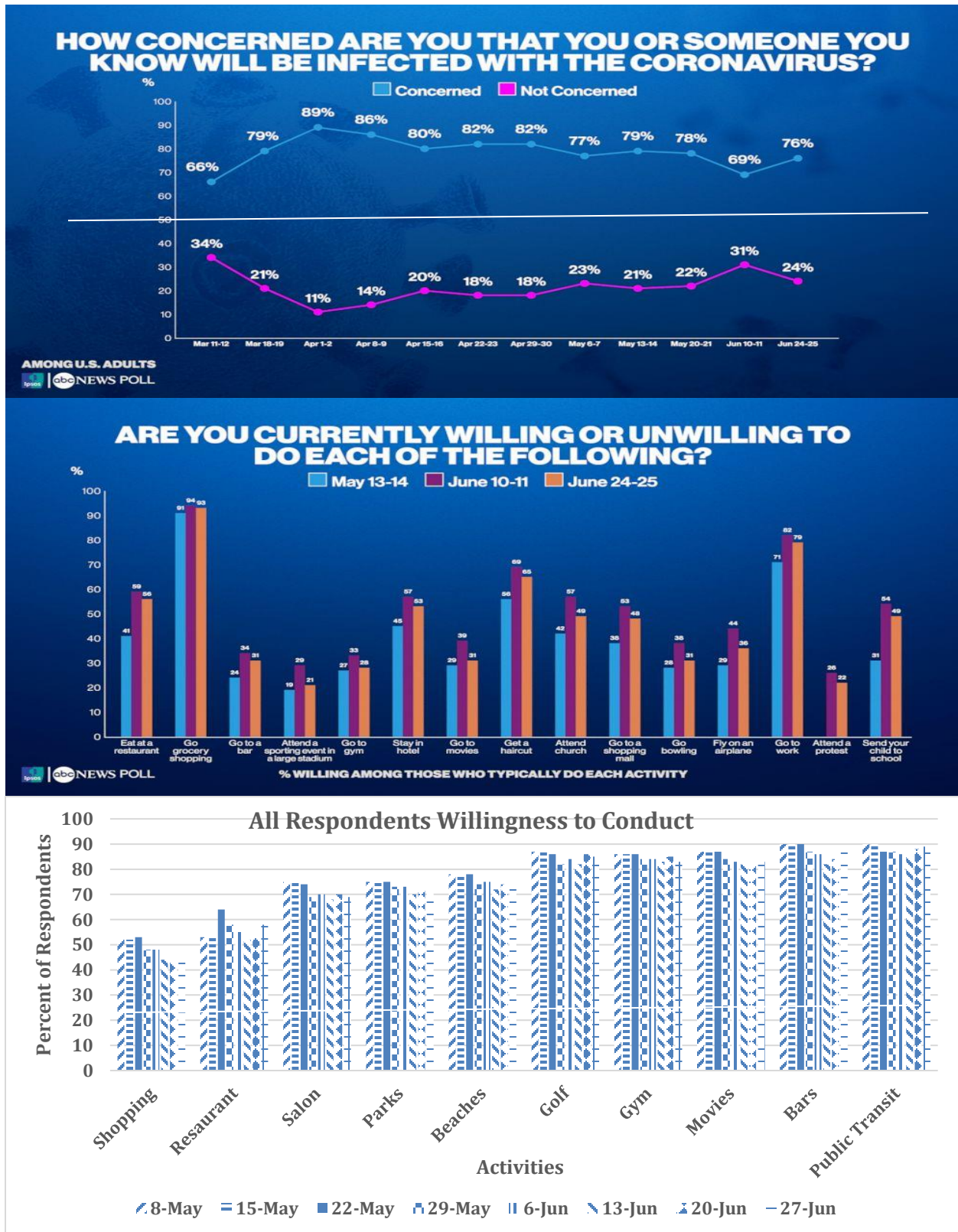
Strong reaction about his performance are evidence by rapidly deteriorating polls. Polling also takes on an important function in the midst of an election year pandemic. First, and foremost, they indicate how the people feel about the response, which is a key determinant of the ability to reopen the economy, the central policy on which the Trump administration has built its campaign. Thus, I begin with public opinion polls about reopening.

As shown in Figure 20, the public has been unpersuaded by the spin of the Trump administration and its supporters. The upper graph shows that people are still concerned about the spread of the virus. While the early April figure was almost 90% (concerned), the late June figure was still 76%. Of equal importance, it had grown by 7 percentage points (almost one-tenth) since the second wave had become evident in places that had opened.

Infections were the central focus of the SIR models and the cost-benefit analysis. Concern about infections is the key to reopening the economy, which is captured in the middle and lower graphs of Figure 20. The middle graph restricts the respondents to activities in which they engage. Eating and working are the only activities that almost all people (80%-90%) are willing to engage in. Bars, movies, sporting activities, air travel have the smallest percentage of willingness (about one-third). Other activities are in between. Beyond the basic necessities of grocery shopping and working, between one-third and two-thirds are unwilling to engage in the activities.

The willingness to engage in all of the activities had declined as the second wave came into view. Schools, generally closed until September in any event, churches and shopping malls were right in the middle and they suffered the largest declines in late June (-14%, -15%, -17%), which constitute marginal decline of about one-quarter. The activities with the least or largest reductions in willingness, were the ones that had been the focal point of discussion in the reopening debate: bars, beaches, recreation, schools and churches.

FIGURE 20: PUBLIC OPINION ABOUT THE PANDEMIC AND ACTIVITIES



Sources: Ipsos, Q. 1 and 3. Engine, ORC Weekly Survey.

The lower graph approaches this question from a broader perspective. While the Ipsos question was directed to those who engage in the activities, the Engine question was posed to all respondents. It asks everyone, whether or not they engage in roughly the same set of activities or whether they would be willing to do so in light of the pandemic. The unwillingness to engage in activities is stronger here. As shown in the lower graph of Figure 20, between half and five sixths of the respondents to an early May poll (just about the time that the other nations went to zero new cases) opposed opening a variety of retail establishments. There was very little change in public opinion and general resistance to opening across time. The public did not feel comfortable with reopening.

An analysis of households where the person who routinely engages in activities is willing to do so, but the household members are not willing, which this data indicates may not be uncommon, would be interesting, but it would likely reinforce the basic conclusion that these surveys support. The Trump administration and its supporters had not convinced the public that the virus was sufficiently controlled to reopen. Given the strongly stated warnings of the experts and the second wave, public opinion was “right.”

The question on school opening in the middle graph is notable. Having failed to convince the public about the safety of activities and suffering mightily in disapproval, the administration sought wedge issues. Opening schools and day care centers was its gambit, in part because if children were not back in school or day-care full time, it would be difficult to get a large part of the work force back on the job.⁹⁸ However, by late June, a clear majority (54%) were not comfortable with opening schools and an even larger majority (58%) were not comfortable with day-care centers. These numbers were sharp increases over the course of a month, the same month in which the disapproval of the handling of the pandemic had grown most strongly.

The debate over school opening reproduces and recalls the debates and failures of the Trump administration and its supporters.⁹⁹ The European nations that the Trump administration points to have been very cautious in their opening and adopted policies that are anything but the “open full time full blast or you lose federal funding” that the Trump administration laid out then walked back. Two month before the Trump administration seems to have discovered school as a new political wedge issue with the failure of the virus to “disappear,” the nations opening schools pointed to were in a very different status with the virus and took a much more measured approach. A look at those nations shows they¹⁰⁰

- 1) start from a place that the U.S. has failed to reach, very low rates of infection
- 2) are very sensitive to risk of a second wave
- 3) committed to science advancing understanding of children, their vulnerability to infections and transmission,, particularly when asymptomatic COVID-19 interacts with the routine illnesses children in school are vulnerable to
- 4) monitoring all health
- 5) implementing general advice on the spread of the virus
 - Testing
 - Distancing which shrinks class sizes generally leading to staggering of days
 - Building physical barriers

Eliminating large groups.

5) challenged by the lack of teachers, in general, and the reduction in numbers due to infection.

Simply put, the very things that the Trump administration had failed to do to control the virus were needed to open schools. Yet again, contradicting the CDC guidelines, it pushed ahead and the public skepticism was almost as great on schools as other aspects of opening, as noted above.¹⁰¹

Clearly the political situation was deteriorating, driven by the handling of the virus. Figure 21 shows three polls that illuminate the political situation. All cover the year, 2020. The upper poll presents the 538 estimate of Trump's job approval rating. I use all adults, because polls based on registered voters miss the dramatic changes in the electorate that appear to be taking place. The numbers are adjusted by 538 for the quality of the polls. The middle poll is a Morning Consult poll on the public evaluation of President Trump's handling of the pandemic. The bottom graph shows a comparison with George W. Bush approval ratings with a focus on his response to Hurricane Katrina. The public came to see his response as poor and it had huge political implications.

As the top polling shows Trump was not very popular in the election years. President Trump's net approval ratings were below water by 5%-10% before the pandemic. The COVID-19 response could have changed that. Initially there was a positive bump, which is typical when a leader faces a crisis.¹⁰² The bump dissipated quickly and President Trump gave a national address, then began to attend the COVID-19 briefings, which were quickly turned in to press events. Approval of his handling and his overall rating deteriorated very rapidly. The net negative was about twice as large as it had been in the months before the virus.

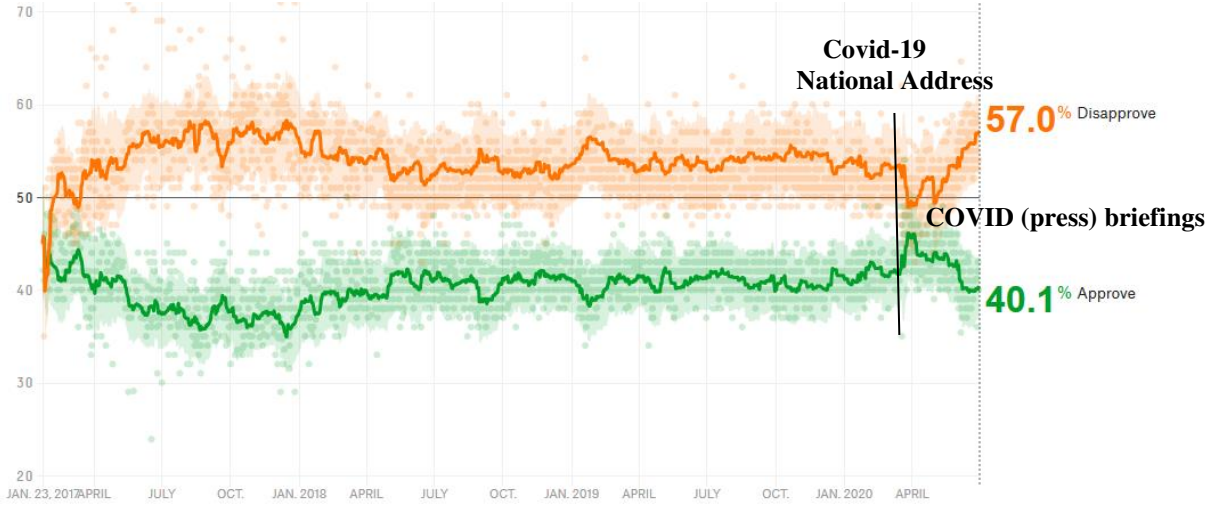
This trend can be appreciated by looking at George W. Bush and the reaction to Katrina (the bottom graph in Figure 21). Before the hurricane, his approval rating looked like President Trump's, a little below water. His ratings improved slightly for a short period but then began a steady decline for 4 months, which is the period of time between the late June second wave and the 2006 presidential election. Bush was not on the ballot since he was in his second term, but in the next major election, the 2006 mid-terms, the Republicans lost control of both houses of Congress.¹⁰³

Trump's political problem in the polls, which drew louder and louder claims of "fake" news can be seen in the Real Clear Politics average of all general election polls that included a Trump-Biden head-to-head matchup. (see Figure 22). The net negative for Trump (advantage for Biden) doubles in size from mid-May to early July.

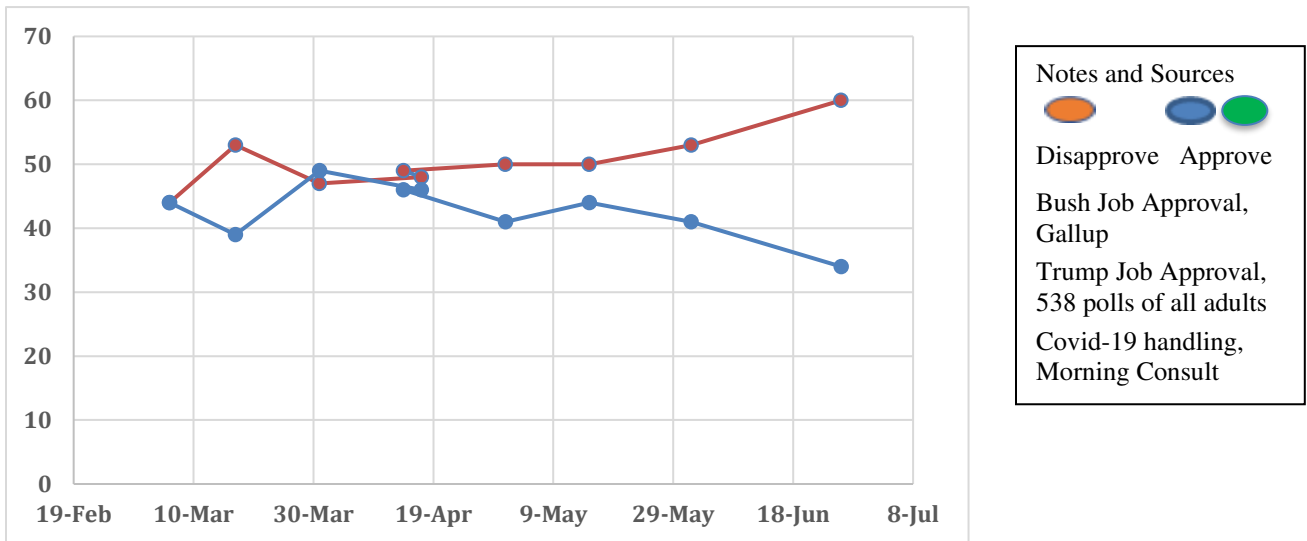
In the midst of the second wave, Trump declared that the COVID-19 pandemic would disappear --"I think we are going to be very good with the coronavirus. I think that, at some point, that's going to sort of just disappear.,"¹⁰⁴ a claim that is not part of the 54 counted by the *Washington Post*. The Secretary of the Treasury repeated the claim that there would be a "snap-back V shaped recovery. Two other officials at Congressional hearings.¹⁰⁵ Powell of the Fed contradicted Mnuchin, and Fauci of the CDC contradicted Trump, with a much more ominous view. The economic good news, such as it was, did not reflect the full impact of the second wave and the need to restrict behaviors recognized by governors supporting Trump.

FIGURE 21: THE POLITICAL COST OF MISHANDLING CRISES

Trump Job Approval (2020)



Trump Handling of Covid-19 (Feb. 29- June 26)



Bush Job Approval (2005)

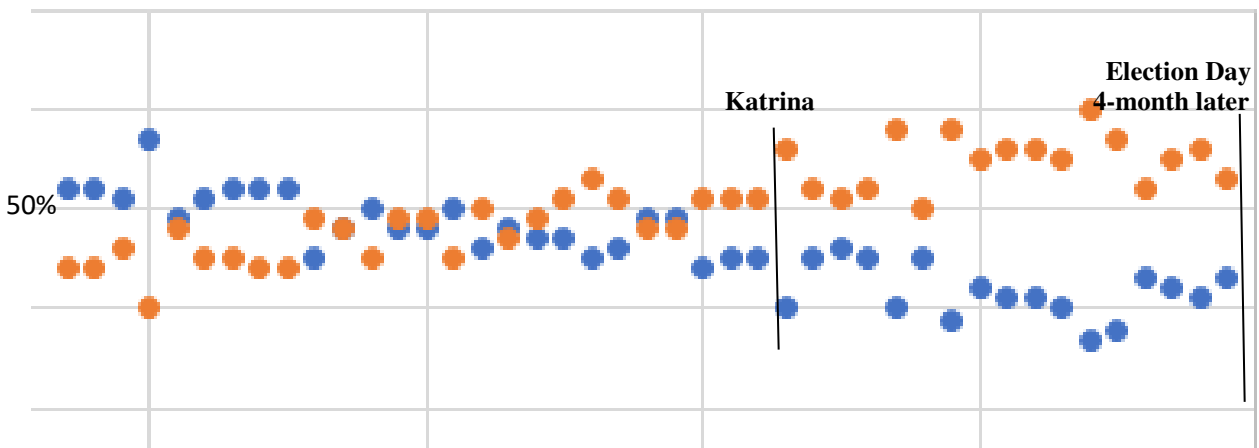
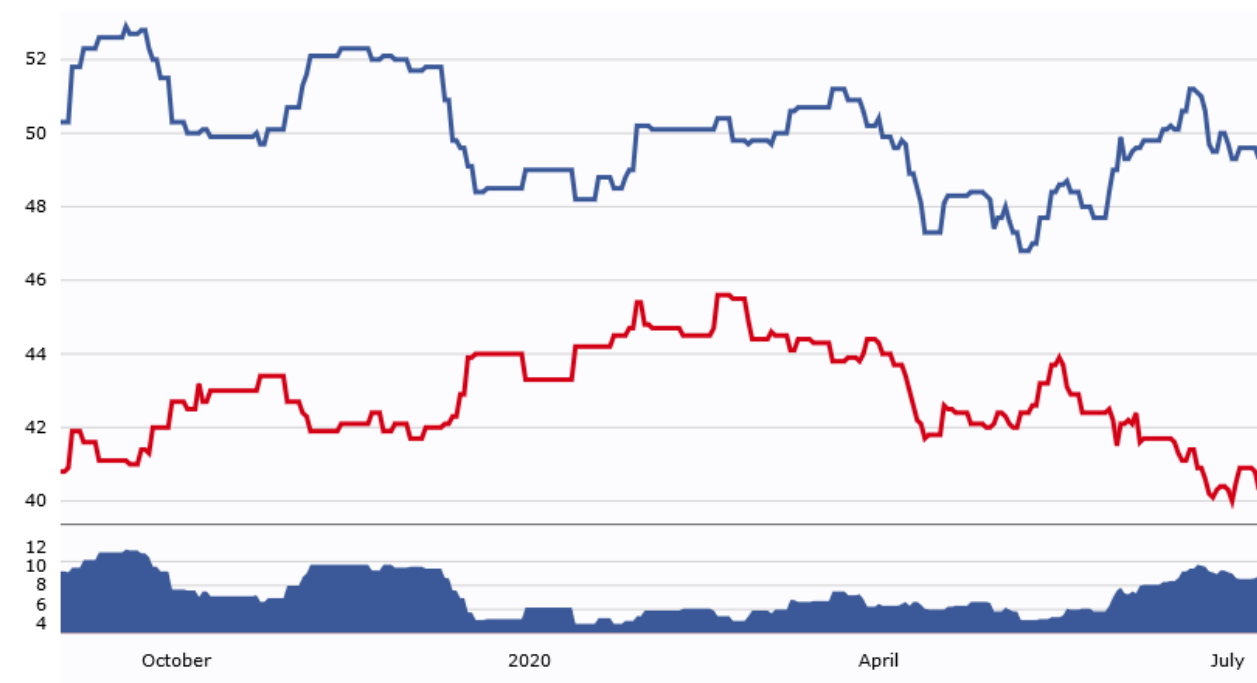


Figure 22: Average of Biden-Trump Head-to-Head Polls



Source: Real Clear Politics

Here one can well ask, why did the strategy that Trump had been using for over three years as president stop working? The above analysis suggests at least half a dozen reasons.

- 1) The strategy had never worked all that well. President Trump's favorability had been net negative in all three years. The virus was a blown opportunity to improve it.
- 2) The warfare against fact, data and science had always been a guerilla war, buried in executive agencies and in the weeds of experts. Now it had broken in public view and it was ugly, with heavy-handed attempts to control the message.
- 3) Much the same was true of the Trump *modus operandi* of saying things and taking positions that were contracted by reality, caused a flip-flop, dismissed as a "joke" or had to be walked back. Spread out over weeks or months, with unclear consequences, these gaffes could be side stepped and hidden, but the virus was different.
- 4) Questions that could easily be dismissed as nasty, which the president refused to answer under normal circumstances, suddenly began look like legitimate concerns that should be addressed.
- 5) During a pandemic, the consequences of being wrong were severe and people were paying attention. The flip flops were frequent, "it's nothing and will go away", drugs, testing, face masks, social distancing, the second wave could not be so easily dismissed. They took a toll and turned the pandemic into a Katrina moment.

- 6) It was difficult to hide the harm (bury the body to use a market speculation term).¹⁰⁶ It was easy to bury the task force, which all but stopped meeting,¹⁰⁷ but the real problems could not be hidden -- there were just too many bodies.

Obviously, the uncertainties are large, but it remains clear that the benefits of a much faster, more rigorous non-pharmaceutical response for a lot longer than the Trump administration and its supporters contemplated at any time during the pandemic, far outweighed the costs. The political economy of the Trump administration and its supporters trumped (pun intended) not only the public health economics, but also reasonable economic, cost-benefit analysis. My claims that the Trump administration and its supporters were ill-prepared, waited too long to implement policy, were weak in their suppression/mitigation efforts, and urged reopening far too soon, are supported by “simple” cost-benefit analysis.

Given the life cycle of the pandemic, it would take the miracle disappearance that President Trump had talked about four months earlier to support the optimism. Being unwilling, perhaps incapable due to market fundamentalist ideology to implement vigorous policy interventions, all the Trump administration and its supporters could do is urge voluntary actions to quell the spread. After six months, the political spin of market fundamentalism continued to be based on hope and hype and the likely basis for continued failure.

5. BROADER IMPLICATIONS FOR A HUGE, INTERCONNECTED GLOBAL POPULATION

Long before the pandemic of 2020, the Trump administration had made it clear that it had little use for science and even less for multinational institutions. In an ever-increasing number of areas, the Trump administration is at war with the direction of global development demanding to restore U.S. dominance. The administration's policy direction was antithetical to the powerful forces driving the economy and ecology.

The early example *par excellence* of the “cookie cutter” was the Paris Accord on Climate Change. Like COVID-19, climate change has achieved strong scientific support and consensus among policymakers with clear rules for decision making in the face of incommensurable, uncertain and intergenerational impacts. While these fundamental characteristics of the outcomes and the fact that the “cause” of the problem inevitably crosses global boundaries are the foundation for the similarity between the COVID-19 and climate challenges. The literature comparing the two yields immediate and practical concerns, like what characteristics do effective responses share,¹⁰⁸ what lessons can be learned from grappling with the climate challenge,¹⁰⁹ and *vice versa*.

Across the board, developments in the 21st century make it clear we live in a global context that cries out for global governance. These include not only to the biosphere and the atmosphere (climate change), which are “obvious” as problems of a global ecology (a global commons), where borders are continually crossed, but also to the economic sphere. In a sense, the central elements of 21st century life are in the economic sphere including technological (digital) revolutions in communications (broadband) and advanced controls linked to immense computing capacity (including the Internet of things) that have similar characteristics of spread and flow that deeply affect economic and social life. COVID-19 and climate change command attention, but global interconnectedness extends strongly to economic systems, including finance, where coordination across central banks is crucial (e.g. the Great Recession) and energy (dramatically falling cost of wind, solar and batteries),¹¹⁰ which makes an economic viable response to the climate challenge feasible.

The opinion piece in the Guardian that raised the alarm about the attack on science also drew a dire analogy between climate change and the pandemic:

Like the climate crisis, epidemics are not merely accidents of nature. They have anthropogenic drivers... The implications of this analysis are radical. But the doctors and epidemiologists who make it are not revolutionaries. What they have insistently called for is a global public health infrastructure commensurate with the risks that globalisation entails...

Covid-19, like the unprecedented hurricanes and devastating fires of 2019, will be dismissed as a freak of nature. That is comforting. It will be good for business in the short run. But it sets us up for another crisis. If it is right that Covid-19 is a crisis like no other, what is to be feared is that there will be more like it to come.¹¹¹

CLIMATE CHANGE

In addition to being one of the first areas where the Trump administration applied the “cookie cutter” to global issues, climate change stands out as an example for two reasons. First, several commenters noted the similarity between COVID-19 and climate change¹¹², flowing from the fact that the global ecology is interconnected. Second, a few weeks of lockdown demonstrated the potential for a “clean” environment. Pictures of smog-filled streets were replaced by blue skies. Of course, the challenge (great question) is how to clear the air while still enjoying economic progress. The Paris Agreement was a unanimous, general expression and plan of how to achieve that goal—unanimous until the U.S. withdrew.

Volumes have been written about the global response to climate change. Here I stress three fundamental values of the Paris Agreement that were anathema to the Trump administration and its supporters – 1) progressive sharing of responsibility and resources with wealthy nations helping the less wealthy, 2) collective global governance, and 3) the integration of science into a system of values.

The Paris Report and Agreement outline progressive policies in that they note the greater resources, technological skill and the higher rate of emissions in the more advanced nations. They call for commensurately greater obligations on these nations including reductions in emissions, funding and transfer of technology. The goal of sustainable development is balanced and progressive in the Agreement: “Developing countries . . . are encouraged to move over time towards economy-wide emission reduction or limitation targets in the light of different national circumstances.”¹¹³ Developed countries not only take the lead in financing and enhancing technology transfer, they “shall continue taking the lead by undertaking economy-wide absolute emissions reduction targets.”¹¹⁴ As larger emitters with more resources, they are held to a higher standard.

The documents are market and efficiency-oriented policies in the sense that, while goals are set by governments, markets and public-private partnerships are a primary vehicle to achieve the goals.¹¹⁵ They favor efficiency and renewables for economic reasons.¹¹⁶ The Report points to the “need to promote universal access to sustainable energy in developing countries, in particular in Africa, through the enhanced deployment of renewables.”¹¹⁷ The focus on renewables, which use local resources, also furthers other goals, including a desire to promote the “development and enhancement of endogenous capacities and technologies. . . [so they] can take ownership of building and maintaining capacity over time and space.”¹¹⁸

In the political dimension, the governance solution had to be geographically polycentric and vertically coherent, affording flexibility to the parties. It recognized the need to respect the autonomy of nations. This required collaborative solutions and reciprocity around shared goals. The techno-economic context also had to take into account the Agreement’s political structure. While the principles of global governance were dismissed by authoritarian governments and groups who believe that anything short of a direct and explicit order is too weak to work, in a commons, where no single centralized authority exists, it was the only approach that could be effective. It is also an approach that has been documented to work on a smaller scale thousands of times in the literature on common pool resources and on a global scale of the Internet.

Cooperation and social pressures (norms) are the only approach in a space where individual nations assert authority.

THE PAPAL ENCYCLICAL

The number of studies and analyses documenting the severe challenge of climate change and the need for a response is legion. I have reviewed them elsewhere¹¹⁹ and specifically examined the Paris Agreement as a response. This strong consensus was rejected by the Trump administration and its supporters. The U.S. became the only nation to withdraw from the agreement and stands as the only nation outside of the Agreement. Additional science will certainly receive the “political hit job from a liberal institution” label. Therefore, to drive the three key points home, I turn to a very different source – the Papal Encyclical on Climate Change, *Laudato Si*.

Table 2 extracts key observations on five key issues in the response to climate change from the Papal Encyclical. The economic analysis and policy conclusion directly contradict the Trump administration’s discussions and decisions with respect to climate change, and they mirror the fundamental issues I have shown drove the inadequate response to COVID-19. In both cases, the bottom line of the analysis is clear: President Trump and his supporters were driven by the image of a 19th century political economy that is ill-suited to a 21st century world.

Laudato Si, put the Catholic church in strong support of climate action. Although one can point to a steady stream of progressive Papal Encyclicals, like the need to ensure fair treatment of labor¹²⁰ and concerns about the poor and powerless, which is consistent with its moral framework,¹²¹ the Encyclical on Climate Change triggered an intense reaction, as if its principles were a bolt of lightning. It was attacked by free-market climate deniers and anti-market (even Marxist) analysts¹²² and it was criticized by economists supporting climate policy as insufficiently appreciative of the role of markets and technology,¹²³ even before the Papal visit to Washington,¹²⁴ which gave it greater prominence in the U.S. debate. It was widely recognized as an extremely important development in the global debate over climate change and energy poverty.

Laudato Si’ bridges the universes of the pastor and the scholar, consistent with Pope Francis’ Jesuit background. It recognizes the importance of technology and markets, and reconciles the complementary roles of the scientific and religious world views by insisting that science, technology, and markets should be embraced only when they are guided by social values—one of the most important being the commitment to promoting social justice. The conflict between market fundamentalism and this moderate, science-based recognition of a shared, global challenge demonstrates that it is neither the suddenness of onset nor immediacy of impact that defines the conflict, but rather the tension between fundamental values and worldviews.

CLIMATE CHANGE AND COVID-19, BENDING THE CURVES

Although I said I would not review the myriad of studies that support and agree with the Encyclical, I will close with an observation of a University of California Study. There are several reasons to do so.

TABLE 2: PRINCIPLES FOR MEETING THE CHALLENGE OF CLIMATE CHANGE IN THE PAPAL ENCYCLICAL, *LAUDATO SI*

The social definition of property and the limitations of markets in dealing with externalities: The environment is one of those goods that cannot be adequately safeguarded or promoted by market forces.” Once more, we need to reject a magical conception of the market, which would suggest that problems can be solved simply by an increase in the profits of companies or individuals. Is it realistic to hope that those who are obsessed with maximizing profits will stop to reflect on the environmental damage which they will leave behind for future generations? Where profits alone count, there can be no thinking about the rhythms of nature, its phases of decay and regeneration, or the complexity of ecosystems which may be gravely upset by human intervention. Moreover, biodiversity is considered at most a deposit of economic resources available for exploitation, with no serious thought for the real value of things, their significance for persons and cultures, or the concerns and needs of the poor. 140 Efforts to promote a sustainable use of natural resources are not a waste of money, but rather an investment capable of providing other economic benefits in the medium term. If we look at the larger picture, we can see that more diversified and innovative forms of production which impact less on the environment can prove very profitable.... 69 The Christian tradition has never recognized the right to private property as absolute or inviolable and has stressed the social purpose of all forms of private property. ... The Church does indeed defend the legitimate right to private property, but she also teaches no less clearly that there is always a social mortgage on all private property, in order that goods may serve the general purpose. 140 It is a matter of openness to different possibilities which do not involve stifling human creativity and its ideals of progress, but rather directing that energy along new channels.

The need for progressive policy and multilateralism. 69 The developed countries ought to help pay this debt by significantly limiting their consumption of non-renewable energy and by assisting poorer countries to support policies and programmes of sustainable development. The poorest areas and countries are less capable of adopting new models for reducing environmental impact because they lack the wherewithal to develop the necessary processes and to cover their costs. We must continue to be aware that, regarding climate change, there are differentiated responsibilities.... 121 An interdependent world not only makes us more conscious of the negative effects of certain lifestyles and models of production and consumption which affect us all; more importantly, it motivates us to ensure that solutions are proposed from a global perspective, and not simply to defend the interests of a few.... 35 This is due partly to the fact that many professionals, opinion makers, communications media and centres of power, being located in affluent urban areas, are far removed from the poor, with little direct contact with their problems. They live and reason from the comfortable position of a high level of development and a quality of life well beyond the reach of the majority of the world’s population.

Science and technology in pursuit of social values under the precautionary principle: 74–75 Technoscience, when well directed, can produce important means of improving the quality of human life, from useful domestic appliances to great transportation systems, bridges, buildings and public spaces. It can also reproduce art and enable men and women immersed in the material world to “leap” into the world of beauty. 142 Put simply, it is a matter of redefining our notion of progress. A technological and economic development which does not leave in its wake a better world and an integrally higher quality of life cannot be considered progress. Frequently, in fact, people’s quality of life actually diminishes—by the deterioration of the environment, the low quality of food or the depletion of resources—in the midst of economic growth. We have the freedom needed to limit and direct technology; we can put it at the service of another type of progress, one which is healthier, more human, more social, more integral... A technological and economic development which does not leave in its wake a better world and an integrally higher quality of life cannot be considered progress. 136 The Rio Declaration of 1992 states that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a pretext for postponing cost-effective measures” which prevent environmental degradation. This precautionary principle makes it possible to protect those who are most vulnerable and whose ability to defend their interests and to assemble incontrovertible evidence is limited.

The urgency of action: 106 The time has come to pay renewed attention to reality and the limits it imposes; this in turn is the condition for a more sound and fruitful development of individuals and society. We urgently need a humanism capable of bringing together the different fields of knowledge, including economics, in the service of a more integral and integrating vision... 142 Halfway measures simply delay the inevitable disaster. Put simply, it is a matter of redefining our notion of progress. A technological and economic development which does not leave in its wake a better world and an integrally higher quality of life cannot be considered progress. Frequently, in fact, people’s quality of life actually diminishes—by the deterioration of the environment, the low quality of food or the depletion of resources—in the midst of economic growth.

New governance structures: 133 Results take time and demand immediate outlays which may not produce tangible effects within any one government’s term. That is why, in the absence of pressure from the public and from civic institutions, political authorities will always be reluctant to intervene, all the more when urgent needs must be met. To take up these responsibilities and the costs they entail, politicians will inevitably clash with the mindset of short-term gain and results which dominates present-day economics and politics. 100 It sometimes happens that complete information is not put on the table; a selection is made on the basis of particular interests, be they politico-economic or ideological. This makes it difficult to reach a balanced and prudent judgement on different questions, one which takes into account all the pertinent variables. Discussions are needed in which all those directly or indirectly affected (farmers, consumers, civil authorities, scientists, seed producers, people living near fumigated fields, and others) can make known their problems and concerns, and have access to adequate and reliable information in order to make decisions for the common good, present and future. This is a complex environmental issue; it calls for a comprehensive approach which would require, at the very least, greater efforts to finance various lines of independent, interdisciplinary research capable of shedding new light on the problem. 128 The twenty-first century, while maintaining systems of governance inherited from the past, is witnessing a weakening of the power of nation states, chiefly because the economic and financial sectors, being transnational, tends to prevail over the political. Given this situation, it is essential to devise stronger and more efficiently organized international institutions, with functionaries who are appointed fairly by agreement among national governments and empowered to impose sanctions. 154 If the laws are to bring about significant, long-lasting effects, the majority of the members of society must be adequately motivated to accept them, and personally transformed to respond. Only by cultivating sound virtues will people be able to make a selfless ecological commitment. Let us keep in mind the principle of subsidiarity, which grants freedom to develop the capabilities present at every level of society, while also demanding a greater sense of responsibility for the common good from those who wield greater power. But economics without politics cannot be justified, since this would make it impossible to favour other ways of handling the various aspects of the present crisis.

First, I began with a study from the University of California at Berkeley on the pandemic response and having argued for the similarity of the pandemic and climate change. A paper from the same institution outlining similar policies appropriate to climate change is in order.

Second, in fact, the title of the study is “Bending the Curve,” a phrase made popular by Governor Cuomo in this battle with the virus and the Trump administration.

Third, the executive summary is prefaced with a statement from the Governor of California praising the Papal Encyclical and echoing its urgent call for action, stressing even though harms in the future cannot be foreseen with precision, they pose a grave danger:

Speech given at the UN Foundation dinner in New York City in honor of the Vatican’s Pontifical Academy of Sciences for its role in shaping the Vatican’s position on climate change as espoused in Pope Francis’ encyclical, *Laudato Si.*’

“We must combine rigor and imagination to confront climate change: the rigor of scientific facts with the imagination to perceive what is now unseen – the dangers that lie ahead if we do not act.”¹²⁵

Fourth, as shown in Table 3, the 10 solutions offered cover the key issues raised in this paper, the urgent need to act, the important role of science and technology, reliance on markets and targeting government policy where necessary, vigorous efforts to create a strong multilateral governance model including national, state and local levels based on cooperative principles.

Fifth, California was extremely active in promoting the alternative approach that the Trump administration opposed. Governor Brown led the subnational and nongovernmental units to stay active in the Paris Agreement.

Sixth, in fact, the University of California which houses the Lawrence Berkeley Laboratory, was extremely active in demonstrating the feasibility and cost-effectiveness of the alternatives. The ten principles were backed up with a great deal of analysis and implementation.¹²⁶

Seventh, California was involved in a life or death struggle with the Trump administration over its right/ability to set independent standards for automobiles, something it had been doing, on-and-off for over forty years.

The struggle with California highlights one of the most important themes that links the failed response to both of the pandemics, the rejection of science and the failure to conduct proper cost-benefit analysis. The GAO notes that one of the key tools for gutting the climate policies of the Obama administration was to put a value on carbon that was one-seventh the value the Obama administration used.¹²⁷ In the case of one of the most cost-beneficial tools of climate policy, energy efficiency, which the Trump administration gutted, the key tools were overestimated costs and underestimated benefits, since energy efficiency is cost justified on strictly economic grounds, i.e.. it costs far less to save energy with more efficient technology than to consume it.¹²⁸

**TABLE 3: POLICIES FOR A CHALLENGE WITH INCOMMENSURABLE, UNCERTAIN OUTCOMES:
CLIMATE CHANGE**

1. Immediately by reducing short lived climate pollutants (SLCPs) and sustainably by replacing current fossil-fueled energy systems with carbon neutral technologies.
2. Foster a global culture of climate action through coordinated public communication and education at local to global scales. Combine technology and policy solutions with innovative approaches to changing social attitudes and behavior.
3. Deepen the global culture of climate collaboration. Design venues where stakeholders, community and religious leaders converge around concrete problems with researchers and scholars from all academic disciplines, with the overall goal of initiating collaborative actions to mitigate climate disruption.
4. Scale up subnational models of governance and collaboration around the world to embolden and energize national and international action.
5. Adopt market-based instruments to create efficient incentives for businesses and individuals to reduce CO₂ emissions.
6. Narrowly target direct regulatory measures — such as rebates and efficiency and renewable energy portfolio standards — at high emissions sectors not covered by market-based policies. Create powerful incentives that continually reward improvements to bring down emissions while building political coalitions in favor of climate policy. Terminate subsidies that encourage emission-intensive activities. Expand subsidies that encourage innovation in low-emission technologies.
7. Promote immediate widespread use of mature technologies such as photovoltaics, wind turbines, battery and hydrogen fuel cell electric light-duty vehicles and more efficient end-use devices, especially in lighting, air conditioning, appliances and industrial processes. These technologies will have even greater impact if they are the target of market-based or direct regulatory solutions.
8. Aggressively support and promote innovations to accelerate the complete electrification of energy and transportation systems and improve building efficiency. Support development of lower cost energy storage for applications in transportation, resilient large-scale and distributed micro-scale grids, and residential uses. Support research and development of a portfolio of new energy storage technologies, including batteries, supercapacitors, compressed air, hydrogen and thermal storage, as well as advances in heat pumps, efficient lighting, fuel cells, smart buildings and systems integration.
9. Immediately make maximum use of available technologies combined with regulations.
10. Regenerate damaged natural ecosystems and restore soil organic carbon to improve natural sinks for carbon (through afforestation, reducing deforestation and restoration of soil organic carbon).

Source: University of California, Bending The Curve: 10 Scalable Solutions for Carbon Neutrality and Climate Stability, October 27, 2015.

CONCLUSION: DECISION MAKING IN THE FACE OF EXTREME AMBIGUITY

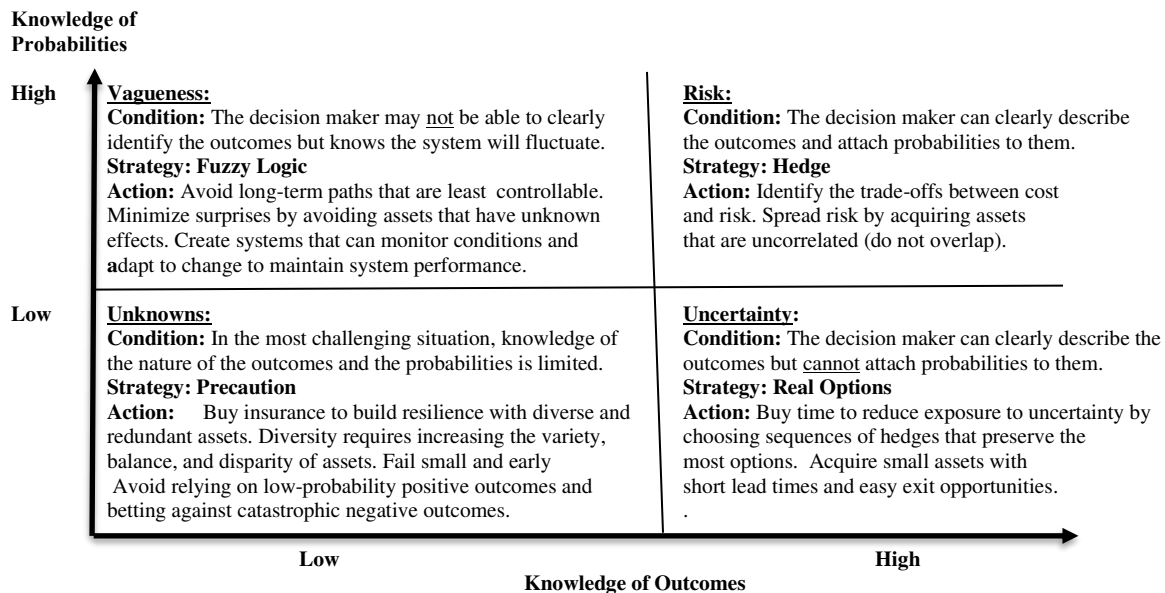
I have shown in this paper, that this bleak prognosis certainly fits the U.S. response to COVID-19, but I have also shown that this did not have to be the case. Other nations did much better. A century ago, the same was true of the response to the influenza pandemic.

This is certainly a positive note on which to conclude, but only a small number of policy making entities achieved this result. A “perfect” response is possible but difficult and leads to the ultimate question.

How does one make decisions – move in the right direction, i.e. head toward the “perfect” response – in the face of outcomes that are incommensurable and uncertain?

I have argued for the precautionary principle as a general proposition, but the last century has seen the development of a much more precise set of guidelines for what I call decision making under ambiguity (see Figure 23).¹²⁹

FIGURE 23: DECISION MAKING IN THE FACE OF INCOMMENSURABLE, UNCERTAIN OUTCOMES AMBIGUITY DEFINED BY FOUR REGIONS OF KNOWLEDGE



Source: Mark Cooper, The Political Economy of Electricity (Praeger, 2017), Tables 10.1, 11.2

I have shown the origin of this framework and its application to climate change elsewhere and will not reiterate that lengthy analysis. I have shown that the elements of this framework for decision making can be found in 20th literatures on economics, Black Swan theory, technology risk assessment, finance, military strategy, even space exploration. Market fundamentalists find this antithetical to their approach, because it rests on careful analysis of facts and data and principles that seek to minimize real world risk. Table 4 lists a set of recommendation from analysts at the University of Chicago for immediate responses to the COVID pandemic as a challenge with severe uncertainty.

TABLE 4:
POLICIES FOR A CHALLENGE WITH INCOMMENSURABLE, UNCERTAIN OUTCOMES COVID-19

- Buy some time upfront but use that time wisely. Use the time so purchased to gather information and build capacity to deal with the various scenarios that might play out.
- Given the high stakes, the out-of-pocket costs for most policy responses are likely to be round-off errors in the calculations.
- Design policies and disseminate information so as to leverage, rather than thwart, individual incentives and local information.
- Apply scarce resources, such as mandatory social distancing and the shutdown of economic activities, where they have the greatest marginal impact. Targeted policies are generally superior to blunt ones, but as shown above we need to know who and what to target, and when to target them.
- Isolate the most vulnerable—primarily the elderly and those with serious preconditions. This makes sense under any scenario. Such policies have proven very effective in protecting the most vulnerable in Iceland, Austria, and South Korea while reducing the overall cost of policy restrictions.
- Evidence indicates we are still in the early stages of the pandemic, when the level of overall infection is still low. In this phase, policies that identify those likely to be infected and trace individuals with whom the infected have had contact—STTQ—have a substantial comparative advantage over broad ex-ante restrictions (LSSD) that require economies of scale. Such targeted policies are preferable to broad ex-ante restrictions where the costs are high regardless of the level of infection.
- Enlist employers as a productive source of population testing, with the goal of allowing the economy to function while still reducing the transmission of the disease. Employers could be required to continually test employees working in at-risk situations, such as in an open office or factory floor, and to require quarantine (non-work at a minimum) for the infected.
- Provide guidelines for individuals and businesses to follow. Information is a public good. Markets work well when they aggregate information and allow those with a comparative advantage to specialize in providing a service.
- Any “buy-time” or long-term containment strategy will have to be based on an effective STTQ policy. Since the costs of those policies depend on the number of individuals infected, they can have low costs when infection rates are kept low.
- Social distancing policies can have their greatest benefit in limiting interactions where an infected individual can infect many others. This calls for limiting large interactions where one person may come in contact with many others, such as sporting events or concerts, or in densely populated areas.
- Given the great heterogeneity in the level of infection and the conditions generating new infections (such as density and interaction rates), the optimal extent and timing of policies are likely to differ substantially across time and space. This argues strongly for letting local actors have flexibility in how and when to impose restrictions. However, since areas do not represent closed systems and infection can leak out to other areas—an externality—there is a social benefit in pushing localities to adopt more aggressive strategies than they would on their own.

Source: “Some basic economics of COVID-19 policy, A look at the trade-offs we face in regulating behavior during the pandemic,” Mulligan, Casey B. Kevin M. Murphy, and Robert H. Topel, University of Chicago, Apr 27, 2020.

The important point for the present analysis is that there are precise principles for decision making when the precise nature of outcomes and the probability of those outcomes are not known. There are four conditions of ambiguity (regions in the terrain of knowledge) when decisions must be made. Specific principles can be applied to each condition and, guided by the overarching principle of precaution, they offer a clear sequence of policy choices. Both the California study of how to “bend the curve” on climate change and a study of decision making under the ambiguity of the pandemic, led to precisely the same principles for policy making. The logic is straightforward, you start by dealing risk (which involves only the risk of probabilities), but inform short-term decision to reflect greater ambiguities. In a sense, you work backwards from the unknown, unknown (Knightian risk) to the simple risk.

- Do everything in the short term to reduce risks (hedge to the limit of knowledge).
- Monitor, gather information and keeping options (real option analysis) by avoiding short and mid-term choice that limit later options.
- Avoid assets with unknown outcomes and create adaptive system (fuzzy logic).
- Exercise caution (the precautionary principle) by buying insurance, relying diversity and avoid low probability positive outcomes or betting against catastrophic negative outcomes.

Thus, the failed pandemic response COVID-19 and climate change and the attack on energy efficiency, put a huge, unnecessary burden on the public. These are losses imposed on public health and the economy because the Trump administration and its supporters adhere to a 19th century philosophy of political economy that is out of touch with and incapable of responding to the challenges of a 21st century ecology and economy. However, as Joseph Stiglitz,¹³⁰ one of the leading critics of market fundamentalism has pointed out, just showing the repeated failure of this political economy is not enough. One must have an alternative.¹³¹ That is the subject of a separate paper. Exposing the catastrophic failure of market fundamentalism in the response to COVID-19 is the first step, but building an alternative is a challenge that will be dealt with in a separate paper.

BIBLIOGRAPHY

Table 1 Source
Issue

- 7 Adam Brzezinski, et al., *Belief in Science Influences Physical Distancing in Response to COVID-19 Lockdown Policies*, Beker Friedman Institute Working Paper 2020-56
- 4 Adelman, Daniel, Thousands Of Lives Could Be Saved In The US During The COVID-19 Pandemic If States Exchanged Ventilators, *Health Affairs*, April 30, 2020.
- Alba, Monica, Carol E. Lee, and Kristen Welker, White House coronavirus task force fades further as fear of second wave emerges,” *NBC News*, June 3, 2020.
- Aldred, Jonathan, “Methodological and Ideological Options Justifying precautionary policies: Incommensurability and uncertainty,” *Ecological Economics*, December 2013.
- 14 Alexander, Nancy, *The Emerging Multi-Polar World Order: Its Unprecedented Consensus on a New Model for Financing Infrastructure Investment and Development, The November 2014 G20 Summit: Part II*, Heinrich Böll Stiftung, December 2014.
- Alltucker, Ken and Jayne O'Donnell “Trump claims 99% of coronavirus cases are 'totally harmless'; 'long haulers' with lingering symptoms say he's wrong,” *USA Today*, July 6, 2020.
- 4 Alvarez, Fernando E., David Argente and Francesco Lippi, *A Simple Planning Problem For Covid-19 Lockdown*, NBER Working Paper Series, April, 2020.
- 7 Amat, Francesc, et al, “Pandemics meet democracy: Experimental evidence from the COVID-19 crisis in Spain,” April 5, 2020
- 9 Atkeson, Andrew G., *Lockdowns and GDP Is there a tradeoff?*, *Federal Reserve Bank of Minneapolis*, March 24, 2020.
- 2 Atkeson, Andrew, How Deadly is COVID-19? Understanding the Difficulties with Estimation of its Fatality Rate, Federal Reserve Bank of Minneapolis, Working Paper, Staff Report 598, March 17, 2020.
- 9 Atkeson, Andrew, *What Will Be The Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios*, Federal Reserve Bank of Minneapolis, Working Paper, 595, March 17, 2020.
- 5 Baldwin Richar and Beatrice Weder di Mauro, “Introduction,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.
- 9 Baldwin, R and B Weder di Mauro, *Economics in the Time of COVID-19*, a VoxEU.org eBook, Centre for Economic Policy Research, 2020).
- 9 Baldwin, Richard and Eiichi Tomiurain, “Thinking ahead about the trade impact of COVID-19,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020
- Bandyopadhyay, S., ‘Coronavirus Disease 2019 (COVID-19): we shall overcome,’ *Clean Technologies and Environmental Policy*, 22, 2020.
- 9 Banker, Steve, “Social Distancing: Are the Costs of Shutting Down the Economy Worth it.” *Forbes Media.llc*, April 8, 2020.
- 7 Bavel, Jay J. Van et al, “Using social and behavioural science to support,” COVID-19 pandemic response,” *Nature Human Behavior*, May 2020.
- 5 Beatrice Weder di Mauro, “Macroeconomics of the flu,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.
- 12 Beland, Louis-Philippe, Abel Brodeur and Taylor Wright, “COVID-19, Stay-At-Home Orders and Employment: Evidence from CPS Data,” *IZA Institute of Labor Economics*, IZA DP No. 13282, May 2020.
- 7 Bennhold, Katrin, “Germany Reopens Its Schools, Inviting Both Relief and Risk,” *New York Times*, June 9, 2020.
- 4 Berger, David, Kyle Herkenho, and Simon Mongey, *An SEIR Infectious Disease Model with Testing and Conditional Quarantine*, manuscript, Duke University, March 2020.

- 12 Bethune, Zachary A., and Anton Korinek, *COVID-19 Infection Externalities: Trading Off Lives Vs. Livelihoods National Bureau of Economic Research*, Working Paper 27009, April 2020
- 13 Blake, Aaron, “The bad news for Trump, amid his coronavirus poll bump,” *Washington Post*, March 27, 2020.
- 1 Bloomberg, Mapping the Coronavirus Outbreak Across the World, *Bloomberg*, June 7, 2020,
- 10 Boone, Laurence, et al., “Tackling the fallout from COVID-19,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.
- 5 Bootsma, Martin C. J. and Neil M. Ferguson, “The effect of public health measures on the 1918 influenza pandemic in U.S. cities,” *PNAS* May 1, 2007.
- Boseley, Sarah, “Herd immunity: will the UK's coronavirus strategy work?,” *The Guardian*, March 13, 2020.
- 7 Boucher Ashley, “Donald Trump Says Joe Biden Is 'Going to Be Your President' Because 'Some People Don't Love Me, Maybe',” *People.com*, June 26, 2020.
- 13 Brady, Dennis, “Most American want government to do more on climate change, poll says,” *Washington Post*, June 26, 2020.
- Bremmer, Ian, “Why President Trump’s Effort to Expand the G-7 Is Doomed to Fail,” *Time*, June 4.
- Breuninger, Kevin and Christina Wilkie, “Trump’s tendency to deny his past statements has become more glaring during coronavirus,” *Bing.com*, May 1 2020.
- 11 Brokaw, Sommer, “Unemployment rise is higher than Great Recession,” *Pew Research Center*, June 11, 2020,
- 10 Buera, Francisco J., et al., *The Economic Ripple Effects of COVID-19*, World Bank, June, 2020.
- Bump, Philip, “The White House’s self-serving approach to estimating the deadliness of the coronavirus,” *Washington Post*, May 5, 2020
- Bureau of Economic analysis, *Gross Domestic Product, Corporate Profit*, database.
- Burke, Daniel “Pope Francis: ‘Revolution’ Needed to Combat Climate Change,” *CNN.com*, June 18, 2015.
- 5 Caley, P., D. J. Philp, and K. McCracken, “Quantifying social distancing arising from pandemic influenza. *Journal of the Royal Society Interface*,” 2008..
- 16 Cameron Hepburn, et al., “Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?,” *Oxford Review of Economic Policy*, May 4, 2020.
- 15 Carleton, Tamma, et al., *Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation costs and Benefits*, Becker Friedman Institute, University of Chicgo, August 12, 2019. □
- Carvalho, Ritvik, “U.S. stock market cheerleader-in-chief goes quiet in downturn,” *Reuters*, March 23, 2018.
- Cary, Peter, Republicans passed tax cuts — then profited,” *Vox and CPI*, January 24, 2020.
- Cassidy, John, “Anthony Fauci Is a Better Economist Than Donald Trump or Jared Kushner,” *New Yorker*, July 14, 2020.
- Cathey, Libby, “Jared Kushner sparks controversy after praising administration's response to the coronavirus pandemic as 'a great success story'/: The comments came one day after the U.S. surpassed one million COVID-19 cases,” *ABC News*, April 30, 2020.
- CBS News “Trump says masks are good” and make him look like Lone Ranger but does not support making them mandatory, *CBS News*, July 1, 2020.
- Centers for Disease Control and Prevention (CDC), Coronavirus Disease 2019,
- 1 Centers for Disease Control and Prevention (CDC), National Center for Health Statistics, Covid Data.
- 6 Cha Victor and Dana Kim, “A Timeline of South Korea’s Response to COVID-19,” *The Center for Strategic and International Studies*, March 27, 2020.
- Cha, Ariana Eunjung and Laurie McGinley, “Antimalarial drug touted by President Trump is linked to increased risk of death in coronavirus patients, study says,” *Washington Post*, May 22, 2020.
- 7 Chapman, Ben, “Coronavirus: UK faces deeper recession than any other country in the developed world, says OECD,” *Independent*, June 10, 2020.
- Chen Caroline, “Fast-Tracking” a Coronavirus Vaccine Sounds Great. It’s Not That Simple, “*Politico/AP*,” and June 20, 2020.

- Chiacu, Doina, "Fauci calls White House criticism of him bizarre, says 'let's stop this nonsense' and fight coronavirus," *Reuters*, July 15, 2020.
- 13 Chinni, Dante, "Poll: Trump's base is eroding," *NBC News*, June 7, 2020.
- 10 Christopher, Condon, Christopher and Dave Merrill, US Debt Swells to World War II Highs – *Bloomberg*, April 21, 2020
- 4 Chu, Derek K, "Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis," *The Lancet*, June 27, 2020
- 4 Cleevely, Matthew, et al. *A Workable Strategy for Covid-19 Testing: Stratified Periodic Testing rather than Universal Random Testing*, 15 April 2020
- 10 CNBC TV, "JPMorgan now sees economy contracting by 40% in second quarter, and unemployment reaching 20%," *CNBC TV*, April 9 2020.
- Congressional Budget Office (CBO), *The budget and economic outlook: 2020 to 2030*, January 2020.
- 14 Cooper Mark and Barbara Roper, *Reform of Financial Markets: the Collapse Of Market Fundamentalism and the First Steps to Revitalize the Economy*, April 2009
- 15 Cooper, Mark, "Governing the Global Climate Commons: The Political Economy of State and Local Action, After the U.S. Flip-Flop on the Paris Agreement," *Energy Policy*, 2018.
- 15 Cooper, Mark, "Prudent Resource Acquisition in a Complex Decision-Making Environment: Multidimensional Analysis Highlights the Superiority of Efficiency," *Current Approaches to Integrated Resource Planning*, 2011 ACEEE, 2011.
- 14 Cooper, Mark, "Renewable and distributed resources in a post-Paris low carbon future: The key role and political economy of sustainable electricity," *Energy Research & Social Science*, 19 (2016) 66-93.
- Cooper, Mark, "Restoring the Balance of Public Values and Private Incentives in American Capitalism," *Too Much Deregulation or Not Enough*, *Cato Institution*, November 1, 2002
- Cooper, Mark, "The Central Role of Wireless in the 21st Century Communications Ecology: Adapting Spectrum and Universal Service Policy to the New Reality," *Telecommunications Policy Research Conference*, September 2011
- Cooper, Mark, "The Failure of Market Fundamentalism: What Are The Issues In The ICT Sector?" *The New Economics of ICT: Implications of Post-Neoclassical Economics for the Information Communications Technology Sector*, *Columbia University*, March 20, 2009.
- Cooper, Mark, "The ICT Revolution in Historical Perspective: Progressive Capitalism as a Response to Free Market Fanaticism and Marxist Complaints in the Deployment Phase of the Digital Mode of Production." *Telecommunication Policy Research Conference Session on Innovation*, September 28, 2015.
- 15 Cooper, Mark, *A \$2 Trillion Mistake: Abandoning Four Decades of Energy Performance Standards that Save Consumers Money, Grow the Economy and Protect Public Health and the Environment A Comprehensive, Benefit-Cost Review of the "Command-But-Not-Control" Approach Applied to Light and Heavy-Duty Vehicles and Household Appliances*, Attachment to Comments of the Consumer Federation Of America, before the Department of Transportation Re: Notification of Regulatory Review, November 1, 2017.
- 15 Cooper, Mark, American Federalism at Its Best: Why The Environmental Protection Agency Should Grant A Clean Air Act Waiver To California For Its Advanced Clean Cars Program," *Environmental Protection Agency*, September 19, 2012
- 15 Cooper, Mark, *Energy Efficiency Performance Standards: Driving Consumer and Energy Savings in California*, California Energy Commission's Energy Academy, February 20, 2014.
- 15 Cooper, Mark, *The Political Economy of Electricity: Progressive Capitalism and the Struggle to Build a Sustainable Power Sector* (Praeger, 2017)
- 1 Covid Tracking Project, *the Atlantic*
- Coy, Peter, "As bad as things are, they've stopped getting worse, economists say," *Bloomberg*, May 4, 2020, 11:
- Coy, Peter, "Cheer Up, Everybody! The Recession Is ... Over?" *Bloomberg*, May 4, 2020.
- Crowe, J.D., Trump: 'I'm a cheerleader for the country,' *Al.com*, April 2, 2020.

- 10 Curran, Edna, “Guardians of the World Economy Stagger From Rescue to Recovery, *Bloomberg*, June 6, 2020,
Curran, Enda Guardians of the World Economy Stagger From Rescue to Recovery, *Bloomberg*, June 6, 2020,
- 8 Dale, Daniel, “Fact check: Trump claimed he was left 'no ventilators.' His administration just confirmed he had more than 16,000,” *CNN*, June 24, 2020.
- 3 Damien de Walque, Jed Friedman and Aaditya Mattoo, *Two Tests for a COVID-19 World*, The World Bank, April 2020.
- 16 Dixon, Hugo, “How a green economy could solve the post-coronavirus unemployment crisis,” *Independent*, June 9, 2020.
- 16 Djalante, Riyanti, Rajib Shaw, and Andrew DeWit, “Building resilience against biological hazards and pandemics: COVID-19 and its implications for the Sendai Framework,” *Progress in Disaster Science*, April 2020
Dmitrieva, Katia, “CBO Says Stimulus to Swell 2020 U.S. Budget Gap by \$1.6 Trillion,” *Bloomberg*, April 16, 2020.
- 10 Domm, P., ‘JPMorgan now sees economy contracting by 40% in second quarter, and unemployment reaching 20%’, *CNBC*, April 9, 2020.
- 11 Donnan, Shawn, "American Jobs Are Returning But An Ugly Summer Still Looms," *Bloomberg*, June 6, 2020.
- 3 Duque, Daniel, *Staged Strategy to Avoid Hospital Surge and Preventable Mortality, while Reducing the Economic Burden of Social Distancing Measures*, University of Texas at Austin, May 18, 2020.
- 6 Edwards, Haley Sweetland, “The Trump Administration Fumbled Its Initial Response to Coronavirus. Is There Enough Time to Fix It?” *Time*, March 19, 2020
- 9 Eichenbaum, Martin S., Sergio Rebelo, and Mathias Trabandt, *The Macroeconomics of Epidemics*, NBER Working Paper No. 26882, March 2020, Revised April 2020.
Erlhauge, Einer, Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory, Harvard John M. Olin Discussion Paper Series, October 16, 2009.
- 5 Fan, Victoria Y, Dean T Jamison, and Lawrence H Summers, “The Loss from Pandemic Influenza Risk,” in Jamison DT, Gelband H, Horton S, et al., editors. *Disease Control Priorities: Improving Health and Reducing Poverty*. 3rd edition., Washington (DC): The *International Bank for Reconstruction and Development / The World Bank*; November 27, 2017.
- 9 Faria-e-Castro, Miguel, *Fiscal Policy During a Pandemic*, Federal Reserve Bank of St. Louis, March 2020.
- 3 Ferguson, Neil M., et al., *Impact of Non-pharmaceutical Interventions (NPIs) to Reduce COVID- 19 Mortality and Healthcare Demand*, Imperial College, March 2020.
- 10 Fernandes, Nuno, *Economic effects of coronavirus outbreak (COVID-19) on the world economy*, Version 2.0, April 13, 2020.
- 13 Five-Thirty-Eight, *How (un)popular is Donald Trump*, 538.
- 3 Flaxman, Seth, et al., “Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe,” *Nature*, June 8, 2020.
- 7 Fogli, Alessandra and Laura Veldkamp, “Germs, Social Networks, and Growth,” *Review of Economic Studies* (forthcoming), 2020.
Francis, *Laudato Si’*, Encyclical letter on care for our common home, June 18, 2015.
- Friedman, Lisa, “G.A.O.: Trump Boosts Deregulation by Undervaluing Cost of Climate Change,” *New York Times*, July 14, 2020.
- 6 Frontline, “Covid-19”, *PBS*, June 16, 2020.
- 6 Frontline, “What Went Wrong?,” *PBS*, June 16, 2020.
- 13 Funk, Cary and Brian Kennedy, “How Americans see climate change and the environment in 7 charts,” *Pew*, April 21, 2020.
Geels, F. W., “Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case study,” *Research Policy*, 31, 2002.
- Gettys, Travis, “MSNBC’s Mika left speechless by Larry Kudlow’s boast,” *Flipboard*, June 15, 2020

- Gittleson, Ben, "Study finds earlier coronavirus restrictions in US could have saved 36,000 lives. Trump calls it a 'political hit job.'" *ABC News*, May 21, 2020.
- 3 Glass, R. J., Glass, L. M., Beyeler, W. E., and Min, H. J., "Targeted social distancing designs for pandemic influenza." *Emerging infectious diseases*, 2006.
- Global Thought Columbia University, Global Thought in the Age of Covid-19," June 2, June 12,
- 12 Glover, Andrew, Jonathan Heathcote, Dirk Krueger, and Jose-Victor Rios-Rull, *Health versus Wealth: On the Distribution Effects of Controlling a Pandemic*, University of Pennsylvania, 2020.
- Goldberg, Dan, 'It's going to disappear': Trump's changing tone on coronavirus for weeks, the president downplayed the threat of a global pandemic even as others warned otherwise, *Politico*, 03/17/2020
- Goldberg, Dan, "President Donald Trump speaks to reporters about the coronavirus outbreak in the White House press briefing room on Tuesday," *Politico*, March 17, 2020
- 10 Goldman Sachs, "Daunting Debt Dynamics," *Top of Mind*, May 28, 2020.
- 10 Goldman Sachs, *Bear essentials: a guide to navigating a bear market.*" March 9, 2020a.
- 10 Goldman Sachs, Measuring the Reopening of America: The GS US Reopening Scale: Steady progress though Scale remains at 1 (Week of May 27), May 27, 2020.
- 10 Goldman Sachs, *The sudden stop: A deeper trough, a bigger rebound*, March 31, 2020b.
- 15 Goldman School of Public Policy, *The 2035 Report*, University of Cal Berkeley, June 2020.
- Gössling, Stefan Daniel Scott and C. Michael Hall, "Pandemics, tourism and global change: a rapid assessment of COVID-19," *Journal of Sustainable Tourism*, April 27, 2020.
- 12 Gould, Elise and Valerie Wilson, *Black workers face two of the most lethal preexisting conditions for coronavirus—racism and economic inequality*, Economic Policy Institute, June 1, 2020.
- 3 Gourinchas, Pierre-Olivier, *Flattening the Pandemic and Recession Curves*, University of California, Berkeley, 2020.
- Gravelle, Jane G. and Donald J. Marples, *The Economic Effects of the 2017 Tax Revision: Preliminary Observations*, June 7, 2019.
- 4 Greenstone, M. and Nigam, V. (2020). *Does Social Distancing Matter?* University of Chicago, Becker Friedman Institute for Economics, Working Paper No. 2020-26.
- 9 Guerrieri, Veronica, et al., *Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages?*, Northwestern University, April 2020.
- 9 Hall, Robert E, Charles I. Jones, and Peter J. Klenow, *Trading Off Consumption and Covid-19 Deaths*, National Bureau of Economic Research, Working Paper 27340, June 2020.
- 14 Harvey, Fiona, "Covid-19 pandemic is 'fire drill' for effects of climate crisis, says UN official," *The Guardian*, June 15, 2020
- 5 Hatchett, Richard J. Carter E. Mecher, and Marc Lipsitch, "Public health interventions and epidemic intensity during the 1918 influenza pandemic" *PNAS* May 1, 2007 104 (18) 7582-7587; first published April 6, 2007.
- Heath, Joseph "The Pope's Climate Error," *New York Times*, June 20, 2015.
- 9 Heaven, Will Douglas, "A bloody battle or a long war? The ethical dilemma of tackling coronavirus," *MIT Technology Review*, March 18, 2020.
- Hebron, Julian, "U.S. Economy to Shrink 24% From April to June 2020: Goldman Sachs," *Basis Point*, March 20, 2020
- Helm, Dieter, "September 2020 (and March 2021): the temporary and the permanent impacts of coronavirus," March 25, 2020.
- Henbest, S., "The First Phase of the Transition is About Electricity, Not Primary Energy," *Bloomberg*, 2020.
- 16 Hepburn, C., et al., "The technological and economic prospects for CO2 utilization and removal," *Nature*, 2019. 7-97.
- 16 Hepburn, Cameron, et al., "Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?," *Oxford Review of Economic Policy* 36(S1)

- 13 Hoff, Madison, "6 in 10 US workers support going back to in-person learning in the fall, but a lot of people are worried schools aren't ready," *Business Insider*, Jul 14, 2020.
- Hovenkamp, Herbert, "Implementing Antitrust's Welfare Goals," *Fordham Law Rev.*, 2013.
- Hovenkamp, Herbert, "Robert Bork and Vertical Integration: Leverage, Foreclosure, and Efficiency," *Fordham Law Rev.* 2013. Hovenkamp, Herbert, "Implementing Antitrust's Welfare Goals," *Fordham Law Rev.*, 2013.
- 4 Hsiang, Solomon, "The effect of large-scale anti-contagion policies on the COVID-19 pandemic" *Nature*, June 8, 2020.
- Huang, Chye-Ching, "Senate's 'Pass-Through' Tax Cut favors Biggest Businesses and Wealthiest Owners," *Center on Budget Priorities*, November 14, 2017
- 1 IMF, G-20 Surveillance Note, G-20 Finance Ministers and Central Bank Governors' Meetings, *International Monetary Fund*, April 15, 2020
- 6 IMF, *Policy Responses to COVID-19*, Tracker.
- 16 Indrajit Mandal and Swades Pal, "COVID-19 pandemic persuaded lockdown effects on environment over stone quarrying and crushing areas," *Science of the Total Environment*, 2020
- Institute on Taxation and Economic Policy, "Multinational Corporations Would Receive \$413 Billion in Tax Breaks from Concretional Repatriation Proposal," *Institute on Taxation and Economic Policy*, December 16, 2017.
- 1 Johns Hopkins University, Coronavirus Resource Center
- Johnson, Jake, "Nobel Economist Joseph Stiglitz Warns US Barreling Toward Second 'Great Depression' Thanks to Trump-GOP Failed Covid-19 Response," *Wall Street Window*, April 23, 2020.
- Julian Hebron, U.S. Economy to Shrink 24% From April to June 2020: Goldman Sachs," *Basis Point*, March 20, 2020
- 13 Kahn, Chris, "Approval of Trump's coronavirus response sinks to lowest on record amid surge in cases," *Reuters/Ipsos poll*, June 24, 2020.
- 15 Karlsson, Mikael Eva Alfredsson and Nils Westling, "Climate policy co-benefits: a review," *Climate Policy*, 2020
- 8 Kelly Ayotte, Stephen Morrison, Julie Gerberding, *Ending the Cycle of Crisis and Complacency in U.S. Global Health Security*, Center for Strategic and International Studies, November 2019.
- 11 Kelly, Jack, "There's A Glaring, Misleading Error In The May Jobs Report: U.S. May Be At 20% Unemployment," *Forbes*, June 8, 2020.
- Kennedy, Simon, "Goldman Lowers U.S. GDP Forecast, Sees 4.6% Contraction in 2020," *Bloomberg*, July 5, 2020.
- 7 Kent Sepkowitz, "Why Is Germany's Coronavirus Death Rate So Low?" *CNN*, March 20, 2020.
- Kessler, Glenn, "Trump's claim that 99 percent of coronavirus cases are 'totally harmless,'" *Washington Post*, July 8, 2020.
- King, Jamilah, "Eight Trump Campaign Staffers Test Positive for Coronavirus After Tulsa Rally", *Mother Jones*, June 27 2020.
- 13 Knowles, David, "Polls deliver more bad news for Trump," *Yahoo News*, June 27, 2020.
- 12 Kochhar, Rakesh, "Hispanic women, immigrants, young adults, those with less education hit hardest by COVID-19 job losses," *Pew Research Center*, June 9, 2020.
- 11 Kochhar, Rakesh, "Unemployment rose higher in three months of COVID-19 than it did in two years of the Great Recession," *Pew Research Center*, June 11, 2020.
- 15 Kokudo, N., and H. Sugiyama (2020), 'Call for international cooperation and collaboration to effectively tackle the COVID-19 pandemic,' *Global Health & Medicine*, 2020.
- Kristof, Nicholas, "America's True Covid Toll Already Exceeds 100,000," *New York Times*, May 13, 2020
- Law, Tara, "FDA Head Declines to Defend or Deny Trump Claim That 99% of COVID-19 Cases Are 'Totally Harmless'," *Time*, July 5, 2020.
- Lee, Don, "Despite jobs rebound, Fed officials see long road to recovery from pandemic recession," *LA Times*, June 10, 2020.
- Lew, Alan A. (eds.), "Reset: Visions of Travel and Tourism after the Global COVID-19 Transformation of 2020," *Tourism Geographies*, 22(3) 2020.

- Limbaugh, Rush “The Pope’s Leaked Marxist Climate Rant [transcript],” *Rushlimbaugh.com*, June 16, 2015.
- Long, Heather, “The big factor holding back the U.S. economic recovery: Child care,” *Washington Post*, July 3, 2020
- Long, Heather, “The Trump Economy v. the Obama Economy in 15 Charts,” *The Washington Post*, August 20, 2019.
- Lu, Joanne, “World Bank: Recession Is The Deepest In Decades,” *OPB*, June 12, 2020.
- 8 Lutz, Eric, “How Trump Made America Far Less Prepared For Coronavirus: After ignoring warnings and ousting experts, the national security apparatus is now scrambling to address the pandemic,” *Vanity Fair*, March 12, 2020.
- 4 Maharaj, S., and Kleczkowski, A. (2012), “Controlling epidemic spread by social distancing: Do it well or not at all,” *BMC Public Health*, 2012.
- 10 Mann. Catherine L., “Real and financial lenses to assess the economic consequences of COVID-19,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.
- 7 Martin, Rachael, “Coronavirus Europe: Why is Germany’s Covid-19 death rate so low compared to other countries?” *MetroUK*, April 18, 2020.
- Martin, Stephen, “Contestability,” updated chapter from *Advanced Industrial Economics*, Wiley Blackwell, 2001,
- 6 Martinez, Didi, et. al. “Timeline: Trump administration's response to coronavirus: An examination of how the Trump administration responded to the coronavirus outbreak,” *NBC News*, March 17, 2020
- 4 McCarthy, Niall, “Study: Coronavirus Lockdowns Saved 3 Million Lives In Europe,” *Forbes*, June 9, 2020.
- McGinley, Laurie and Yasmeen Abutaleb, “White House effort to undermine Fauci criticized,” *Washington Post*, July 14, 2020
- 10 McKibbin, W. J. and Fernando, R., *The global macroeconomic impacts of COVID-19: Seven scenarios*, CAMA, March 2020.
- 10 McKibbin, W. J. and Fernando, R... *The global macroeconomic impacts of COVID-19: Brookings*, March 2, 2020.
- Miller, Rich, “Jerome Powell Sees Long Road Ahead for Jobs Market,” *Bloomberg*, June 11, 2020.
- Milligan, Susan, “ Trump’s Choice: The Economy or Human Lives: The president is running counter to public health experts – and some in his own administration – with his call to reopen the country soon,” *US News*, March 24, 2020.
- 5 Morse, Stephen S. “Pandemic influenza: Studying the lessons of history,” *PNAS* May 1, 2007.
- 12 Muellbauer, J., *The coronavirus pandemic and US consumption*. CEPR, 2020.
- 3 Mulligan, Casey B. Kevin M. Murphy, and Robert H. Topel, “Some basic economics of COVID-19 policy, A look at the trade-offs we face in regulating behavior during the pandemic,” University of Chicago Apr 27, 2020
- 13 Mutikani, Lucia, “U.S. consumer confidence rises; COVID-19, unemployment shadow lingers,” *Reuters*, June 12, 2020.
- Oh, Inae, “I Don’t Kid” Trump Says After Multiple Aides Insist He Was Kidding, *Mother Jones*, June 23, 2020.
- Oh, Inae, “Trump Refuses to Say Whether He Ordered to Slow Down Coronavirus Testing,” *Mother Jones* June 22, 2020.
- Oh, Inae, As Cases Surge, Pence Insists the Country Has Made “Truly Remarkable Progress,” *Mother Jones*, June 26, 2020.
- Onarian, Yalman, “Trump’s Tax Cut Hands \$32 Billion Windfall to America’s Top Banks,” *Bloomberg*, January 16, 2020.
- 10 Organization for Economic Co-operation and Development, *Evaluating the Initial Impact of COVID Containment Measures on Activity*, Mar 27, 2020.
- 13 Owens, John E., “Donald Trump’s short-lived coronavirus poll bump reveals his fundamental vulnerability,” *The Conversation*, May 14, 2020

- 7 Pallini, Thomas, "The OECD said coronavirus has triggered the worst global recession in almost 100 years - and laid out 2 scenarios for its impact on the world economy," *Business Insider*, June 10, 2020.
- Pancevski, Bojan, "Covid-19 Deaths in Germany Far Below Rates in Other Countries," *Wall Street Journal*, March 22, 2020.
- Panda, Ankit, "Trump Suggests a G7 Expansion to Include Australia, India, and South Korea. Is That Realistic?," *The Diplomat*, June 4.
- Parker Ashley, Robert Costa and Josh Dawsey, "Trump allies urge shift amid 'atrocious' polling," *Washington Post*, June 29.
- 3 Pei, Sasikiran Kandula, Jeffrey Shama, "Differential Effects of Intervention Timing on COVID-19 Spread in the United States," *medRxiv*, May 20, 2020.
- Pence, Mike, "Pence Tells Governors to Repeat Misleading Claim on Outbreaks," *New York Times*, June 15, 2020.
- Peoples, Steve, "US jobs surge: Trump sees sunshine, Biden 'no victory yet'," *AP*, July 3, 2020.
- 13 Perez, Juan, Jr., "Trump's push to reopen schools and day care gets chilly reception from voters," *USAToday/Ipsos*, May 19, 2020.
- Perrett, Connor, "Education Secretary Betsy DeVos says it should be 'the rule' to return students to classrooms in the fall," *Business Insider*, July 12, 2020.
- Perrigo, Billy, "Why Germany Has a Low Coronavirus Death Rate," *Time*, March 30, 2020.
- 6 Peters, Cameron, "A detailed timeline of all the ways Trump failed to respond to the coronavirus: The federal coronavirus response shows a president dead set on avoiding responsibility for the pandemic," *Vox*, June 8, 2020.
- 11 Pickert, Reade, "U.S. Jobless Claims Extend Gradual Decline, Remain Elevated," *Bloomberg*, June 11, 2020.
- Pirrong, Craig, *The Economics, Law, and Public Policy of Market Power Manipulation*, Kluwer, 1996.
- Prideaux, Bruce, Michelle Thompson and Anja Pabel, "COVID-19 can prepare global tourism for the economic transformation needed to combat climate change", *Tourism Geographies*, April 2020.
- Prideaux, Bruce Michelle Thompson & Anja Pabel, "Lessons from COVID-19 can prepare global tourism for the economic transformation needed to combat climate change," *Tourism Geographies*, Special Issue 2020.
- 3 Pueyo, Tony, "Coronavirus: Why You Must Act Now Politicians, Community Leaders and Business Leaders: What Your Should Do and When?," *Medium*, March 10, 2020.
- Qiu, Linda, "Analyzing the Patterns in Trump's Falsehoods About Coronavirus," *New York Times*, March 27, 2020.
- Quigley, William, "The Living Wage And Catholic Social Teaching," *America: The National Catholic Review*, August 28, 2006.
- 2 Rajgor, Dimple D. et al., "The Many Estimates of the COVID-19 Case Fatality Rate," *The Lancet*, March 2020.
- 14 Ramanathan, Veerabhadran, et al., *Bending the Curve: 10 scalable solutions for carbon neutrality and climate stability*, Executive Summary of the Report, University of California, October 27, 2015.
- Rampell, Catherine, "The myth of the strongest economy," *New York Times*, June 9, 2020.
- Rappeport, Alan and Jeanna Smialek, Mnuchin and Powell Offer Mixed Views of Economic Recovery, *New York Times*, June 30, 2020.
- 12 Reeves, M., P. Carlsson-Szlezak, K. Whitaker, and M. Abraham (2020), "Sensing and Shaping the Post-COVID Era." *Henderson Institute of the BCG Consulting Group*, April 3, 2020.
- 4 Reinicke, Carmen, "National mask mandate could save US from a 5% GDP hit, Goldman Sachs says," *Reuters*, Jun. 30, 2020.
- 3 Riley, Charles, "The world hasn't seen a recession this bad since the 1930s. The recovery is far from certain," *CNN Business*, April 14, 2020.
- Riyanti Djalante, Rajib Shawb and Andrew DeWit, "Building resilience against biological hazards and pandemics: COVID-19 and its implications for the Sendai Framework," *Progress in Disaster Science* 6 (2020).

- Robins, Denise, “Conservative Media v. the Pope: The Worst Reactions to Pope Francis’ Climate Change Encyclical,” *Media Matters*, June 18, 2015.
- 12 Rockeman, Olivia and Kyungjin Yoo, “Economists Still Expect a Slow Decline in U.S. Unemployment Rate,” *Bloomberg*, June 12, 2020.
- 15 Roehrl, Richard A. Wei Liu and Shantanu Mukherjee, UN/DESA Policy Brief #62: The COVID-19 pandemic: a wake-up call for better cooperation at the science–policy–society interface, Division for Sustainable Development Goals in UN Department of Economic and Social Affairs Economic Analysis, April 22, 2020.
- Romano, Andrew, “Trump on coronavirus: ‘If we stop testing right now, we’d have very few cases, if any.’ Why he’s dangerously wrong,” *Yahoo News*, June 16, 2020.
- Romano, Andrew, “Trump says it’s safe for schools to reopen. Fauci disagrees. What does the science say?,” *Yahoo News*, May 14, 2020.
- Romano, Andrew, July 4 poll: A staggering 62 percent of Americans no longer see America as Ronald Reagan’s ‘shining city on a hill,’ *Yahoo News/YouGov*, July 2, 2020.
- Roos, Meghan, “Three White House Staffers Have Now Tested Positive for Coronavirus, Including Trump’s let, Two Pence Employees,” *News Week*, May 8, 2020.
- 16 Rosenbloom, Daniel and Jochen Markard, “A COVID-19 recovery for climate,” *Science*, May 2020
- Samuels, Brett, “Kushner predicts much of the country will be ‘back to normal’ in June,” *The Hill*, April 29, 2020.
- Samuels, Brett, Trump calls study on taking earlier action against coronavirus a ‘political hit job,” *The Hill*, - May 21, 2020.
- 14 Sapinsley, Pat, “Blinded By Disbelief: COVID-19’s Devastation Is A Mirror For Climate Change,” *Forbes*, June 15, 2020.
- Sauter, Michael B., “Coronavirus impact: These states have the most underreported COVID-19 deaths,” *Wall Street Journal*, May 30, 2020.
- Sauter, Michael B., “How COVID-19 Is Being Underreported in Most States,” *24/7 Wall St.*, May 27, 2020.
- 9 Scherbina, Anna, *Determining the optimal duration of the COVID-19 suppression policy: A cost-benefit analysis*, AEI Economics Working Paper 2020-03, May 2020.
- 6 Sebenius Isaac and James K. Sebenius, *How many needless Covid-19 deaths were caused by delays in responding? Most of them*, STAT, June 19, 2020.
- Shear, Michael D., “After a Grim Forecast, Trump Extends Limits: Giving Up on a Goal of Reopening the U.S. by Easter.” *New York Times*, March 30, 2020.
- 6 Sheer, Michael D., The Lost Month: How a Failure to Test Blinded the U.S. to Covid-19, *New York Times*, March 28, 2020.
- Shepherd, William G. 1988, “Entry barriers, contestability, and predatory pricing,” *Revue d’Economie Industrielle*, 1988.
- Shepherd, William G., “‘Contestability’ vs. competition,” *American Economic Review*, September 1984.
- Shilling, F. and D. Waetjen. *Impact of COVID19 Mitigation on California Traffic Crashes*, UC Davis, 2020.
- Smith, Elliot, “Goldman Sachs bets against the dollar as economies reopen,” *CNBC*, June 1 2020:37
- Spokesperson of German Chancellor Angela Merkel on Social Distancing Measures to Fight COVID-19, March 30, 2020.
- 6 Stiglitz, Joe, “Why the market fails in a crisis,” Pitchfork Economics, May 19, 2020
- 7 Stock, James, *Coronavirus Data Gaps and the Policy Response to the Novel Coronavirus*, manuscript, Harvard University, 2020.
- Stracqualursi, Veronica, “Fauci says he wears a mask to be a symbol of what ‘you should be doing,’” *CNN*, May 27, 2020.
- Sun, Lena H., “The Trump administration is ill-prepared for a global pandemic,” *Washington Post*, April 8, 2020.

- Tankersley, James, “Trump Eyes New Tax Cuts for Next Stimulus Package,” *New York Times*, May 5, 2020.
- Tax Policy Center Staff, “Distributional Analysis of the Conference Agreement for the Tax Cuts and Jobs Act,” *Tax Policy Center*, December 18, 2017.
- The Hill, “237 Groups Oppose Major Business Tax Breaks In Cares Act,” *The Hill*, June 10, 2020
- 7 Thompson, Derek. 2020. “Denmark’s Idea Could Help the World Avoid a Great Depression.” *Atlantic*, March 21, 2020.
- 10 Thunström, Linda, et al., “The benefits and costs of using social distancing to flatten the curve for COVID-19,” University of Wyoming, Forthcoming *Journal of Benefit-Cost Analysis*, April 14, 2020,
- Timmons, Heather, “Fed Chair Powell warns of prolonged U.S. recession after coronavirus,” *Reuters*, May 13, 2020.
- 10 Toda, Alexis Akira, *Susceptible-Infected-Recovered (SIR) Dynamics of COVID-19 and Economic Impact*, University of California San Diego, 2020.
- Tooze, Adam, “we are living through the first economic crisis of the Anthropocene,” *The Guardian*, May 7, 2020.
- 8 Tracy, Abigail, “How Trump Gutted Obama’s Pandemic-Preparedness Systems,” *Vanity Fair*, May 1, 2020.
- Trump says he’ll stop taking hydroxychloroquine ‘in a day or two,’ Associated Press, May 20, 2020.
- Trump, Mt. Rushmore Speech, *White House*, July 3, 2020.
- UN Global Compact 20th Anniversary Leaders Summit, June 15, 2020
- United Nations, Framework Convention on Climate Change, 2015. Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December.
- Wagner, John et al., “Fauci, top health officials warn of covid-19 surge, contradict Trump on testing,” *Washington Post*, June 23, 2020
- 15 Wagner. Gernot, “Cost-Benefit Analysis in the Time of Coronavirus and Climate Change, Like climate economics, the economics of Covid-19 mean we need to take aggressive action, not incremental steps,” *Bloomberg Green*, April 1, 2020.
- Waldman, Tyler, White House Responds To Scathing Op-Ed By Gov. Hogan,” *WBAL NewsRadio*, July 16, 2020.
- Washington Post, “54 times Trump downplayed the coronavirus,” *Washington Post*, ending June 20, 2020
- Weinberg, Abigail, “The FDA Just Revoked Its Emergency Authorization of Hydroxychloroquine,” *Mother Jones*, June 15, 2020.
- Weinberg, Abigail, “During the 1918 Flu’s Second Spike, Americans Resisted Social Distancing. Could That Happen Again?” *Mother Jones*, June 11, 2020.
- Werner, Erica, Jeff Stein and Rachael Bade, “McConnell calls for five-year lawsuit shield for businesses as part of next coronavirus bill,” *Washington Post*, July 6, 2020
- White House, *2020 Economic Report of the President*, February 20, 2020;
- Whyte, Liz Easley, “Trump’s Favorite Weapon in the Coronavirus Fight: Deregulation,” *Vox ad Center for Public Integrity*, June 30, 2020. u
- Wilde, Robert, “Climate Expert: Marxists, Global Warming Extremists Control Vatican,” *Breitbart.com*, June 13, 2015.
- Winck, Ben, “The Atlanta Fed’s latest model estimates a 52.8% GDP contraction this quarter as the US grapples with COVID-19,” *MSN*, June 1, 2020.
- 10 World Bank, *Global Economic Prospects*, June 2020.
- 1 World Health Organization (WHO), *Rolling updates on coronavirus disease (COVID-19)*, 2020.
- 9 Wren-Lewis, Simon, “The economic effects of a pandemic,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.
- 7 Wyplosz, Charles, “The good thing about coronavirus,” in (Richard Baldwin and Beatrice Weder di-Mauro, Eds.), *Economics in the Time of COVID-19*, CEPR Press, 2020.

Zamarripa, Ryan, "5 Ways the Trump Administration's Policy Failures Compounded the Coronavirus-Induced Economic Crisis," *Center for American Progress*, June 3, 2020

END NOTES

¹ I use the term “**political economy**” in three ways to describe the models advocated by various policymakers. First, **political economy is a scientific discipline** with deep roots in economic social analysis. As Pearce puts it:

Political Economy: Until recent times the common name for the study of the economic process. The term has

connotations of the interrelationship between the practical aspects of political action and the pure theory of

economics. It is sometimes argued that classical political economy was concerned more with this aspect of the

economy and that modern economists have tended to be more restricted in the range of their studies (1984, p.342)

Second, a **political economy is a constellation of political and economic institutions** forming a coherent

system that produces the material conditions in which people live. I prefer “political economy” to “mode of

production” (Marx) or “mode of subsistence” (Smith) because it reminds us there are two spheres of

paramount importance—political and economic. The term “political economy” also reminds us that the

political is not only of equal importance, but in some senses more important.

Third, **political economy is also a pragmatic approach to action**. There is no separation between analytical

and political practice. We hope that our analysis is objective in the sense that it correctly depicts reality, but

there is no escaping the fact that subjectivity is inherent in all thought. The key to the ability to convince an

audience, the public, policy makers, that the view expressed depicts reality and identifies better policies is to

marshal evidence that is based on rigorous analytical methods.

If ever there was a policy that reflected the interconnection of politics and economics, it is the U.S. response to

the COVID-19 pandemic.

² *New York Times*, June 28. Tavernese, *New York Times*, online version updated June 29.

³ Olorunnipa, *Washington Post*, June 28.

⁴ Tavernese, *New York Times*, June 28.

⁵ Cooper, 2017; Cooper, 2018.

⁶ *Wikipedia*.

⁷ Denis, Brady, “Most American want government to do more on climate change, poll says,” *Washington Post*, June 26, 2020, Ipsos/ABC News Poll, July 10.

⁸ Hogan, 2020.

⁹ Waldman, *WBAL NewsRadio*, July 16.

¹⁰ Reed, *Baltimore Sun*, July 17.

¹¹ Chiayu, *Reuters*, July 15.

¹² Obviously, there are other opinions. They are rarely, if ever, supported with data or science, but frequently, especially during the pandemic, described as a “hunch,” or “gut feeling,” or “I see other data.” Analyses that try to justify these “feelings” are small in number and very weak in analytic methods.

¹³ Columbia is Sen, May 8; UCal is Hsiang, June 8.

¹⁴ Shear, *New York Times*, May 30.

¹⁵ Arizona, Texas and Florida were instituting new restriction, California was restoring old conditions to regain control of the virus, New York, New Jersey and the northeast were trying to preserve progress with restricted entry.

¹⁶ Trump, July 3, Mt. Rushmore Speech.

¹⁷ Pei, *Columbia*, May 20.

¹⁸ Samuels, *The Hill*, May 21; Gittleson, *ABC News*, May 21.

¹⁹ A study questioning the use of Hydroxi, was dismissed as a “Trump Enemy Statement.” (*AP*, May 23).

²⁰ This is the implication of the Asian cases (South Korea, Japan, Taiwan) discussed below.

²¹ *Merriam Webster online*, lacking a basis of comparison in respect to a quality normally subject to comparison

²² Hsiang, et al., *Berkeley*, June 8, 2020.

²³ *Id.*,

²⁴ The two other countries in this study are, not included among the large, high income democracies are China and Iran,. They have an income less than one-third of the U.S. Adding in these two nations, one with a very good response (China equal to South Korea) and one with a much less effective response (Iran about equal to France), does not change the basic conclusions. The U.S. had the worst policy among these nations.

²⁵ *Id.*

- ²⁶Pei, *Columbia*, May 20. p. 1, The counterfactual simulations indicate that had observed control measures been adopted one week earlier, the US would have avoided 703,975 (95% : 624,923-773,388) [61.6% (54.6%-67.7%)] confirmed cases and 35,927 (30,088-40,638) [55.0% (46.1%-62.2%)] deaths nationwide as of May 3, 2020... A more pronounced control effect would have been achieved had the sequence of control measures occurred two weeks earlier: a reduction of 960,937 (900,114-1,011,498) [84.0% (78.7%-88.4%)] cases and 53,990 (49,688-57,186) [82.7% (76.1%-87.6%)] deaths in the US.
- ²⁷ South Korea, Department of Health and Welfare, February 1, 2020, press release.
- ²⁸ *Id.*,
- ²⁹ *Id.*
- ³⁰ The Timelines in Table 1, all show these key events. The timelines offer links to specific documents to resolve questions of what was said or happened. Nevertheless, the parsing of words is interminable. Here the defenders of to policy insist tht the president never called the pandemic a hoax, as such, he called it a democratic hoax. (Egan, *CBS News*, February 28, “President Donald Trump accused Democrats of “politicizing” the deadly coronavirus during a campaign rally here on Friday, claiming that the outbreak is “their new hoax” as he continued to downplay the risk in the U.S. “Now the Democrats are politicizing the coronavirus,” Trump said. “They have no clue, they can’t even count their votes in Iowa.” “This is their new hoax,” Trump continued, adding that attacking the White House’s response to the coronavirus had become the Democratic Party’s “single talking point.” Trump has weaponized the word “hoax” throughout his presidency, using it to belittle and discredit former special counsel Robert Mueller’s probe into Russian election interference as well as his impeachment trial. He also has a long history of distrusting experts, most notably his own intelligence community and government scientists.”
- ³¹ *Guardian*, March 13, 2020.
- ³² Owen, *Foreign Policy*, March 17, 2020.
- ³³ *Guardian*, April 12, 2020
- ³⁴ Fernando, June 30, 2020, Mclaughlin, *Business Insider*, May 15, 2020.
- ³⁵ The quote is from, Hatchett, 2007. Other analyses that reach similar conclusion include: Morse, 2007, Ferguson, 2007; Puevo, 2020; Tabarrok, 2020; Markel, 2007.
- ³⁶ Scherbina, *AEI*, pp. 3-4.

- ³⁷ Cohen, *Forbes*, April 14, 2020; Sauter, *Wall Street Journal*, June 8; Ba Tran and Brown, *New York Times*, June 3, 2020.
- ³⁸ This is midway between the results of the Columbia study and South Korea.
- ³⁹ *NBC News*, June 30,
- ⁴⁰ Testimony of Allen Greenspan, U.S. House of Representatives, Committee on Oversight and Government Reform, October 23, 2008.
- ⁴¹ All quotes are from Chotiner, *New Yorker*, March 30.
- ⁴² Bump, *Washington Post*, May 5.
- ⁴³ Martin , 1984, and Stiglitz, 2019, provide early and late criticism from the economic point of view Hovenkamp, 2013s,b provide the antitrust perspective. is an immense amount of criticism in between, including two dozen Nobel laureates, as discussed in Cooper, forthcoming.
- ⁴⁴ Cooper forthcoming, Cooper, 2009, Cooper, 2015
- ⁴⁵ As one article pointed out, Republicans are a mix of vigorous supporters and quiet enablers of the Trump administration policies, although there were a few voices of opposition.
- ⁴⁶ In addition to the studies cited in Figures 1 and 2, which are based on studies from 2007, the experience in the U.S. was invoked in much more recent articles, see Fan, 2010, and Baldwin and Weder di Mauro, 2020.
- ⁴⁷ Michael D. Shear, Abby Goodnough, Sheila Kaplan, Sheri Fink, Katie Thomas and Noah Weilande, “The Lost Month: How a Failure to Test Blinded the U.S. to Covid-19: Aggressive screening might have helped contain the coronavirus in the United States. But technical flaws, regulatory hurdles and lapses in leadership let it spread undetected for weeks,” *New York Times*, March 29, 2020, pp. 1, 13.
- ⁴⁸ Michael D. Shear, Abby Goodnough, Sheila Kaplan, Sheri Fink, Katie Thomas and Noah Weilande, “The Lost Month: How a Failure to Test Blinded the U.S. to Covid-19: Aggressive screening might have helped contain the coronavirus in the United States. But technical flaws, regulatory hurdles and lapses in leadership let it spread undetected for weeks,” *New York Times*, March 29, 2020, pp. 1, 13.
- ⁴⁹ Michael D. Shear, , *New York Times*, March 30, 2020.
- ⁵⁰ *Id.*
- ⁵¹ The Trump administration went farther than the Bush administration by being very public about the disrespect for science. Although Dick Cheney had little respect for science, he counselled business interests to “match” the science so they could achieve their deregulatory goals. In a sense this approach was even more offensive because it

was not transparent, but it did, give the courts a chance to review the scientific basis of decisions under the Administrative Procedure Act.

⁵² Third party attacks and control of appearances appear to have become administration policy early in July (see, McGinley, *Washington Post*, July 14. After dueling with Fauci at press conference/briefings and blaming it the failed response on the CDC, Trump claimed to really like Fauci.

⁵³ Wikipedia The discussion in Wikipedia captures both the power and the openness of the principle: The principle is often used by policy makers in situations where there is the possibility of harm from making a certain decision (e.g. taking a particular course of action) and conclusive evidence is not yet available. For example, a government may decide to limit or restrict the widespread release of a medicine or new technology until it has been thoroughly tested. The principle acknowledges that while the progress of science and technology has often brought great benefit to humanity, it has also contributed to the creation of new threats and risks. It implies that there is a social responsibility to protect the public from exposure to such harm, when scientific investigation has found a plausible risk. These protections should be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result.

⁵⁴ Id.

⁵⁵ The positive test for the President's valet was widely reported and this was the start of a stream of positive tests that seemed to contradict the rosy view being offered by a variety of Trump administration officials and their supporters.

⁵⁶ The CDC was publicly overridden, being forced to modify or reinterpret at least three times, on reopening guidelines, on churches, and on schools,

⁵⁷ Garcia, *Yahoo News*, May 11, 2020.

⁵⁸ Tooze, *The Guardian*, May 7.

⁵⁹ Krugman, *New York Times*, July 7.

⁶⁰ Panda, *The Diplomat*, June 4. Bremmer, *Time*, June 4.

⁶¹ Stiglitz, *Power*, pp. 150; He has also described the failure of the Trump Administration's response, Stiglitz, 2020.

⁶² Several economic policymakers (Minuchin, Kudlow, Navarro, Kushner) had loud voices downplaying the virus and demanding economic opening,

⁶³ Crow, Al.com, belittled the cheerleading and identified 11 other times the president had belittled or downplayed the virus. 1. "We have it totally under control. It's one person coming in from China, and we have it under control. It's going to be just fine." (January 22) Trump: 'I felt it was a pandemic long before it was called a pandemic'

2. "We pretty much shut it down coming in from China." (February 2)

3. "The Coronavirus is very much under control in the USA. We are in contact with everyone and all relevant countries. CDC & World Health have been working hard and very smart. Stock Market starting to look very good to me!" (February 22)

4. "We're going very substantially down, not up. ... We have it so well under control. I mean, we really have done a very good job." (February 26)

5. "This is a flu. This is like a flu. ... It's a little like the regular flu that we have flu shots for. And we'll essentially have a flu shot for this in a fairly quick manner." (February 26)

6. "It's going to disappear. One day — it's like a miracle — it will disappear. And from our shores, we — you know, it could get worse before it gets better. It could maybe go away. We'll see what happens. Nobody really knows." (February 27)

7. "No, I'm not concerned at all. No, I'm not. No, we've done a great job." (March 8)

8. "So last year 37,000 Americans died from the common Flu. It averages between 27,000 and 70,000 per year. Nothing is shut down, life & the economy go on. At this moment there are 546 confirmed cases of CoronaVirus, with 22 death. Think about that!" (March 9)

9. "This is a very contagious virus. It's incredible. But it's something we have tremendous control of." (March 15)

10. "I don't believe you need 40,000 or 30,000 ventilators. You know, you're going to major hospitals sometimes, they'll have two ventilators. And now, all of a sudden, they're saying, can we order 30,000 ventilators?" (March 27)

11. "You call it germ, you can call it a flu. You can call it a virus. You can call it many different names. I'm not sure anybody knows what it is."

([March 27](#)); There was some question about whether the cheerleading really did any good before the pandemic, Carvalho, March, 2018.

⁶⁴ Tenkersley, *New York Times*, May 5, Whyte, *Vox CPI*, June 30.

⁶⁵ Werner, *Washington Post*, July 6, 2020.

⁶⁶ There is an ironic twist to this dispute with the G-7/20. Other members had used their leadership roles earlier to suggest that the member do more public health policy to prepare for pandemic.

Abe of Japan in 2015 (at the G-7) and Merkle of Germany (G-20) had made this a prominent issue, and the issue had certainly not escaped notice in the U.S. in this time frame. Kelly, 2019.

⁶⁷ Id.

⁶⁸ Pence, *New York Times*, June 15.

⁶⁹ Romano, *Yahoo News*, June 16.

⁷⁰ Law, *Time*, July 5.

⁷¹ Kessler, *Washington Post*, July 8, 2020.

⁷² The ways Covid-19 is much worse than the flu or a cold go beyond the fact that it is much more infectious and deadly. It was also not seasonal, continuing with even greater force into the summer. The only way it was like the flu or a cold, is that the immunity created by infection was short-lived at best.

⁷³ Cooper, forthcoming.

⁷⁴ Long, 2019; Gravel and Marple, 2019, Rampell, *Washington Post*, June 9, 2020.

⁷⁵ Stiglitz, 2019, Cooper, forthcoming.

⁷⁶ Cary, *Vox and CPI*, January 24.

⁷⁷ Cooper, forthcoming.

⁷⁸ Id.

⁷⁹ Goldman Sachs, May 27, 28, 31.

⁸⁰ Curran, *Bloomberg*, June 6.

⁸¹ Goldman Sachs made an explicit point that lurked in the background, warning that a Democratic victory in the election would result in the elimination of much, perhaps all, of the trickle-down tax cuts

⁸² Reincke, *Reuters*, Jun. 30.

⁸³ Chapman, *Independent*, June 10; Pallini, *Business Insider*, June 10; *International Monetary Fund*, April 15.

⁸⁴ Miller, *Bloomberg*, June 11.

⁸⁵ Donan, *Bloomberg*, June 6, 2020

⁸⁶ Gould, *Economic Policy Institute*, June 1

⁸⁷ Congressional Budget Office (CBO), *The budget* January 2020.

⁸⁸ Condon, *Bloomberg*, April 21.

⁸⁹ Bump, *Washington Post*, May 5.

⁹⁰ Kushner predicted the end by June/early July, Samuels, *The Hill*, April 29, Cathey, *ABC News*, April 30.

⁹¹ Thunström, et al., April 14.

⁹² Banker, *Forbes Media LLC*, April 8.

⁹³ Scherbina, *AEI*, May.

⁹⁴ Id., p. 1.

⁹⁵ Id., p. 1.

⁹⁶ Nate Silver of 538.

⁹⁷ Parker, *Washington Post*, June 29.

⁹⁸ Long, *Washington Post*, July 3, 2020

⁹⁹ Perrett, *Business Insider*, July 12, 2020.

¹⁰⁰ Benhold, *Washington Post*, May 11..

¹⁰¹ Hoff, *Business Insider*, July 14, 2020. Note that the percentage of those supporting a return to work (60%) mirror the polls cited above, and leaves the problem that a large minority does not.

¹⁰² Owen, *The Conversation*, May 14, 2020; Blake, *Washington Post*, March 27, 2020.

¹⁰³ It is also important to note that the myth of the invincible sitting president is just that, a myth. Two incumbents one from each party failed to get re-elected (Carter and George W.H. Bush). Two sitting presidents, who had not won election on their own, failed to get a second term (Ford was defeated, Johnson chose not to run). Before COVID-19, Trump's ratings were significantly worse than any president who was reelected since WWII and about the same as the two how lost their bid for reelection (Carter and George H.W. Bush). The pre-COVID-19 deficit and the COVID response provide strong support for the Republican concerns.

¹⁰⁴ *CBS News* July 1, 2020.

¹⁰⁵ Rapport, *New York Times*, June 30, Wagner, *Washington Post*, June 23.

¹⁰⁶ Pirrong, Craig, *The Economics, Law, and Public Policy of Market Power Manipulation*, Kluwer, 1996.

¹⁰⁷ Chiaxu, *Reuters*, July 15.

¹⁰⁸ Dixon, Hugo, "How a green economy could solve the post-coronavirus unemployment crisis," *Independent*, 9 June 2020 ; Harvey, Fiona, "Covid-19 pandemic is 'fire drill' for effects of climate crisis, says UN official," *The Guardian*, June 15, 2020; Sapinsley, Pat, "Blinded By Disbelief: COVID-19's Devastation Is A Mirror For Climate Change," *Bloomberg*, June 15, 2020;

¹⁰⁹ Wagner, Gernot, "Cost-Benefit Analysis in the Time of Coronavirus and Climate Change, Like climate economics, the economics of Covid-19 mean we need to take aggressive action, not incremental steps," *Bloomberg Green*, April 1, 2020.

¹¹⁰ Baldwin and Weder di Mauro, 2020, p.18, identify a dozen ways the economic sphere is inevitably and irretrievably impacted by "cross-border flows (propagation of economic shocks, or economic contagion) of:

- goods,
 - services,
 - knowhow,
 - people,
 - financial capital,
 - foreign direct investment,
 - international banking, and
 - exchange rates...
- beliefs...
policy reaction

Some of these flows within nations are..vectors connecting the medical and economic aspects of COVID-19.

- ¹¹¹ Tooze, Adam, ‘We are living through the first economic crisis of the Anthropocene,’ *The Guardian*, May 7, 2020;
- ¹¹² See sections 14-16 in Table 1.
- ¹¹³ United Nations, Framework Convention on Climate Change, 2015. Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December.
- ¹¹⁴ UNFCCC, Report, 21.
- ¹¹⁵ *Ibid.* 23.
- ¹¹⁶ *Ibid.* 2.
- ¹¹⁷ *Ibid.* p. 3
- ¹¹⁸ *Ibid.* 9–10.
- ¹¹⁹ Cooper, 2017,
- ¹²⁰ William Quigley, ‘The Living Wage And Catholic Social Teaching,’ *America: The National Catholic Review*, August 28, 2006
- ¹²¹ Francis, *Laudato Si*’, Encyclical letter on care for our common home, June 18, 2015; Daniel Burke, ‘Pope Francis: ‘Revolution’ Needed to Combat Climate Change,’ *CNN.com*, June 18, 2015.
- ¹²² Robert Wilde, ‘Climate Expert: Marxists, Global Warming Extremists control Vatican,’ *Breitbat.com*, June 13, 2015; Rush Limbaugh, ‘The Pope’s Leaked Marxist Climate Rant [transcript],’ *Rushlimbaugh.com*, June 16, 2015; Denise Robins, ‘Conservative Media v. the Pope: The Worst Reactions to Pope Francis’ Climate Change Encyclical,’ *Media Matters*, June 18, 2015.
- ¹²³ Joseph Heath, ‘The Pope’s Climate Error,’ *New York Times*, June 20, 2015.
- ¹²⁴ The *New York Times* ran front page and major stories five days in a row.
- ¹²⁵ Ramanathan, et al., 2015, p. ii.
- ¹²⁶ Goldman 2020.
- ¹²⁷ Friedman, *New York Times*, July 11
- ¹²⁸ This struggle with California highlights an aspect of the Trump administration policy that has not received as much attention as it should. President

Trump’s support for the energy industries of the second industrial revolution – coal, oil and nuclear – and his dislike for alternatives, like wind and solar, are well known. His war against energy efficiency is much less well known. I have shown that the economic and public health costs of rolling back or freezing efficiency standards for autos and appliances would impose public health costs and lost economic value of \$2 trillion dollars in the residential and commercial sectors. Adding in the industrial sector would more than double that to \$4 trillion. The savings are overwhelmingly efficiency-based (about 80%), lowering consumer costs by reducing consumption much more than the cost of the technology that is needed to do. Only about 20% come from the public health benefits of reduced pollution. No cost of carbon – benefit of reduced climate change – is included in the \$4 trillion. This demand-side benefit comes without any increase in the long-term, supply-side cost of energy. It is a net benefit directly comparable to the net benefits analyzed in the pandemic cost-benefit studies. The Energy Information Administration puts industrial energy consumption at about 24% more than the total of residential and commercial and at least as much petroleum based liquid fuels. Thus assuming an equal potential savings in the industrial sector is a very conservative estimate.

¹²⁹ Cooper, 2017, Chapter 10; Cooper 2011.

¹³⁰ Stiglitz, 2019.

¹³¹ The Luddites of the first industrial revolution, laborers who destroyed machines because society had not addressed their legitimate concerns, express the frustration that makes it possible to “sell” a return to an idealized past. The failure to articulate a clear alternative has opened the door to the attack, not only on the alternative, but also on science and analysis more generally