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RESEARCH REPORTS

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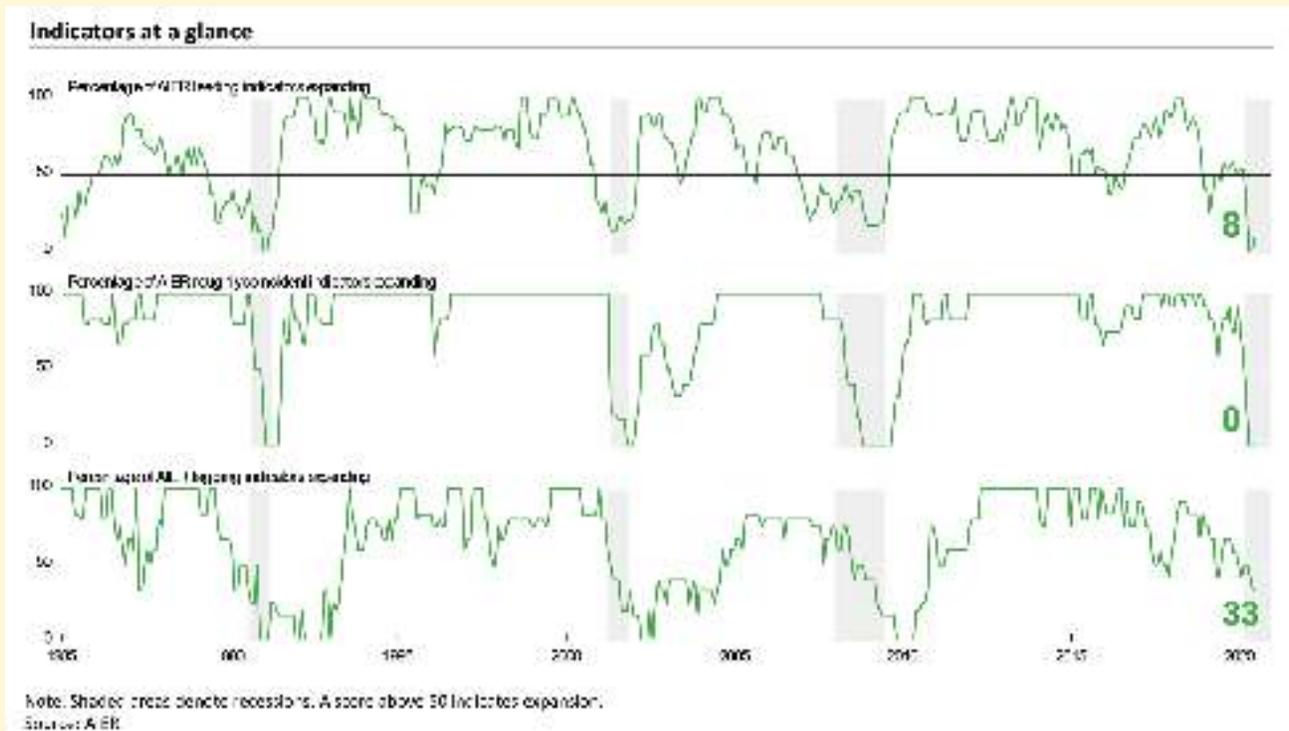
Month Four of the Panic: Where Is the Evidence?	
ROGER W. KOOPS	9
Bill Gates: From Entrepreneur to Supervillain	
BARRY BROWNSTEIN	15
When Will the Madness End?	
JEFFREY A. TUCKER	19
The Models Were Wildly Wrong about Reopening Too	
PHILLIP W. MAGNESS	21
What Economists Can Teach Epidemiologists	
PETER C. EARLE	24
The Dangers of Keeping the Schools Closed	
ETHAN YANG	29
Don't Let Hospitalization Trends Blind You to the Numbers Themselves	
STEPHEN C. MILLER	33
Did the US Lockdown Too Late and Open Too Soon?	
PHILLIP W. MAGNESS	38
Fauci Is Wrong: New York Did Not Do it "Correctly"	
FIONA HARRIGAN - PETER C. EARLE	41
The Economy after COVID-19	
JAMES D. GWARTNEY	44
The Economic Performance of Coronavirus Sweden	
JOAKIM BOOK	46

BUSINESS
CONDITIONS
MONTHLY

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AIER's Leading Indicators Index Takes A Small Step Up in July



The policy-induced economic coma implemented to fight the spread of COVID-19 resulted in a historic plunge in economic activity in the second quarter. Reopening has allowed some partial rebounds in some areas of the economy but has also coincided with a resurgence of new cases and deaths attributed to COVID-19. The potential for uncertainty, confusion, and risk aversion among consumers and businesses along with the renewed shutdown efforts in some areas put the germinating recovery at great risk.

Developments in three areas remain critical to the medium-term path for the economy. First, the progress of the outbreak as well as progress in developing an effective treatment and a vaccine have had mixed results over the past month. Record new daily cases and deaths have eased slightly but are a setback on the path to normalization. Furthermore, development of a vaccine is proceeding but that process is slow and is likely to take several more quarters. Second, responses by consumers, businesses, and policymakers to the rapidly changing environment have been detrimental to economic activity. Consumer sentiment remains mixed while some businesses continue to lay off workers as others file for bankruptcy, and policymakers contemplate reimplementing of restrictions. Third, many areas of the economy benefited from the initial push to reopen, posting sharp gains following massive declines. However, the rebounds are starting to falter in some areas and the outlook across the economy remains highly uncertain.

For the AIER Business Cycle Conditions indexes, results for July remain very weak. The Leading Indicators index increased slightly to a reading of 8 in July. The Roughly Coincident Indicators index held at 0 for a third month while the Lagging Indicators index remained at a cycle-low 33 for a second month

(see chart). The latest results suggest the possibility of a rapid recovery is diminishing quickly and that full recovery is likely to be more drawn out, uneven, and uncertain.

AIER Leading Indicators index rose slightly in July

The AIER Leading Indicators index rose to a reading of 8 (on a scale of 0 to 100) in July following two months at 0. The back-to-back zeros in May and June were the first pair of bottom readings since January and February 1991. The last time the Leading Indicators index posted more than two months at the lower bound was a three-month run from April through June 1980. The index has never stayed at zero for more than three consecutive months.

The one indicator to change in the July update was debit balances in margin accounts, improving from a negative trend in June to a positive trend in July. The improvement suggests investors are willing to take on more risk. The real stock price indicator remained in a negative trend through June (the latest data available). However, nominal stock prices posted gains in July, suggesting this indicator may show improvement in next month's update.

With just the one indicator showing improvement in the July update, the results show 11 of the leading indicators still in a downtrend, one in an uptrend, and none are neutral.

The Roughly Coincident Indicators index remained at 0 in July. The last time the coincident indicators index spent multiple months at zero was in 2008-09 when the index spent a total of 11 consecutive months at the bottom. The index spent five months at zero in 1991 and four months there in 1981-82. While some of the underlying data for the Roughly Coincident Indicators posted gains in the most recent month or two, the trends remain negative. An additional month (or possibly more) of recovery may be needed before solid uptrends

are established.

AIER's Lagging Indicators index held at 33 in July. None of the six individual indicators changed in July, leaving two indicators trending higher while four had unfavorable trends, and none were neutral.

Overall, the extremely weak results for both the Leading Indicators index and the Roughly Coincident Indicators index suggest that the probability of a rapid recovery is fading quickly. Many areas of the economy benefited from the initial push to reopen and posted sharp gains in May and June following massive drops in March and April. However, data for July indicate that the rebounds may be starting to falter in some areas. Those missteps suggest the outlook across the economy remains highly uncertain and that full recovery is likely many quarters away.

U.S. Economy Posts Record Decline During Lockdowns

Real gross domestic product plunged at a historic 32.9 percent annualized rate in the second quarter, down sharply from a severe -5.0 percent pace of decline in the first quarter. Over the past four quarters, real gross domestic product is down 9.5 percent, the worst year-over-year on record. On a nominal basis, gross domestic product tumbled 34.3 percent in the second quarter, putting the change from a year ago at -9.0 percent.

The historic plunge in the second quarter was expected as the outbreak of COVID-19 and government responses including shelter-in-place orders for individuals and the shutdown of non-essential businesses crushed the labor market and most economic activity.

Declines were widespread across the different areas of the economy. Real consumer spending declined sharply in the second quarter, falling at a 34.6 percent pace compared to a -6.9 percent rate in the first quarter. The decline was the result of drops

in spending on durable-goods (down 1.4 percent) nondurable-goods (-15.9 percent), and services (-43.5 percent, see second chart). Among the few bright spots, spending on recreational goods and vehicles rose at a 40.5 percent pace while motor vehicles and parts spending rose at a 5.5 percent annual rate. Notable weakness came from recreation services (-93.5 percent annualized), transportation services (-83.9 percent), food services and accommodations (-81.2 percent), and the catch-all other services (-59.1 percent).

Business fixed investment fell at a 27.0 percent annualized rate in the second quarter of 2020. That decline was led by a 37.7 percent fall in spending on equipment while spending on structures fell 34.9 percent and Intellectual-property investment fell at a 7.2 percent pace.

Residential investment, or housing, dropped at a 38.7 percent annual rate in the second quarter compared to a 19.0 percent gain in the prior quarter. Housing has shown some resilience in the current environment as extremely low interest rates combined with the desire by some people to move away from virus epicenters created some demand.

Businesses liquidated inventory at a \$315.5 billion annual rate (in real terms) in the second quarter, subtracting 3.98 percentage points from first-quarter growth after subtracting 1.34 percentage points in the prior quarter. Inventory liquidation has reduced real gross domestic product for five consecutive quarters.

Exports declined at a 64.1 percent pace, subtracting 9.38 percentage points, while imports declined at a 53.4 percent rate. Since imports count as a negative in the calculation of gross domestic product, a drop in imports is a positive for GDP growth, adding 10.06 percentage points. Net trade, as used in the calculation of gross domestic product, added 0.68 percentage points to overall growth.

Government spending rose at a 2.7 percent

annualized rate in the second quarter compared to a 1.3 percent gain in the first quarter, contributing 0.82 percentage points to growth versus a 0.22-point contribution in the first quarter of the year. Within that total, federal government spending rose at a 17.4 percent annual rate while state and local governments saw a 5.6 percent annualized decline.

Real final sales to private domestic purchasers, a key measure of private domestic demand, fell at a 33.7 percent annualized rate in the second quarter, versus a 5.8 percent pace of decline in the first quarter.

Reopening Boosts Consumer Optimism, But COVID Dampens the Outlook

The Consumer Confidence Index from The Conference Board declined in July, falling 5.7 points to 92.6 and leaving the index 31.8 percent below the year-ago level. The index is constructed so that it equals 100 in 1985. The main components of the index moved in opposite directions in July.

The present-situation component increased to 94.2 from 86.7, a 7.5-point gain though the July result is still 44.9 percent below July 2019. According to The Conference Board report, “Consumer Confidence declined in July following a large gain in June. The Present Situation Index improved, but the Expectations Index retreated. Large declines were experienced in Michigan, Florida, Texas and California, no doubt a result of the resurgence of COVID-19. Looking ahead, consumers have grown less optimistic about the short-term outlook for the economy and labor market and remain subdued about their financial prospects. Such uncertainty about the short-term future does not bode well for the recovery, nor for consumer spending.”

The expectations component lost 14.6 points to 91.5 from 106.1 in the prior month. The Conference Board report also noted, “Consumers, however, were less optimistic about the short-term outlook. The percentage of consumers expecting business

conditions will improve over the next six months declined from 42.4 percent to 31.6 percent, while those expecting business conditions will worsen increased from 15.2 percent to 19.3 percent. Consumers' outlook for the labor market was also less favorable. The proportion expecting more jobs in the months ahead declined from 38.4 percent to 30.6 percent, while those anticipating fewer jobs in the months ahead increased from 14.4 percent to 20.3 percent." The net percentage for jobs expectations (more jobs minus fewer jobs) came in at 10.3, down from 24.0 in June. This compares to a rise of 4.1 points to 1.3 in the net present situation labor index (current jobs plentiful minus current jobs hard to get).

Initial Claims for Unemployment Benefits Suggest Labor Market Recovery is Faltering

While reopening has helped some businesses recall some employees, the surge in new cases and deaths attributed to COVID-19 has led some states to slow the process of reopening and, in some cases, reverse course. Furthermore, ongoing restrictions on some businesses have limited revenues, resulting in bankruptcy and new layoffs. In addition, the potential for uncertainty, confusion, and risk aversion among consumers and businesses regarding the resurgence of COVID-19 cases is putting the nascent recovery at great risk.

For a second week in a row, initial claims for unemployment benefits rose slightly, suggesting labor-market conditions remain in flux. Initial claims for unemployment insurance totaled 1.434 million for the week ending July 25, a rise of 12,000 from the previous week's 1.422 million. The second consecutive rise follows a run of fifteen consecutive weeks of slowing claims after registering a record 6.87 million for the week ending March 28. Overall, the latest results extend to nineteen the total number of consecutive weeks of historically massive claims.

Prior to the lockdowns, initial claims were running around 250,000, less than a fifth of their current level.

The number of ongoing claims totaled 17.02 million for the week ending July 18, up 867,000 from the prior week. The insured unemployment rate was 11.6 percent, up from 11.1 percent in the prior week.

Consumer prices decline in 2Q

Consumer price measures from the gross domestic product report showed declines in the second quarter. The personal-consumption price index fell at a 1.9 percent annualized rate, down from a 1.3 percent pace in the first quarter. From a year ago, the index is up 0.6 percent, well below the Federal Reserve's 2 percent target. Excluding the volatile food and energy categories, the core PCE (personal consumption expenditures) index fell at a 1.1 percent pace, the first quarterly decline on record. From a year ago, the core PCE index is up 1.0 percent and has been at or below 2 percent since 2012.

Existing-Home Sales Rebound in June; Inventory Remains Tight

Sales of existing homes jumped 20.7 percent in June to a 4.72 million seasonally adjusted annual rate. Sales are still down 11.3 percent from a year ago and below the 5 to 6 million range they had been in since 2015.

Sales were up in all four regions in June: sales were up 31.9 percent in the West but are still down 13.6 percent from the year-ago level; sales rose 26.0 percent in the South, the largest region by volume, leaving that region's sales rate 4.0 percent below the year-ago pace; sales gained 11.1 percent for the month in the Midwest and are 13.4 percent below the June 2019 rate; and sales were up 4.3 in the Northeast, leaving sales 27.9 percent below year-ago levels.

Sales in the market for existing single-family homes, which account for around 90 percent of total existing-home sales, rose 19.9 percent in

June, coming in at a 4.28 million seasonally adjusted annual rate. From a year ago, sales are off 9.9 percent. The June pace is about in line with the dip in early 2014 but below the range of 4.4 million to 5 million since early 2015.

By region, sales for existing single-family homes followed the same pattern as total existing homes: sales were up 30.8 percent in the West but are still down 12.4 percent from the year-ago level; sales rose 24.2 percent in the South, leaving that region's sales rate 2.5 percent below the year-ago pace; sales gained 11.7 percent for the month in the Midwest but are 12.5 percent below the June 2019 rate; and sales were up 4.9 percent in the Northeast, leaving sales 25.9 percent below year-ago levels.

Condo and co-op sales posted a 29.4 percent surge for the month, but still leaving sales 22.8 percent behind the June 2019 pace. Sales came in at a 440,000 pace for the month versus 340,000 in May. Sales of condos and co-ops are only slightly ahead of the lows from the 2008-2009 recession.

Total inventory of existing homes for sale rose 1.3 percent to 1.57 million in June, pushing the months' supply (inventory times 12 divided by the annual selling rate) to 4.0 from 4.8 in May. For the single-family segment, the months' supply also fell, to 3.8 from 4.6 while the condo and co-op months' supply fell to 5.3 from 6.6. Months supply for the single-family segment is very low by historical comparison.

Though mortgage rates are hitting record-low levels, unemployment has surged and the outlook remains highly uncertain, suggesting lending may be somewhat restrained as lenders grow more cautious. Furthermore, resurging COVID-19 cases and deaths may discourage buyers and sellers. Nevertheless, there are anecdotal stories of urban dwellers seeking temporary and permanent housing alternatives, providing a bit of a bump up in demand.

CAPITAL MARKET PERFORMANCE

(Percent change)

	July	Latest 3M	Latest 12M	Calendar Year			Annualized		
				2019	2018	2017	3-year	5-year	10-year
Equity Markets									
S&P 1500	5.4	12.4	8.3	28.3	-6.8	18.8	9.1	8.8	11.3
S&P 500 - total return	5.6	12.9	12.0	31.5	-4.4	21.8	12.0	11.5	13.8
S&P 500 - price only	5.5	12.3	9.8	28.9	-6.2	19.4	9.8	9.2	11.5
S&P 400	4.5	13.2	-5.2	24.1	-12.5	14.5	1.9	4.4	9.4
Russell 2000	2.7	13.0	-6.0	23.7	-12.2	13.1	1.3	3.6	8.6
Dow Jones Global Large-Cap Index	4.7	12.0	6.2	23.8	-10.4	42.9	5.4	5.6	6.6
Dow Jones Global Large-Cap ex-U.S. Index	3.7	11.4	-1.4	18.2	-15.7	41.0	-0.9	0.8	1.9
STOXX Europe 600 Index	-1.1	4.8	-7.6	23.2	-13.2	7.7	-1.9	-2.1	3.4
Bond Markets									
iShares 20-plus Year Treasury Bond ETF	4.3	2.6	28.7	11.5	-4.2	6.5	11.3	6.9	5.5
iShares AAA - A Corporate Bond Fund	2.4	4.7	10.2	9.1	-5.2	2.9	3.9	3.0	NA
Commodity Markets									
Gold	10.7	15.9	38.3	18.7	-1.7	12.6	15.9	12.5	5.3
Silver	34.9	57.0	46.1	16.7	-8.3	3.8	12.8	10.6	3.1
CRB all commodities	4.9	6.9	-6.3	-1.9	-5.4	2.2	-5.1	-1.6	-1.5

Sources: Barrons, Commodity Research Bureau, Dow Jones, Frank Russell, iShares, Standard & Poor's, STOXX Europe 600, Refinitiv.

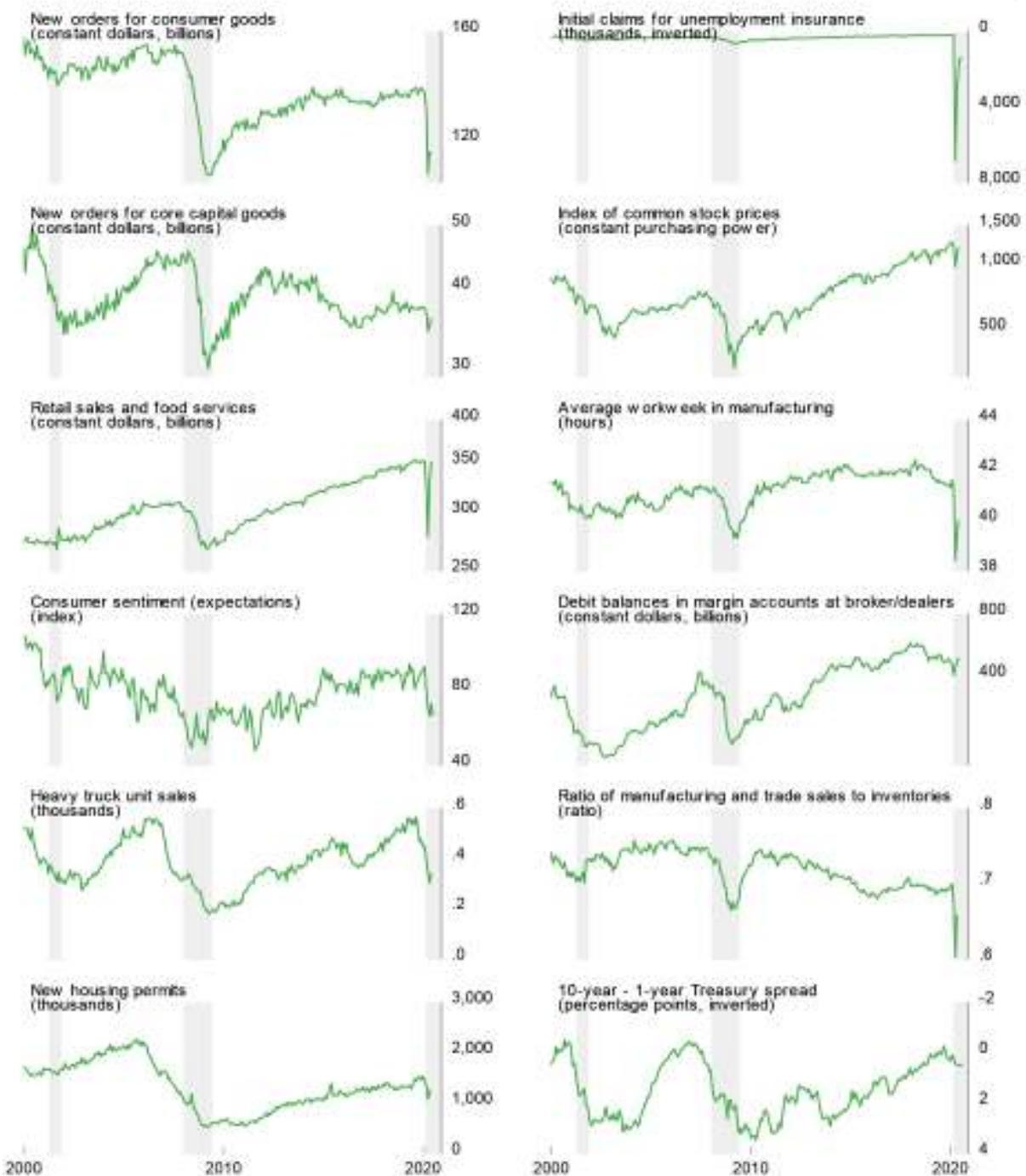
CONSUMER FINANCE RATES

(Percent)

	July	Latest 3M	Latest 12M	Average for Year			Average over Period		
				2019	2018	2017	3-year	5-year	10-year
30-yr. fixed mortgage	3.0	3.1	3.5	3.9	4.5	4.0	4.0	3.9	4.0
15-yr. fixed mortgage	2.5	2.6	2.9	3.4	4.0	3.3	3.5	3.3	3.3
5-yr. adjustable mortgage	3.0	3.1	3.3	3.6	3.8	3.2	3.5	3.3	3.2
48-month new car loan	NA	5.1	5.3	5.4	4.3	4.2	5.1	4.8	4.9

Sources: Bankrate, Federal Reserve.

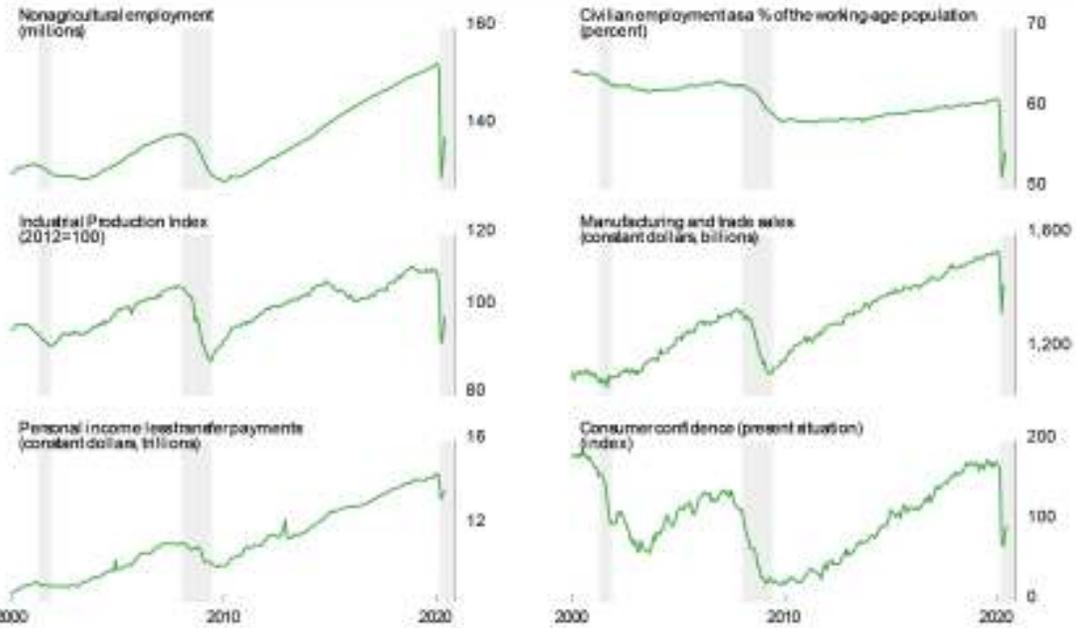
LEADING INDICATORS (2000-2020)



Note: Shaded areas denote recessions.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The Conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

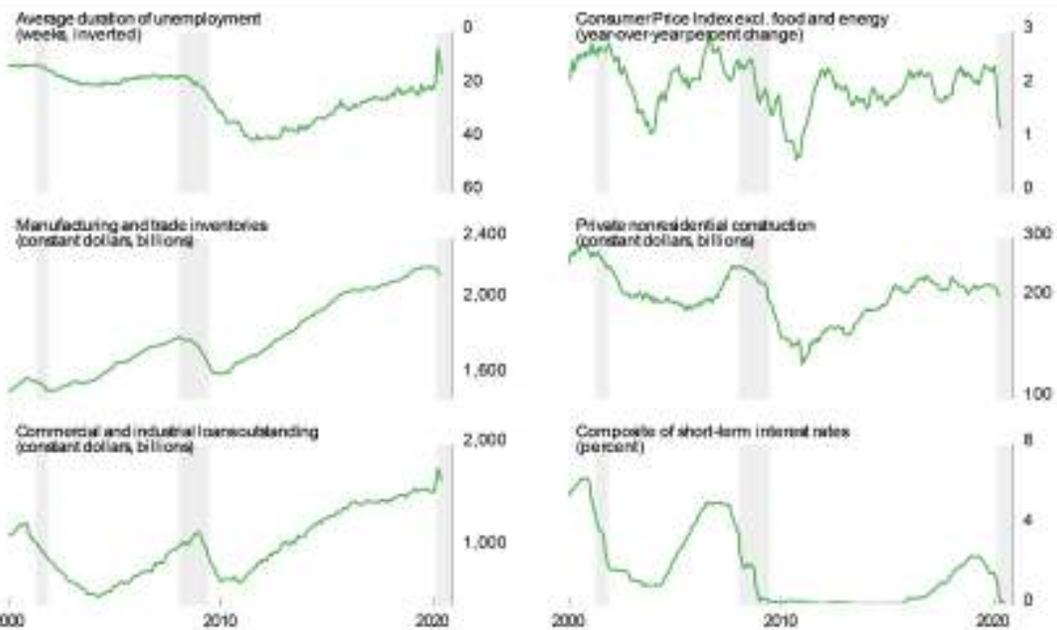
ROUGHLY COINCIDENT INDICATORS (2000-2020)



Note: Shaded areas denote recessions.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

LAGGING INDICATORS (2000-2020)



Note: Shaded areas denote recessions.

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, The conference Board, Census Bureau, Department of Labor, Federal Reserve, Institute for Supply Management, Standard & Poor's, AER (Refinitiv).

Month Four of the Panic: Where Is the Evidence?

ROGER W. KOOPS

Contributor

“Extraordinary claims require extraordinary evidence.” Dr. Carl Sagan

Dr. Carl Sagan was one of the premier scientists when it came to trying to bridge the gap of hard science with general public understanding. In the process, his personal enthusiasm for the wonder of science became evident to all. He also understood that science could be hijacked and that the highest standards of evidence were required when fantastic claims were being made.

In just a few short months, the world has gone from a normal functioning society to one of extreme panic and chaos (maybe *The Twilight Zone* could not have conceived of this to such a degree). We have seen the very foundations of human existence cracked, some might say disintegrated. There has been induced panic and hysteria, cultural and social disintegration, censorship, political hijacking, economic collapse and hardship, imposition of laws in free societies incurred beyond the usual process of lawmaking and resembling totalitarian regimes. In short, human existence has been turned upside down. Fortunately, there have been some zones of sanity around the world, but far too few.

The panic that has been induced has been directed towards trying to convince the public that SARS-COV-2, which I will refer to simply as coronavirus, is an apocalyptic virus that will doom anyone that gets it. This effort continues to this day.

Avoiding the virus, or run and hide, has been the major theme of the inducement. Therefore, the message is that all of these extreme measures are necessary to save people from the horrors of the disease. This is truly an extraordinary claim. So,

where is the extraordinary evidence?

First, we need to go back in time BEFORE the panic because it seems that the collective memory of society has been lost.

A. Pandemic Start and Spread

Recently, the European CDC published a lengthy report updating the science and what we know about this virus and the disease. They reported that serology studies have indicated that this pandemic could have started as early as the beginning of October 2019.

This is significant beyond words.

While it has been assumed that this started in Wuhan, China, it is still not clear if that was the actual starting point or the catalyst for pandemic. Wuhan is a major metropolitan city of China and is the center for advanced technology, commerce, arts, science, and culture. It has a population of about 17 million people. Last fall, Wuhan was the site for many international events in the aforementioned areas. For example, Wuhan was the site for the World Military Games (an Olympics of sorts for military personnel) that ran for about ten days from October 18-27 with over 9,000 competitors from over 80 countries. What better opportunity for the spread of a virus?

In addition, Asia hosted many international events last fall, including the Rugby World Cup and the Women’s World Handball Championship (both Japan), the World Track and Field Championships in Dubai, and even the PGA held a tournament in China. Include the numerous technology, university, cultural, and other events and conferences that were conducted in Wuhan and you have a huge

opportunity to export the virus to the world.

But, you do not even need all of that. Given the great number of flights from Asia to all parts of the world that occur (or did occur) on a daily basis, and you have people from all parts of the world as potential carriers of a virus.

By the time medical researchers in China started to take notice, it was into December. They originally reported a cluster of pneumonia cases of unknown origin and they eventually traced it to a coronavirus. By this time, the pandemic was likely well underway in many countries but was going unnoticed. Why? The symptoms mimic the other URI, mainly influenza and colds, but also bacterial infections such as bronchitis or sinusitis, and were being treated as such. Remember, we are still in the B.P. (Before Panic) period.

By the time we are ending 2019 and entering 2020, people around the world are experiencing the disease. Even the U.S. CDC recently said that this virus was already in the US by early January 2020 (and quite probably before). People were still going to concerts and sporting events; kids were going to school; people socialized with other people without fear; and yes, people were getting sick.

There were probably some serious cases, just like influenza and colds, and yes, some people were dying from the disease. Remember, at that time there was still no test for this virus. People who were sick and seeking medical help were being diagnosed with symptoms and were quite likely being diagnosed for any URI like influenza, colds, bronchitis, or sinusitis.

Where was the extraordinary evidence? If this was truly an apocalyptic disease, we certainly would have seen it by that time.

By mid-January, the first testing was available. The first testing was limited so it was not applied to the general population. In the US, it was focused on travelers from China and very quickly the first

confirmed case was found near Seattle in a person who had traveled to China for business and returned. This was not the actual first case in the US. This was only the first confirmed case by testing. In fact, shortly after this, by early February, some nursing homes were starting to report problems; how could that be possible? Even so, panic had not erupted. Life was still continuing as normal even though this virus was circulating.

During February, more cases were being confirmed. The health agencies everywhere, Europe CDC, US CDC, Australian and British Health Authorities, Japan Ministry of Health, etc. were all issuing the same advice to people. If you become sick, stay at home, drink plenty of fluids, rest and take pain relievers as needed. Essentially, treat it like the flu. It was already becoming understood who were the at risk groups-the same as influenza. The advice was that if symptoms worsened or you started to have breathing problems, go seek medical care. There were no calls to mask people, only to practice common respiratory etiquette of blocking your cough or sneeze. There were no calls for physical distancing (and yes, physical distancing is different from social distancing).

During February, gradually there became an understanding that we were experiencing a pandemic but still no extraordinary evidence of anything any different than a typical URI pandemic.

B. Panic Start

March 2020 has become the turning point from before to after panic. Why induce panic? We understood much about the virus and the disease, COVID-19 (notice the name is for Corona Virus Disease-19, i.e. starting in 2019, NOT 2020), so why now? Was there something different? The answer is no.

It is well known that panic and anxiety changes the chemistry in the brain. In fact, rational thought diminishes rapidly in a panic state. Governments

know this and use it to coerce populations to follow what they might normally consider to be questionable or bad policy.

A recent example in the US comes from the attacks on 9/11. The government used that horrible event to try and convince people that the US was going to be under more-or-less constant attack from terrorists. The Department of Homeland Security was established. Remember the warning color codes issued daily? They never fell below “high” and “elevated.” People were told that if they go to shopping centers, sporting events, etc. that hordes of terrorists were ready to come and cause damage.

Does this ring a bell? How about now, just substitute coronavirus for terrorist and you have almost the exact repetition of fear (do it for the lines below). Remember at the beginning in March, the following mantra:

We are at WAR with this virus (Nonsense, you cannot fight a war against a virus)

We must unite to DEFEAT this virus (Nonsense again, humans adapt to it and vice versa)

Everyone must SACRIFICE to defeat this virus (A foreboding of what was to come)

We are in this TOGETHER (Trying to set the foundations for silencing dissenting opinion?)

So first of all, in order to implement the horrific policies which were about to be unleashed on society, the government had to create a state of panic. But, unlike 9/11, when some news media questioned the premises, this time the main news media was in hook, line, and sinker and they continue still in that mode. Why that should be I am not sure and it is better left to others to decipher.

Where is the extraordinary evidence?

Well, some people point to the death toll. The current per capita (pc) death rate for COVID-19 (about 7 per 100,000 for the world and about 36 per 100,000 in the US) is far below that for both the Asian and Hong Kong flus of the 1950s and 60s both for the world and the US (both about 30 per capita for the world and 44 per capita for the US). At that time, the world population was about half of today but over 1 million people died. The US population was about 2/3rds of today but over 100,000 people died. Those pandemics did not induce lockdowns, physical distancing, masks, etc. and society and culture continued.

But, what do we know about deaths from this disease? Throughout the world, about 85-90% of all death occurs with the elderly over 70 years of age, and not just any elderly, but those with problems such as hypertension, obesity, kidney disease, heart disease, lung disease, liver disease, or weakened immune systems. Yet, in this elderly population over 70, 70-90% who experience the disease still SURVIVE. Yes, the people most susceptible to serious disease and death actually SURVIVE more than they die. These are numbers that one will find also with most influenza pandemics. Further, throughout the world, about 50% of elderly deaths occur in long-term care facilities.

Where is the extraordinary evidence?

As a person’s age goes down, the risk of severe disease decreases but there is still a link to the same health risks listed above. But, now you start adding some new demographics into the severe disease and death picture. Two groups stand out in particular; first, low income groups in high density population areas (the Bronx in New York City leads the US in per capita deaths of any county with a significant population), and second, health care workers. When one looks at Europe, major areas of severe disease

are densely populated urban areas with indigent poor or refugees (Spain-Barcelona/Madrid; France-Paris; Italy-Milan; Belgium-Brussels, etc.) Why should this be the case? There are two major reasons and they are lockdown policies and viral load.

What is Viral Load?

Viral load (a term everyone should begin to understand) and immune response are the keys for how any individual will deal with a viral respiratory infection (the same holds true for bacterial infections, can we say “bacterial load?”). Viral load is just a technical way to describe the amount of virus working in the body. To understand about viral load, people need to understand how the virus works in the simplest of terms.

Outside of the body, a virus is a protein, an organic molecule that does little and can break apart under various conditions. Influenza, coronavirus, and rhinovirus are very, very small in the natural state (each ranging from 10-120 nanometers); much smaller than a bacterial cell. They cannot be seen with an ordinary microscope and require an electron microscope.

Certainly, humans have absolutely no way to know if a virus is present or not, until it is too late. You cannot see it, smell it, taste it, or have any other sensory perception to its presence. It can pass through most things (including masks) undetected. It can be dispersed easily with air handling systems and can land on any surface. In short, it can be considered an environmental toxin at the nanometer scale.

The stability of these viruses in the natural environment is usually limited. For example, coronavirus is unstable with pH below 3 or above 10 and breaks down quickly; UV radiation, heat, chemical oxidants such as bleach also break it down quickly. However, on some surfaces it can survive; for example, it has a half-life of almost 7 hours on smooth plastic (so what is the purpose of all the plastic sheets?).

What does that mean? Well, let’s say that the plastic is contaminated by 100 million virus particles. Seven hours later there will still be 50 million particles. Seven hours later from that there will be 25 million particles, and so on, assuming no new introduction of virus. Since the virus survives better on some surfaces as opposed to others, infection by contact (fomites) can occur.

Once inside of the body, the virus is not an environmental toxin but now works as a parasite. It will find cells that it can penetrate (URIs target nasal, throat, and upper airways) and once into cells, it uses that cell to manufacture more virus, which are in turn released back into the body. As more virus is produced, more cells are infected and more virus is produced, the viral load rises, just like when a factory increases its production its inventory of goods also goes up. The human body becomes a virus production factory. Bacteria, however, are their own production factory-they do not need human cells to reproduce. This is why it is easier to develop antibiotics than antiviral drugs.

But, a virus works differently from bacteria in another way. Bacteria start to multiply immediately, doubling their numbers each time there is growth, usually within minutes. Viruses are more subtle; they seem to do nothing for a period of time and then suddenly they take off. This is probably due to the time it takes to invade the cell and start to commandeer the cell machinery for production.

Your body detects when a virus has started to go to work and generally begins to attack the virus using the immune system. If your body has no specific antibodies for the virus, it will send its general array of immune system defenses after the virus (since this coronavirus is a new version, this is what will occur).

The goal is to control the viral load long enough for a healthy immune system to develop specific antibodies to combat the virus directly. At some

point, these antibodies start to take over. In a healthy person, this timing can vary from a few to several days but is usually enough to lessen the disease process and bring about a normal recovery.

The viral load can be more difficult to control with the following circumstances:

1. The initial viral infection or initial viral load was high. If you get a good blast of virus to start, the factory could be well into production mode by the time your immune system responds. The more you get to start, the tougher to control.
2. Your immune system is weakened due to age or other disease processes. The ability to respond is now reduced so the viral production can outpace your immune response.
3. You have pre-existing disease in susceptible parts of your body, such as lung disease, etc. It becomes easier for the virus to penetrate and continue the production. Unfortunately, it also means greater damage to an already damaged part of your body.
4. You continue to get virus exposure while combating the viral load. This is the piling on of viruses when you are already down. Illegal in football but not in viral disease. This is a critical point in care facilities or crowded areas.

As a result, healthy people can experience anything from a minor, uncomfortable illness to something a little more, but, generally, they will recover and go on. People who have more difficulties in controlling viral load will suffer more. The Europe CDC has reported that viral loads with coronavirus in severe cases are 50-60x that in mild cases. Controlling viral load with help determine the course of the disease.

So, what role does a lockdown or other similar policies play in the death toll situation? Epidemiologists understand that you cannot force viruses and virally infected people into confined spaces. When

you combine people together in close spaces, with poor ventilation, poor sanitation, common use items, etc., if one gets sick, all are likely to get sick.

But, it goes beyond just getting sick; you are also setting the conditions that are ripe for increasing viral load. You now have many virus factories together, producing away at an awesome rate. While the production is occurring, the body is also releasing virus, called “shedding.” This can occur from the mouth and nose, such as in coughing or sneezing but also from feces. It can be easy to imagine how quickly viruses can build up and be spread under these conditions, especially in elderly care facilities.

In places like retirement homes or long-term care facilities, institutions (i.e. prisons, recovery centers, etc.), hospital wards, refugee camps, inner city tenement housing and public housing developments, etc. such conditions exist and will cause the worst outcomes. And this is exactly what has been seen.

The risk to the general public has never risen above a stated level of low to moderate from any Health Authority. It has always remained high in the at-risk groups and yet the lockdown policies are the worst for these high risk groups. Add to that the policies of actually placing infected individuals into facilities of high risk groups and now you have truly a health crisis.

So what is the extraordinary evidence? Well, now the evidence seems to point to lockdown policies as exacerbating the disease process, not reducing it.

Consider also the health issues that contribute to the risk of severe disease, with this or any other URI. The US CDC publishes annual reports on the health risks in the US. The results are as follows:

1. Obesity: The U.S. has the highest adult and child obesity rate in the world.
2. Hypertension: The U.S. also is number one with hypertension and heart disease.
3. The US is at or near the top also with diabetes, lung disease, cancer, liver and kidney disease.

In June, the US CDC published a report on US mortality for 4 months from the first of February to the end of May. Pneumonia deaths outpaced COVID-19 deaths (and we have antibiotics for pneumonia). Combined, they totaled about 15-20% of the total deaths in the US during that period. Shouldn't an apocalyptic disease be much more prevalent?

Recently, the CDC has reported that based on serology, as many as 10-20x more Americans have experienced the disease than the confirmed cases (that number could increase). Well, this is no surprise since we know that (1) most people who experience the disease experience mild disease and do not seek medical help and have not likely been tested, and (2) the likely start time of the pandemic was much earlier than believed which meant the disease was passing through the population long before the panic. If we use the conservative number of 10x, the current lethality rate goes from about 5% to 0.5%. If we use a 20x number, it is now about 0.25%. If that factor increases more, the rate will be further reduced. The known lethality rate for influenza is 0.15-0.20%.

Where is the extraordinary evidence?

Since testing was started for COVID-19, Asia has shown very small numbers. Why should that be? Could it be possible that this disease passed through Asia during December 2019 and January 2020 before the panic? Did it fly under the radar because it can be so confused with influenza, the common cold, bronchitis, or other respiratory infections? Quite possibly that is the case, especially considering all of the activities in Asia. Most cases that have been reported have been clusters, and yes, about 50% of the clusters have been in care facilities.

No matter how you analyze it, this virus is NOT apocalyptic.

If there is no extraordinary evidence, why are there such extraordinary claims and responses? Why has the world medical, social, and economic order

been torn apart for a pandemic that looks much like a normal influenza pandemic? These are the questions for which we will be seeking answers for years to come.

July 19, 2020

Bill Gates: From Entrepreneur to Supervillain

BARRY BROWNSTEIN

Contributor

Bill Gates is regretting things left undone. Gates is sorry he hasn't done "more to call attention to the danger" of a pandemic." In an interview, Gates said, "I feel terrible. The whole point of talking about it was that we could take action and minimize the damage."

For his critics, rather than minimizing the damage, Gates has done too much to set a course of action having disastrous unanticipated consequences. Gates, the billionaire philanthropist, has become a supervillain.

Since April, over 500,000 people have signed a petition at whitehouse.gov calling for an investigation of the Gates Foundation for "medical malpractice and crimes against humanity."

Admirers of Gates blame "anti-vaccine activists and conspiracy-minded posters" for spreading "misinformation" damaging to Bill Gates's reputation. In May, one essay claimed to debunk the assertion that Gates plans to make South Africans early test subjects for a COVID-19 vaccine. A month later, the "myth" was revealed to be true.

Gates has taken up the cause of global warming too. He is funding a mad geoengineering scheme at Harvard to partially block sunlight. Imagine setting in motion a "solution" that has the potential to destroy all life on earth. Gates's hubris seems boundless.

You don't need a conspiracy theory to explain Bill Gates's transformation from entrepreneur to supervillain. Gates has always been a ruthless zealot. Yet when he was at Microsoft, his worst character flaws were held in check by the demands of running a competitive business and the necessity of meeting the needs of consumers. As a philanthropist, he is not disciplined by forces of the marketplace. Empowered by government coercion, there is nothing to keep

him or us from his worst instincts.

Good Intentions Don't Matter

Gates is ready to give away most of his vast fortune, in his words, to "coordinated global action" to prevent disease. You might give Gates high marks for his good intentions.

History is full of reasons why we should not trust those with good intentions. A common trope in movies and comics is the supervillain who is ready to sacrifice the well-being of many people to further a warped pursuit they see as noble.

In his book *Capitalism and Freedom*, Milton Friedman explained why "concentrated power is not rendered harmless by the good intentions of those who create it." Friedman pointed to internal threats to freedom that are far more difficult to see than external threats:

"It is the internal threat coming from men of good intentions and good will who wish to reform us. Impatient with the slowness of persuasion and example to achieve the great social changes they envision, they are anxious to use the power of the state to achieve their ends and confident of their own ability to do so."

When Gates the entrepreneur was wrong, he was held accountable by consumers and competitive forces. When Gates the philanthropist is wrong, politicians and academics will evaluate him by different criteria.

Gates at Microsoft

When Gates co-founded Microsoft with the late Paul Allen, he didn't build Microsoft on good intentions. Paul Allen described "ruthlessness" as a character flaw of Gates. Gates routinely browbeat and denigrated those he disagreed with. Allen saw himself as the real innovator but valued Gates as a "sanity check" on his ideas. Allen and Gates needed each other to build Microsoft.

Others confirm Allen's view of Gates. Ed Roberts has been called the father of the personal computer. James Wallace and Jim Erickson interviewed Roberts for their book *Hard Drive: Bill Gates and the Making of the Microsoft Empire*. Roberts recalls Gates being unyielding: "We got so we didn't even invite him to meetings where we were trying to come up with a new software approach or something like that because he was impossible to deal with."

Roberts believed, "Paul Allen was much more creative than Bill. Bill spent his whole time trying to be argumentative and not trying to come up with solutions. Paul was exactly the opposite."

A *Financial Review* essay describes Allen "as an intuitive thinker who had a sixth sense about new products" while Gates "was the driven, clear-headed partner who turned Allen's sometimes random ideas into successful products."

Synergies between Gates's and Allen's differing leadership styles made for success. "Gates was explosive and confrontational while Allen... was thoughtful and empathetic." Fights were typical: "The two argued frequently, often screaming at each other in front of employees. But the fights, colleagues said, frequently resulted in good business decisions."

Why did the fights result in good decisions? On some level, Gates and Allen were willing to be led by consumer needs.

In his seminal leadership book *Good to Great*, Jim Collins found that the most successful leaders blended extraordinary "personal humility and

professional will." Gates lacked humility and may have been a miserable failure without Allen's partnership.

The late Harold Geneen was CEO of ITT. In his instructive book, *Ego is the Enemy*, Ryan Holiday quotes Geneen who compared egoism to alcoholism: "The egotist does not stumble about, knocking things off his desk. He does not stammer or drool. No, instead, he becomes more and more arrogant, and some people, not knowing what is underneath such an attitude, mistake his arrogance for a sense of power and self confidence."

A leader with an unbridled ego is a danger, Geneen explained:

"Whether in middle management or top management, unbridled personal egotism blinds a man to the realities around him; more and more he comes to live in a world of his own imagination; and because he sincerely believes he can do no wrong, he becomes a menace to the men and women who have to work under his direction."

Holiday adds, "If ego is the voice that tells us we're better than we really are, we can say ego inhibits true success by preventing a direct and honest connection to the world around us."

Market forces reward businesses that maintain an ongoing "direct and honest connection" to the needs of consumers. Ludwig von Mises explained why consumers are the real "bosses:"

"[Consumers], by their buying and by their abstention from buying, decide who should own the capital and run the plants. They determine what should be produced and in what quantity and quality. Their attitudes result either in profit or in loss for the enterpriser. They make poor men rich and rich men poor.

The consumers are merciless. They never buy in order to benefit a less efficient producer and to protect him against the consequences of his failure to manage better. They want to be served as well as possible. And the working of the capitalist system forces the entrepreneur to obey the orders issued by the consumers.”

Gates the Philanthropist

Neil Ferguson of the Imperial College London had inordinate influence “advising national governments on pathogen outbreaks.” Ferguson listens to Gates, as his center receives “tens of millions of dollars in annual funding from the Bill & Melinda Gates Foundation.”

The model Ferguson used to advise draconian lockdowns in response to COVID-19 has been thoroughly discredited both on theoretical and empirical grounds. To err is to be human, but this was not Ferguson’s first disastrous prediction. As AIER president Edward Peter Stringham points out, “Ferguson rose to fame in 2005 when he predicted that up to 200 million people could be killed from the bird flu.” The actual number of deaths was 50.

Gates, the businessman, would have long ago cut off Ferguson. No successful entrepreneur insists on partnering with a dismal failure. Yet for Gates, Ferguson’s performance as an epidemiologist didn’t seem to matter. What matters to Gates is that Ferguson’s view of the world is aligned with his own. Both support quarantining healthy people without regard to the human and economic cost.

Bill Gates has enjoyed a partnership with Dr. Anthony Fauci. Of course, it is natural to partner with those who share your worldview. Problems arise when a partnership leads to the use of the coercive arm of government to implement what you believe is your superior vision.

In his April blog post on COVID-19 vaccine development, Gate explains how a new rushed to

market COVID-19 vaccine is likely to be a RNA vaccine. With an RNA vaccine, “rather than injecting a pathogen’s antigen into your body, you instead give the body the genetic code needed to produce that antigen itself.” Gates admits the process is risky. “It’s a bit like building your computer system and your first piece of software at the same time.”

Rushed vaccines have unique safety concerns, and RNA vaccines deserve heightened scrutiny. Gates admits the vaccine may not be both safe and effective:

“If we were designing the perfect vaccine, we’d want it to be completely safe and 100 percent effective. It should be a single dose that gives you lifelong protection, and it should be easy to store and transport. I hope the COVID-19 vaccine has all of those qualities, but given the timeline we’re on, it may not.”

Heightening potential risks, vaccines are shielded from liability when they turn out to be unsafe. Nobody is held accountable for the consequences of taking shortcuts in the development process.

A COVID-19 vaccine has not even arrived and already some doctors are advocating for compulsory vaccination. Gates himself says, “We need to manufacture and distribute at least 7 billion doses of the vaccine.” With polls showing only 50% of the population planning on taking a COVID-19 vaccine, presumably, Gates and vaccine manufactures are banking on the government making the vaccine mandatory.

Gates is now actively stoking the fires of fear. He warns that this fall “COVID-19 will be back in big numbers, if we don’t restrain our behavior more than it looks like we are right at the moment.” He complained that we’re not tough enough “on contact tracing or enforcing quarantine.” In short,

obey Gates and his favored “experts” or doom will befall us all.

Gates insists normalcy cannot return until “we have an almost perfect drug to treat COVID-19, or when almost every person on the planet has been vaccinated against coronavirus.” Yet, death rates from the COVID-19 virus are falling. Without a deadly virus it is hard to sell a potentially dangerous vaccine.

Nobel laureate Michael Levitt repeatedly warned that the doomsday exponential models, such as Ferguson’s, were wrong. Instead of examining Levitt’s analysis, Levitt received only “abuse” from other scientists. You need to “stop talking like that,” he was told. Another Nobel laureate, Saul Perlmutter, observed the “tendency to circle the wagons and hide all the conversations that need to happen.”

Entrepreneurs don’t hide conversations that need to happen; it’s bad for business. Those with a one-track agenda seek to maintain control by suppressing conversation of divergent viewpoints.

I will leave it to others to parse Gates’ philanthropic motives. His good intentions don’t matter. What matters is that Gates has access to world leaders who have coercive power. Gates, undisciplined by consumers or business partners, will make errors. Given his character flaws, Gates is likely to ignore and not learn from his mistakes.

Supervillains coerce and harm. Successful entrepreneurs serve and enrich humanity. Gates should return to his entrepreneurial roots.

July 8, 2020

When Will the Madness End?

JEFFREY A. TUCKER

Editorial Director

I was sitting in the green room in a Manhattan television studio on the day that the storm seemed to hit. It was Thursday, March 12, 2020, and I was waiting anxiously for a TV appearance, hoping that the trains wouldn't shut down before I could leave the city. The trains never did shut but half of everything else did.

On this day, everyone knew what was coming. There was disease panic in the air, fomented mostly by the media and political figures. A month earlier, the idea of lockdown was unthinkable, but now it seemed like it could happen, at any moment.

A thin, wise-looking bearded man with Freud-style glasses sat down across from me, having just left the studio. He was there to catch his breath following his interview but he looked deeply troubled.

"There is fear in the air," I said, breaking the silence.

"Madness is all around us. The public is adopting a personality disorder I've been treating my whole career."

"What is it that you do?" I asked.

"I'm a practicing psychiatrist who specializes in anxiety disorders, paranoid delusions, and irrational fear. I've been treating this in individuals as a specialist. It's hard enough to contain these problems in normal times. What's happening now is a spread of this serious medical condition to the whole population. It can happen with anything but here we see a primal fear of disease turning into mass panic. It seems almost deliberate. It is tragic. Once this starts, it could take years to repair the psychological damage."

I sat there a bit stunned, partially because speaking in such apocalyptic terms was new in those days, and because of the certitude of his opinion. Underlying

his brief comments were a presumption that there was nothing particularly unusual about this virus. We've evolved with them, and learned to treat them with calm and professionalism. What distinguished the current moment, he was suggesting, was not the virus but the unleashing of a kind of public madness.

I was an early skeptic of the we-are-all-going-to-die narrative. But even I was unsure if he was correct that the real problem was not physical but mental. In those days, even I was cautious about shaking hands and carrying around sanitizer. I learned later, of course, that plenty of medical professionals had been trying to calm people down for weeks, urging the normal functioning of society rather than panic. It took weeks however even for me to realize that he was right: the main threat society faced was a psychological condition.

I should have immediately turned to a book that captivated me in high school. It is *Extraordinary Popular Delusions and the Madness of Crowds* by Charles Mackay (1841). I liked reading it because, while it highlighted human folly, it also seemed to indicate that we as a civilization are over that period in history.

It allowed me to laugh at how ridiculous people were in the past, with sudden panics over long hair and beards, jewelry, witches, the devil, prophecies and sorcery, disease and cures, land speculation, tulips, just about anything. In a surprising number of cases he details, disease plays a role, usually as evidence of a malicious force operating in the world. Once fear reaches a certain threshold, normalcy, rationality, morality, and decency fade and are replaced by shocking stupidity and cruelty.

He writes:

In reading the history of nations, we find that, like individuals, they have their whims and their peculiarities; their seasons of excitement and recklessness, when they care not what they do. We find that whole communities suddenly fix their minds upon one object, and go mad in its pursuit; that millions of people become simultaneously impressed with one delusion, and run after it, till their attention is caught by some new folly more captivating than the first. We see one nation suddenly seized, from its highest to its lowest members, with a fierce desire of military glory; another as suddenly becoming crazed upon a religious scruple; and neither of them recovering its senses until it has shed rivers of blood and sowed a harvest of groans and tears, to be reaped by its posterity.... Men, it has been well said, think in herds; it will be seen that they go mad in herds, while they only recover their senses slowly, and one by one.

After 2005 when the Internet developed into a serious repository for human knowledge, and it became accessible via smartphones and near-universal access, I too was tempted by the idea that we would enter into a new age of enlightenment in which mass frenzies would be quickly stopped by dawning wisdom.

You can see evidence of my naivete with my April 5, 2020 article: *With Knowledge Comes Calm, Rationality, and, Possibly, Openness*. My thought then was that the evidence of the extremely discriminatory impact of the virus on plus-70 people with underlying conditions would cause a sudden realization that this virus was behaving like a normal virus. We were not all going to die. We would use rationality and reopen. I recall writing that with a sense of confidence that the media would report the

new study and the panic would end.

I was preposterously wrong, along with my four-month-old feeling that all of this stuff would stop on Monday. The psychiatrist I met in New York was correct: the drug of fear had already invaded the public mind. Once there, it takes a very long time to recover. This is made far worse by politics, which has only fed the beast of fear. This is the most politicized disease in history, and doing so has done nothing to help manage it and much to make it all vastly worse.

We've learned throughout this ordeal that despite our technology, our knowledge, our history of building prosperity and peace, we are no smarter than our ancestors and, by some measures, not as smart as our parents and grandparents. The experience with COVID has caused a mass reversion to the superstitions and panics that sporadically defined the human experience of ages past.

Eventually, people have and do come to their senses, but it is as Mackay said: people "go mad in herds, while they only recover their senses slowly, and one by one."

July 10, 2020

The Models Were Wildly Wrong about Reopening Too

PHILLIP W. MAGNESS

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Most of the United States entered into a tepid reopening from the COVID lockdowns in mid-May. Although the reopening process has advanced through an interminable succession of bureaucratic phases with most of the country remaining under varying degrees of restriction as of mid-July, the reopening process has remained under sustained criticism from the media and a segment of the epidemiology profession since the moment it started.

Back on May 24th the epidemiology team at Imperial College London (ICL) published a study that expanded on their now-notorious COVID-19 model. Donald Trump and UK Prime Minister Boris Johnson both cited the apocalyptic projections of this report and its lead author Neil Ferguson back in March to justify their decisions to lock everything down.

The follow-up ICL paper from May attempted to model the effects of reopening in 5 US states: New York, Massachusetts, California, Washington, and Florida. In all five cases, the Imperial College team predicted an aggressive rebound of COVID-19 fatalities under even the most modest relaxation of stay-at-home policies and practices.

To illustrate this pattern, the ICL team presented three scenarios based on the expected change in human mobility in each state after the lifting of lockdown restrictions. The first scenario kept the lockdowns in place, assuming that mobility would remain constant at its severely reduced post-lockdown rate. Under the other two scenarios, the ICL team assumed a 20% and 40% increase of mobility corresponding with the reopening process.

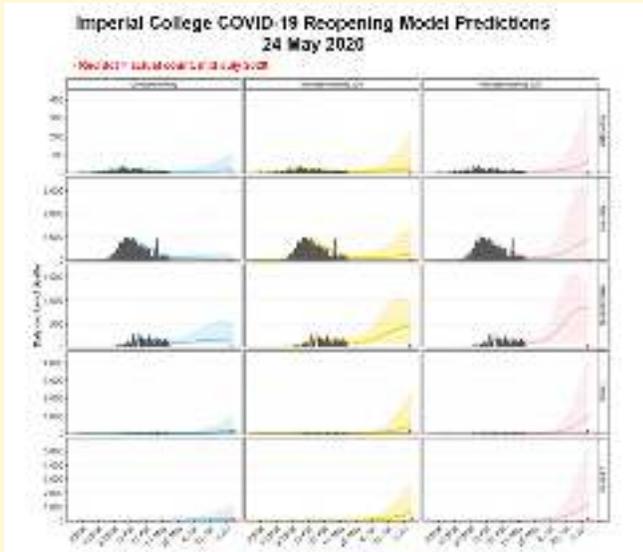
In both of these reopening scenarios, the model depicted a catastrophic rebound of COVID-19 fatalities. As the ICL team itself put it, their

model “illustrate[s] the potential consequences of increasing mobility across the general population: in almost all cases, after 8 weeks, a 40% return to baseline [mobility] leads to an epidemic larger than the current wave.” Media reports at the time touted the study’s dire warnings as reasons to stall the reopening process – even at its sluggish pace of recurring 2-week delays and extensions.

More than 8 weeks have passed since the publication of the ICL team’s warnings against reopening, meaning we can now see how their model performed.

As with other examples of ICL COVID modeling, their attempt to predict the effects of a US reopening can only be described as an embarrassing scientific failure.

The image below shows the three modeled scenarios from May, as depicted in the ICL report for the five states under consideration. Note that even under the “constant mobility” scenario of remaining under lockdown, their model predicted an increase in COVID deaths for every state except New York, which had already peaked. Under the reopening scenarios where mobility increased 20% and 40% respectively from its lockdown state, all five states were predicted to surge into apocalyptic territory by the middle of July. Under the 40% scenario, this even entailed upper boundaries of more than 4,000 deaths per day (the bands represent the 95% confidence interval). Massachusetts and New York, two of the hardest-hit states from the first wave back in March and April, would easily match or exceed their previous COVID-19 daily death records.



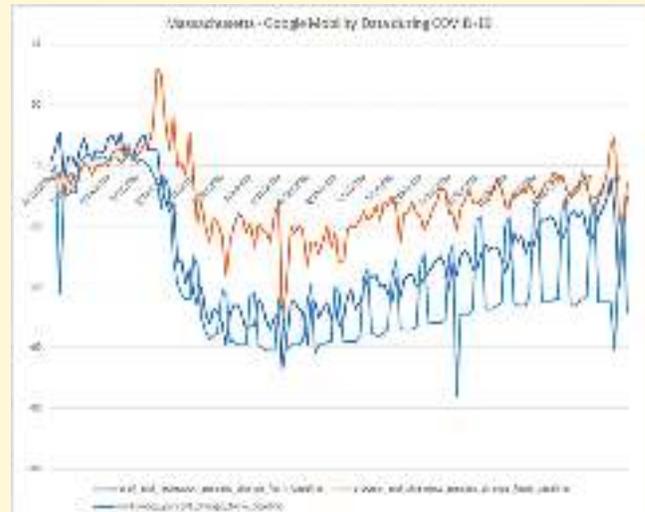
To see how these predictions held up, I indicated the daily death totals for each state for July 20th with a small red dot on the graphs above. As you can see, the actual totals are below the ICL model’s predictions in every scenario. In Massachusetts, the current daily death totals are even falling below the lower boundary of the ICL model’s projections for both its 20% and 40% mobility increase scenarios.

Coronavirus cases and deaths have spiked in two of the modeled states, Florida and California. As of the week of July 20th, both are averaging between roughly 100 and 150 deaths per day. Yet even with this “second wave” spike, Florida and California are only showing about one-tenth of the projected deaths that the Imperial College modelers predicted for this time back in May.

In New York, Washington, and Massachusetts, daily death counts have dropped to the low double-digits and remain a tiny fraction of the ICL predictions for mid-July.

Although all five states remain under COVID-19 restrictions of varying degrees, even partial reopening has increased mobility at levels that match or exceed the ICL’s modeled scenarios. The main Google mobility indicators for Massachusetts

are depicted below for reference, and show a clear upward trend since the time of the ICL predictions in mid-May.



These patterns confirm that US mobility trends are increasing as lockdown restrictions are slowly lifted, and as society moves toward reopening. They therefore show that the ICL model correctly anticipated one effect of relaxing the lockdowns.

At the same time though, the ICL model severely overstated the projected mortality associated with reopening in all five states. Actual data do not map onto any of their scenarios, including the broadest of the three predictions for reopening. States that peaked back in March and April show no signs of a resurgence, let alone the predicted resurgence that would surpass the first wave. And states that are undergoing later surges are still well below the ICL team’s predictions – so far below that they barely even register on the graphs.

As with other predictions from the ICL team, the May paper likely faltered due to a fundamental error in its underlying code. These flawed ICL models begin with an unproven assumption, namely that lockdowns are effective at combating the coronavirus. The models are therefore automatically calibrated to produce a sharp spike in deaths after

the removal of lockdowns or any move toward reopening.

As we're now seeing in actual data however, that assumption is grossly exaggerated. As a result, the predictive ability of Imperial College's COVID epidemiology modeling amounts to little more than an exercise in statistical astrology.

July 23, 2020

What Economists Can Teach Epidemiologists

PETER C. EARLE

Research Fellow

As data accrues on both a national and state-by-state basis, the parameters of COVID-19's lethality is firming up. Two new papers from Dr. John Ioannidis point to the growing shortfall between apocalyptic pandemic predictions and the vastly more destructive policies implemented in observance of them.

The first, entitled "Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying diseases in pandemic epicenters" offers more evidence supporting the assertion that the government reaction to the virus has been vastly overwrought.

Using data from 11 European countries, 12 US states, and Canada, Ioannidis and his team show that the infection rate is much higher than previously thought, which suggests that both the incidence of asymptomatic and mildly symptomatic cases is higher than thought, and the fatality rate much lower than previously estimated.

As regards the age of victims,

People [under] 65 years old have very small risks of COVID-19 death even in pandemic epicenters and deaths for people [under] 65 years without underlying predisposing conditions are remarkably uncommon. Strategies focusing specifically on protecting high-risk elderly individuals should be considered in managing the pandemic.

In the other paper, "Forecasting for COVID-19 has failed," Ioannidis and co-authors take aim at the reasons for which the predictions were so incredibly inaccurate. Early predictions included

that New York needed up to 140,000 hospital beds for stricken COVID-19 victims; the total number of individuals hospitalized was 18,569.

In California on March 17th, 2020, it was predicted that "at least 1.2 million people over the age of 18 [would] need hospitalization from the disease," which would require 50,000 additional hospital beds. In fact, "COVID-19 patients [ultimately] occupied fewer than two in 10 beds."

On March 27th 2020, Vice Provost for Global Initiatives at the University of Pennsylvania, Ezekiel Emanuel predicted that there would 100,000,000 COVID-19 cases in the United States in the four subsequent weeks — slightly less than one in three of all Americans. Unsurprisingly, this prediction has since been taken down.

Divination, accurate or not, is harmless in and of itself: that's obvious. But when made by scientific dignitaries, in particular in the process of informing politicians amid crisis circumstances, it often leads to knee jerk reactions at all levels. The causative factors cited are, or should be, well known to economists: they include use of poor data or the wrong use of high quality data; improper or incorrect assumptions; wrongful estimates of sensitivity; wrongly interpreted past results or evidence; problems of dimensionality; and groupthink/bandwagon effects.

From a high level, epidemiological forecasts failed for the very reason that econometric predictions often flounder: the uncritical importation of modeling techniques from physics or applied mathematics into social science realms. This should not be especially revelatory. In "The Counter-revolution of Science" (1956), F. A. Hayek noted the pernicious effects of applying rigidly quantitative

concepts where human action is at work, attributing them to “an ambition to imitate science in its methods rather than its spirit.”

Using Ioannidis’ guidelines, a subset of the elements which lead to predictive failures in epidemiology can not only be examined, but analogized directly with economic and econometric counterparts.

Data Problems

The issue of data quality and application in economics is one which arose from the growing quantification of the social sciences. Data which is either erroneously recorded, speciously accurate, or completely fabricated has been a problem of legendary proportions in econometrics and in the crafting of economic policy.

Although first identified as a serious issue 70 years ago (less than three years after the publication of this pivotal work), the mathematization of economics has proceeded apace with virtually no embracing of Oskar Morgenstern’s cautions. (While not waxing conspiratorially, it bears mentioning that low-quality data can be as much a political tool as a source of imprecision in both epidemiology and economics.)

Similarly, there is growing evidence that some COVID-19 related data has been problematic: erroneous or miscalculated. Where testing is concerned, even a 1% error in the tens of millions of coronavirus tests being conducted would amount to hundreds of thousands of misdiagnoses, with the knock-on effects that such results give rise to.

Erroneous Assumptions

Untenable and oversimplifying assumptions in economic formulations are often defended as pragmatic or unavoidable. These are problematic even when methodologies are appropriate, the data sound, and the calculations correct:

Many [epidemiological] models assume homogeneity, i.e. all people having equal chances of mixing with each other and infecting each other. This is an untenable assumption and in reality, tremendous heterogeneity of exposures and mixing is likely to be the norm. Unless this heterogeneity is recognized, estimates of the proportion of people eventually infected before reaching her immunity can be markedly inflated.

Epidemiologically, the homogeneity oversight is seen at its starkest and most tragically in comparing the outcome of insufficiently protecting the most vulnerable populations while simultaneously closing schools and excoriating teenagers/college students — among the least affected groups — for their social inclinations.

Sensitivity of Estimates

Determining how an independent variable or groups of independent variables affect dependent variables is the focus of sensitivity analysis. Depending upon the regression (or other operation) being performed, and in particular the presence of exponents, a small error in independent factors can lead to huge variances in outcomes. (This is one of the characteristics of a chaotic system: the so-called butterfly effect refers to systems where ultimate outcomes or states show a tremendous degree of sensitivity to initial conditions.)

There are techniques which can be used to determine where, when, and to what degree estimates have a disproportionate impact on the outcome of simulations or calculations, whether that comes in the form of wildly overblown or unrealistically diminished outcomes. Often, though, sensitivity is seen not in models, but in the real world events they are designed to approximate.

Ioannidis cited the “inherent impossibility” of fixing such models, as the ubiquity of models employing “exponentiated variables [lead to] small errors [that] result in major deviations from reality.” Morgenstern evinced similar concerns in 1950 regarding the curve-fitting propensities of the new wave of economic practice; here in production functions, but the criticism is certainly extendable:

Consider, for example, the important problem of whether linear or nonlinear production functions should be considered in economic models. Non-linearity is a great complication and is, therefore, best avoided as much as possible. True non-linearity in the strict mathematical sense is avoided in physics as far as possible. Even quantum mechanics is treated as linear on a higher level. Many apparently nonlinear phenomena, upon closer investigation, can well be treated as linear . . . The distinction is largely a matter of the precision of measurement, which is exactly where the weakness is strongest in economics. It is astonishing that economists seem to hesitate far less to introduce non-linearity than physical scientists, where the tradition of mathematical exploration is so much older and the experience with observation and measurement so much firmer.

I would not deign to correct such a luminary as Dr. Morgenstern, but I would add that the weakness is not strongest in economics alone, but in all undertakings which quantitatively rigidify human action, whether individual or *en masse*.

Poor past evidence on effects of available interventions

Unbeknownst to the vast majority of people who are or will suffer from the effects of the lockdowns, the

“flatten-the-curve” efforts were informed by information from the Spanish Flu of 1918. Thus data of impeachable quality, from a pandemic event which occurred over one century ago, involving a different pathogen — as a major world war was ending, and when living conditions, longevity, the state of medical science, the tenor of social interactions, and countless other variables were immeasurably different — were applied to sculpt the government response to the outbreak of the novel coronavirus.

Ioannidis and his co-authors comment that “[w]hile some interventions . . . are likely to have beneficial effects, assuming huge benefits is incongruent with the past (weak) evidence and should be avoided. Large benefits may be feasible from precise, focused measures.”

The idea that a single (or even a small handful) of studies might be used to buttress indefensible arguments or to support questionable plans is occasionally seen in economic policymaking as well.

Dimensionality

“Almost all models that had a prominent role in [pandemic] decision-making,” Ioannidis continues, “focused on COVID-19 outcomes, often just a single outcome or a few outcomes (e.g., deaths or hospital needs). Models prime for decision making need to take into account the impact on multiple fronts (e.g. other aspects of healthcare, other diseases, dimensions of the economy, etc.)” Some remedies to this include interdisciplinary scrutiny of model outcomes and a look at past implementations in the face of pandemics — including those to which there was no response at all.

While dimensionality as a specific problem afflicts economic modeling as well, general comments in this regard closely echo the battered-but-unmoved screeds against one of the earliest fixtures of economic education: *ceteris paribus*, by which one considers causal or empirical relations while

holding other influences equal. While a useful tool for educational purposes, when it creeps into crafting policies the results can be costly.

(At times, the *ceteris paribus* approach is defended by econometricians who liken it to the practice of ignoring air resistance in gravity experiments. It's a shamefully underhanded argument that immingles physical with social science phenomena.)

Groupthink and Bandwagon Effects

Ioannidis cites groupthink among epidemiologists as a source of forecasting error. When a doomsday prediction is made — especially by celebrity scientists — the act of introducing a more mitigating prognosis may bring substantial risk to one's career, and thus be suppressed. Alternately, the published or broadcast results of thought leaders may be a form of anchoring. As Ioannidis and his team write,

Models can be tuned to get desirable results and predictions, e.g. by changing the input of what are deemed to be the plausible values for key variables. This is true for models that depend upon theory and speculation, but even data-driven forecasting can do the same, depending upon how the modeling is performed. In the presence of strong groupthink and bandwagon effects, modelers may consciously fit their predictions to what the dominant thinking and expectations are — or they may be forced to do so.

The economics profession is certainly not immune to this. It manifests in several ways, one of which is mainstream economists' unwillingness to admit their errors (as the continued use of flawed models or bad data attests to). Many economists instinctively do not criticize theory or practices within their institution or school of thought owing to political expediency. The highly 'siloe'd' nature of journals and conferences attests to it, as do the veritable

echo chambers in social media. This is not merely a personal observation; it and its effects have been cited elsewhere. Here, in no less prominent a place as the International Monetary Fund:

Analytical weaknesses were at the core of some of the IMF's most evident shortcomings in surveillance ... [as a result of] ... the tendency among homogeneous, cohesive groups to consider issues only within a certain paradigm and not challenge its basic premises.

Cognitive and confirmation biases are noted as well.

The Media Amplifier

Farcical predictions, whether owing to one or all of the above elements, would nevertheless be innocuous if limited to circulating among small groups of scientists or within the rarified pages of peer-reviewed journals. But whether viewed as a vital democratic institution, a propagandistic organ of political parties, or somewhere in between, it's far from a conspiracy theory to note that the dominant media outlets are massive businesses which fundamentally compete for revenue on the basis of attention. As with politicians, the loudest and scariest messages and interpretations garner the most attention and have the added perk of defensibility in the name of "vigilance."

And in the same manner in which tremendously negative predictions permit self-aggrandizing assessments of policy outcomes — such as in Neil Ferguson's claim that the lockdowns saved lives — doomy economic projections are almost always associated with unprovably optimal outcomes.

An example of that is found in President Obama's assertion that without the bailouts and Fed programs administered in the wake of the 2008 financial crisis, the world might have fallen into a "permanent recession." (The idea that a "permanent recession"

would have been a recession which simply lapsed into a new, permanent low level of economic activity went predictably unchallenged.) The best (and least common) unprovable counterfactuals are good guesses; the majority are deceptive.

Where Economists can Help Epidemiologists

Having said all of that, the paper concludes with a redemptory note, commending the efforts of epidemiology teams and warning that it would be “horribly retrograde if this [modeling] debate ushers in a return to an era where predictions, on which huge decisions are made, are kept under lock and key (e.g. by the government – as is the case in Australia).”

The mundanity of letting individuals or localities assess and act in concert with proprietary risk appetites must, on some level, be frustrating when compared with creating vast artificial populations of agents or using big data to sift through colossal data repositories. It would no doubt seem a massive waste of time to expend energy writing code and poring over results only to recommend that citizens exercise their best judgment.

Simply building and running computational models is not, of course, harmful in and of itself: it is in the leap from output to implementation where hazards emerge. Here’s Hayek, again, in “The Counter-Revolution of Science” (1956):

The universal demand for conscious control or direction of social processes is one of the most characteristic features of our generation. It expresses perhaps more clearly than any of its other cliches the peculiar spirit of the age. That anything is not consciously directed as a whole is regarded as itself a blemish, a proof of its irrationality and of the need completely to replace it by a deliberately designed mechanism . . . The belief that processes

which are consciously directed are necessarily superior to any spontaneous process is an unfounded superstition. It would be truer to say [as Whitehead did] that on the contrary “civilization advances by extending the number of important operations we can perform without thinking about them.”

Hysterical, wildly off-the-mark forecasts about COVID-19 will ultimately cause more harm than good, and find their origins in the same set of snags which regularly trip up econometric forecasts. In the epidemiological version, instead of predicting a new Great Depression, they brought an artificial depression, a growing spate of coercive masking initiatives, school closures, and the lockdowns — which quite possibly filled the powderkeg that was ignited by the killing of George Floyd. And that’s what we can see, directly in front of us: the ultimate cost of surgeries foregone, rising rates of drug abuse, alcoholism, and suicides, and other knock-on effects of the ridiculous government responses to the novel coronavirus outbreak will be unfolding for a generation.

What can economists teach epidemiologists? When it comes to forecasting, humility is key and discretion is the better part of valor. If in a position of power or influence, don’t be afraid to bore politicians to death. Be aware, and remain aware, of the utter unpredictability of human action. And always, above all, remain mindful that the presence of even one human being (and more realistically, millions) introduces complexities which are difficult to predict and virtually impossible to simulate.

July 11, 2020

The Dangers of Keeping the Schools Closed

ETHAN YANG

Editorial Intern

As the school year approaches, there is much consideration over whether or not to close the K-12 system in an effort to slow the spread of COVID-19. These concerns come from a wide variety of constituencies, from parents to public officials to teachers. However, much like the overall discussion regarding COVID-19, this proposal is ill-informed and will likely lead to unintended consequences that will be far more severe than the problem it seeks to address.

School Closures Are a Time-Sensitive Policy

One of the first points to consider when approaching the question of closing schools is timing. Yale University sociologist Nicholas Christakis, a proponent of school closure, warns that although the policy could be beneficial it must be done very early. Furthermore, although Dr. Christakis certainly supports school closure if done at the correct time, he acknowledges that now

“It’s sort of closing the barn door after the cow is gone.”

This maneuver, even for those that support it, will be incredibly difficult to do effectively and the appropriate time to even consider this policy may well have been in January, not July.

It also seems that proponents of school closure seem to misunderstand the purpose of their proposal. Italian epidemiologist Marco Ajelli tells NPR

“Closing schools can buy time and delay the peak of an epidemic.”

Unfortunately, that time has passed as well. Much

like anything concerning COVID-19 and epidemiology, we cannot be certain that closing schools will actually delay the peak of an epidemic. Even if it is an effective policy measure, school closures are not intended for simply reducing cases amongst children; they are a way to buy time to prepare for the climax of an outbreak.

As outlined by Dr. Christakis’s sentiments, the time for this conversation should have been months ago. It may have been an effective policy to buy time for hospitals to retool and prepare for the outbreak but that has since been accomplished, although rather sloppily. The peak of the pandemic has passed, COVID-related deaths have dramatically decreased, and hospitals are far more prepared than they were months ago.

Closing Schools May Hurt Children More Than It Protects Them From COVID-19

When it comes to protecting the health of children, sending them to school could possibly be the safest option. Sonja Santelises, CEO of Baltimore Public Schools tells NPR that

“For a large number of our students, the safest place for them to be is actually in school.”

Schools provide a number of things that would be advantageous to the well-being of a child. Being at school places children in a controlled environment which in some neighborhoods could be better for more problems besides infection control.

Children are the least vulnerable to COVID-19. Professor Peter Collignon, an Australian microbiologist and infectious disease physician, writes in the Guardian

“The data from a range of countries shows that children rarely, and in many countries never, have died from this infection. Children appear to get infected at a much lower rate than those who are older... there is no evidence that children are important in transmitting the disease.”

Furthermore, a paper published by medical experts at Colorado State University and Yale University says that

“What we know about social distancing policies is based largely on models of influenza, where children are a vulnerable group. However, preliminary data on COVID-19 suggests that children are a small fraction of cases and may be less vulnerable than older adults.”

The Atlantic offers some additional insight on why children seem to be at a lower risk of contracting COVID-19 as they report

“Everything an infant sees, or a young child sees, is new,” says Donna Farber, an immunologist at Columbia University. Thus, their immune system is primed to fight new pathogens in a number of ways... This is why adults are able to mount a rapid immune response to previously encountered pathogens, but also why they might have trouble fighting a new one. Diseases such as rubella and chicken pox are also, for various reasons, more severe in adults than in children.”

The CDC echoes this assertion that children are at a lower risk of COVID-19 not only in the mortality rate which is extremely rare but also in the infection rate. Furthermore, online teaching in its current state

would not deliver the same results as an in-person experience. If schools intend to stay closed for any substantial amount of time that could be incredibly detrimental for young students.

Professor Collignon writes

“Many will likely miss out on over six months of teaching. While online learning might be available it is unlikely to be as effective as face-to-face teaching and those with less resources will disproportionately be disadvantaged. Minimal or no mixing with their friends and other children for over six months will also have deleterious effects.”

Many teachers will have little to no aptitude for effectively running online classes. Disadvantaged students such as those with troubled families or low socioeconomic status will be most harmed by school closure. In particular, many parents will need to take time off from work to care for their children. For many, this would be impossible.

Childcare Obligations Will Decrease the Effectiveness of the Healthcare Sector And Potentially Increase Deaths

When considering the childcare needs of healthcare workers, closing schools may actually lead to an increase in mortality rates not just for COVID patients but sick individuals more broadly. Congruent with AIER’s observation that the conversation surrounding COVID-19 seems to be utterly blind to the tradeoffs of lockdown measures, Jude Bayham and Eli Fenichel write

“School closures come with many tradeoffs. Setting aside economic costs, school closures implemented to reduce COVID-19 spread create unintended childcare obligations, which are particularly large in healthcare occupations.”

According to their raw data about 15% of registered nurses, 19.14% of Diagnostic- related technicians and technologists, as well as 14.45% of EMT and paramedics will be unable to meet their childcare obligations with the help of a nonworking adult or sibling just to name a few. Much like all models and calculations, the true percentage of total healthcare professionals that will be forced to take time off from work is not certain. However, what we can be certain about is that closing schools will impose childcare obligations on healthcare workers that will lead to a reduction in the overall medical staff.

The drawbacks of such a decision, the most important being an increase in mortality rates due to lack of medical professionals, can only be estimated with models. These models, much like those used by epidemiologists to predict COVID-19 deaths and spread, must rely on assumed values and equations that seek to imitate reality. As a result, we cannot be certain whether the result will be more or less severe.

We can be certain that closing schools will result in a reduction of medical staff. We can also be certain that this reduction of staff will increase the risk of mortality not just for COVID-19 which is a comparatively mild disease but also for those suffering from even more serious ailments. Whether it will be a slight increase that can be justified by an overall reduction in infections, as some would say, or send catastrophic shockwaves of unintended consequences, much like closing the economy, cannot be reliably predicted at this time.

A paper on epidemiology written by British Healthcare Professionals caution concludes that

“Other implications of school closure (e.g., ethical and economic considerations) and viral properties such as virulence must also be considered in policy decisions.”

It is worth noting that the authors of the paper conclude that school closures would be effective in combating influenza. In the case of COVID-19, in which children are at a lesser risk, it is unclear whether or not school closures would be as helpful in slowing infections. What we can be sure of is that there will be a host of unintended consequences. These include everything from a drop in healthcare staffing to an additional economic disturbance on top of the current financial calamity generated by the lockdowns.

Closing Schools Will Exacerbate Existing Economic Calamity

A report published by the Brookings Institution states that

“We find that closing all schools in the U.S. for four weeks could cost between \$10 and \$47 billion dollars (sic) (0.1-0.3% of GDP) and lead to a reduction of 6% to 19% in key health care personnel. These should be considered conservative (i.e., low) economic estimates in that earnings rather than total compensation are used to calculate costs.”

This is only assuming schools will be closed for four weeks, not until 2021 which many either advocate or have already done. Much like shutting down the economy and labeling some businesses “nonessential” has unleashed a wide range of predicted as well as unpredicted consequences, we can be sure closing schools will do the same.

Sending children to school has been a basic component of American socioeconomic life for generations. A sudden cessation leaves millions of kids at home in an economic system which is virtually built on the assumption that their parents don’t have to take care of them during the day. We can only imagine how disruptive that would be.

Perhaps one of the most overlooked consequences of closing schools and lockdowns more generally because of its difficulty in measuring is hope. Although we can measure decreases in the healthcare workforce and economic retraction, we can't easily measure optimism. Right now optimism is critical. A working paper from the University of Chicago estimates that 60% of the current economic downturn is due to consumer sentiments; that is, being afraid of living their lives due to COVID-19.

There will surely be further economic retraction due not only from physically closing schools but a reduction of hope and increased anxiety. The effects will be impossible to measure until they happen. The same goes for increases in suicide rates, domestic violence, substance abuse, and so on. These are further unintended consequences and tradeoffs that have resulted from the lockdowns. It is not absurd to think they will only worsen by closing schools.

Are the Tradeoffs Worth It??

As the 2020-2021 academic year approaches, closing K-12 education and switching to remote learning is on the minds of many. Those who advocate for this decision must come to terms with a number of important tradeoffs that come with it. Some of those tradeoffs are more apparent than others.

Closing schools will certainly be detrimental to the education and social needs of a generation of children.

For some, school might actually be the safest place to be and for countless working parents they need their kids to be there. More importantly, the healthcare sector needs all hands on deck not only to handle the pandemic but to serve patients with ailments far deadlier than COVID-19.

Forcing healthcare professionals to stay home to take care of their children will likely result in a higher mortality rate. Closing schools will inevitably worsen the economic downturn caused by the

existing lockdown in ways that we can only begin to imagine.

Medical experts who support school closures more generally clarify that they are a tool to be considered at the beginning of a pandemic, not seven months in. Lastly, COVID-19 poses a far lesser risk to children for both death and infection. Closing schools will probably spare some schoolchildren from infection. Whether it will be enough to justify what we may have to sacrifice is another question entirely.

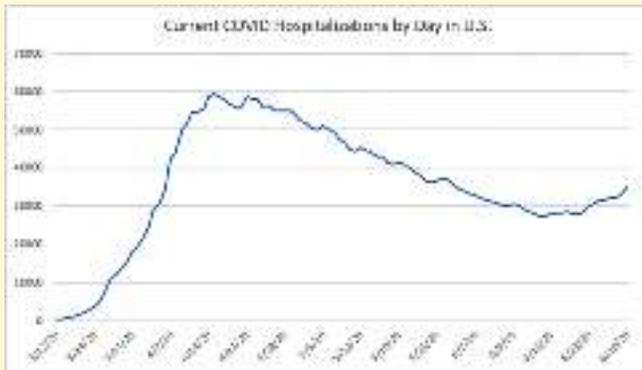
July 13, 2020

Don't Let Hospitalization Trends Blind You to the Numbers Themselves

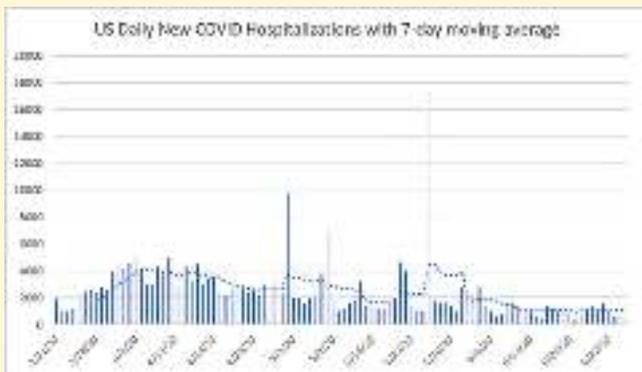
STEPHEN C. MILLER

Chairman of the Standing Committee

Since I wrote about hospitalizations two weeks ago, the trend in current hospitalizations has reversed, with more COVID hospitalizations now than there were a month ago, although still well below the peak in mid-April.



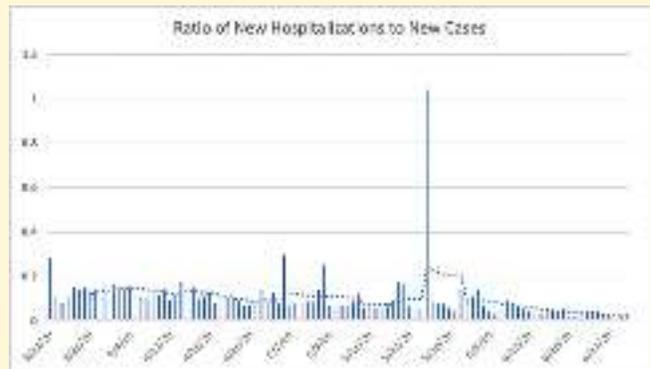
The trend in new hospitalizations nationally, is still flat, as the next chart shows. Not only is the recent trend flat, but the current weekly average of new hospitalizations is lower than it was one, two, and even three months ago.



So what do these trends mean? How can the number of people currently hospitalized for COVID be rising while the number of new hospitalizations stays relatively low?

One answer is that hospital stays must be getting longer. If the increase in cases is picking up how infection is spreading, then the hospitalization data can help us see how serious those cases are. Looking at the ratio of new hospitalizations to new cases suggests that fewer of those infected need to be hospitalized.

The chart below indicates that the ratio of hospitalizations to infections is roughly a quarter of what it was in mid-April. This presents an even more complex puzzle: More people are currently in the hospital with COVID, but new hospitalizations are relatively low with a flat trend over the past few weeks. And on top of that, a smaller portion of those infected need to be hospitalized. And deaths continue to fall. The virus appears to be spreading as quickly as ever, but with fewer new hospitalizations and deaths, and longer hospital stays.



To understand how that may be happening, we need to disaggregate the data a bit, and examine how the trends in hospitalizations differ across the states.

Comparing Hospitalizations at the State Level

The table below uses four basic categories of states based on their hospitalization data and based on where their current numbers are relative to mid-April: Increasing trend, decreasing trend, flat trend, and insufficient data.

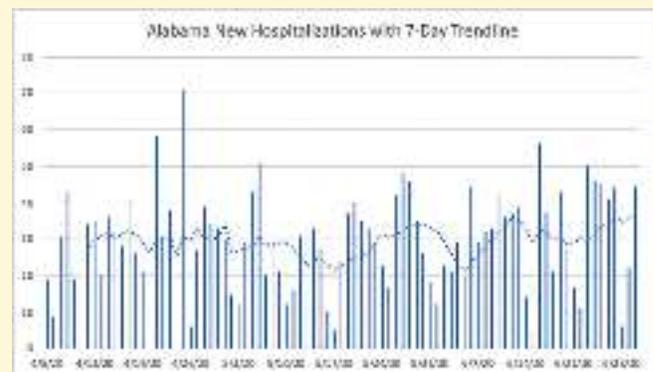
Currently 14 states have increasing trends, several of which were showing flat trends a few weeks ago. 24 states and the District of Columbia show clear downward trends, and eight have essentially flat trends. Of those eight, some could be categorized as increasing, but in those cases the number of hospitalizations have stayed low (often in or near the single digits) such that they could be considered “flat near zero”.

Montana, for example, had 21 COVID hospitalizations on April 15th and currently has 12. On May 15 Montana had 3 COVID hospitalizations. The numbers are so small that no trend is identifiable. The same is true for Alaska, North Dakota, and Wyoming.

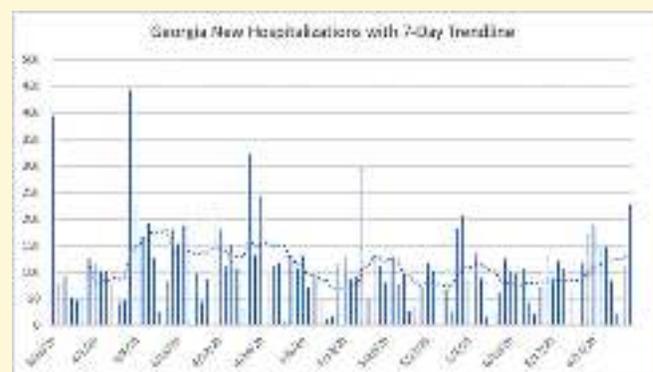
States with Increasing Hospitalizations Since Mid-April	States with Decreasing Hospitalizations Since Mid-April	States with Flat Hospitalization Trends	States with Insufficient Data
1. Alabama	1. Colorado	1. Nebraska	1. Florida
2. Arizona	2. Connecticut	2. North Dakota	2. Hawaii
3. Arkansas	3. DC	3. Montana	3. Idaho
4. California	4. Delaware	4. Alaska	4. Kansas
5. Georgia	5. Iowa	5. New Mexico	
6. Kentucky	6. Illinois	6. Oklahoma	
7. Massachusetts	7. Indiana	7. South Dakota	
8. Michigan	8. Kansas	8. Wyoming	
9. North Carolina	9. Massachusetts		
10. Nevada	10. Maryland		
11. North Carolina	11. Maine		
12. Tennessee	12. Michigan		
13. Texas	13. Missouri		
14. Utah	14. New Hampshire		
	15. New Jersey		
	16. New York		
	17. Ohio		
	18. Oregon		
	19. Pennsylvania		
	20. Rhode Island		
	21. Vermont		
	22. Wisconsin		
	23. Washington		
	24. Wisconsin		
	25. West Virginia		

Among the states with increasing trends, the current and new hospitalization data are sometimes contradictory. As of June 30th, Alabama had 776 current hospitalizations, which is certainly more

than that figure likely was in mid-April or even mid-May; the current hospitalizations do not go back that far for Alabama. The level of new hospitalizations has been around 30 per day since April. The seven-day average is slightly higher than it was a week ago, but roughly the same as it was a little over two weeks ago.

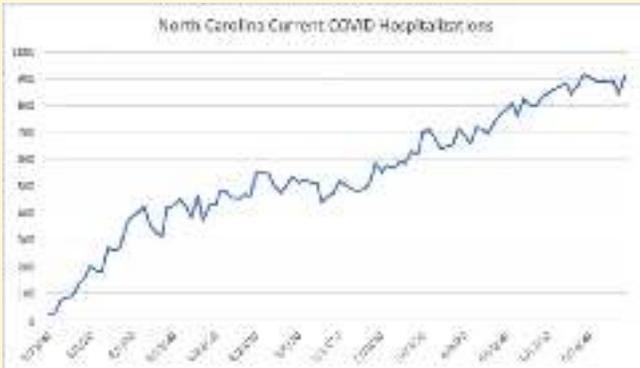


Georgia’s current hospitalization goes back a bit farther than Alabama’s, but not back to mid-April. Because of Georgia’s steady increase in current hospitalizations for the past two weeks, it seems likely that its current hospitalizations are higher than they were ten weeks ago. Similar to Alabama, new hospitalizations seem relatively flat, near their levels in both mid-May and slightly lower than their levels in mid-April.



Other states have clear upward trends, such as North Carolina. But it is important to keep the magnitudes on the vertical axes of these charts in mind. North Carolina’s current hospitalizations,

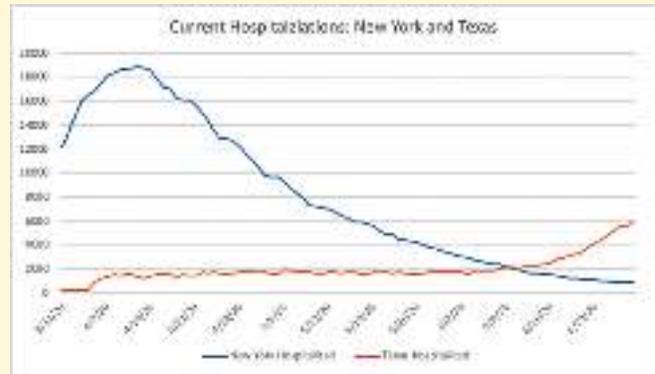
below, give the impression of a strong upward trend. The next chart puts that trend in perspective, by comparing hospitalizations in North Carolina (population of 10.5 million) to those of New Jersey (population of 8.9 million).



While the above chart suggests a sharp increase in hospitalizations, the comparison to New Jersey below makes North Carolina’s increase appear gradual, as though they have successfully “flattened the curve.”



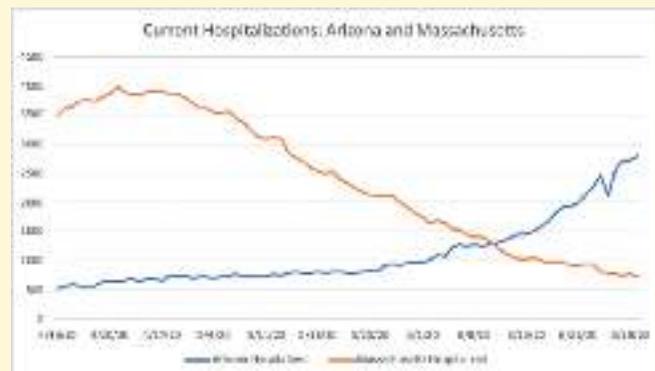
A similar comparison can be made between Texas (population of 29 million) and New York State (population of 19.5 million):



Despite the rapid increase in hospitalizations in Texas and its 30 percent larger population, it currently has a third of the people hospitalized today as New York did in mid-April. The trend in Texas is concerning, and worth watching closely. The reason to watch the trend is to guard against overwhelming the health care system’s capacity. Surely New York came very close to doing just that, but it seems unlikely that Texas is close to exceeding its available resources at the moment.

Arizona has seen an increase in the past few weeks that is comparable to Texas. When compared to Northeastern states, Arizona’s population of 7.3 million is closest to Massachusetts at 6.9 million. Given its trend, Arizona may well see hospitalization numbers similar to Massachusetts.

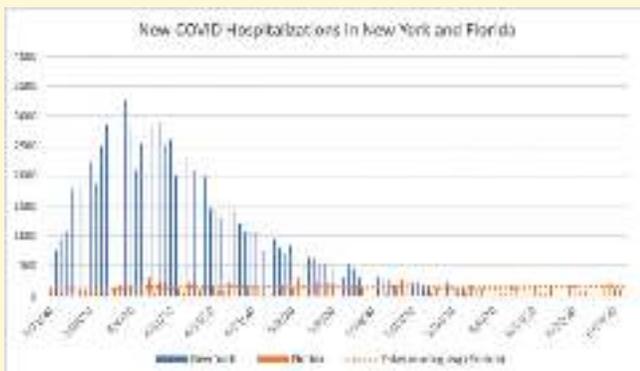
At the moment, though, it has roughly 1,000 fewer current hospitalizations than Massachusetts did at its peak. Similar to Texas, public health officials should monitor current hospitalizations as they consider ways to temporarily increase their capacity for treatment.



According to the COVID Tracking Project (CTP), 4 states do not report current hospitalizations. California, on the other hand, does not report cumulative hospitalization numbers to the CTP. Nonetheless, we know that California’s current trend, despite its much larger population of 39.5 million, is very gradual compared with New York’s. Comparing their current hospitalizations suggests that California has “flattened the curve” despite its large population and major metropolitan centers.



Florida, as one of the four states without current hospitalization numbers, can only be compared to other states on the basis of daily new hospitalizations. Florida’s population, at 21.5 million, is 10 percent larger than New York’s. Similar to other states currently seeing an increase in cases, the overall trend is much flatter than states with slightly smaller populations in the Northeast.

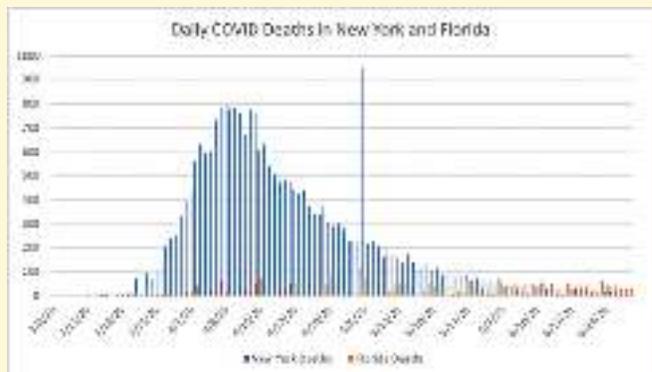


In all of the states that have seen an increase in hospitalizations since April, the absolute numbers

are much smaller than states with similar (or in some cases much smaller) populations. More importantly, the trends are flatter, generally with more gradual increases over a much longer period of time, which is precisely what stay-at-home orders and school and business closures were intended to accomplish.

I focused on hospitalizations because they are the most relevant measure when it comes to the stated goals of preventative measures, i.e. to “flatten the curve.” The objective behind prevention is to slow the spread of the virus, so that our health care providers and facilities would not be overwhelmed.

However, the data on COVID deaths are an important consideration. Deaths in most states with growing case numbers are still relatively flat. Similar to the hospitalization numbers, the absolute numbers are much lower in the South and Southeast than they were in the Northeast. In fact, the deaths are quite a bit lower in some cases. New York currently has very low death numbers, but they are similar to Florida’s as seen below.



Overall, to the extent that people in the South and Southeast appear to not be taking COVID’s spread as seriously as people in the Northeast, it is because the pandemic is not as serious in those states. The absolute numbers of hospitalizations and deaths are much lower, and the spread of the virus has been much slower.

Debating Differences

An obvious response to the comparisons above is to note that while New York, New Jersey, Massachusetts, and other Northeastern states may be comparable to Florida, North Carolina, Georgia, Arizona, and Texas in terms of population, they are much different in other ways. New York obviously has a much greater population density than Texas or Florida.

That is the point of making the comparisons, to highlight the fact that these differences matter when it comes to COVID's impact. Population density, demographics, and a number of other differences have slowed the spread and lessened the virus's impact on those states. It cannot be argued that the policy response has been more strict in those states or that the residents have been more vigilant.

Some may speculate that warmer weather or higher Vitamin D levels are part of the story. What is obvious is that states in the South have characteristics that make it harder for COVID to spread. It may just be the luck of having had exposure to similar viruses that enhance their residents' immune response to the virus. It may be that by the time the virus started to spread quickly in these areas that it has evolved to become less deadly. Those are medical research questions to be settled later.

What we can see clearly from the trends around the world is that the virus's impact has been very uneven, and massive outbreaks like those experienced in Italy and New York are not inevitable, and seem to have little to do with how local government addressed the pandemic. The states discussed above have all eased restrictions to different degrees on different timelines, yet the ones with the strictest policies are not systematically better off than those with the least restrictions.

So what about the puzzle of how current hospitalizations can increase while new hospitalizations remain flat and deaths continue to decline? As

Peter C. Earle pointed out recently infections have tended to grow more quickly among younger people recently. Many of those young people still seek treatment, although their symptoms are less severe than they tend to be for older patients. And we know that medical facilities have an incentive to increase their counts of COVID hospitalizations.

Since the virus is far less deadly among younger people, even when large numbers are infected deaths can continue to fall. Those who are hospitalized are more likely to live, which combined with better treatment protocols can increase the number of people living in the hospital at a given point in time. As more of those people recover, the virus's impact is lessened even further.

*The data used in this article were downloaded from *The Atlantic's* COVID Tracking Project on July 1st, 2020.

July 3, 2020

Did the US Lockdown Too Late and Open Too Soon?

PHILLIP W. MAGNESS

Senior Research Fellow

As the United States experiences a surge in COVID-19 outbreaks with most of it concentrated in regions that avoided the earlier wave that struck the Northeast back in March and April, the media has adopted a new explanation to continue its long-standing rationalization of society-wide lockdowns.

As the argument goes, most European states (including those that were harder hit than the US) followed a “responsible” pattern of quashing the virus through heavy-handed lockdowns and shelter-in-place orders, and only began the reopening process when its data-driven models said it was safe to do so. By contrast, the United States allegedly waited too long to lock down, did so ineffectively, and “rushed to reopen” before the virus was under control.

It’s a convenient narrative for justifying the reimposition of lockdowns, as well as politically chastising anyone who questioned their efficacy in the first place. But is it based on any evidence?

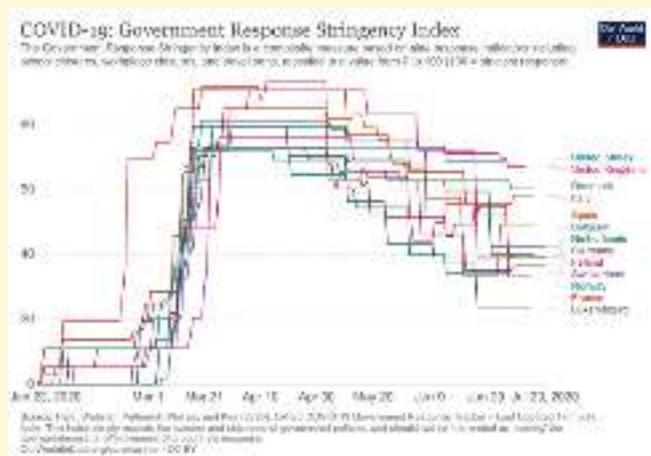
To assist in answering that question, we may turn to a helpful tool created by the University of Oxford’s Blavatnik School of Government that allows cross-country comparisons of the COVID policy responses. Among their trackers is a government “stringency index” that “records the strictness of ‘lockdown style’ policies that primarily restrict people’s behaviour.”

As described on the project’s website, the stringency index assigns scores on a 0 to 100 point scale to capture the severity of a country’s responses. Points are awarded for the familiar suite of non-pharmaceutical policy interventions, adopted in the name of counteracting COVID. These include school and business closures, event cancellations, restrictions on large gatherings, internal and external travel

restrictions, and shelter-in-place or lockdown-style attempts to confine residents to their homes.

The stringency index also tracks how these policies change over time, as countries impose greater restrictions or begin to reopen from their previous lockdown state.

So how does the US stack up against other developed countries that locked down? Were we behind the curve in responding to COVID, and did we reopen too early as the current media narrative claims?



Quite simply put, there’s no evidence in the index for either of these assertions. To the contrary, the United States locked down at almost the exact same moment as most of Western Europe.

The overall stringency of the U.S. response increased from 8.33/100 on March 1st to 52.31/100 on March 16th, the day that President Trump embraced lockdowns on the advice of the now-discredited Imperial College model of Neil Ferguson. Over the next few days some 43 out of 50 states imposed lockdown policies. The exceptions came from lightly populated rural states that did

not experience massive outbreaks, so most of the country's population was, in effect, under full lockdown. By March 21, the US stringency index rose to 72.69 where it more or less remained for the next two months.

At its peak, the US stringency index reached comparable levels with Great Britain (75.93), Belgium (81.48), the Netherlands (79.63), Germany (73.15), Norway (79.63), Denmark (72.22) and Switzerland (73.15). Among comparable developed nations, only Italy, France, and Ireland topped the 90 point mark on the index.

Of these countries, almost all imposed their most stringent policies at exactly the same time – the week surrounding the March 16th release of the Imperial College report, which also corresponded with the World Health Organization's pandemic declaration on March 11th. Only Italy – an early hotspot – preceded this wave of lockdowns, having imposed them in late February.

In short, there's no evidence that the United States lagged behind Europe in its lockdown timing. Nor is there any evidence that the U.S. lockdowns were meaningfully less stringent than the average Western European nation – and this despite having a much larger geography and population.

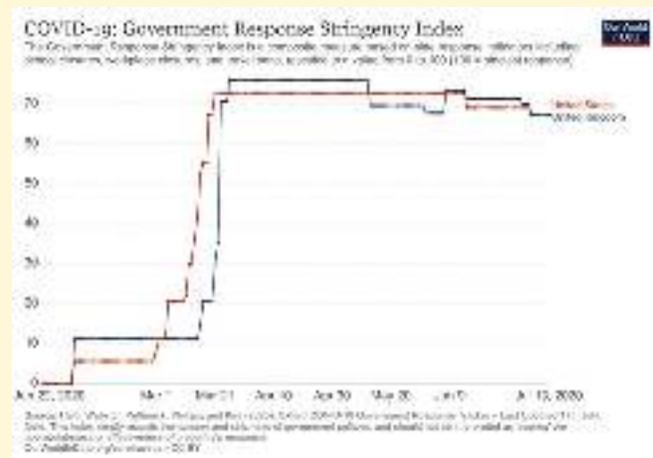
So what about the alleged “rush to reopen” that the media now depicts as the source of the recent case surges?

Due to its decentralized federalist system, individual US states reopened at different times. Georgia, for example, repealed its stay-at-home order on April 30, and most other US states began relaxing their lockdowns from mid-May to mid-June (although significant restrictions on events, schools, and certain businesses still remain in place in most of the reopened states).

For comparison, most European states began their reopening at approximately the same time in early May and quite a few did so at significantly

faster rates than the United States. After Belgium began relaxing its lockdowns around June 8, only the United Kingdom and Ireland remained at a comparable lockdown stringency to the United States, with all three showing scores above 70.

Ireland reopened on June 26 with its stringency index dropping to 38.89. As of July 4th and even with slow reopenings underway in most states, the stringency index shows that the United States (68.89) as a whole still remained under heavier restrictions than any country in Western Europe except for the comparably-shuttered United Kingdom (69.91).



Critics might respond that the difference in state-level policy responses are obscured by Oxford's national stringency index. And yet current US hotspots did not begin their reopening processes any faster than the typical European states. Texas began relaxing its lockdown on April 30th and Florida on May 4th – approximately the same period that the stringency index began to decline in the Netherlands, Italy, Germany, Denmark, Norway, Luxembourg, and Switzerland.

Perhaps more telling is current hotspot California, the first U.S. state to go under full statewide lockdown on March 19 and one of the slowest states to reopen, having only reached the beginning of its “Stage 2” plan before the recent case surge.

Any number of factors explain the development of the U.S. pandemic at the moment, with little connection to the timing of the lockdowns back in March or the tepid and bureaucratically managed reopening process.

Notably, severe COVID outbreaks appear to be overwhelmingly concentrated in nursing homes – a problem that is not meaningfully addressed by lockdowns, and which did not even figure into the considerations of the Imperial College model on which they were premised. We are also seeing the clear geographic dimensions of the pandemic’s spread. After ravaging the Northeast while it was under full lockdown, viral hotspots have now moved to previously unaffected areas – and irrespective of their remaining or reinstated lockdown policies, as California shows.

The media’s latest narrative however shows the telltale signs of a policy response – lockdowns – in search of a political rationalization. For all the rhetoric and bluster about the U.S. “rush to reopen” and Europe’s allegedly more responsible and effective use of lockdowns, data such as the Oxford stringency index show the exact opposite pattern. The U.S. imposed lockdowns at the same time as Europe, did so with comparable levels of stringency, and actually reopened at a later date and slower pace than most European nations.

July 20, 2020

Fauci Is Wrong: New York Did Not Do it “Correctly”

FIONA HARRIGAN (Research Intern) – PETER C. EARLE (Research Fellow)

After a months-long struggle to contain COVID-19, New York Governor Andrew Cuomo seems confident that he has steered the state to safety at long last. He has hardly shied away from expressing pride over his pandemic policies, spurring headlines that derided his “gaslighting” and his “cringeworthy victory lap.”

And Cuomo landed squarely in the good graces of White House health advisor Dr. Anthony Fauci, who, on July 18, lauded New York State’s handling of the crisis.

Fauci declared, “They did it correctly.”

This interpretation was curious, given that the state’s pandemic prevention efforts have been marred by grave errors (which AIER has previously covered).

Those errors became the subject of deep scrutiny in a recent academic article entitled, “A Case Study in Model Failure? COVID-19 Daily Deaths and ICU Bed Utilisation Predictions for New York State.”

Written by a team of mathematicians, biostatisticians, and data scientists from Stanford University, the University of Texas at El Paso, Northwestern University, and the University of Sydney, the paper takes direct aim at the decision support tools—models—that were influential in shaping New York State’s policy response to the disease spread.

The four models reviewed are those produced by the Institute for Health Metrics and Evaluation (IHME), Youyang Gu, the University of Texas at Austin, and the Los Alamos National Laboratory. Though they were widely cited and enthusiastically implemented, these models fell short:

Forecasting models have been influential in shaping decision-making in the COVID-19 pandemic. However, there is concern that their predictions may have been misleading. Here we dissect the predictions made by four models for the daily COVID-19 death counts between March 24 and June 5 in New York State, as well as the predictions of ICU bed utilisation made by the influential IHME [Institute of Health Metrics and Evaluations] model. We evaluated the accuracy of the point estimates and the accuracy of the uncertainty estimates of the model predictions ... For accuracy of prediction, all models fared very poorly. Only 10.2% of the predictions fell within 10% of their training ground truth, irrespective of distance into the future ... For ICU bed utilisation, the IHME model was highly inaccurate; the point estimates only started to match ground truth after the pandemic wave had started to wane.

As COVID-19 first began to spread, ICU bed predictions were indeed dire. In March, Governor Cuomo declared that New York would require between 18,600 and 37,200 ICU beds to treat the impending wave of COVID-19 cases. Compare that to New York’s reality: 3,000 ICU beds available as of Cuomo’s assessment. If these horrific prophecies came true, the state’s medical system would have been entirely overwhelmed. It was these concerns, driven by model predictions, that informed the strategy that came to be known as “flattening the curve:” attempting to preserve medical resources by

blunting the rush of all but the most dire COVID-19 cases to hospitals and healthcare facilities.

How did the models backing the curve-flattening perform?

The accuracy of point estimates—which is to say, the actual daily death count predictions generated by each model—is evaluated using two metrics: the mean absolute percentage error and the maximum allowable percentage error. The former, in a straightforward way, calculates the percentage difference between a given model’s prediction for a specific day and the actual result on that day. The latter takes the maximum of the absolute percentage errors for each forecast and each model.

The authors of the paper find that “while some models may perform better or worse over subsets of the time frame of interest, no one model clearly dominates throughout [the time period] with respect to either of the metrics.” Across them, only 10.2% of the daily death predictions fall within 10% of the actual outcomes.

Of the paper’s two major findings, one is nontrivial but unsurprising: the methods of data collection and the verification of data quality exercise great influence over models. Poor data makes good models bad, and bad models worse. A related issue arises:

[e]arly on, Dr. Anthony Fauci, NIAID Director, stated that: “As I’ve told you on the show, models are really only as good as the assumptions that you put into the model. But when you start to see real data, you can modify that model...” An open question raised ... is how can one expect quality predictions, if the data are faulty? ... Clearly, if the data are suspect, projections may also be sub-optimal.

The second conclusion, of considerably more gravity, bears repeating:

Models need to be subjected to real-time performance tests, before their results are provided to policy makers and public health officials. In this paper, we provide examples of such tests, but irrespective of which tests are adopted, they need to be specified in advance, as one would do in a well-run clinical trial.

Only the Los Alamos National Laboratory model “was found to approach the 95% nominal coverage,” but it was not available when Cuomo was forging his March policy decisions. Furthermore, a model that gradually becomes more accurate is functionally irrelevant, given that it is in the early stages of a pandemic that sound and timely decisions are paramount.

Such dire ICU bed utilization predictions never came to pass, at least not to the degree that was so widely feared, but the sense of urgency surrounding them compelled New York State leadership to prepare accordingly. The models were run, their purveyors advised, and policymakers listened.

Thousands of recovering coronavirus patients were sent to nursing homes, landing in settings that even Cuomo has called “the optimum feeding ground for this virus.” Moving elderly COVID-19 patients back into nursing homes—which produced a contagion effect that has been likened to “fire through dry grass”—was done in the name of flattening the curve, keeping hospital beds and other resources from being overwhelmed as the initial spread proceeded. But devastation followed. As of July 15, 42 percent of all U.S. deaths were linked to nursing homes, amounting to more than 57,000 lives lost—over 6,000 of them in New York.

Needless to say, there will be no recognition of the role that awful models played in the formulation

of practices that extinguished so many innocent lives. Real-time evaluation of prediction models would allow policymakers and medical experts to arrive at better prevention methods if their established plan of attack was proven inaccurate—or at the very least, they could tailor the rigidity of policy responses to the evinced exactness of outcomes. But such an approach was clearly absent in New York State. In terms of predictions of hospital resources being utilized, the degree of error between forecasts and reality was so great that it could have counterbalanced the fervor with which nursing home residents were sent back to those facilities to preserve hospital beds.

Not long after that decision, adding deep insult to unfathomable injury,

[i]n the chaotic days of late March, as it became clear that New York was facing a catastrophic outbreak of the coronavirus, aides to Gov. Andrew M. Cuomo quietly inserted a provision on Page 347 of New York’s final, voluminous budget bill. Many lawmakers were unaware of the language when they approved the budget a few days later. But it provided unusual legal protections for an influential industry that has been devastated by the crisis: nursing home operators.

In light of these findings, it’s difficult to determine which is more of an affront to the families of the thousands upon thousands of victims of New York State’s handling of COVID-19. Is it the shameless self-aggrandizing and celebration by Cuomo, whose policies led to the devastation of the elderly in long-term care facilities? Is it Dr. Anthony Fauci’s commendation of those policies? Or is it the legal protection of the entities that abetted such widespread demise?

Ultimately, there is plenty of blame to go around.

But one thing is certain: the deep human costs of this virus and its corresponding policies have been exacerbated by blind hubris and unfounded pride—which, to no small extent, saw their expression in the conceit of rule by models. Though it might be too little too late, diligent reflection and readjustment in future pandemic combat efforts will be the only way to honor those who were lost so unnecessarily.

July 23, 2020

The Economy after COVID-19

JAMES D. GWARTNEY

Contributor

One thing is certain: life in America is not going to be the same after COVID-19. Like the Great Depression and World War II, the pandemic will exert an impact for years, perhaps even decades, on the nation's economic and political fortunes.

Some of the changes cannot be predicted. However, we can anticipate some long-term effects. Here are six areas that will see major alterations.

1. The economy's structure will change. The virus and lockdown crisis forced people to do things differently. Some people have discovered options that will cause them to make different choices in the future. For example, some businesses will use online meeting technology more intensely in the future, expanding work-at-home opportunities and potentially cutting back on travel to meetings. Some doctors and patients have discovered that online doctor visits work well compared to office visits. Some educational institutions and students may even find that online education works well and is more economical than in-person education. Some people have learned to cook and others discovered how to enhance their living spaces.

These changes will exert a positive impact on some sectors of the economy and an adverse impact on others.

2. Government debt will affect growth. The increases in federal expenditures and the reduction in government revenue are being financed almost exclusively by borrowing and will push the federal debt to \$30 trillion sometime during 2021. This is 140 percent of GDP, a historically high figure, greater than even the level at the height of World

War II. Currently, interest rates are low, which will reduce the cost of servicing this debt. But interest rates will inevitably rise at some point, and the additional interest cost will have to be covered by either higher taxes or money creation. The former will slow future economic growth, while the latter will be inflationary.

3. The Fed is likely to make monetary policy errors. Monetary policy exerts its impact on both output and the price level with a lag. The Fed may not even know when the crisis has ended; thus it will be difficult for the Fed to follow a policy consistent with price stability. The risk of policy error is great. The Fed may be too expansionary, leading to high rates of inflation. Or it may not be expansionary enough, and therefore the recovery will be weak. If either of these errors occur, economic instability and slower future growth will result.

4. Government regulations will be reassessed. If regulatory reforms facilitating telemedicine and provision of healthcare and other services across state boundaries and increasing the speed of developing life-saving drugs made sense during the COVID-19 crisis, why not make the reforms permanent? Removal of rules, regulations, licenses, and certifications that act as entry barriers, rather than protect public safety, could increase the flexibility of the U.S. economy and its resilience to future shocks from pandemics and other sources.

5. International trade and travel will be increasingly restricted. The United States and several other countries argue that China covered up the dangers of

the COVID-19 virus and even encouraged international travel from China in January and February of 2020, thereby contributing to the worldwide spread of the virus. As a result, leading political figures argue for imposing trade restrictions on China to punish it for its irresponsible actions. The United States and other countries also imposed restraints on the export of health care equipment such as ventilators and respirators during the crisis.

These actions are likely to lead to more trade restrictions. Might they result in a trade war like the one generated by the 1930 Smoot-Hawley Tariff Act? If so, the nation's (and the world's) future output will be lower, and living standards will suffer. That is because modern living standards are the result of the specialization and interconnected exchanges that occur daily. And if politically managed trade replaces market exchange, both rent-seeking and political corruption will expand.

6. A ratchet effect is likely in government expenditures and intervention. Economic historian Robert Higgs observes that government intervention increases during a crisis, and virtually never falls back to the pre-crisis level. Expenditures during the crisis create interest groups that lobby for continued spending after the crisis is over. The government becomes more and more involved in the economy. Replacement of markets with political allocation leads to a less efficient allocation of resources and an increase in political corruption. Will the COVID-19 crisis follow this pattern?

With the passage of time, the impacts of the Great Suppression of 2020 will become more obvious. But these are areas to watch as we continue to live in interesting times.

This article is adapted from a chapter of a forthcoming book, *Economics: Private and Public Choice*, 17th edition, written by Gwartney, Richard Stroup, Russell Sobel, and David Macpherson (Boston: Cengage).

July 7, 2020

The Economic Performance of Coronavirus Sweden

JOAKIM BOOK

Contributor

Four months ago, I first wrote about the pandemic and Sweden. Lots have happened since – and at the same time, almost nothing has changed. Back then, the mayhem was all financial: stock markets crashing, oil prices going nuts, central banks adding zeros faster than anyone even thought possible.

Slowly, a new normal set in, where the disease was spreading to more countries and the closures of travel – to work and abroad – all but ended. We argued over the causes, the spoils, how best to maintain incomes for people innocently sacked and ensure that business could taper themselves over this temporary setback. And naturally, about how to protect health care workers and save those infected from harm. All the while the elderly kept dying.

And then there was Sweden (and Iceland and initially, the UK) refusing to obey the invasive government measures to restrict freedom so prominent elsewhere. Mid-March, the U.K. dropped its strategy and adopted the same restrictive measures dominating other countries, seemingly to no avail as the British death rates kept rising no matter how many freedoms were taken away.

On Monday, Jonathan Sumption in *The Telegraph* asked provocatively if we were to “surrender our humanity as well?” There was no end to the heavy hand of government control, it seemed. Verging on hyperbole, Simon Dolan wrote earlier this month about the UK lockdown experience:

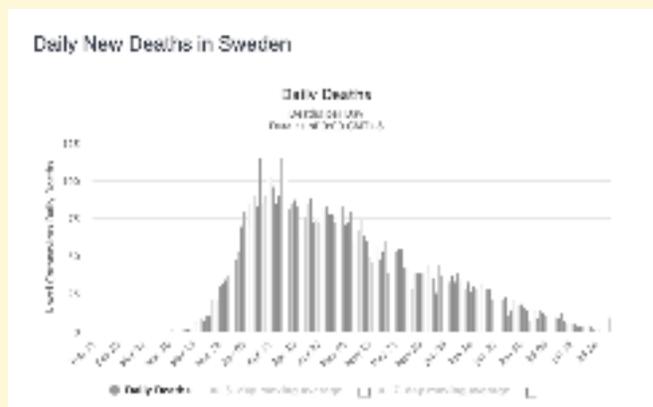
“For not only does this week mark 100 days since our liberties were stolen, it also marks 100 days of rising inequalities, countless avoidable deaths and the ruin of a generation.”

In Iceland, aggressive track-and-trace policies, effective quarantining, and closed borders had the country’s infection peak in early April. Soon enough we all forgot about them and their single-digit deaths.

Instead Sweden became the black sheep. The stubborn outlier kept its society comparatively open. Shops and cafés and workplaces introduced some changes, like putting screens between customers and shop-workers. The Scandinavian nation leveraged its high internet accessibility to work from home, and public policy and persona alike appealed to common-sense behavior – like staying at home if ill, keeping physical distance, and using sanitizer (though not as religiously as the Icelanders).

While pundits of either ideological persuasion lined up to defend it or attack it, Sweden’s elderly population kept dying. The strategy’s focus on openness, we were told, was directly to blame for care homes being unable to shield their vulnerable residents.

Except, it turned out, that the elderly and those in nursing homes elsewhere were dying all the same: in New York, in England, in Italy, in New Orleans, stringent government restrictions or not.



Since then, the novelty of coronavirus mania has worn off, but the controversy remains the same. Less about whether hospitals and governments could source masks, more about how to divvy up the free money surging forward from governments and central banks alike.

From the beginning, defenders of freedom threw up their hands in despair, pointing to the absurdity of closing society for a disease that harms relatively few – and a select group that we could and should have protected. Even so, the public response across the world was mostly exaggerated, we said: a virus of this minor caliber is not worth freezing society over.

We said that the economic pains for tens and hundreds of millions could not possibly justify the health damage to tens of thousands. In any case, a hibernated economy could only survive for so long, government checks or not. We pointed to the fatal dangers of a disrupted society, of the chaos emerging from economic ruin.

Slowly, the economic indicators are coming in. For Sweden, already in April card spending figures suggested that the drop-off in consumer spending was surprisingly mild. One critical feature was an environment where industries did not have their labor force cut off, where life mostly continued as usual, where schools were kept open so that working parents could do their jobs instead of unexpectedly becoming baby-sitters. Shopping malls remained open, to the delight of Danish citizens whose closed society had them happily cross the Öresund for some Saturday afternoon shopping in Sweden.

Capital Economics, a macro consultancy, reported this month that some of their economic trackers for Sweden were almost back to pre-crisis level. They forecast Swedish full-year GDP growth of -1.5%, an astonishing feat in a world that otherwise paused for a few months. While overly optimistic (especially among contrarian voices), the same consultancy places Denmark and Norway at -3% for the year.

The picture of Sweden as an economic success, all things considered, is slowly unfolding.

In June, the OECD's biannual Economic Outlook summary put the full-year GDP growth forecast for Sweden between -7.8% and -6.7%, depending on the severity of a potential second wave. It puts Denmark slightly ahead with between -7.1% and -5.8%, with estimates for the UK (between -14% and -11%) and the U.S. (-8.5% or -7.3%) noticeably worse.

The European Commission is slightly less dismal, estimating a eurozone GDP decline for the year of 8.7%, but Sweden (-5.3%) and Denmark (-5.25%) as the second and third best-performing member states after Poland (-4.5%).

Recent numbers from Statistics Sweden report that household consumption has fallen by some 4.5% year-to-date – a catastrophic number in any other year. In contrast, for the period March-May, American household consumption fell by over 10% compared to the same period last year.

Earlier this spring, the Riksbank invoked great uncertainties about the economic future and offered two forecasts instead of their usual one: GDP losses for 2020 of 6.9% in the more optimistic case, or a 9.7% decline otherwise. In July, long after anyone with a disaster-prone mind had stopped listening, the central bank quietly updated its projection.

The two scenarios now projected -4% and -5.7% in GDP growth for the full year – considerably below what most other rich countries are expecting. The U.S. GDP fell in the first quarter by over 5%, whereas Sweden reported miniscule growth, hovering around zero. In macroeconomic terms, that's a world of difference. For the U.S. we'll have better numbers on Thursday when the Bureau of Economic Analysis releases its advance GDP estimate for the second quarter and updates to its first-quarter estimates.

In contrast, the American unemployment rate of over 14% in May compares very unfavorably with the Swedish experience, stabilizing at just above 9%.

By a large margin, fewer Swedish workers report that they have had their working hours cut during the pandemic than anywhere else.

In the last three months, the Swedish currency has also rallied, appreciating 12.5% against the dollar and over 5% against the euro (5.5% using the trade-weighted KIX-index). Lars Calmfors, frequent policy commentator and professor at Stockholm University, reluctantly admits that Sweden has so far done economically better than most other places, but that it's still too early to conclusively say. If there's a second wave in the fall, Calmfors says, the economic gains Sweden has carved out for itself will have been for nothing.

Perhaps. Judging from Google mobility data, however, Swedes are back to pre-corona level movements, yet new infections are at low double-digits a day – on par with the health-success of Denmark – and COVID deaths are now only a handful a week. Perhaps only a seasonal effect, and we'll have to wait for the fall.

Selectively using some economic forecasts rather than others can still portray Sweden in an unflattering light. If you compare some more dire Swedish projections with the most optimistic Danish or Norwegian ones, for instance, the Swedish experiment looks barbarous.

Judging by per-capita deaths, Sweden has clearly done worse than the U.S. Still, Stockholm, Sweden's worst-hit area, has done much better than New York City, America's worst-hit region. Compare Sweden to similar-sized NYC, Massachusetts, or New Jersey, and the Nordic black sheep looks much better.

There are more dishonest takes too, like this story in the *New York Times*, where the writer compares the Riksbank's pre-corona projection with its current estimate for GDP growth (with no account of the revisions in-between) and pretending that it weighs against Sweden's corona strategy.

The spread of the virus and the economic damage the countermeasures are causing are not yet fully understood. For every Iceland and Denmark and New Zealand against which Sweden looks bad, there's a Spain, a UK, and a New York City against which it looks marvellous. While Sweden's experiment has not been an uncontested success, much of its economic data so far suggests that it's doing better than many other places – and much better than we thought just a few months ago.

Almost everywhere we look, the disruption of life and commerce, financial loss and economic ruin, has been smaller in Sweden than elsewhere; the International Monetary Fund says so too. The effects on Sweden's already prudent public-sector debt has been muted.

Perhaps "counting coppers" is vile, but we do it in normal times, so why not in corona times? Unfortunately, conclusive economic data doesn't arrive in real time. Economically, as far as we can tell, Sweden has been comparatively successful, but the projections between various economic institutions and statistics agencies still vary way too much for us to be entirely certain about this. In a year where models and forecasts have been widely off the mark, we should interpret this conservatively. In this – Professor Calmfors is right: the full judgement of the Swedish experiment must wait a while.

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