Plus:

How COVID-19 is changing the labor market

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Is a wave of sovereign-debt defaults ahead?

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Academics are collecting and analyzing data with urgency, because findings are needed now.
We don’t have the option of borrowing money from Mars. We’ve got to think of something else.”

Page 47
THIS TIME IT’S DIFFERENT.
Researchers are analyzing this crisis as it unfolds, and their findings can help shape policy.

Much of the research we’ve published since Chicago Booth Review launched in 2016 has been connected to the Great Recession of 2007-10. It has taken academics time to digest the data from that crisis, and the work is far from completed. (Researchers are still making new discoveries about the Great Depression and earlier crises.)

But in the past decade, the availability of high-frequency, real-time data has exploded, enabling researchers to analyze crises as they happen. The cliché is that journalism is the first draft of history. This time around, so is academic research.

The rapid spread and economic impact of this pandemic have been breathtaking. And in this crisis, more so than previous ones, it’s possible to use research to help navigate the fast-changing situation. From home, Booth faculty have been collecting and analyzing data, documenting the developing situation, and producing findings that we hope are helping leaders in government and business to make sense of what’s happening.

Some of the research had been in progress before the lockdown, but other projects were conducted immediately and urgently, with the knowledge of the immense challenges facing policy makers. Some of the research described in this issue could help save lives, such as that by Chicago Booth’s Dan Adelman, who studied how US states could share ventilators to maximize their use (page 51). Other research could help companies to continue functioning, such as the analysis conducted by Booth’s Eric Zwick and his coauthors on how the US government could use insurance and loans to keep small businesses afloat (page 28). And it could save entire economies: Booth’s Chang-Tai Hsieh explains the coordinated effort that would be needed to stave off a wave of sovereign-debt defaults (page 47).

Those are just three of the ideas covered in this issue, in which we summarize 50 projects and conversations, by and with more than three dozen Booth faculty, all of whom are making sense of our rapidly changing world. The tremendous amount of work they’ve done in just a few weeks, with the potential to influence policy, is staggering.

By the time you read this, some of the initial analysis may already be outdated, and researchers may be revising their findings. Moreover, all the research captured in these pages represents just some, not all, of the work being done at Booth about COVID-19. To stay up-to-date, visit our website, Review.ChicagoBooth.edu, where we post new articles, charts, and videos every day.

On page 44, you’ll find an edited excerpt of a conversation between Booth’s Luigi Zingales and Luis Garicano, an economist who is also a member of the European Parliament. The video of the conversation between them can be seen on our website, as well as on ProMarket, a publication of Booth’s Stigler Center.

“I see this as a massive moment of transformation,” Zingales says. He is surely right. We hope that you consider the research and informed analysis in this issue as you make decisions in the immediate health crisis and whatever comes in its wake.
Veronica Guerrieri, the Ronald E. Tarrson Professor of Economics and a Willard Graham Faculty Scholar, studies macroeconomics with a particular interest in labor and financial markets. She is managing editor of the Review of Financial Studies and the recipient of, among other awards, the 2015 Bernácer Prize for the best European economist under 40 in the fields of macroeconomics and finance. (Page 13)

Eric Budish, the Steven G. Rothmeier Professor of Economics and the Centel Foundation/Robert P. Reuss Faculty Scholar, uses game theory—and applied microeconomics tools more broadly—to study the design of markets. In this issue, he offers a way to think about public-health and economics goals in a simple, unified framework—something policy makers can keep in mind as they navigate the twin crises. (Page 23)
Chang-Tai Hsieh, the Phyllis and Irwin Winkelried Professor of Economics and the PCL Faculty Scholar, conducts research on growth and development. The recipient of an Alfred P. Sloan Foundation Research Fellowship as well as the Sun Yefang Economic Science Award for research on the Chinese economy, he warns that lenders and policy makers must plan and act swiftly to avoid a wave of catastrophic sovereign defaults. (Pages 47 and 49)

Ayelet Fishbach, the Jeffrey Breakenridge Keller Professor of Behavioral Science and Marketing and an IBM Corporation Faculty Scholar, is an expert on motivation and decision-making. Some of her recent research, predating the COVID-19 crisis, looks at feelings of isolation—a topic that took on new relevance when lockdowns and social-distancing mandates went into effect. (Page 57)
The Rustandy Center for Social Sector Innovation is Chicago Booth’s destination for people committed to helping solve complex social and environmental problems. In our monthly newsletter, Booth faculty will share articles and ideas for accelerating impact in the social sector, and we’ll summarize relevant news and events.

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WHY DID WE GET POPULIST POLITICS?

The populism puzzle (Spring 2020)

Because economic growth wasn’t benefiting most of the population. The skilled workers enjoying better wages were affected by somewhat unregulated trade policies. In the United States, that’s the 40 million people who are now making $10 an hour in the service sector, or have warehouse jobs, and are now just barely getting by.

—Jim Scheffler

Because the stock market is a false indicator. The middle class in both Britain and the US are in dire economic straits. It was a slow removal of economic power. Once the floor was reached, populism became popular.

—Christian Gestwicki

REVIEWING ONLINE REVIEWS

Yelp has revived intimate capitalism (Spring 2020)

Online reviews are an invaluable source of information and reputation. Yelp, Tripadvisor, Airbnb, eBay, etc. Caveat emptor. If you take the time to do your homework and read the online reviews ahead of time, you will discover which of the butchers, the brewers, and the bakers will most likely delight you and which likely will not. I believe Adam Smith and Benjamin Franklin would be very pleased with the way the internet has helped to deliver transparency of reputation and character. And a lack thereof.

—Dave Schultz

Not while you can pay people to make fake reviews.

—Ryan Kappedal

HUNGRY FOR HUMANITY

Food restrictions may stoke loneliness (Spring 2020)

I’m a vegetarian, and it’s amazing how many restaurants aren’t actually interested in feeding me. . . . Even their french fries are made in something animal. So when all my friends go to the latest barbecue meat joint that literally doesn’t have a vegetarian option, how can I feel anything but unincluded?

—Angela Sassnake Barsotti

My experience of diet adjustments was what I call “socially awkward.” I was caught between wanting to participate fully in the event, including the meal, but needing to exercise self-care.

—Laurel Walton

REMEMBER GLOBAL GROUPS

How to avert a disastrous group decision (Spring 2020)

Interesting and very useful article! From a Dutch/European perspective, I would favor a more indirect approach, but that is probably culturally defined. “C’est le ton qui fait la musique.” (It’s the tone that makes the music.)

—Willem Koppel

INEQUALITY IN FOCUS

Stop worrying about wealth inequality (Spring 2020)

What about all that inefficient, hoarded capital? Isn’t the whole idea of capitalism that rich people are rich because they are efficient and good at investing, so let’s give them unfair privileges to make more wealth because it grows the economy “for everyone”?

—Kyle Carlson
For the latest research and updates on the crisis, visit CHICAGOBOOTH REVIEW online

Veronica Guerrieri on why the crisis could prompt more women to join the labor market

Casey B. Mulligan, Kevin M. Murphy, and Robert H. Topel on the economics of COVID-19 policy

Pradeep K. Chintagunta on pivoting a business during a time of uncertainty

Raghuram G. Rajan on the global economic impact of the crisis

View our collection of articles, videos, and charts at Review.ChicagoBooth.edu/covid-19
RESEARCHING THE CRISIS IN REAL TIME

Academics are collecting and analyzing data with urgency, because findings are needed now

ILLUSTRATIONS BY BEN WISEMAN

THE ECONOMY Page 12
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IN NORMAL TIMES, ACADEMIC RESEARCH AND PUBLISHING IS DELIBERATELY SLOW.

The process can seem painstaking to outsiders. It can take years for research projects to be planned, conducted, written up, peer reviewed, revised, and ultimately published. The laborious scientific search for answers is designed to result in findings that are as rigorous and accurate as possible.

But COVID-19 has changed a lot, including the pace of research. In just a few weeks, Booth faculty have produced white papers and working papers at an astonishing pace. What follows is a collection of summaries of many of these projects and insights.
After the 2008–09 financial crisis, researchers spent much of the decade seeking to understand what happened. Lessons continue to emerge from data collected during the Great Recession. But while every crisis is different from the one that came before, something notable about this one is the amount of data available. Unlike a decade ago, for example, it is now possible to track people’s movements in real time and to study the implications. Booth faculty have analyzed, among other sets, text data, financial-market data, labor-market data, time-clock data, mobile-phone data, and data from surveys of business leaders, consumers, and workers.

From the first days of this crisis, when the virus was spreading in China, and as it progressed, researchers have sought to understand what is happening and determine the best course of action. What have the economic effects of lockdown measures been? Has the resulting shock been an issue of supply, demand, or both? How can officials chart a course between reducing the spread of the virus and preserving economic activity? The answers to these and other questions have been vital to understanding how policymakers should respond, and which actions will have the desired effects.

Much of what researchers have produced quickly is based on years of experience and study. For example, how trustworthy are predictions and forecasts, the kind on which epidemiologists and governments the world over have been relying? What assumptions are baked into the underlying models, and how do you recognize trustworthy research findings? Some prior data sets have new relevance in a world changed by COVID-19. Several projects conducted with historical data could potentially help address impediments and problems in the process of distributing funds to small businesses.

The research and related discussions also address big-picture questions about the future. Can we stave off massive sovereign-debt defaults? Could the crisis prompt the collapse of the European Union—or perhaps lead to a new era of global cooperation?

Researchers continue to collect and analyze data, and with urgency. Governments are taking actions to both stem the spread of the virus and contain the economic fallout. We would hope our leaders would act informed by evidence and thoughtful analysis, and by the best research findings and suggestions available. The decisions governments and policy makers are facing now will have effects that reverberate for years, and will shape our lives for years to come.

The research is being done quickly because the findings are needed now. There are more questions than answers, but there are data—and people who know how to interpret and analyze them, and learn the lessons.
THE ECONOMY

The public-health crisis caused by COVID-19 quickly turned into an economic one. How bad is it, who is hit the hardest, and how long will it last?
How COVID-19 shocked both supply and demand

The sudden closure of businesses around the world has contributed to a massive economic shock, and policymakers have scrambled to try to contain the damage. To many, it has seemed a clear supply shock—the term for what happens when an event interrupts the production of goods and services.

But the COVID-19 downturn involves more than that typical supply shock, write Chicago Booth’s Veronica Guerrieri, Northwestern’s Guido Lorenzoni, Harvard’s Ludwig Straub, and MIT’s Iván Werning. They argue that the supply shock has led to an even larger demand shock, as affected workers lose income and all consumers cut back on spending. Therefore, they write, policy responses need to address both types of shocks.

To combat the spread of COVID-19, many governments responded with lockdowns and shelter-in-place measures. Across the globe, businesses deemed nonessential closed, and their workers were instructed to stay home. This caused the huge supply shock, and usually the appropriate response would be to keep people afloat through social-insurance programs—and wait for productive capacity to revive when the pandemic passes.

Because of this, some policymakers and economists argued early on against government stimulus, which is the usual response to a shock caused by a lack of demand, as opposed to supply. After all, why should a government try to encourage people to spend money when the underlying issue is that they need to stay home?

But a supply shock can lead to a demand shock, according to Guerrieri, Lorenzoni, Straub, and Werning. “Demand may indeed overreact to the supply shock and lead to a demand-deficient recession,” write the researchers. It’s also possible that the deterioration of demand will have larger economic effects than the supply shock that caused it, and the researchers dub this a “Keynesian supply shock.”

This can happen because of the interrelated pieces of a complex economy. Closing businesses such as gyms, restaurants, and movie theaters can hurt demand elsewhere. If yoga class is canceled until at least the end of summer, a studio member might see no immediate reason to spend money at sportswear stores such as Lululemon or Under Armour. If hotels are closed and business travel is canceled, there’s less need to buy luggage and attire, even if both are available for sale online.

Workers in shuttered industries lose spending power, so demand drops in all sectors. This can sap income from even unaffected workers—and dampen their willingness to consume.

The researchers’ model indicates that government purchases have limited effects in this environment. The government can’t spend in frozen sectors and isn’t able to move resources toward those affected businesses and workers.

But unemployment insurance and other direct payments to fired workers can mitigate the demand shock, providing households with the means to continue spending. This, by reducing the economic pain, will allow the government to continue lockdown measures when necessary, potentially shortening the length of the pandemic.

Initiatives including the Small Business Administration’s Paycheck Protection Program can help in this respect. Direct payments will keep waylaid workers solvent, and encouraging companies to furlough rather than fire workers can protect valuable labor-employer relationships that can eventually support the recovery.

The recession ultimately needs to be mollified by a combination of stimulus and social support, as both have a role to play in mitigating the effects of a downturn.

—Michael Maiello


“I would love if we’d have a V-shaped recovery, but I’m not optimistic. The shocks we have seen, on both the policy side and the health side, will have fundamental impacts on economic behavior. It’s not that a bit of a flu came through and we can move on; and it’s not that we had a bit of a policy change, just turned off the lights for a bit, and now can turn those lights back on.”

From an interview on April 13. View the video and full transcript online.
The US economy could contract 11 percent in 2020

As it attempts to stem the coronavirus epidemic, the United States can expect to see its economy shrink by 9 percent in the second quarter of 2020, relative to the same quarter in 2019, according to research by Northwestern’s Scott R. Baker, Stanford’s Nicholas Bloom, Chicago Booth’s Steven J. Davis, and Stephen J. Terry of Boston University. The researchers predict a peak contraction of 11 percent in the fourth quarter of 2020, relative to a year earlier.

Trying to forecast the scope of the economic damage inflicted by the coronavirus presents economists with considerable challenges, as the COVID-19 crisis has few, if any, historical analogs, and the situation has evolved and escalated rapidly. To surmount these obstacles, Baker, Bloom, Davis, and Terry examined economic uncertainty in three ways: through newspaper coverage of the economy and equity markets, surveys that capture business leaders’ expectations about future sales growth, and stock market volatility.

To estimate the economic impact of the COVID-19 crisis, they fed data on the stock market drop and the rise in its volatility into an empirical model of disaster effects developed by Baker, Bloom, and Terry.

To quantify uncertainty reflected in news about the economy and markets, the researchers used resources developed in previous research, much of it conducted by Baker, Bloom, and Davis, sometimes with other colleagues. One source is the daily and monthly US Economic Policy Uncertainty (EPU) indexes, which indicate the frequency of articles—drawn from about 2,000 US newspapers—containing one or more terms related to the concepts of economics, policy, and uncertainty. The daily index went from a monthly average value of around 100 (roughly normal uncertainty) in January to almost 400, a record high, in March. The monthly index showed a similar spike.

The EPU indexes, as well as another newspaper-based index, the Equity Uncertain outlook for sales
Surveys captured US business leaders’ initial reaction to the COVID-19 crisis.

Sales-growth-rate uncertainty
Higher value = greater uncertainty

Market Volatility Tracker—developed to reflect the frequency of articles about the economy, markets, and market volatility—also provide a glimpse of how much uncertainty can be attributed to the pandemic.

In a dramatic shift from previous infectious disease outbreaks, which have historically had modest effects on financial markets, “COVID-19 developments receive attention in more than 90 percent of all newspaper discussions of market volatility and policy uncertainty,” according to other, recent research—by Baker, Bloom, and Davis, along with PhD candidates Kyle Kost at the University of Chicago, Marco Sammon at Northwestern, and Tasaneeya Viratyosin at the University of Pennsylvania.

Surveys of executives provide another measure of economic uncertainty. The Survey of Business Uncertainty, developed by Davis and Bloom with colleagues at the Federal Reserve Bank of Atlanta, tracks US companies’ expectations for future sales growth.

The Decision Maker Panel, created by a team of researchers including Bloom, does the same for companies in the United Kingdom. Both surveys indicated spikes in sales-growth uncertainty in March 2020 that went “well above any previous peak in their (short) histories,” write Baker, Bloom, Davis, and Terry. Yet, the researchers suggest the values derived from the surveys underestimate the true magnitude of business uncertainty, as uncertainty grew especially rapidly in the last half of the month.

Finally, US stock market volatility has been an especially visible reflection of uncertainty since the outbreak of the virus. The researchers note that the CBOE Volatility Index (known as the VIX), which measures investors’ expectations about future volatility, grew by roughly 500 percent from January 15 to March 31.

The researchers used that volatility in Baker, Bloom, and Terry’s model to predict the magnitude of the contraction that the US economy is likely to experience. The model looks at “first-moment” and “second-moment” effects of a disaster—that is, the initial economic shock that follows the disaster’s strike, as well as the sustained rise in uncertainty that follows. The researchers based the first-moment effect on the S&P 500’s 28 percent plunge between February 19 and March 31, and the second-moment effect on the rise of the VIX over the same period.

The findings forecast a peak GDP contraction in the fourth quarter of 2020. About half of this projected contraction is due to COVID-19-related uncertainty. What’s more, the researchers suggest, “There are reasons to think that our illustrative exercise understates the likely output effect of the COVID-19 pandemic”—for instance, the broad closure of schools and the shift to working from home for many workers may further hinder productivity, they write.—Jeff Cockrell
Economic shocks that initially hit specific sectors can spill over into others—and have effects that long outlast the crisis period, highlights research by Chicago Booth’s Kilian Huber. This suggests that the economic impact of COVID-19 could be broad.

“The recovery from big shocks can be slow, even if the shock itself is temporary,” Huber says. “This is especially true if productivity-enhancing investments are affected during the crisis.”

The findings come from an analysis of German companies during and after the 2008–09 global financial crisis. Commerzbank, one of the country’s largest banks, in 2008 made deep lending cuts because of losses on its international financial investments. Germany, unlike most developed economies at that time, hadn’t experienced a real-estate boom or bust, local banking panic, or sovereign-debt crisis. This made it possible to track the effects of the lending cut without the interference of additional external factors.

Huber analyzed five data sets sourced from the government and business surveys. The lending shock reduced the growth of companies that relied directly on loans from Commerzbank, he finds. On average, over the four years following the lending cut, employment at directly affected companies was around 5 percent lower than at those with no direct exposure.

But the shock also reached companies that didn’t have a direct relationship with the bank. These companies experienced spillover effects due to both a general decline in demand and a temporary lack of innovation at directly affected companies. When Commerzbank’s customers made job cuts, overall household consumption fell, which then affected revenue and employment at other companies, Huber says. Further, declining production and research-and-development activities at directly affected companies spilled over to others, thus halting broad innovation. Indeed, the research finds that more-innovative companies were more likely to be hurt by the lending cuts.

As lending normalized, the pain continued. In the years following the recession, directly affected companies were worse off than others, Huber finds, but indirectly affected companies also experienced continued challenges.

How might these findings relate to the economic shock wrought by COVID-19, which couples a health catastrophe with a massive global halt to economic activity? The financial shock of 2020 initially hit hospitality and tourism, and disrupted manufacturing supply chains, but quickly spread into other sectors as stay-at-home policies were enacted worldwide. Job cuts accelerated even as some companies—including shipping, grocery stores, and remote-work platforms—at least temporarily ramped up their hiring.

Indirect effects of an economic shock can depress all growth. “If the directly affected firms fire workers, these workers will buy less from all types of firms,” Huber says. “That will lower demand also for firms that were not directly disrupted. As a result, all firms will grow more slowly.”

In the case of Commerzbank’s lending cut, companies hit by a temporary credit shock were persistently affected—and this suggests any current hit to companies, however temporary, could also have consequences that long outlast the initial disruption, Huber says.

But the findings also offer a lesson about investing in innovation during hard times. Companies that invested less in developing technologies, ideas, and products during the crisis period were particularly likely to experience long-term effects. “In the case of COVID-19,” Huber says, “it could be that firms end up worse off in the long run if they forgo productive investments into technologies and ideas that have a long-term payoff.”—Rebecca Stropoli

Kilian Huber, “Disentangling the Effects of a Banking Crisis: Evidence from German Firms and Counties,” American Economic Review, March 2018

JOSEPH L. PAGLIARI, JR., CLINICAL PROFESSOR OF REAL ESTATE

“Economics provides a useful lens through which we can evaluate competing options, even if they are all ‘bad’ options. The practice of examining trade-offs and searching for the optimal outcome(s) can serve us well in the current crisis. But we must all acknowledge the uncertainty inherent in our analyses, and accept that we will not have full knowledge of all the variables involved for quite a long time, if ever.”

From “No one has all the answers for COVID-19 policy,” May 2020, published online at Review.ChicagoBooth.edu.
US unemployment is even worse than the official numbers say

The COVID-19 crisis has sent the US jobs market reeling. As of April 16, more than 22 million workers had filed unemployment claims since the shutdowns began in March.

But the real unemployment figures are likely higher than reported, suggests research by University of Texas’s Olivier Coibion, University of California at Berkeley’s Yuriy Gorodnichenko, and Chicago Booth’s Michael Weber. Despite catastrophic job losses, an increase in workers dropping out of the labor force altogether may mean the official unemployment rate is misleadingly low, they argue.

To track the pandemic’s effect on unemployment, the researchers used an ongoing survey, conducted by Nielsen, of households that participate in its Homescan panel, studying three key measures typically tracked by the Bureau of Labor Statistics (BLS): the employment-to-population ratio, the unemployment rate, and the labor-force-participation rate.

During recessions, as the employment-to-population ratio falls, the unemployment rate typically rises, and vice versa. But in more severe recessions, a higher number of discouraged out-of-work people may stop looking for employment. In this case, while the employment-to-population ratio is low, the unemployment rate doesn’t rise at the same rate, as there are fewer people who are an active part of the labor force.

The researchers tracked surveys prior to and during the pandemic. They find that the employment-to-population ratio had fallen by around 7.5 percent in April, which meant almost 20 million jobs had been lost as of April 6, far more than the estimated 16.5 million that had been reported. State governments’ inability to process such a crushing number of claims, coupled with the fact that many workers aren’t eligible for unemployment benefits, may account for the underestimation, the researchers note.

Twenty million jobs lost at that point should have led to an approximately 12-percentage point jump in the unemployment rate, the researchers write, which would translate to about a 16 percent unemployment rate if all laid-off workers were searching for new jobs. However, using the survey data—and building an unemployment model similar to the BLS’s, which includes only unemployed people looking for work—they find an increase of just 2 percentage points. At the same time, they see a decline in the labor-force-participation rate of almost 8 percentage points. In the span of just one month, this rate far exceeded the cumulative 3-percentage-point decline experienced from 2008 to 2016.

The survey indicates that many of these workers simply chose to retire early. The percentage of people claiming they were retired rose from 53 percent in the precrisis survey to 60 percent in the latest survey. “Given that the age distribution of the two surveys is comparable, this suggests that the onset of the COVID-19 crisis led to a wave of earlier than planned retirements,” the researchers write.

“With the high sensitivity of seniors to the COVID-19 virus, this may reflect in part a decision to either leave employment earlier than planned due to higher risks of working or a choice to not look for new employment and retire after losing their work in the crisis.”

Historically, few people have returned to the labor force after retiring, and Weber does exercise some caution in assuming this will be the case now. The crisis is unprecedented and in its early days, so it’s possible some workers claiming to be retired may ultimately return to work, along with others who may have stopped looking for work only temporarily. “If you say you have entered retirement and, in the end, you realize you don’t have enough savings, once the economy gets better, you may go back into the labor force,” he says.

If the patterns align with historical norms, that’s unlikely to happen, however. And if those newly retired workers stay out of the labor force, the United States is likelier to see a longer recession, rather than a swift, sharp—or V-shaped—recovery.

—Rebecca Stropoli

How has the crisis affected hourly workers at small businesses?

As the COVID-19 crisis spread and US states issued stay-at-home orders, companies dramatically reduced their employees’ hours. Analyzing data from a provider of scheduling and time-clock software for small businesses, a team of researchers finds that the change was not primarily a matter of companies laying off a portion of their staffs, bringing down the average number of hours. Rather, companies either did widespread reductions in hourly workers’ schedules or shut down their operations entirely.

University of Illinois’s Alexander W. Bartik, Chicago Booth’s Marianne Bertrand, Booth research professional Feng Lin, University of California at Berkeley’s Jesse Rothstein, and UC Berkeley PhD candidate Matt Unrath collaborated with the company Homebase, which shared time-clock data from its customers to provide a high-frequency picture of employment. They document a series of facts that provide a picture of small businesses’ response to the crisis.

Fact 1: Companies dramatically reduced employee hours. In an analysis of the overall distribution of work hours, the researchers find that companies began scaling back the week of March 8, and by the week of March 29, more than 40 percent of companies had shut down entirely.

Fact 2: Hours reductions varied by industries’ ability to operate under stay-at-home orders. Reductions were largest in beauty and personal care and in leisure and entertainment, declining for each by more than 80 percent. They were smallest in home and repair and in transportation, but even those hours declined by 40 percent.

Fact 3: Hours started falling earlier in states with stay-at-home orders, but by March 16, they had fallen sharply in almost all states. By March 28, total hours had declined more than 70 percent in states with the earlier stay-at-home orders, over 15 percentage points more than states without them.

Fact 4: Hours reductions were primarily explained by company shutdowns and work-schedule adjustments, not layoffs. The total number of hours worked in the first week of April was less than half what it was in late January. Most of this reduction was due to companies fully shutting down or asking retained employees to work fewer hours.

The researchers note that the greater detail and higher frequency of these data come at some costs. Homebase’s list of clients is disproportionately composed of small companies in food service, retail, and other sectors that employ many hourly workers. But they also find that the data are broadly representative of US employment in terms of geography. Roughly 60 percent of the businesses have five or fewer full-time equivalent employees, and the vast majority have 50 or fewer.

Change in hourly workers’ schedules, by industry

1 = level of workers’ hours before COVID-19 crisis

- Home and repair
- Others
- Transportation
- Retail
- Professional services
- Health care and fitness
- Food and drink
- Charities, education, and membership
- Leisure and entertainment
- Beauty and personal care

Almost two-thirds of workers in the US can’t work from home

From an interview on April 9. View the video and full transcript online.

How much work can continue during COVID-19?

To understand the short-term hit to the US economy, it’s important to know what work will look like during this period of social distancing. The most basic question you might want to know is, how many people can work from home? Or, how many people won’t be able to work if they can’t leave their home to go to a workplace? For answers, Chicago Booth’s Jonathan Dingel and I looked at a number of survey questions administered by O*NET, a database of occupation-specific facts covering about 1,000 jobs in the US economy, sponsored by the Department of Labor. The survey questions describe various characteristics of given occupations, for example: Do you operate heavy machinery? Do you have to run during a typical day to conduct your job?

On the basis of these survey responses, we classified given occupations as those that could be done entirely from home versus those that couldn’t be. Police officers and firefighters, for instance, can’t really do their jobs from home. The same is true for dentists, machine operators, commercial drivers, and certain kinds of workers who need to be physically active. Waiters can’t really do their jobs from home.

By contrast, for financial professionals and a lot of service workers, it’s not a big deal to do the job from home. Dingel and I estimate that 37 percent of all jobs in the United States can be done from home. And it’s worth noting that this is a much larger percentage of jobs than were done entirely from home before the COVID-19 crisis.

This leaves a large set of workers who can’t work from home. That’s scary and problematic, and it suggests there will be a severe economic hit from strong social-distancing measures put in place to combat the health effects of the virus.

Those jobs that can be done from home typically are higher paid than those jobs that can’t be. They represent 46 percent of all wages earned in the US economy. Of course, there are a lot of elements that make it really difficult to map from our estimates to a forecast of GDP. One thing that’s important to note is that there’s been a big demand shock associated with this crisis.

Furthermore, we have not evaluated the efficacy and productivity of jobs performed at home as a result of social distancing. It might be that various jobs can be done at home, but they’re done less productively, for a variety of reasons. While we think our number is helpful, more work would have to be done to translate it into an assessment of what the actual hit to the economy will be from strong forms of social distancing.

What differences do you see across cities and countries?

Behind those aggregate statistics, there’s a lot of heterogeneity across cities and across industries. For instance, in some cities, such as San Francisco, a large share of workers could continue their work even under strong forms of social distancing. In other places, such as Las Vegas or Bakersfield, California, it’s going to be much more difficult. This is important because the effects of this crisis will hit unevenly across households and regions, cities and industries. We hope that providing these statistics might be useful as policy makers target aid to those regions and occupations and industries and people that most need it.

The heterogeneity that we describe exists not only across US cities, but across countries. Our research underscores that poor countries and emerging markets typically have an even lower share of jobs that can be performed at home, making it a greater challenge to keep workers going in those places.

All of our attention right now is, and should be, on containing the public-health crisis, doing what we can to save lives and to stop the spread of the virus and the disease. I fully support this approach. But hopefully sooner rather than later, we will move beyond the phase where we’ve got strong forms of social distancing. At that
point, the world is going to face severe economic challenges.

**What will the aftermath of COVID-19 mean for global trade?**

The last time you saw a large global trade collapse was in 2008 and 2009, associated with the global financial crisis. There are some reasons to believe that, at least in the long run, the implications of this recent crisis might be just as big, if not much bigger and more lasting, in terms of international trade.

Why might international trade collapse in the aftermath of the crisis? First, it might be that it takes a while for demand for durable goods, which are the most intensively traded, to pop back up. My previous research—done together with Penn State’s Jonathan Eaton, Yale’s Sam Kortum, and University of Sydney’s John Romalis—documents that declining demand for intensely traded goods was in fact the key factor behind the trade collapse in 2009. But this time around, there may additionally be concern about traveling and finding suppliers face-to-face—doing some of the things that lead to trade ties between countries.

Further, even before the COVID-19 crisis, many countries had instituted protectionist measures. Together with Harvard’s Alberto Cavallo and Gita Gopinath and the Boston Fed’s Jenny Tang, I’ve been working on understanding the impact of import tariffs placed by the US on goods from around the world, and the retaliatory response by other countries. These policies already put a dent in global trade flows. Now we additionally see export restrictions put in place, though thus far they’ve predominantly applied to medical gear and related items.

In response to COVID-19, we may well change the way we do business, and our technological ability to meet people and find suppliers and integrate our supply chains without physically going anywhere may increase quite substantially. But in the short to medium run, there’s the concern that trade could potentially dry up, and this could be compounded by the prevailing protectionist sentiment. And if countries come out of the COVID-19 crisis at different times, there might even be concern about doing business across certain borders.—*CBR*

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**STEVEN J. DAVIS, WILLIAM H. ABBOTT DISTINGUISHED SERVICE PROFESSOR OF INTERNATIONAL BUSINESS AND ECONOMICS**

**With help from delivery services and Zoom, COVID-19 is transforming the labor market**

From an interview on March 31. View the video and full transcript online.

The crisis is going to change the US labor market profoundly. The shift toward online purchasing, coupled with onsite delivery, will be a massive change. Already, there’s been a huge uptick in demand for delivery services, both home delivery and business delivery. Some of that will subside in the wake of the crisis, but not all of it.

Millions of people have figured out in the past few months how to order food deliveries online. Some of them will continue to do so, either for the sake of convenience or because there are lingering concerns about the health effects of going to a sit-down restaurant or a crowded grocery store.

We’ll do a lot more videoconferencing. Our calendars have filled up with Zoom meetings. All of us are learning how to work with this technology. There is a learning curve, and you’ve got to work out the kinks, both personally and in terms of organizations. But most of us have now crossed that threshold. That’s great for businesses such as Zoom. But it means that airline travel and hotel occupancy for business reasons will probably be soft even after we get over this crisis.

Hopefully, we’ve learned that some of our investments in public-health infrastructure and supply chains for critical medical equipment such as masks, ventilators, and testing—both the kits and the lab capacity—should be increased, not just in the near future but over the longer run. There are going to be many shifts of this sort.

We want policy to be conducted in a way that facilitates these shifts and encourages them, rather than slowing them down and discouraging them.—*CBR*
WHAT WILL COVID-19 MEAN FOR INEQUALITY?

There are a number of factors that could result in COVID-19’s burden being felt more heavily by some groups than others: among them, government shutdowns’ uneven impact across industries, the likelihood of higher-income jobs being more suited to remote working, and varying levels of access to health care. To explore how the pandemic might affect inequality, Chicago Booth’s Initiative on Global Markets asked its US economic experts panel to consider the disease’s consequences for incomes and education in the United States, while IGM’s European experts panel took up the same questions for Europe. US panelists also considered a third question, about inequality in mortality, and European panelists weighed in on targeting inequality through public policy.

Statement A: With the economy in lockdown, low-income workers who are above the poverty line will suffer a relatively bigger hit to their incomes than those further up the distribution (even accounting for all government support schemes).

About the IGM Panels
To assess the extent to which economists agree or disagree on major public-policy issues, Booth’s Initiative on Global Markets has assembled and regularly polls two diverse panels of economists, all senior faculty at the most elite research universities in the United States and Europe. The panels include Nobel laureates and John Bates Clark medalists, among others. Polls are emailed individually to the panel members, and panelists may consult whatever resources they like before answering. Members of the public are free to suggest questions.

See more online
All responses to these polls can be seen at igmchicago.org.
**Statement B:** With schools closed due to lockdowns, existing gaps in access to quality education between high- and low-income households will be exacerbated.

Franklin Allen, Imperial College London

“It depends significantly on which country in Europe. In many, I don’t think there will be much difference across the income distribution.”

Response: Uncertain

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**European Statement C:** Combating the effects of the pandemic on inequality should be a priority for policy interventions.

Agnès Bénassy-Quéré, Paris School of Economics

“Otherwise, social distancing is nonsustainable.”

Response: Strongly agree

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**US Statement C:** The mortality impact of COVID-19 is likely to fall disproportionately on disadvantaged socioeconomic groups.

José Scheinkman, Columbia

“This difference would have been less pronounced if the US had universal health care.”

Response: Strongly agree
US officials have to steer the country through the immediate crisis and its uncertain aftermath. Research offers ideas for how to approach this difficult task.
A simple framework to help revive the US economy

The COVID-19 crisis has seemingly left US policy makers with a choice between two terrible options: keep the economy shut down, or risk allowing the disease to run rampant throughout the populace, overwhelming the health system and opening the door to an unthinkable number of deaths.

But there is a middle course that decision makers can chart, and Chicago Booth’s Eric Budish has created a framework to help them do so. Managing COVID-19 for the time being, he says, requires bringing the rate of the disease’s spread down to an acceptable level and then finding ways to maximize economic activity without exceeding those epidemiological bounds. And he suggests that some combination of low-cost interventions, such as putting out public-awareness campaigns and requiring people to wear masks in public, could be the way forward.

His framework starts with the rate of transmission of the coronavirus that causes COVID-19. Let’s assume the rate of transmission is 2—one person infects two people, those two infect four, the four infect eight, and so on. The actual rate is currently uncertain, but many estimates put the unconstrained rate, absent interventions, at between 2.5 and 3.

Ideally, interventions would bring the rate of infection to 0 and wipe COVID-19 from the planet. But there could be huge social and economic costs involved, at least until a vaccine or cure is developed. For example, one influential epidemiological model by scholars at Imperial College London, which helped push the US and UK governments to impose lockdown measures, predicts that schools would need to be closed for most of two years, Budish notes.

Is there an acceptable alternative? Reducing the rate to 1 or less would contain the spread, he notes. Take $R$ as the rate of transmission. If $R = 2$, the number of infections doubles constantly and quickly, but $R < 1$ constrains the exponential growth. China, South Korea, Singapore, and Hong Kong all managed to bring the rate under 1 by using social distancing, widespread testing, and other nonpharmaceutical interventions, Budish writes. Other countries could similarly reduce the rate to below 1, maybe by overshooting it at first to err on the side of human health.

After that, policy makers could accomplish health goals while also maximizing social welfare. Rather than seek to minimize the virus’s spread at any cost, officials could use the model to think about trade-offs and develop plans that weigh the health and economic risks.

For example, some relatively simple, low-cost interventions could potentially be used to keep the rate below 1 while allowing certain activities to continue, Budish writes. Such interventions might include running public-awareness campaigns that encourage people to wash their hands and maintain distance from others; requiring people to wear masks in public or gloves where necessary; and even putting boxes of tissues in high-traffic areas, such as by elevator buttons and door handles. Officials might temporarily cancel events and shutter places where large groups gather, such as festivals, but permit lower-risk activities to continue, such as jobs where employees can work while remaining at least 6 ft. apart.

There would be some risk of transmission, but it would be low. And some economic activities could resume in a limited, thoughtful manner.

Medical experts would need to lead any discussion about interventions, Budish acknowledges. But he argues that policy makers should be urgently trying to find a combination of policies and interventions that could keep infections low.

“My sincere hope,” he writes, “is that medical experts and economists can work together to engineer creative ways to reduce $R$ and enable the economy and society to return to some semblance of normalcy.”—Emily Lambert

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.

LUIGI ZINGALES, ROBERT C. MCCORMACK DISTINGUISHED SERVICE PROFESSOR OF ENTREPRENEURSHIP AND FINANCE AND CHARLES M. HARPER FACULTY FELLOW

“Historically, a quarantine would last for 40 days. Having a quarantine that lasts for 90, 120 days, it starts to significantly affect how we can restart the economy. And it significantly affects our way of living and our mental health. But also, whatever errors we are making in distributing money to support the people who are left behind are going to be exacerbated.”

Excerpted from the Capital isn’t podcast, Episode 65.
How quantitative models can help policy makers respond to COVID-19

My work as an economist has made me intimately familiar with uncertainty. I use dynamic models and explore the impacts of uncertainty in a variety of settings. I use tools from statistics and decision theory to investigate both market behavior and implications for policy.

Like the rest of the population, I now find myself in rather surreal and, at times, dire circumstances. I wish I were, but do not claim to be, an expert in epidemiology. Like many, I have been trying to give myself at least some basic knowledge of pandemics and models aimed at understanding how COVID-19 can evolve dramatically over a short period of time.

As an outsider, I find the modeling impacts from epidemiology of considerable interest. In the mornings, I search immediately for updated numbers and predictions, hoping that we will soon see an important turnaround in COVID-19 cases, deaths, human suffering, and the subsequent global socioeconomic turmoil.

The role of quantitative models
Policy makers look to forecasts or projections about the future evolution of the contagion and subsequent fatalities to guide their policy choices. These can be best guesses or warnings about how bad things could become. These considerations factor into their decision-making in at least informal ways.

Epidemiologists no doubt have important insights that we all look to digest. Economists and other social scientists are quick to consider ways by which they can draw upon their current stock of knowledge to incorporate the likely responses of individuals and businesses to various policy alternatives.

Quantitative predictions of disease transmission under alternative policies and the resulting social behaviors, however, bring special challenges. Models require specific assumptions and ingredients that govern how social and economic interactions play out within the models. Subjective judgments are unavoidable. There are unknown parameters to calibrate in the face of limited data. These challenges are pervasive in quantitative modeling that aims to support policy.

Aquinas’s warning
Different researchers or research groups build models with different implications. I have great respect for the scientific-model builders who make revealing attempts at quantifying the uncertainty we face, and for those policy advisors who are willing to accept differences in the outputs and predictions of alternative models. At the same time, I worry when policy makers seemingly embrace models without a full understanding of the underlying assumptions involved, or because those models deliver the findings that they prefer to see.

I find it insightful to think of every model as telling a quantitative story. Each may seek to offer guidance and insight, but alternative models may have different predictions and implications for policy. By nature, each model is an abstraction and necessarily a simplification, and sometimes
the approximation can appear to be bold. There are uncertainties within each model having to do with unknown inputs, and there are differences across models in terms of how they aim to depict behavior.

When thinking about using models in a variety of settings, including our current health and economic crisis, I am reminded of an injunction attributed to Thomas Aquinas: “Beware the man of one book.”

We should replace the word book with model when our understanding of the phenomenon in question has such apparent limits. Looking across the predictions of numerous models is a valuable exercise. Substantive expertise can help in weighing the pros and cons of alternative models, but when there are obvious bounds to our understanding, this seldom rules out all but one model.

**Looking to data**

We look to data to help calibrate inputs, but many concerns have been raised about the quality and reliability of data pertaining to the COVID-19 pandemic. At the most rudimentary level, we are unsure of the actual numbers of contaminated people. Death attributions are challenging because unhealthy people are substantially more vulnerable to the disease. We do not yet know how strong the immunity is of those who have already been affected by the virus and survived.

We can look to evidence from countries with earlier experiences, such as China, where the disease and its initial transmission started. But serious concerns have been raised about the officially quoted numbers there and elsewhere. If only we could just “let the data speak”--but that is not how most model building proceeds.

There has to be some guesswork in determining how best to exploit the evidence we have from previous experiences. Data limitations make it challenging, even for experts, to assess the merits and limits of alternative models and predictions.

**Where does economics come in?**

Policy-relevant modeling for crises such as COVID-19 isn’t just about epidemiology. Inside the models are individuals making decisions about social interactions and businesses responding to new economic demands and policy restraints. The people “inside the model” respond to changes in their environment and policies that might be implemented along the way. The economist in me has been observing a quantitative macroeconomics literature quickly emerge that incorporates simplified epidemiological specifications of disease within a macroeconomic framework in the face of the crisis.

To my colleagues’ credit, they aim to address important policy challenges and to introduce behavioral responses to changing incentives.

They explore the health benefits and economic consequences of quarantining a significant portion of the population, and the best ways to use testing to improve the social and economic outcomes of the current crisis. We know from a variety of experiences that incentives can matter when assessing policies. But it is no small feat to incorporate epidemiological forces in dynamic models of the economy in credible ways, even putting aside how best to confront the overriding uncertainty.

My guess or hope is that much of this quantitative-modeling literature that is coming together in the fields of economics and epidemiology will help us to design policies to confront future pandemics better, as this one is unfolding at a much faster rate than the necessary scientific advances needed to produce new and better integrated models, inclusive of the social sciences. In my view, for these efforts to be successful, it will require that uncertainty be incorporated formally into the modeling and not treated as an afterthought.

**Uncertainty and trade-offs**

Economists identify and assess trade-offs pertinent to the conduct of prudent policy, which even at a qualitative level is an important contribution. Indeed, there are extremely tricky economic and social trade-offs that policy makers must cope with, although some have suggested naively that we should put them aside.

For instance, we cannot quarantine everyone and leave society without access to food and necessary pharmaceuticals. Exactly where we draw the line entails a trade-off between protecting people...
from exposure to the virus and making the accessibility of necessary food and medicine easier and less costly. When exactly do we choose to remove restrictions on various social and economic activities as we emerge from this pandemic? Such assessments clearly involve weighing costs and benefits of alternative courses of action.

How we use alternative-model predictions to guide policy also exposes a trade-off that warrants serious consideration. When policy advisors explore alternative courses of action, they are necessarily unsure of the consequences. Various projections get reported in the press about how infections and resulting deaths will evolve in the future. We are keenly interested in when things will turn around.

In sifting through projections reported in the media, we encounter a wide range of outcomes. On more careful inspection, an important reason for some of the differences is that they represent different public-health protocols or conventions. Some projections represent “best guesses” and others represent “worst-case” possibilities. Even the term worst case is a misnomer, as even these forecasts are typically premised on “reasonable” bounds in terms of their model inputs.

Both types of projections can be informative as long as it is understood that they serve different but related purposes. In formal or even informal approaches to addressing urgent social problems, we are confronted with how much weight or attention we should attach to the alternative health trajectories that might play out. How much attention should be paid to our best guesses of how the disease will evolve under alternative policies relative to the more cautious examination of worst-case trajectories whereby the number of infections and deaths are much more severe? There are “in-between” possibilities as well. Simulations of the best-guess and worst-case type, and for that matter, even in-between ones expressed using probabilities, are all revealing. I believe it is the role of the media to do a more balanced job of reporting the options, and reporters should aim to be more transparent with the public about assumptions made for each simulation.

**Determining prudent policy choices includes taking a stand on how concerned about or averse to uncertainty we should be.**

However, these simulations alone do not inform us of the best course of action. This would be true even in a simpler setting in which we could assign probabilities with great confidence. Determining prudent policy choices includes taking a stand on how concerned about or averse to uncertainty we should be. This goes beyond merely assigning probabilities to alternative outcomes. How much attention should we pay to outcomes that are potentially much worse than our best guesses of the disease and fatality forecasts, when exploring alternative courses of action?

Why do I call this a trade-off? Going with the best guesses may leave us vulnerable to bad outcomes. Featuring only so-called worst-case analysis in future policy considerations is not some panacea either. Embracing this approach could potentially induce subsequent social losses when unlikely worst-case outcomes do not emerge. It is these types of considerations that I wish were formally integrated into the economic analysis of policy as it applies here—and to other policy challenges. Policy advisors necessarily confront this trade-off when they look at alternative-model projections.

**Miserable uncertainty**

I am a firm believer that models can provide useful frameworks for prudent policy design, provided they are used sensibly and without unjustified confidence in their predictions. Existing quantitative models are tools that tell stories we should take seriously when used by experts who are willing to acknowledge limitations. This willingness should be a virtue and not a vice. One modicum of good news is that new information now flows quickly and openly to challenge model predictions. There have been some remarkable changes in model predictions of new infections and fatalities in response to the most recent evidence. The emerging body of evidence will no doubt lead to important modeling advances in the future.

I only wish that I, and other academics, could provide even better quantitative ways to guide policy in this challenging time. Mark Twain observed that “education is the path from cocky ignorance to miserable uncertainty.” We are living in the “miserable uncertainty” to which Twain referred, uncertainty that comes with the bounds to our understanding.

But as scholars with quantitative ambitions seek to distill and process information and insights now unfolding at a rapid pace, I can only applaud sensible policy makers as they weigh the alternative possible outcomes in real time. Such leaders are placed in the hot seats of having to implement sensible policy over the short time frame during which this pandemic is unfolding, and in the face of obvious uncertainty. At the same time, I cringe seeing leaders who seemingly place the cart before the horse by only targeting evidence that supports preordained political agendas. Unfortunately, such agendas often get in the way of sensible policy making.

While economists struggle to come up with the best way to model individual altruism, I can only hope that, at least for this episode, altruism is much more prevalent than it is in the models that economists typically use. Along these lines, I am continually reminded of the contributions of the real heroes from our health-care system, whom we are placing on the front lines of this global crisis, and who are risking their personal health to support that of their communities. —CBR
Amid uncertainty, err on the side of caution

From an interview on April 2. View the video and full transcript online.

This crisis has been characterized by tremendous uncertainty. We have not considered, using a formal economic framework, how the US government should react in a situation with a great deal of uncertainty. There has been a lot of prior work by my colleague, [University of Chicago’s and Chicago Booth’s] Lars Peter Hansen, and others about how policy should be made in cases where there is uncertainty about future damage. This is called robust control, and an example of its application is climate change. We know that temperatures are rising, and we know that this is caused by human activity, but there is a lot of model uncertainty. We don’t know (1) by how much temperatures will rise, and (2) what the impact will be on humans and the economy.

Economic theory suggests that in cases of uncertainty, policy makers should try to minimize the maximum damage that can be done. A basic guiding principle should be to avoid major damage—for example, a large portion of the population dying if it turns out that this virus has a high fatality rate, or that there’s a significant potential for it to mutate and turn into a more virulent and deadly form.—CBR

The crisis could help lighten burdensome regulation

From an interview on April 3. View the video and full transcript online.

Policy makers were right to pump liquidity into the financial system quickly. The relief payments to households and the expansion of the unemployment-insurance program are good moves, and they were done in reasonably quick order.

It would have made a difference if some of the regulatory barriers to innovation could have fallen earlier. Obviously, testing was not widely available early, in part because of a reluctance to allow decentralized testing. That restriction was loosened, but too late.

New York, Massachusetts, and other states have allowed doctors who are licensed elsewhere in the US to practice in their states. They graduated medical students a few months early. All this helped to bring medical personnel into the field.

We have seen some movement on loosening regulations regarding the production of medical equipment, such as respirators. We have seen some movement on loosening regulations regarding the production of medical equipment, such as respirators. After this crisis, we may well have more flexibility in the regulatory system, so that if something like this happens again, we will be able to address it more seamlessly.

The economic effects in the short run are enormous, but necessary. You cannot have normal economic activity without the threat of the virus spreading at an incredible rate. This notion that there is some trade-off between having a full economy and solving the medical problem is false.

It will take longer for the US economy to come back if a lot of capital is destroyed during the slowdown. We could lose intangible capital, such as organizational effectiveness, trust, financial intermediation, and relationships.

When we think about who deserves a bailout, we should consider how much capital will be destroyed if a business does not get a bailout. First and foremost, we want to avoid financial chaos. If there are a lot of spillover effects of a particular company defaulting, it might be worth the cost of aiding that company.

One thing that may continue to rise at an accelerated rate is the concentration of economic activity in most industries. There are reasons to think that small and midsize businesses could fail at a higher rate than large businesses during the slowdown. That would reallocate more activity toward larger companies than before. Will we see a wave of new entries after the initial failure of these small and midsize businesses? The long-term trends are not encouraging. We have been seeing a decline for decades in business-formation rates.—CBR
Two proposals to keep the lights on at small businesses

Overwhelmed by the COVID-19 crisis, the US government has taken several steps to stabilize the economy, including issuing payments to individuals who may be furloughed or out of work. Meanwhile, the Federal Reserve has shifted quickly to accommodative liquidity policies, including lower interest rates.

But many small and midsize businesses, which form the backbone of the US economy, haven’t received the assistance they need to stay open. The $349 billion in federal aid initially devoted to a small-business-loan program quickly ran out of funds.

Two business stabilization plans, based on insurance and lending models, could help vulnerable businesses remain on firm enough footing that they would be able to reopen when health conditions normalize, suggest Harvard’s Samuel G. Hanson, Jeremy C. Stein, and Adi Sunderam and Chicago Booth’s Eric Zwick.

These plans, with an estimated cost of $348 billion, are philosophically in line with that of University of California at Berkeley economists Emmanuel Saez and Gabriel Zucman, who have proposed direct grants to keep businesses viable. However, Hanson, Stein, Sunderam, and Zwick have sought to define and control costs and to potentially recoup returns on public investments from the fastest recovering companies.

“We’re thinking about how to put something in place given the institutions we have in the United States,” says Zwick—namely, an insurance plan to be administered by the Internal Revenue Service and a loan program to be implemented by the Fed and the Treasury.

The researchers call the first of their approaches business continuity insurance (BCI). In this, the IRS would use past tax returns to estimate a business’s fixed costs such as rent, utilities, and debt service payments and then make grants to those businesses—although with soft repayment obligations. Businesses that recovered most robustly would pay back more, in the form of future taxes. Those that struggled longer would pay back less.

The BCI plan is similar to the Small Business Administration’s Paycheck Protection Program (PPP), set up to grant companies money that need not be repaid if 75 percent of it is used to continue paying salaries to workers.

But unlike the PPP, the BCI is not meant to cover payroll, especially considering that many workers are being asked to shelter in place and stay home for the sake of public health. “The unemployment-insurance system is best equipped to take care of workers, while this program concentrates on business overhead,” says Zwick.

The researchers’ second approach depends on business continuity loans, in which the Fed and Treasury would loan money directly to businesses, in the form of junior subordinated debt with deferrable or even forgivable interest payments. As with the BCI program, companies that recover quickly may pay off these obligations with interest, creating a return for the Treasury, but the “soft” nature of these loans allows for the government to support companies that continue to struggle after the COVID-19 epidemic passes. The BCL plan is a form of flexible bridge financing for companies with disrupted revenues but current obligations.

If the borrowing company already has debt, BCLs are junior in the credit structure to loans made by existing lenders. In many cases, proceeds from these junior loans will be used to keep more-senior obligations current. This helps both the borrowing business and its lenders.

The repayment terms and paths to loan forgiveness are generous by design, explains Zwick, so that business owners who are wary of borrowing in the first place don’t refuse these offers of assistance for fear of losing equity or control of their enterprises in the future.

Both proposals focus on nonfinancial companies—the idea being that insuring the solvency of restaurants, car dealerships, beauty salons, landscapers, retailers, and the like will also shore up their lenders and the real-estate management companies that lease to them. If these programs are successful, the financial sector shouldn’t require its own bailout, the researchers write.

And they recognize that businesses need help to get through a period when many consumers simply won’t materialize. Their workers, including the hardest-hit ones, will be helped by receiving unemployment insurance, the researchers write—but they emphasize that the economy is suffering from a supply rather than a demand shock.

In that case, even if individuals receive direct payments, they will shop for necessities, but not much beyond that.

The BCI and BCL proposals are meant to work in tandem, giving the government flexibility to choose how to best help a business after taking its circumstances into account. A company that has lost 90 percent of its sales may be too large a credit risk for the Fed and Treasury to stomach, making the IRS insurance program perhaps a better avenue. By contrast, if a company has lost just 30 percent of revenue, and the odds are higher that it will be able to repay a loan with interest, it might be an appropriate risk for the Fed and Treasury. Plus, this avenue would not only potentially keep the business solvent, but would give the public a chance to earn a return.

The infrastructure for both programs is already in place, the researchers write, though the IRS would require legislation authorizing it to act. The Fed and Treasury have greater flexibility to forge ahead under existing congressional approvals.

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.
“A once-and-for-all wealth tax to pay for this epidemic would be fine. I’m not all for it, but I think it’s legitimate. If you’re going to do it every year, then I’ve got a problem with it. We all talk in economics about one-off taxes not being distortive. But once the politicians get the one-off tax, what’s the probability that they’ll use it for everything and that we’ll get a one-off tax periodically?”

EUGENE F. FAMA, ROBERT R. MCCORMICK DISTINGUISHED SERVICE PROFESSOR OF FINANCE

The potentially misguided COVID-19 accounting gift to banks

To jump-start the US economy amid the COVID-19 crisis, President Trump signed the Coronavirus Aid, Relief, and Economic Security (CARES) Act on Friday, March 27. The $2 trillion package is meant to provide much-needed temporary support for American workers and small businesses affected by COVID-19. It also gives banks various types of temporary relief and support in order to spur lending to small businesses and households.

But one provision tucked inside the sweeping measure grants banks optional temporary relief from complying with the current expected credit losses (CECL) accounting standard. And this temporary relief—a delay in the implementation of a controversial accounting standard—is potentially misguided.

What does an accounting standard have to do with this crisis? A bit of history might help: during the 2008-09 financial crisis, banks were criticized for excessively delaying their recognition of credit losses by relying on an incurred-loss model, which did not require recognizing such losses until they were highly probable. In response, the International Accounting Standards Board and the US Financial Accounting Standards Board (FASB) introduced new rules—the IFRS 9 and CECL, respectively—based on models that estimate expected losses. Both call for banks to estimate expected credit losses over the contractual life of a loan. The idea is that more-timely loan-loss recognition will both induce cautious lending behavior in good times and prompt earlier corrective action in bad times.

The CARES Act gives banks the option to delay implementing the new credit-loss standard until December 31, 2020, or until the end of the coronavirus national emergency, whichever comes first. On the same day the bill became law, the Federal Reserve board issued an

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Excerpted from the Capitalism podcast, Episode 66.
interim final rule, the CECL IFR, that provided an optional extension to delay the CECL’s impact on regulatory capital by two years. This delay includes the original three-year transition period, so banks could potentially put off incorporating the full impact of the CECL on their capital for five years.

And the Fed did not stop there: on April 1, it announced that it was temporarily easing its leverage rules for large banks by exempting certain investments from a key calculation, part of the effort to ease credit and combat the economic slowdown. Note that banks cannot have their cake and eat it too: those that choose the statutory relief under the CARES Act, and therefore do not implement the CECL, would not get the full benefit of the capital relief.

Bankers have been pressuring the FASB for years to delay implementing the CECL. It took the onset of COVID-19 for Congress to intervene and stop the controversial accounting standard before it fully kicked in.

Insights from my current research suggest that this decision to delay is potentially misguided. Some argue that due to the economic uncertainty brought about by COVID-19, banks may face higher-than-anticipated increases in credit-loss allowances. But my research demonstrates that the role of expected-loss models such as the CECL is to reveal timely information about credit losses so that a bank’s stakeholders can be more nimble and make informed, sound decisions. Ignoring such information would not discipline risk-taking—and could potentially exacerbate it. Governments and central banks are providing much of the cash to spur lending, but banks will perform the difficult task of figuring out which companies should receive assistance and which of them would have struggled regardless. This is precisely the time that bank management, board members, and regulators need to monitor credit risk more carefully. The CECL provides this opportunity.

Banks have also argued that the growing economic uncertainties stemming from the pandemic, and the rapidly evolving measures to confront related risks, make certain allowance-assessment factors potentially more speculative and less reliable at this time. Such arguments are perplexing because large and midsize banks have been preparing for the CECL since 2016. Moreover, it is hard to imagine that banks do not have reliable information systems in place to measure and monitor such risks.

As for arguments that say relying on expected-loss models would curb lending because banks would face a capital crunch, these only make sense if banks’ capital requirements are set independently of the accounting standards used to provision for loan losses. My research demonstrates that capital requirements and loan-loss models are inherently linked. If banks change the methodology they use to estimate loan losses, banking regulators should also adjust capital requirements. The rationale behind such a link is straightforward: if banks become more timely and proactive in measuring and recognizing loan losses, their capital levels will also become more sensitive to risk in their loan portfolios. Such increased sensitivity would in turn allow banking regulators to better tailor banks’ capital requirements to the riskiness of their loan portfolios. More precisely, according to my current research, if the expected-loss model provides good estimates of loan losses, and/or if banks’ risk-taking incentive is not too severe, implementing the CECL would actually relax capital requirements and spur lending—not necessarily constrain it!

Congress recently recognized the importance of this link and directed the Treasury Department, in consultation with bank regulators, to study the impact of the CECL and to determine whether any changes to regulatory capital requirements are necessary. The research insight to implement the CECL and to simultaneously adjust capital requirements is consistent with what the banking regulators are indirectly achieving via the CECL IFR.

This is precisely the time that bank management, board members, and regulators need to monitor credit risk more carefully. The CECL provides this opportunity.
Banks that elect to continue to comply with the CECL during the pandemic will be granted temporary relief and face relaxed capital requirements over five years. For those that don’t comply with the CECL, there is very little capital relief. According to a draft statement released April 3, European Union officials are holding off on loosening the equivalent standard, estimating the impact of other relief measures before taking further action. I believe in requiring banks to comply with the CECL but providing some form of capital relief.

My message also echoes that of Kathleen Casey, chair of the Financial Accounting Foundation’s board of trustees, which oversees FASB. She wrote a letter to congressional leaders arguing, “Those who have raised objections to the implementation of the standard are primarily concerned about the effect it has for some banks on their regulatory capital. This concern can be addressed directly by the regulators themselves without requiring any change to CECL or its effective dates.” Stated differently, regulators can always choose how to implement the appropriate level of capital requirements in light of the information the CECL produces. Our research suggests that if banks implement the standard, regulators will optimally use balance-sheet information to tailor banks’ capital requirements to the riskiness of banks’ loan portfolios. In doing so, regulators could relax capital requirements to spur lending.

As the crisis evolves, many companies and consumers will unfortunately default on their loans, and banks will incur credit losses. But banks that are timely about recognizing these losses will emerge from this crisis in better shape and with more credibility. For regulators, the crisis underscores the importance of adjusting regulatory capital to the CECL. The sooner regulators act, the better-prepared banks will be for weathering further crises.

These are probably the most uncertain times we have faced in the world economy since the Great Depression. However, now we have better accounting systems in place to try to monitor or manage this uncertainty.

The Coronavirus Aid, Relief, and Economic Security (CARES) Act is going to be helpful. I also believe that banking regulators providing capital relief to banks is a move in the right direction. We need to be patient in terms of how we deal with this crisis, in the sense that executives and managers need to be given time to resolve these issues.

It’s interesting to me that every time there’s a major crisis, people talk about accounting. Think of the 2008–09 financial crisis: what came to the forefront was something called fair-value accounting. Banks were marking to market their loan portfolios, and there was a lot of criticism that accounting was causing the crisis. I don’t believe it was. At best, fair-value accounting was revealing the type of risks that banks were taking, and maybe that, perhaps, provided a catalyst for banks to write down their loans.

The same thing is playing out again. There’s a feeling that the way you do your accounting could be making things worse during the crisis. In a crisis, it is important that you build trust. Fair-value accounting allowed banks to be transparent during the financial crisis, and the expected-loss model also allows banks to be transparent during a financial crisis. That’s a message not just for accounting, but for politicians. It’s important to be transparent during a crisis—that way you build trust in the economy and among people. This is precisely the time when people want politicians, not just banks, to be trustworthy. It’s not just accounting; it’s part of everyday life. Being trustworthy is probably the best medicine right now.
There is unusually broad consensus among economists about what the current economic problems are and what the policy goals should be. Direct health spending should be the highest priority. But that has not been broadly embraced by the political debate. A lot of the policy discussion has still viewed the situation and the approach to stimulus through the lens of a normal recession.

Even the framing of these policy interventions as stimulus is misleading. With social-distancing mandates in place, our goal is not to encourage spending. That’s a standard policy tool for fighting recessions, but we do not want people to go out shopping right now. We want people sitting at home for public-health reasons, and we want to engage in policies that allow people to do that.

And our goal is not to encourage job creation. When you see discussion about a new round of stimulus and infrastructure investment, those things are fine—once the economy is in a recovery. For now, if we’re going to have months of people staying home without any work, we need to help them survive without any jobs or income.

The people who are most well-off and best able to bear the consequences of this recession should be the people who take the write-downs. Now, that’s not fair in the sense that rich shareholders didn’t cause the recession. But if somebody is going to suffer negative economic consequences, this route seems better from a welfare perspective. The CEOs of airlines and Boeing will still be able to eat. They are not going to lose their homes. They have a greater ability to weather this shock than frontline workers.

When we contemplate bailouts to these companies, we are really thinking about whether it makes sense to provide transfers to their shareholders. These companies are not going anywhere. They might change names if they go through bankruptcy, but they have fixed assets. We are not going to liquidate cruise ships. We are not going to scrap airplanes.

For large companies, bankruptcy works reasonably well. That is much less true for smaller businesses without the same access to debt and equity markets, businesses that potentially are not able to continue operations through a sustained period of bankruptcy, and that lack fixed assets with substantial value.

We do not want many small businesses to be destroyed that otherwise would have been successful absent this pandemic. The businesses can potentially restart later, or new businesses can replace those destroyed, but there are large fixed costs and disruption that we might want to avoid through direct loans, stimulus, or grants.

There are other longer-term, persistent consequences for households that we might want to avoid. If a large fraction of the workforce becomes unemployed, it will be harder for those households to make their mortgage or rent payments. If we do not implement policies to try to limit these negative consequences, months from now we may start to see a wave of foreclosures and evictions. The rise in defaults and foreclosures during the Great Recession had steep consequences for the overall economy. We do not want to layer a similar effect on top of the already large economic disruptions that we’re having.

A major concern is that the crisis will exacerbate inequality. This recession is disproportionately hitting small retail chains, restaurants, and bars—the types of jobs that are difficult to do from home. They also tend to be the lower-skilled, lower-income jobs. You see large spikes in unemployment disproportionately in these jobs. These are the households that have lower liquidity and lower savings, and are less able to weather negative shocks.—CBR

Not all businesses survive bankruptcy
Bankruptcy filings surged during the 2008–09 financial crisis, but smaller businesses that were short on valuable, fixed assets fared more poorly than bigger companies.
How the Fed plans to pay the country’s bills

Public attention in the United States during the first phase of the COVID-19 crisis has been largely on the disease itself, the massive social and economic shock of the shutdown, and how we can orchestrate a safe reopening. But we also need to pay some attention to the financial side of the current situation, and the Federal Reserve’s immense reaction to it. Whatever one thinks of that reaction, it’s important to understand what the bank did, what beneficial and adverse consequences there are, and how our financial and economic system and policies might be set up better in the future.

We face a severe economic downturn of unknown duration. If it is something other than a V-shaped downturn spanning months rather than years, there will be a wave of bankruptcies, from individuals to corporations, and huge losses all over the financial system. “Well, earn returns in good times and take losses in bad times,” you may say, and I do, more often than the Fed does, but for now this is simply a fact.

Our government’s basic economic plan to confront this situation is simple: the Federal Reserve will print money to pay every bill, and guarantee every debt, for the duration. And, to a somewhat lesser approximation, the plan is also to ensure that no fixed-income investor loses money.

To be clear, my intention here is not to criticize this plan. From a combination of voluntary and imposed social distancing, the economy is collapsing. Twenty million people, more than 1 in 10 US workers, lost their jobs in the first month of the COVID-19 shutdowns. That’s more than the entire 2008-09 recession, all in the course of three weeks. A third of US apartment renters didn’t pay April rent. Run that up through the financial system: most guesses say that companies have one to three months of cash on hand, and then fail.

If you want to know why the Fed hit the panic button, it’s because every alarm went off.

Is the plan really to try to pay every bill? Yes, pretty much. This is not stimulus. It is “get-through-it-us.” People who lost jobs and businesses that have no income can’t pay their bills. When people run out of cash, they stop paying rent, mortgages, utilities, and consumer debts. In turn, the people who lent them money are in trouble. Businesses with zero income can’t pay debts, employees, rent, mortgages, or utilities either. When they stop paying, they go through bankruptcy, and their creditors get into trouble. If you want to stop a financial crisis, you have to pay all the bills, not just hand out some cash so people can buy food.

And that’s more or less the plan. There will be unemployment insurance, with 100 percent replacement of wages, for people who lose jobs, so they can pay rent, mortgages, utilities, and consumer debts. The Small Business Administration has made, and will continue to make, forgivable loans to businesses. Bailout plans are in place to make sure industrial companies such as airlines do not file for bankruptcy. (Much of this money is stuck in snafu, but that’s the plan if not the execution.) And, where the big money is, the Fed is propping up corporate bond markets, municipal bond markets, Treasury markets, money market funds, and other markets.

Are they really printing money? Yes. Start with the Treasury. The Treasury authorized $2 trillion of spending in the first stimulus bill alone. Where is that money coming from? In normal times, that would mean selling $2 trillion in Treasury bonds and bills. But who has $2 trillion of extra income lying around that they want to use to buy Treasury debt? That’s a good question, to which we are not right now finding out the answer. Seeing ominous trouble in the Treasury market, the Fed is now buying all the debt that the Treasury is selling, and more.

When the Fed buys Treasury debt, it prints up new money and gives it to the holder of the Treasury debt. (I will say “printing money,” as that is clearer. The Fed actually creates new reserves, which are what banks hold in their accounts at the Fed, by flipping an electronic switch. Banks can convert reserves to cash and back at will.) On net, if the Treasury borrows and spends the money, and the Fed buys the Treasury debt, the government as a whole has printed up new money to spend. That’s what’s going on now.

From the March 4 and April 8 Fed H.4.1 data, we learn that the Fed increased its holdings of Treasury securities between those dates by $1,132 billion, from $2,502 billion to $3,634 billion. From Treasury data, we learn that debt held by the public (including the Fed) rose from $17,469 billion to $18,231 billion—a (huge) rise of $762 billion, or $9 trillion at an annual rate. The Fed bought all the Treasury debt, and then some, printing new money to do it. On net, the government financed the entire $762 billion by printing new money, and printed up another $370 billion to buy back existing Treasury debt.

The United Kingdom is abandoning pretenses. “Bank of England to directly finance UK government’s extra spending,” reads the April 9 Financial Times. Rather than have the government sell to the market, and then the bank buy it, the bank will now print money for the government to spend, and the government will print Treasury debt to give to the bank in return.
The Fed and Treasury are teaming up to provide trillions to businesses and banks, and to buy assets including money market funds, corporate bonds, municipal bonds, and mortgages. And the short answer to where those trillions are coming from is that the Fed is printing them up.

**The Fed and Treasury, together but separate**

In normal times, the Fed creates money (reserves) by buying Treasury bills. It has an asset, the T-bill, and a liability, the money. The money is backed by the T-bills, a good principle of noninflationary policy.

When the Fed lends money to a bank or a company, the Fed likewise prints up money, gives it to a company, and counts the company’s promise to pay back the loan as the corresponding asset. You can see the danger. The Fed is supposed to make only safe loans, to guard against inflationary finance and to keep itself politically independent. Printing money to hand gifts to well-connected companies and politically powerful interest groups is dynamite, and an independent agency will not stay independent long if it does so.

For this reason, the Fed and Treasury work together. The Treasury agrees to take the first tranche of losses, so the Fed can say this is a safe loan. Fed chair Jay Powell was, as usual, clear on this in an April 9 speech (delivered via Zoom, naturally) to the Brookings Institution:

> I would stress that these are lending powers, not spending powers. The Fed is not authorized to grant money to particular beneficiaries. The Fed can only make secured loans to solvent entities with the expectation that the loans will be fully repaid.

What happens if the loans aren’t fully repaid? Well, the Treasury takes the first 5–10 percent of losses. But right now, the Treasury gets its money from the Fed. So it really comes back to printed money anyway. If losses are so severe that the Fed loses a lot of money, the Treasury will have to recapitalize the Fed with a gift of T-bills.

If the loans are not paid back, one way or another, we end up with that much more outstanding Treasury debt, either owned by the Fed, with corresponding reserves held by the public, or owned directly by people.

But this Fed versus Treasury business, while important inside baseball for Fed independence and the general function of the country’s economic plumbing, is really beside the point. The important point now is that the Fed and Treasury right now are, together, printing up trillions of dollars—$4 trillion to $6 trillion is the current guess, which assumes a short, sharp recession—and handing it out. Most of it is “loans” that the Fed and Treasury hope to recoup. If they do, they can reduce the amount of money or government debt left outstanding.

**Lending or spending?**

As Powell emphasized, the current vision is that most of the support to date is lending, not spending. The Treasury kicks in something like $400 billion that really is spending: the anticipated loan losses (from companies that don’t survive) and forgiveness (programs that promise to forgive the loan if the company meets employment or other goals). The Fed lends $4 trillion on top of that, and gets its money back. The government as a whole has only spent $400 billion when it’s over, and the new debt (money) is soaked up again by repayment.

But is this really lending or just spending? Well, in the short run, it’s lending, but if the recession lasts more than a few months, it will turn in to spending.

Companies have no income but must pay rent, debts (interest on their corporate bonds and bank loans used to purchase now-idle plants and equipment), utilities, skeleton staff, etc. Local governments are in a similar bind. They borrow from the Fed to cover this cost. What’s wrong with that?

Well, borrowing usually corresponds to a productive asset, to an increase in value. If a bakery borrows to buy an oven, the bakery will make more bread, and use the additional profits on the extra bread to pay off the loan. If it doesn’t work out, the oven is a real asset, collateral that the bank can sell to get some of its money back. A city borrowing to build a highway gets more tax revenue from greater activity, which helps to pay off the loan.

But there is no economic value to these loans. These are consumption loans, stay-alloat loans, preserve-the-business loans. They are loans against future profits, but not additional future profits. They are a transfer of the franchise value of the business to the lender—the Fed, in this case.

Clearly, at some point the business is better off shutting down than promising its entire profit stream to a lender just for the right to reopen someday. Furthermore, the government, already inclined to forgive, say, student debt, has every reason to forgive these “loans” as well. The business loans explicitly promise forgiveness if the business keeps

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**In a matter of months, these loans turn into gifts. The $4 trillion Fed lending package winds up as $4 trillion permanently added to Treasury debt.**
workers on board. When we are in a sluggish recovery, and businesses are saying, “Well, I would hire more people, but we have all this extra debt because we took Fed loans to keep our employees fed while we were shut down,” let’s see just how tough the government is going to be on repayment.

So, in a matter of months, these loans turn into gifts. The $4 trillion Fed lending package winds up as $4 trillion permanently added to Treasury debt.

The threat of inflation
You would think that if the Fed and Treasury are going to print up something like $1 trillion a month to pay everyone’s bills and prop up markets for the duration, we would soon be heading for inflation.

But we won’t, or at least not immediately, because reserves pay interest. Reserves are just another form of Treasury debt. (Reserves that pay interest are one of the best innovations of recent decades, and kudos to former Fed chair Ben Bernanke and everyone else involved.)

With abundant, interest-paying reserves, reserves and Treasury debt are almost exactly the same thing. In roughly functional markets, what matters is their total supply, not reserves alone. Inflation is a danger, but from the total quantity of government debt, not its split between reserves and bills. Inflation comes, basically, if the US hits a debt crisis where people don’t want to hold or roll over US debt.

(That is, so long as the Fed pays market interest on reserves, and lets the market basically have as much or as few reserves as it wants. If the Fed, and the Treasury, start worrying about interest costs of the debt, and do not pay interest on reserves and do not allow people to convert to Treasurys, inflation will come sooner.)

Why does it matter that reserves pay interest? Couldn’t the Treasury just print up T-bills, sell them for reserves, hand out the reserves, collect loans in due time, and retire the Treasurys? In the short run, it matters for a rather disturbing reason: apparently the Treasury had a hard time finding willing buyers, so printing up the reserves directly and handing them out made a difference.

Instead, the Fed ends up with a loan asset on its balance sheet against reserves, rather than the Treasury having that loan as an asset on its balance sheet against T-bills. Conveniently, also, reserves—though equivalent to Treasury debt—are not counted in the debt limit along with many other contingent liabilities.

In the long run, though, it does not matter. The Fed and Treasury print up reserves, they lend to Joe’s Laundry, Joe pays his mortgage, and the mortgage company pays its investors. If those investors are happy sitting on reserves (bank accounts backed 1:1 with reserves on the margin), the reserves sit there. If they are not happy to sit on reserves, which would be the beginning of the inflationary process, the Fed can just raise the interest rate on reserves until they are happy to hold them, thereby really, really transforming reserves into Treasury debt. Or the Fed can give people some of its stock of Treasurys and so soak up unwanted reserves. That is, so long as people want Treasurys. If people don’t want Treasurys or reserves, if the US has to promise so much interest to get people to hold them that the budget is consumed by interest payments, we get inflation.

We’re looking, for sure, at raising US debt from $22 trillion to $27 trillion, likely hitting 150 percent of GDP if this is a short and swift recession. It could be much larger if the recession goes on a year or more. Is there a demand for that much more Treasury debt in the long run? Is there a flow of that much new saving that people are willing to park with Uncle Sam? How much more can markets take?

So the chance of a global sovereign-debt crisis and accompanying inflation is not zero—but not centrally because of the fact that recession relief efforts are currently financed by printing money.

How long can this go on?
As you can see, the viability of this whole plan depends on a short recession. As I noted earlier, the Fed is printing up something like $1 trillion per month. If the recession ends up being L-shaped, those numbers will ramp up as reservoirs of private cash dry up. A few large companies need bailouts, a few more “dysfunctional” markets turn to the Fed to buy everything, and so on. The International Monetary Fund wants $1.2 trillion to bail out emerging-market economies. State and local governments, already facing pension crises, will be toast when sales- and income-tax receipts collapse.

Where is the limit? Perhaps the peasants with pitchforks, remarkably absent so far, will revolt. Perhaps the willingness to hold interest-bearing reserves or US Treasury debt will find its limit after $10 trillion. Or $20 trillion. There is no magic. The sad lessons of a thousand years of government borrowing and its limits can be forgotten, but not erased. –CBR

The sad lessons of a thousand years of government borrowing and its limits can be forgotten, but not erased.
MARKETS

What can volatile financial markets tell us about the state of this crisis, and about what the future holds?
COVID-19 has exerted historic influence on equity markets

One of the most visible indicators of the economic disruption triggered by COVID-19 has been the frequency of dramatic movements in equity-market prices. In the 22 trading days between February 24 and March 24, 18 days saw the US stock market jump at least 2.5 percent up or down—a pace 23 times greater than the average frequency of such jumps since 1900.

The volatility engendered by the pandemic far outstrips the stock market impact that could be attributed to any previous outbreak of infectious disease, in large part because of the policy response to the health crisis, research suggests.

A group of economists—Northwestern’s Scott R. Baker, Stanford’s Nicholas Bloom, Chicago Booth’s Steven J. Davis, University of Chicago PhD candidate Kyle Kost, Northwestern PhD candidate Marco Sammon, and University of Pennsylvania PhD candidate Tasaneeya Viratyosin—examined a number of explanations for this pandemic’s historic effect on markets.

To quantify how much the coronavirus has contributed to the market’s erratic ups and downs, the researchers used a tool developed by Baker, Bloom, Davis, and Kost in previous research: an equity market volatility (EMV) tracker, which mines the text of newspaper articles to create an index of market volatility over time. By searching the articles in the EMV tracker for keywords associated with outbreaks of disease—such as epidemic, pandemic, virus, flu, and disease—they were able to compare the role of this health-care crisis to previous infectious-disease outbreaks. They find that the prominence of the coronavirus in coverage of equity-market volatility is totally without precedent.

Why has this outbreak wreaked so much havoc on equity markets than those in the past? One possibility the researchers consider is that the coronavirus and the disease it causes, COVID-19, are more serious than the diseases at the heart of past crises. But the researchers consider this answer “highly incomplete,” given that even the notoriously deadly 1918 flu didn’t trigger a market reaction remotely similar to that caused by the coronavirus.

Another explanation rests on how much faster news spreads today. But the researchers note that the 1918 flu pandemic’s stock market impact was comparatively mild even over the course of months, during which time news of the disease would have had plenty of time to travel. The researchers also consider the interconnectedness of the modern economy, and the importance of services—which often involve face-to-face interactions—to many developed economies, and conclude that these factors contribute to the coronavirus’s market impact, but don’t explain it entirely.

Rather, the researchers point to the public-health-policy response to the pandemic, which has involved travel restrictions, the temporary closure of businesses such as bars and restaurants, and other social-distancing measures. They suggest that such containment efforts are more extensive and widespread than those in place during past disease outbreaks, and when combined with the modern economy’s interconnectivity, have created an economic impact of historic magnitude.

“The health-care rationale for travel restrictions, social distancing mandates, and other containment policies is clear,” they write. “These policies also bring great economic damage. Recent stock-market behavior is an early and visible reflection of the (expected) damage.”—Jeff Cockrell

Historically high market volatility
During the early weeks of the COVID-19 crisis, one span of 22 trading days had 18 S&P 500 closes that were at least 2.5 percent higher or lower than the day before.

S&P 500 Index movement
Trading day closes, February–March 2020

<table>
<thead>
<tr>
<th>Date</th>
<th>Close</th>
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<tbody>
<tr>
<td>Feb 24</td>
<td>2,500</td>
</tr>
<tr>
<td>Mar 2</td>
<td>3,000</td>
</tr>
<tr>
<td>Mar 9</td>
<td>3,500</td>
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<tr>
<td>Mar 16</td>
<td>3,000</td>
</tr>
<tr>
<td>Mar 23</td>
<td>2,500</td>
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Trading days with at least 2.5% change from the previous day’s close

Baker et al., 2020; S&P 500 Index data ©S&P Dow Jones Indices
How COVID-19 affects stock prices and growth expectations

The lockdowns and other measures put into place to fight the spread of COVID-19 have affected the financial position of companies, households, and governments—but how much? With the situation changing rapidly, it has been hard to use macroeconomic models to quantify the damage, as the models rely on data that take time to come in.

But there may be a market-based solution to this problem, propose Chicago Booth’s Niels Gormsen and Ralph S. J. Koijen. They identify a way to quantify expected GDP growth using asset prices. And according to their calculations, as of April 20, investors expected GDP growth in the coming year to fall by 3.8 percent in the United States and 6.3 percent in the European Union.

Many people turn to stock markets for information, but it may be of limited use. Stock markets in the EU and the US fell by as much as 30 percent between mid-February and mid-March. If this decline were driven by fundamentals only, investors would have permanently revised downward their estimate of future profits by as much as 30 percent. However, research by Harvard’s John Y. Campbell and Yale’s Robert J. Shiller has established that most moves in stock market value are due to changes in expected returns, not growth forecasts. The upshot is that stock markets can be revealing about expected returns, but not about growth expectations.

For a different take, Gormsen and Koijen turned to a related market, namely dividend futures, which are futures contracts that allow investors to take a position on the amount one or more companies will pay out in dividends during a given time frame. For example, say an investor expects the S&P 500 to pay $100 in dividends in the coming year, and a futures contract on these dividends is selling for $90. The investor might buy the contract and pocket the difference if proven correct.

There are two reasons that dividend-futures data are informative, the researchers write. First, dividend futures have historically done a good job of forecasting economic growth. Second, they are differentiated by maturity, just like nominal and real bonds are. Gormsen and Koijen use this feature of the data to estimate expected GDP growth over the coming year and to predict how low growth expectations could be for various time frames.

Using their method, the researchers find that it took time for the progressing virus to affect US and EU growth expectations, which didn’t change much when China imposed a lockdown on the city of Wuhan, but deteriorated when Italy took a similar action. When the US in March restricted visitors from the EU, growth expectations fell sharply, and they did again after the declaration of a US national emergency and subsequent actions by the Federal Reserve. As of March 18, expected dividend growth over the next year was down by 28 percent for the S&P 500 and 25 percent for the Euro Stoxx 50, while GDP growth estimates were down 5.2 percent in the US and 7.2 percent in the EU.

The researchers note that their estimates are based on a forecasting model that uses historical data. “In these unprecedented times, there is a risk that the historical relation between growth and asset prices changes, meaning these estimates come with uncertainty,” they caution.

With that caveat, the researchers have been publishing updated estimates online. As of April 20, they estimate dividend growth to be down 17 percent in the US and 28 percent in the EU, while GDP growth was down 3.8 percent and 6.3 percent, respectively.

They also used the prices of dividend futures to predict how low expected growth could fall in the years ahead. “The lower bound on the change in expected dividends is -30 percent in the US and -46 percent in the EU at the 2-year horizon,” they write. But on a more positive note, “there are signs of catch-up growth from year 3 to year 7.”

—Emily Lambert

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.

Dividend outlook for the coming years

The researchers forecast a drop in the lower bound on expected dividend growth for the next one to two years, followed by a period of some recovery.

Lower bound of the change in expected dividends

<table>
<thead>
<tr>
<th>Percentage point change from Jan. 1, 2020</th>
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<tbody>
<tr>
<td>S&amp;P 500</td>
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<td>Euro Stoxx 50</td>
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Gormsen and Koijen, 2020
COVID-19 has exposed the fragility of the life-insurance industry

When the COVID-19 crisis hit, the stock prices of life-insurance companies declined sharply. The sector experienced drawdowns (the percent decline from the maximum to the minimum of the cumulative return index) that rivaled those seen in the hard-hit airline industry. These declines highlight the life-insurance industry’s fragility, write Chicago Booth’s Ralph S. J. Koijen and Princeton’s Motohiro Yogo. And while this fragility would be reason for worry at any time, it may be particularly concerning during a pandemic, they say.

Life-insurance companies safeguard a large share of long-term savings and insure health and mortality risks. In the United States, they have done this in part by selling variable annuities, which package mutual funds with minimum-return guarantees over long time periods. These annuities offer an agreed-upon minimum in retirement and potentially more than that, benefiting from the market’s upside potential.

But these products carry risk for the industry. From the insurers’ perspective, minimum-return guarantees are difficult to price and hedge, which becomes particularly problematic when unexpected movements in the stock market, or in interest rates, cause liabilities to grow.

The 2008–09 financial crisis exposed weaknesses in the sector. The COVID-19 crisis illustrates that life insurers remain fragile, Koijen and Yogo write.—Emily Lambert


Dip in economic-growth expectations

Once the COVID-19 crisis started spreading in the US and Europe, the 1-year outlook for both dividends and GDP declined well below levels from the beginning of 2020.

Change in 1-year dividend-growth expectations

Percentage point difference from Jan. 1

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<thead>
<tr>
<th></th>
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<th>EU</th>
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<tr>
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<td>Mar 24</td>
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Change in 1-year GDP-growth expectations

Percentage point difference from Jan. 1

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<td>US</td>
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[Graphs showing changes in dividend and GDP growth expectations for US and EU, with significant events marked.]
How the Treasury yield curve reflected worry

In normal times, when the market is relatively calm, the US Treasury yield curve tends to slope upward, reflecting that investors expect to be paid more when lending over the long run. In times of crisis, the curve usually flattens out or slopes downward, which is traditionally considered an indication that a recession is coming.

But when the US stock markets went into crisis mode in March, the yield curve didn’t always move in this usual pattern. That’s a worrying sign, according to Chicago Booth’s Zhiguo He and Johns Hopkins’s Zhaogang Song.

The researchers looked at what happened during two weeks in March when the US stock market hit an unprecedented number of market-wide circuit breakers, which kick in and temporarily halt trading during periods of dramatic market drops. Market declines that cross thresholds of 7 percent, 13 percent, or 20 percent, calculated on the basis of the prior day’s closing price of the S&P 500, can trigger trading halts ranging from 15 minutes up to the rest of the day, all depending on the time.

On March 9, when a circuit breaker triggered the first market-wide halt in stocks, the curve reflected a typical flight to safety. Amid panic, investors dumped stocks and moved into long-term bonds, pushing the price of bonds up and their yields down. The yield curve flattened.

But during the second and third market-wide halts of stocks, on March 12 and March 16, the yield curve changed, the researchers note. As a liquidity crisis loomed, it appeared that investors started to worry about the safety of long-term bonds, so they sold those and scrambled for cash-like instruments. Short-term Treasury bills, which can be quickly converted to cash, became highly favored by investors, raising T-bills’ prices relative to long-term Treasurys and making the entire yield curve slope upward again—despite efforts from the Federal Reserve to calm the markets by buying long-term bonds.

On March 18, when the stock market halted for the fourth time in this sequence, the slope of the yield curve steepened further, indicating a dire situation. The upward slope was driven by a surging demand for cash—US currency, in particular. Not knowing how long it would take for normal business to resume from the looming crisis, investors—including companies, banks, and sovereigns—stocked up on cash that they could use to settle contracts or pay off debts.—Emily Lambert


Investors’ flight to cash at the onset of the crisis

Investors initially moved into long-term bonds, pushing yields down. Then they turned to short-term T-bills, and the curve steepened.

Calculation of the US Treasury yield curve

Yield-curve rate minus the three-month overnight interest-rate swap on four dates in March 2020 when markets halted trading

He and Song, 2020
In small-business lending, some areas could get left behind

During periods of economic expansion, the average distance tends to grow between a US bank branch and its small-business borrowers, according to research by Chicago Booth’s João Granja, Christian Leuz, and Raghuram G. Rajan. But when the economy constricts, banks are likely to lend closer to home, they find.

In response to the COVID-19 crisis, the US government wants to encourage banks to lend to small businesses to promote economic growth. But will businesses located farther from banks be left behind?

The researchers tapped a variety of data sources to correlate the number and size of small-business loans originated by county and financial institution with the locations of bank branches, also inputting information on loans and borrowers themselves. They find that between 1996 and 2016, in good economic times, banks offered loans farther from home. In the three booms years before the 2008–09 financial crisis, the average distance between a lender and small-business borrower rose from 175 to 350 miles. However, when bankers went farther from branch offices, the loans they made defaulted at a much higher rate than loans to businesses closer to branches.

It’s possible that financial-technology companies may jump in to service underbanked areas and help deploy stimulus, he allows. Future research will help determine if that is the case.

—Emily Lambert


Banks’ lending territory

In good economic times, banks offered loans to small-business customers located farther away, and then pulled back during the 2008–09 financial crisis.

Average number of miles between lenders and borrowers

Decline during the 2008–09 crisis

SMALL-BUSINESS LOANS DIDN’T REACH THEIR TARGETS

The Paycheck Protection Program was meant to pump billions of dollars into US small businesses, to help them stay afloat during the COVID-19 crisis. But it didn’t perform as hoped, according to research by Chicago Booth’s João Granja, Constantine Yannelis, and Eric Zwick and MIT’s Christos Makridis.

To assess its performance, the researchers looked at data from sources including the Small Business Administration and Homebase, a software company that serves many small businesses.

Some areas of the country, such as New York, had seen their economies particularly hard hit by the pandemic prior to the loan disbursement, as measured by business shutdowns and hours worked. But just 15 percent of businesses in most-affected regions received PPP funding, while the percentage was double in the least-affected regions.

Banks may have been part of the reason. Prior to the crisis, four banks accounted for around a third of all small-business loans. However, they disbursed less than 3 percent of PPP loans. “These banks were disproportionately located in areas that received less PPP funding,” the researchers note.

—Emily Lambert

GLOBAL IMPACT

RAGHURAM G. RAJAN, KATHERINE DUSAK MILLER DISTINGUISHED SERVICE PROFESSOR OF FINANCE

How COVID-19 could prompt global cooperation

From an interview on March 26. View the video and full transcript online.

As policy makers in many countries have become aware of the size of this problem, they certainly have reacted on the medical side by trying to bring more resources to bear; on the financial side, by flooding the markets with liquidity; and on the fiscal side, by making direct transfers to households, postponing tax payments, and issuing loans to small and midsize and even large enterprises to ensure their survival.

But one of the things that’s really missing this time is any sense of international cooperation. Countries are putting bans on exporting medical supplies and equipment, which is sort of natural, but also self-defeating at the global level because to kill this virus, we have to kill it everywhere. Otherwise, it will come back to infect countries in second and third waves, unless they can completely shut their borders, which is impossible in this world.

More broadly, the question that we have to address is, in this integrated world, is it even possible to go it alone?

There is an impetus for global cooperation, to make sure that poor countries have a way of confronting the problem even as the rich countries confront it themselves. I believe that as the immediacy of the pandemic is behind us, we will see some movement toward stronger global institutions, to deal with this kind of problem. We may even start the process of dealing with climate change seriously—because this pandemic will increase the awareness of global problems that we may have to deal with in the next few decades.

There is a real concern about whether poor countries, which currently don’t seem to be experiencing the virus, at least to the extent that industrial countries are, have the resources to tackle it.

The problem in poor countries is that the kind of social distancing that is possible in developed countries is much harder. If you’re in a slum in Mumbai, India, it’s hard to stay some distance from people within your community. And if you are in a state of lockdown, public services are less well developed. How do you get milk? How do you get bread or naan every day? That becomes a big problem.

When the poor countries in emerging markets have to fight this virus, they will need all the help they can get. The availability of ventilators is much lower. Hopefully, they reach their peak later than the industrial countries, at which point there will be resources and treatments to spare. And hopefully, we can do a better job of fighting the epidemic than we are currently doing, but it remains to be seen.

This crisis comes at an interesting time across the world. We’ve seen the rise of populist national governments and the undermining of professional capabilities. Unlike the 2008–09 financial crisis—for which many people blame the bankers, as well as the administrative elite who let the bankers take the risk—this crisis is what economists would call exogenous: it’s coming from the outside. To that extent, it’s harder to find somebody to blame, though China and the United States are trying their level best to pin it on each other.

We’ve seen countries that have more-reasonable administrations take early action—for example, Taiwan and South Korea. We’ve also seen more populist administrations acting as though somehow magical thinking will be enough to stave off this pandemic, and we’ve seen administrations finally come to recognize the value of professional expertise and bring more competent people on board in managing the crisis.

One hope is that, politically, this experience will reestablish the value of competence and professionalism, something that is necessary if we are to navigate the challenges of the future. How the medical and administrative establishments perform in this crisis will be important. Will they regain the credibility that professionals had before the global financial crisis?

That change may also imply that people now will demand more and be less willing to elect leaders who talk a good game but who lack administrative capabilities. But that remains to be seen. I think it depends on how this plays out and whether our populist leaders can claim credit for whatever happens, regardless of their direct contribution to the outcomes.

The broader issues are going to be: What structures do we need in place to deal with such global events? Are we adequately buffered globally? What kinds of new, stronger international structures are required?

There will also be a real question of whether the 2008-09 global financial crisis and this global pandemic are not once-in-a-lifetime or once-in-a-century events. Are we going to see a major crisis happen every 10 years or so? And if so, are we justified, as societies, pouring so much money into defending against them when, in fact, we are mortgaging our children’s inheritance and then their children’s inheritance, and we’re building up an enormous amount of debt? Should we take a different approach? How much is OK to spend on these calamities? It seems as if countries across the world are saying, “Whatever it takes!” But is it really feasible to spend whatever it takes every 10 years?

We haven’t brought down the debt from the last time we dealt with problems in the global financial crisis, and we’re going to add to it substantially. Is this going to handicap future generations? What is their say in all this, especially when we are trying to save the elderly in our societies? These are the kinds of knotty issues we’ll have to deal with.—CBR
After this pandemic, will the state be more powerful?

Garicano: You wrote recently a tough editorial in the Financial Times about Europe. You said, “The EU is playing with fire. It’s Europe’s last chance. Either the EU shows itself willing to provide substantial help to member states in trouble, or it has no reason to exist.” Do you really think this is the last chance for Europe?

Zingales: Absolutely. I think that tension is growing, especially in my home country [Italy]. There was a lot of dissatisfaction with Europe before, but now the situation is so grave that if the EU doesn’t take fast and bold action, Italians will reject Europe. Many people think there are no alternatives, but alternatives exist. Italy could become an ally of China, for example.

Garicano: This point you raise is new and shocking. In the past, we’ve had leaders who have played a pretty tough game with Europe, and in the end, they didn’t really have any bargaining power because they didn’t have alternatives. Now you’re telling us you really think it’s a credible threat for Italy to throw itself into the hands of China and make a massive strategic shift.

Zingales: China is playing the game beautifully in the absence of American and European leadership. At a moment when people in Italy were questioning Europe, China sent a team of doctors and ventilators. My parents’ generation grew up with an image of the American dream liberating the country, and I grew up with that image in my mind. Unfortunately, President Donald Trump does not portray that image across the world. For the new generation, China in many respects is more similar to Italy than the United States [in that] we both have family values and long-term cultures.

Garicano: This would be a massive defeat for Europe, and I hope I can help prevent that and make Europe take the action that it needs to take.

But let’s shift to the changes to capitalism that we expect as a result of the coronavirus. There are two main issues: one is the role of the state, and one is the role of globalization. Many people say liberalism has seen its best days. [Philosopher] John Gray recently wrote [in the New Statesman]:

The era of peak globalization is over. Any economic system that relied on worldwide production and long supply chains is morphing into one that will be less interconnected. A way of life driven by unceasing mobility is shuddering to a stop. Our lives are going to be more physically constrained and more virtual than they were. A more fragmented world is coming into being that in some ways will be more resilient.

Do you agree? Are we going to see a big role for the state in the future, and are we going to see a change in globalization? Are we going to see a return of the nation-state?

Zingales: Certainly the role of the state will become much more important. Most people have not seen a market failure of this proportion. You can argue that global warming is in that direction, but with the pandemic, we saw it right away, and we saw that governments such as...
Taiwan that intervened right away have economies that are still functioning. But a government that acted like the US caused an economic disaster.

This suggests that the government, and what I call government capacity or government effectiveness, is extremely important in the response to pandemics, and I would say in development as well. Market economists underplay the role of the government. But which country has really succeeded with a weak government? I don’t think you’ll find one. All the big capitalist success stories are those with a strong government capacity. A vein that needs to be fought is the idea of minimizing the role of the state.

Garicano: One huge concern is the idea of crony capitalism. As the role of the state grows, we get more institutions in which prices don’t rule and allocations are made by friends, by cronies. This has been the main concern in market-oriented economies. If the state grows larger, how are we going to avoid the crony capitalism and corruption that grow with it?

Zingales: I completely agree, but before talking about size, we need to talk about the effectiveness and capacity of the government. American libertarians want to minimize the government, its power, and the problems they think stem from that power.

That doesn’t work because we need the state. This pandemic is an example. Compare the effectiveness of the response of Switzerland or Denmark with the US response. The US is throwing money at the problem with no ability to target the solution because it doesn’t have an effective bureaucracy. I don’t like bureaucracy. I would like to live in a world in which we don’t need it, but I’m also a realist. We do need it, and when we need it, it’s better to have a bureaucracy that works.

Once you go down that path, the first question is how to create an institution with a better chance of not adding all these deviations. For many years, one solution was to minimize the role of the state. That was the wrong answer because of the difference between the discretionary role and the automatic role of the state.

Consider universal basic income. I’m not in favor, but if you implement a policy such as that, where everyone gets $1,000 per month, that’s not discretionary. If there is a policy that introduces help only if you can show that you are a strategic industry and you are really suffering, that creates all sorts of discretion.

The first policy clearly requires an effective government. But it’s possible to have government intervention without bringing in so many cronies. You need to have more universal and noncontingent rules.

Garicano: There was a famous Spanish economics minister who said the best industrial policy is the one that doesn’t exist. His view was to just let the market work. What we now find with masks and medical supplies is that certain things are actually necessary to survive. Letting a whole globalized system of production decide that all your food is going to be grown on another continent might be a problem. So we might start thinking that supply chains need to be brought home for items such as masks, but why not for food? Why not energy? If we talk this way, we are just a step away from picking winners, from having well-connected industrialists who managed to get help because they were strategic. What is your view in this particular case of industrial policy and strategic supplies?

Zingales: Globalization took place only two times in history, and during those times, there was a hegemonic power that was maintaining order. The first was under the British Empire, which enforced a number of rules that made that [globalization] possible. The second was under American power. In the past, the reason nobody would dare to say, “I won’t send you the masks,” is because the president of the US would pick up the phone and say, “If you want to belong to this community, you’ll have to play by the rules.”

So we need to have some global institutions that take this stance. This is where Europe has failed massively. When European states block the export of material to other European countries, this becomes an existential crisis. If Europe
does not rise to the occasion now, there is no reason for it to exist.

Garicano: I agree. But still, even if we had managed to get a single market to work, my question would remain. Do we really think that we have the concept of strategic supplies? Are there certain industries that Europe or the US needs to have? That’s something that Trump would have said three or four years ago, and it would have been shocking, but maybe now we have to accept that some supply chains have to be local, or that there are industries where the state decides things cannot be exported or imported.

Zingales: It depends on geopolitical alliances. Italy has never thought about having a strategic reserve of oil because we rely on allies that will supply oil in the case of need. If you do not trust those allies, you have to make strategic choices.

Trump told 3M to produce masks and only sell them to the US, but 3M pushed back because it wants to trade globally. The moment Canada cannot rely on the US as an ally, Canada has to build that strategic industry for basic things. That will quickly create a much less globalized economy.

Garicano: The welfare costs of that are massive. If we start thinking that any state needs to be self-sufficient on a large range of things, trade is going to be substantially reduced.

Zingales: The welfare costs are huge, but what is worse is the risk of war. That strategy pretty quickly goes the way of war, because if I don’t have guaranteed access to something I need to survive, I will need to have control over it. That’s what colonialism was about. The fights that led to World Wars I and II were about exactly this.

After the fall of the Berlin Wall, we created a new world order, and that guaranteed a different world, the world we live in. Now China is a superpower that plays by different rules and does not reassure us in the same way that the US reassured us. I don’t know whether that’s a consequence of China behaving this way, or the idiosyncrasies of President Trump, or a combination of the two, but the US has started to behave differently. Even before the COVID-19 crisis exploded, we were already going down a bad path.

Garicano: What’s the path back? For Europe, it would be more or less something close to a fiscal union. We need to have a package to help the nations in need, and to recover the role of Europe. Is there a path back for the world?

Zingales: I’m a bit skeptical because I see the China-US tension as inevitable and dangerous. Culturally, they don’t understand each other. China’s perspective is, “We have always been the center of the world.” They want a dominant position at the table.

Americans have grown up for generations thinking that they are the dominant force. They’re certainly not going to be prepared to concede dominance to China. This is a major cultural clash. We desperately need a united Europe. Each of our individual countries of origin are nonexistent, in a sense, if we don’t have Europe. We are little peons in the big war.

Garicano: One thing that is always talked about in this context is this idea of a different model of capitalism in Asia—in Taiwan, Singapore, China, Hong Kong, and Japan—in which the state plays a much more central role, in which businesses in these states are not really separate. Do you think we’re going to move toward that form of capitalism?

Zingales: That’s certainly a risk. My hope is that we can develop a different form of a state and capitalism. If you think about the way Denmark, Sweden, and Norway work, they are much more promarket than the US in many sectors. But they do have a pretty efficient government, and a good one for systems. The future of a state without an effective government is nonexistent. The choice is between state capitalism and capitalism with an effective state. I much prefer the latter to the former.

Let me leave you with a positive. I see this as a massive moment of transformation. Digitalization is being pushed down the throats of people in a way that would be unbelievable before, but this has moved the economy forward by 20 years. That will generate an enormous amount of ideas, innovation, and creation. I hope that this pandemic will show us what can happen with climate change. I see this crisis as a sign of what can happen if we don’t act. —LB

“What’s the path back? For Europe, it would be more or less something close to a fiscal union. We need to have a package to help the nations in need and to recover the role of Europe.”

—LUIS GARICANO
In the United States, the rescue packages are already almost $3 trillion. That is 15 percent of GDP. Now there are talks about an additional rescue package. All of the European countries have put in place, or will, their own rescue packages. The details differ, but they fundamentally involve borrowing huge sums of money.

First, where will that money come from? Second, who is affected by this crisis? It’s not just China, or Europe, Canada, and the US, but every country in the world. It’s Mexico, Argentina, Colombia, Indonesia, Malaysia, the Philippines, India. It’s a shock that hits everybody equally.

If you think the US needs to put in place a rescue package, every other country needs to do the same thing. On the low side, India or Mexico really should be spending at least 5 percent of their GDP. If they don’t, people will die.

It is just an impossibility for everybody to borrow money at the same time. This is why what’s going on now is very different from what’s happened before.

What will the people with the resources to take on that debt invest their money in? They’re going to put it into the safe havens, those countries able to issue relatively risk-free debt. Investors are going to buy up debt that’s issued by the treasuries of the US, Denmark, Germany, Canada, and China.

The money will come from US investors deciding, “I no longer want to keep Mexican debt in my portfolio. I no longer want to keep Argentinian debt in my portfolio.”

Two things will happen to a country such as Mexico. One, it won’t be able to raise the money it needs. Two, because of what the US and Europe are doing, regardless of whether Mexico tries to borrow money, its money is leaving the country. The best estimate is that there has been a flight of about $100 billion out of the middle-income countries just in the past three or four weeks.

You’ll have a situation where you can’t spend money. What do you do as a government? You either let your people die in the streets, or you grab whatever resources you have. Mexico is faced with essentially the situation, “Do I not pay my landlord or do I not buy food?”

For a lot of countries, some of their biggest spending is on debt service. Many governments will make the decision to take the billions of dollars that they would otherwise pay servicing their debt and spend it on these urgent social needs. That’s a default. The question is, if that’s coming, can we do it in an orderly way, or will we have this chaotic, massive sovereign-debt default? Unless we do something, I fear the latter will happen.

If we organize all the lenders of the world, and they all agree to a one-year moratorium on payments of debt because of the worldwide emergency, and we let countries use these resources for their people, hopefully their economies and the health of their people will recover. Then, once they recover, they can continue their schedule of payments.

What I’m calling for is not a default. I’m trying to put together a plan precisely so there isn’t a default. If we don’t do it, we are looking at a humanitarian and economic catastrophe that will be much larger than anything we’ve ever seen in our lifetimes.

Before, we used to be able to borrow from China. Mexico in 1994 turned to the US for help. But that’s not an option anymore. We don’t have the option of borrowing money from Mars. We’ve got to think of something else.

—CHB
Global investment statistics hide potential risks

When investors buy stock in Alibaba Group, the Chinese e-commerce behemoth, they’re looking to participate in the company’s prosperity and, by proxy, the world’s second-largest economy. Except that a giant company located in China didn’t issue those shares; an affiliate in the tiny Cayman Islands did.

Most US stockholders probably don’t sweat this technicality, but the way those transactions and many others like them are compiled in international statistics can mislead investors and economic policy makers, suggests research by Harvard’s Antonio Coppola, Stanford’s Matteo Maggiori, Chicago Booth’s Brent Neiman, and Columbia’s Jesse Schreger. And the prevalence of such offshore financing could make it hard to size up the risks of a corporate debt crisis or to design policies in response if one occurs, an outcome made much more likely by the COVID-19 pandemic.

Consider the numbers for China. According to official figures for 2017, US investors held about $150 billion in Chinese equities. Yet, this number excludes investments in Alibaba stock as investments in a Cayman Islands company. Using company-level data to include such issuances by offshore affiliates, the researchers calculate the equity position of US investors in Chinese companies to be closer to $700 billion. Underestimating US equity positions in China creates the illusion of a large and persistent economic imbalance between the two countries.

“There’s this narrative that the US buys China’s goods, they buy our Treasurys, and it’s totally asymmetric,” says Neiman. “The official statistics don’t acknowledge that the US buys a huge amount of equities issued by what are effectively Chinese companies, and it’s just because they’ve been issued indirectly in the Caymans. If you include those positions, it makes the relationship between the US and China look much more symmetric in terms of bilateral investments.”

Tapping foreign markets through offshore subsidiaries is a common maneuver. It helps companies get around regulatory capital controls, attract more foreign investors, and lower tax bills. Global corporations raise nearly 8 percent of their equity and 10 percent of their bond financing via subsidiaries based in foreign tax havens including the Caymans, Bermuda, and Luxembourg, the researchers note.

But all that extra financial scaffolding has a subtle, potentially deleterious effect: it obscures the size and direction of global investment in securities, the researchers find.

Understanding the true financial linkages between countries is important, in part so that investors and policy makers can predict how shocks in other countries will affect their country’s wealth. Further, the global pattern of investment positions can have implications for key macroeconomic values such as the exchange rate. “For decades, there have been dire forecasts of a collapsing US dollar to reconcile US imbalances with China,” says Neiman. “But if, in fact, global holdings of China’s assets are much bigger [than the statistics suggest], the imbalance is a lot smaller.”

To get a clearer picture, the researchers rebuilt the aggregate numbers. Using an algorithm fed by seven commercially available data sets, they matched the universe of traded securities with their ultimate parent companies—not with the subsidiaries, affiliates, and shell companies that issued them. Having established those links, they could then restate the value of investment positions by nationality, rather than by residency.

In some cases, as with China and Brazil, the changes were large. At the end of 2017, the US held $547 billion of common stock in the Cayman Islands and another $195 billion in Bermuda, according to official statistics. Reallocating by nationality revealed that the bulk of those investments were ultimately tied to China. As for Brazil, its corporate bonds appear to be more popular than advertised: after making the nationality adjustment, the researchers observe that 66 percent of all Brazilian bonds held by US investors were corporate bonds, as opposed to the just 25 percent recorded in the official statistics.

More visibility helps: if the COVID-19 crisis sparks problems in debt markets in a given country, central bankers and other policy makers will want to know which foreign investors will be most affected.

The prevalence of offshore issuance may also make it less clear in a crisis who gets paid. Warns Neiman, “The fact that so much cross-border lending is intermediated through tax havens means that, if there ever is a debt crisis—there’s cause to be more worried about this now than during typical times—it will be more complicated. Any resolution would have to involve investors in one country, issuers in a second country, and ultimate parent companies located in a third.” —Brett Nelson

The prevalence of offshore issuance may make it less clear in a crisis who gets paid.

CHINA'S POLICY RESPONSE TO COVID-19 HAS HELPED, FOR NOW

After publicly revealing the spread of the coronavirus emanating from the city of Wuhan, the Chinese government worked to bring "sizeable and targeted" economic aid to entrepreneurs, individuals, and businesses. China’s attempts to shore up liquidity, support debt and equity financing, and reduce fees and taxes have helped keep small and midsize companies in business, workers employed, and medical supplies and other necessities in production, according to Chicago Booth’s Zhiguo He and Tsinghua University’s Bibo Liu. Nevertheless, they write, the efforts haven’t been able to entirely stem the pain—in part due to the space China occupies in the global economy.

China took a number of steps to help companies and individuals with liquidity. Among them, it ordered banks to extend loans or roll over debts without penalty, effectively eased margin requirements to prevent firesales of equities, loosened listing standards for companies seeking equity financing, slashed some value-added-tax rates, and suspended local tolls and tariffs.

In some ways, China’s actions set the tone for the global response to the crisis, as other governments used many of the same policy tools to confront the shock to their economies.

One notable difference is that China—unlike the United States, Japan, and many other countries—didn’t make direct cash infusions to workers. While many economists have criticized China for this, He and Liu note that state-owned enterprises in China serve as a financial safety net for many workers. Also, unlike in the US, where many households and small businesses have little to no savings, about 60 percent of Chinese companies have cash on hand to sustain operations, and current employment levels, for three months.

To stimulate the economy, some local governments instead partnered with private companies to send coupons to residents to encourage them to shop. By April 27, according to the study, 42 cities had issued coupons worth 6.5 billion yuan (US $900 million). The Chinese economy is recovering to some extent, but the country still faces a daunting economic challenge, the researchers write. The Chinese economy shrank in the first quarter, and the export-heavy economy is acutely vulnerable to how well the rest of the world is able to weather the pandemic. If the global recession outlasts the savings that Chinese companies and households have, China could be particularly badly affected.

—Michael Maiello

Manufacturing sector: Corroborating official statistics that indicate a quick recovery, the researchers find that city-to-city truck shipments, active online job posts, and air-pollution data offer evidence of returning economic activity over February-April.

Daily measure of truck-shipment activity

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1 = \text{traffic level on Jan. 1, 2020}
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Jan 1 | Jan 23 | Apr 8

Wuhan lockdown

Includes the slowdown associated with the approaching Chinese New Year

Services sector: From electricity consumption to retail sales, caterers’ income, and new-business registrations, data suggest declines through March.

Small businesses: China’s vibrant small-and-medium-enterprises sector was hit the hardest, with February sales at 35 percent of 2019 levels and March at 43 percent. The disruption will likely be long-lasting, the researchers said.

Geographic regions: Data on people’s daily movements in cities around the country suggest a stronger economic recovery by March in the southeastern region compared to elsewhere.

A snapshot of China’s economic recovery

China experienced a quick bounce-back in some areas of the economy and a more sluggish recovery in others while presiding over the end of its lockdown of the city of Wuhan in Hubei Province, according to Business Big Data’s Qin Chen, Chicago Booth’s Zhiguo He and Chang-Tai Hsieh, and Chinese University of Hong Kong’s Zheng (Michael) Song, who studied the response to the crisis.

HEALTH CARE

To win the fight against COVID-19, and future pandemics, we need to share equipment wisely and demand strong scientific evidence.
Better allocating ventilators could save thousands of lives

From an interview on April 7. View the video and full transcript online.

The United States and other countries have contracted with manufacturing companies to retool factories rapidly to make ventilators. One problem is that these plants usually supply parts for automobiles or make other products that are very different from ventilators. In a typical manufacturing environment, retooling and reconfiguring manufacturing lines is an arduous task, and it’s unclear whether enough production capacity could be built in a matter of weeks.

Not only that, but new manufacturing processes have to go through a series of rigorous quality-control checks. Ventilators are sophisticated devices, and I worry about whether US manufacturers can quickly produce defect-free, usable ventilators. In the worst-case scenario, you could have ventilators go out into the field and fail on patients.

We need another plan that allows us to make use of the ventilators that already exist. The ventilators we already have could potentially be used to save many more lives. The problem is they may be in the wrong place at the wrong time.

If COVID-19 were to peak in all states at the same moment, it appears we wouldn’t have enough. But in the way this pandemic is evolving, states will peak at different times. As that happens, ventilators will become less in need in some parts of the country and more in need in other parts. They could be moved.

You would need to have states agree to exchange ventilators. We have seen some of that already, for example with Oregon offering ventilators to New York. But this kind of exchange would require a massive logistical effort on the part of the federal government, and likely include the Army, which has expertise moving military equipment and tanks on the battlefield.

It’s a similar problem, but you need good optimization and logistical tools.

How many lives could be saved by improving ventilator allocation?

To figure out the benefit of doing this, you need a forecast of new intensive-care-unit admissions. Recent medical evidence suggests that roughly 80 percent of people admitted to the ICU with COVID-19 will require mechanical ventilation. We can put this assumption and others, such as the length of time that patients need to be on ventilators, and mortality, along with the supply of ventilators across the country, into an optimization model to figure out how to move the ventilators around to maximize the number of lives saved.

There are many forecasting models out there. My forecast comes from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, which as of April 2, 2020, has three scenarios of the ICU-admissions trajectory. It is also the one that the federal government is using for its planning. Therefore, whether or not this model produces an accurate forecast, our results will be applicable to the government’s plan.

Plotting the trajectory is like forecasting hurricanes. There’s an expected path, and there are uncertainty bounds around that path. The lower bound is a best-case scenario. The upper bound represents the worst-case scenario. Starting from these, you can forecast new ICU admissions, and from that you can build a model—in this case, of three scenarios—that plans the exchanges of ventilators across states over time so as to maximize the number of lives saved.

I estimate that in the worst-case scenario, without the national stockpile of mechanical ventilators being used, about 83,000 lives could be lost due to an insufficient number of ventilators. Even in the best-case scenario, without the national stockpile used, where the states all act independently, you could lose about 8,000 lives due to the lack of readily available ventilators.

But if we allocate the national stockpile of an estimated 8,900 ventilators to the states, and don’t move them further, I estimate that you could save about 5,500 lives in the best-case scenario.

Allowing ventilators to circulate between states could bring more benefits. In the best-case scenario, using the lower bound of the forecast for demand, you could save another 2,000 lives, just by allowing this exchange of ventilators across state lines.

In the worst-case scenario, you could save as many as 14,000 additional lives. In total, by putting to optimal use all of the existing mechanical ventilators in the country, over 28,000 lives could be saved, according to my model and assumptions.

This forecast is contingent on an estimate of how many ventilators each state has. The analysis uses the best available estimates for this in the literature.

What are the challenges in allocating ventilators?

States have to know where ventilators are needed in their states, and be able to conduct their own ventilator-sharing operation—or they have to develop this capability, with integration and supply-chain optimization that would anticipate demand and move ventilators accordingly.

The federal government needs real-time information on the status of ventilators all around the country—an information pipeline, which I suspect it has for some states and not for others, as some states likely have this information, and others likely don’t.

And you need good calculations to conclude when and which states have more than they can use. Apparently, Oregon has made that calculation, or it has some assurance from the federal government that if ventilators are moved before the state peaks, they can come back. But states are peaking within a matter of weeks of each other. There would have to be confidence that the US government could manage in that situation.
How are you going to get the states to actually exchange ventilators? When I’ve spoken with some hospital executives, the response has been, “Well, no one’s going to let you move their ventilators.” There’s uncertainty among states around how big their peaks will be. Politically, most state governors aren’t going to give away their ventilators and risk the public health of their own citizens.

Could the federal government, using its war-powers authority, commandeer ventilators around the country? I don’t know the answer. Even if it could, without knowing exactly where the ventilators need to go, the federal government would be carrying out a dangerous exercise. The best way to do this would be to have states voluntarily offer up ventilators when the time comes. The American Hospital Association has recently partnered with the Federal Emergency Management Agency to start such a voluntary sharing program, but a limited number of ventilators have been offered up as of yet.

For these reasons, in my model, I assume that states would only allow ventilators to be shared after the virus peaks, when they might not need them anymore, but while other states are in need. I would hope that the climate and the political incentives to share ventilators would be significantly greater at that point, making sharing a viable alternative and easier to manage. This could become even more challenging if we see a second or third wave of infection.

For completeness, I also considered a situation where states freely exchange ventilators even before they peak. This is logistically more challenging, because you would need a state to predict with reasonably good accuracy what its peak will look like.

Everyone is so focused on the ramp-up to the peak, and not many people are thinking about what happens on the other side, when they’ll be faced with the situation of having ventilators and wondering where to send them. The federal government needs to be in a position to move those around in the right way, and it needs the right optimization tools to figure out where to send them.

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**The stakes for ventilator sharing**

A plan in which ventilators are allocated to hospitals and later redeployed to other hospitals as pandemic-related needs change could save thousands of lives.

**Estimated number of lives saved in the US thanks to ventilator availability**

Adelman, 2020
Good decisions require good experiments

It’s a common enough type of scene: the CEO of a major company announces the decision to leverage a new promising technology, backed by scientific evidence. The technologist who heads up the company’s strategic partner explains how big data methods will provide new insights as the technology is rolled out. The company’s chief engineer uncomfortably tries to lower expectations, pointing out that the technology is not fully proven yet, while also attempting to not contradict the CEO. But the press, zeroing in on the fact that the public is more interested in solutions than in caveats and caution, breathlessly promotes the new advance. Providers around the world react to the demand, offering this unproven new product or service to their customers, causing shortages and another round of press coverage. A highly successful rollout—but will customers benefit?

We saw exactly this scenario take place this year, but this time on a national stage and in a matter of life and death: treatment of COVID-19. A team of researchers in France, led by Philippe Gautret of the Mediterranean University Hospital Institute for Infectious Diseases, published a hastily assembled research paper on March 17, in which they suggest that the antimalarial drug hydroxychloroquine is effective in treating the coronavirus, particularly when used in conjunction with another drug, azithromycin. US President Donald Trump, in press conferences and on Twitter, touted this breakthrough as a “game changer.” Oracle chairman Larry Ellison announced an initiative to collect data on the drugs’ efficacy faster than a US Food and Drug Administration clinical trial would.

However, Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases, in a joint press conference with President Trump, responded to a reporter’s question about using the treatment as preventative by referring to the evidence as “anecdotal” and stating, “It was not done in a controlled clinical trial, so you really can’t make any definitive statement about it.” The next day, Fauci elaborated further, citing the need for randomized control trials to prove safety and efficacy:

Many of the things that you hear out there are what I called anecdotal reports. They may be true, but they are anecdotal. So the only thing that I was saying is that if you really want definitively to know if something works, that you’ve got to do the kind of trial that you get the good information.

Why was Fauci skeptical, insisting that the evidence was only anecdotal? It turns out you don’t need to be an expert on infectious disease, or even a medical doctor, to see what Fauci saw. If you have a working understanding of what makes experiments beneficial, a quick read of that initial French study is all you need to identify multiple reasons to pause before drawing a conclusion.

First of all, the foundation of what makes experiments informative is randomization, comparing people who were randomly assigned to receive a treatment with an otherwise equivalent control group of people who were randomly assigned to not get the treatment. But the Gautret study was not randomized. Instead, it compared 20 COVID-19 patients at one hospital who received the hydroxychloroquine treatment with a “control” group—16 patients, some at that same hospital who did not qualify for or refused the treatment, and others at an entirely different hospital. Since the treatment was not randomly assigned, there was no guarantee that differences in outcomes were caused by the treatment, as opposed to by differences in the patients, unrelated to the treatment.

Second, all outcomes need to be taken into account in an experiment, to identify the net effect and make decisions about whether to use the treatment. The Gautret study reported results regarding six days of testing for the presence of the virus but did not report length of hospital stays or mortality, which are the policy-relevant outcomes.

Third, a valid experiment needs to account for all data, including the possibility that missing data may distort the actual result. In the Gautret study, 42 patients were initially included, but six hydroxychloroquine-treated patients were dropped from the study for not completing the six-day trial, including one who died on day three of the study, and three who were transferred to intensive care. This is a classic example of a mortality confound, which invalidates an experiment—after all, a treatment that is effective when ignoring patients who get worse is not much of a treatment.

An understanding of the simple properties that make experiments informative reveals how uninformative the Gautret study was and illustrates why Fauci insisted that a controlled clinical trial was needed before making any decisions. Of course, these limitations of the Gautret study don’t mean that hydroxychloroquine is not an effective treatment for COVID-19—just that we can’t know from the study. However, given the possibility of serious side effects from hydroxychloroquine and the need that patients with other conditions have for the medication as a proven treatment, promoting it as a treatment for COVID-19 on the basis of anecdotal evidence may turn out not to be harmless. An inability to assess evidence relative to the standards of a scientific experiment, whether in medicine or business, can result in unfounded decisions with serious and perhaps even deadly consequences.—CBR

Every century or so, a major flu pandemic (an epidemic with a global impact) occurs. The last one, the Great Pandemic of 1918–19, infected many hundreds of millions of people, and killed about 50–100 million men and women worldwide. The Asian flu of 1957 is estimated to have killed 2 million people, and the pandemic of 1968 killed over 1 million people. Various false alarms have also occurred, such as the swine flu outbreak in 1976 in the United States, in which over 40 million people received flu vaccinations, and 30 people died from the vaccinations, while few died from the flu itself.

Is this swine flu scare [the 2009 H1N1 pandemic] the “big one” that has come almost 100 years after the Great Pandemic? If so, what would be its economic cost? So far, fewer than 1,000 people worldwide are confirmed to have swine flu—they are mainly people under age 16—and the death rate is a low percentage of those contracting the disease. However, it is still too early to be confident that the effects of this swine flu will be mild or moderate since flu pandemics, including the Great Pandemic, often go through phases, where the first phase is rather moderate, and the next phases are much more devastating.

Whatever the course of this flu outbreak, health officials are confident that before long, a major pandemic will strike that could wreak devastation throughout the world. Note that flu pandemics involve a huge “externality” because infected individuals have limited incentives to consider the likelihood of infecting others when deciding how much contact to have with other individuals. This externality justifies a significant public-health involvement in trying to control the spread of flu during a pandemic.

Consider the cost of a modern flu pandemic with the impact of the Great Pandemic. Fifty million deaths in 1918–19...
The vast majority of people are willing to pay a lot to gain protection against deadly flu viruses.

constituted about 2.8 percent of the world population at that time. Since world population has grown twofold since then, a flu pandemic to kill 2.8 percent of all people today, it would take about 150 million lives. This is a staggering number. It can be converted into an equally staggering monetary value by using findings on what people are willing to pay to avoid fatal health and other risks—what economists call the statistical value of life.

It is estimated that this statistical value of life for a typical young adult in the US is about $5 million. This means that a young person would be willing to pay about $500 for a decrease of 1/10,000 in the probability of dying at each age, and $1,000 for a decrease in the probability of dying of 1/1,000. To get a monetary value of the aggregate cost of another such great pandemic, we assume that the comparable statistical values of life in other countries equal $5 million times the ratio of the per capita incomes to the US per capita income. For example, the statistical value of life for a typical young person in a country with half the per capita income of the US would be $2.5 million. Then, if we assume that the same percentage of the population would die from such a pandemic in all countries, the total cost of a pandemic equal in severity to the Great Pandemic would be over $100 trillion.

This is such a huge amount that it is hard to visualize. It dwarfs in magnitude the effect of such a pandemic on world GDP, the economic effect that is usually calculated.

A study published in the science magazine the Lancet in December 2006 by University of Washington’s Christopher J. L. Murray and his coauthors estimates that a modern pandemic of equal virulence to the Spanish flu that caused the Great Pandemic would kill not 150 million people, but about 60 million people. They also claim that these deaths would be concentrated in poorer countries. Using the study’s calculations to adjust my estimate of what people of the world would be willing to pay to avoid such a pandemic reduces the estimate, from $110 trillion to about $20 trillion.

The number of deaths from such a virulent flu might well be proportionately less than that caused by the Spanish flu because of important developments in the world health-care system. On the one hand, the explosion in world population since 1919, the growth of cities at the expense of the countryside, and the development of air travel that has led to much greater movement of people across national boundaries imply that the spread of flu among people has become a lot easier.

Offsetting these changes are others that make it a lot easier to contain the spread and severity of a flu pandemic. Public-health officials can more quickly isolate and identify the genetic composition of flu strains than they could during the Great Pandemic. Officials of different countries are also in much greater contact with each other, and can collaborate to partly quarantine the epicenters of future pandemics.

Perhaps the most important development in recent decades that would save lives during a future pandemic are vaccines and antiviral drugs, such as Tamiflu [oseltamivir]. Vaccines might be produced quickly enough to inoculate huge numbers against new flu strains, even highly virulent strains. When taken early enough, the antivirals can greatly moderate the course of an illness and speed up recovery.

The US and the European Union apparently have large enough stocks of antivirals to treat about 16 percent of their populations—the US supply covers about 50 million people—while Japan has even larger drug supplies relative to its population. The poorer countries of Africa and elsewhere are the least prepared to fight a major pandemic.

Of course, new flu strains may emerge that cannot be treated by the known antivirals. And bioterrorists may be able to produce and spread highly deadly viruses of all kinds. At the same time, however, drug companies are better prepared than even a few years ago to ramp up production of old drugs, and to develop additional drugs to fight new flu strains and other viruses that are not treatable by present drugs.

I have indicated that the vast majority of people are willing to pay a lot to gain protection against deadly flu viruses. This is why it would be desirable to greatly increase the stockpile of drugs and vaccines even if the probability of another pandemic were low, and its nature not known. For example, the expected worldwide cost in terms of willingness to pay to avoid the risk of another great pandemic that had a one-in-100 probability of occurring during the next 20 years would be approximately 1/100 x $20 trillion, or about $200 billion. This cost would justify sizable increases in world spending on antiviral drugs and flu vaccines.—GBR

Gary S. Becker was University Professor of Economics and of Sociology at the University of Chicago and at Chicago Booth until his death in 2014. He received the Nobel Prize in Economic Sciences in 1992.

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.
SOCIETY

Lockdowns and social distancing have changed how people work, shop, and interact. Do the changes represent a new normal or just a temporary blip?
When we think about the effect of social distancing on people’s mental health, we are concerned about those who are lonely. While some of us are at home with other people, others are alone or are not with the people who matter most to them. Loneliness is a modern disease that has concerned social scientists, governments, and health providers. We are particularly concerned about older people.

Digital connection is one thing that our modern life offers, which is great. If we’d had to socially distance prior to the internet, things would have been much harder. But online communication is not like physical connection. In our evolution as humans, we didn’t learn to connect over a single medium such as voice or text. We need to be with each other, touch each other, so that we feel connected.

In my own research, I’ve looked at the effects of having a meal with someone. My coresearchers and I find that people tend to have much better relationships, work better with each other, and feel less lonely if they eat with other people. People now have started to have meals with others over online meetings. It’s clearly better than nothing—not to mention that it’s super creative—but it’s a poor substitute. You can’t share your dish or smell theirs.

We are working together, as a society, to keep people healthy. For researchers such as myself, who have been studying coordination, this is fascinating. We can see how humanity is handling this problem, what people and leaders try, and what actually works.

When we think about this period of social distancing, we are also concerned about patience. Many people face an unresolved question: How long will I have to wait before I can see my family and my friends? Patience is hard, and being patient when you face a lot of uncertainty is even harder. My colleagues and I are running a few experiments trying to understand what makes people more patient and what makes them feel better about uncertainty, and exploring the way policy makers can communicate social-distancing policies in ways that reduce panic without reducing alertness.

Think about the well-known marshmallow test. [This was described in a 1970 psychology paper by the late Walter Mischel and Ebbe B. Ebbesen.—Eds.] What makes it really hard for a child who’s waiting to get a marshmallow is that she doesn’t know how long she’s going to wait. Is it going to be one minute or half an hour? The uncertainty people are experiencing might make them feel that it’s going to take forever. This is a scary thought. Policy makers should explain that there is a solution. They should say: we are working together, we are making progress, and we will resolve it.

I would not give US policy makers high grades for how this has been handled so far. We see a few who are reacting with clear instructions and messages that could make us feel more comfortable, but mostly we see lots of contradictory messages and nothing that addresses the concerns about loneliness, about the long-term economic impact, and so on. I also don’t hear enough reminders that we are strong, that we have the resources, that this country is rich and educated, that we can cope with a health crisis.

Social psychology reminds us that it is surprisingly easy to go back to our old habits. It’s also surprisingly easy to go back to feeling satisfied and happy with our lives. Consider studies, for example, about the psychology of job loss. Survey respondents said that if they lost their job, life would never be the same. Guess what? It was the same, if not better. My prediction is that, once the crisis is over, people are going to get back to hugging each other and spending time together and shopping in supermarkets much faster than they anticipate now. Our human nature is designed to bring us back together; we are just not good at being alone. We like to touch each other. We like to be with each other.  

GEORGE WU, JOHN P. AND LILLIAN A. GOULD PROFESSOR OF BEHAVIORAL SCIENCE

“People are isolated, and a lot of people are lonely as a result. Feeling a connection with people, feeling heard, that’s a currency that is extremely valuable these days. . . . That’s the important part of what’s going to make relationships, and negotiations, successful.”

Speaking at the Small Business Bootcamp, hosted by the Polsky Center for Entrepreneurship and Innovation at the University of Chicago, on April 13.
Partisan bias affects what Americans think of COVID-19

There’s a distinct difference in the way Americans react to the threat of the coronavirus pandemic, research suggests. “Even when—objectively speaking—death is on the line, partisan bias still colors beliefs about facts,” write Chicago Booth’s John Barrios and Rice University’s Yael V. Hochberg.

As COVID-19 rages, governments have supplemented the search for a vaccine with a behavioral tool: social distancing. The hope is that reducing nonessential business activity and travel, through shelter-in-place orders and other mandates, will reduce the spread of the disease.

But getting people to stay home and avoid social contact requires a coordinated effort, and though health officials have recommended voluntary restrictions, some people have taken the threat more seriously than others. While many canceled travel plans because of stay-at-home orders, others gathered in Florida for spring break. That’s problematic because when people travel and gather in groups, it potentially affects their health but also that of anyone they encounter, increasing the risk that they will expose their neighbors and others to the virus.

In the face of a shared public-health threat, why do some people react differently than others? To find out, the researchers looked at data on internet searches, using Google Trends to measure searches for terms that included coronavirus, COVID-19, and Wuhan virus. Presumably, when people searched for information on the virus, they were thinking about the risk associated with the pandemic and were considering steps to address it. The researchers also captured search trends for terms related to unemployment, such as benefits and insurance, to track people’s sense of economic risk related to the pandemic.

They find a link between politics and searches. The higher the share of voters who supported US president Donald Trump in a county, the less that people in that county were concerned with COVID-19.

Barrios and Hochberg also used anonymous, national mobile-phone data from the location-data-products company Unacast to measure daily social-distancing trends. They analyzed changes in distance traveled and visits to nonessential retail and services locations, comparing patterns from the pre-pandemic period of February 24 through March 8 and the pandemic period through March 31. To proxy individuals’ political partisan affiliation by county, they relied on 2016 US presidential election data from the MIT Election Data and Science Lab, calculating the share of voters in each county that voted for Trump. Once again, they see a similar story: places with more Trump voters were less likely to practice social distancing.

The results hold when the researchers controlled for factors such as population density, to rule out that rural and urban voters might react differently because of where they live, and the ability of people to work from home. Two people in the same area, who had a similar ability to work from home but opposing politics, tended to react differently.

This trend has to do with the media that Democrats and Republicans consume, the researchers argue. On March 9, news broke that prominent Republican figures were quarantined following their COVID-19 exposure at the annual Conservative Political Action Conference (CPAC) meeting. Barrios and Hochberg considered search shares for COVID-19, before and after the announcement about exposure at CPAC, as a function of the average ratio of searches for right-leaning Fox News to left-leaning MSNBC across designated market areas. In the pre-CPAC period, there were fewer Fox News searches for COVID-19. But this reversed post-CPAC, consistent with Fox News viewers perceiving risk differently once people in their party were affected.

In places with more Trump voters, residents had exhibited a muted response to preliminary COVID-19 cases, even as state governments imposed a variety of school and business closures and stay-at-home recommendations. After March 9, those residents began to reduce travel and visits to nonessential businesses.

The researchers don’t take a view as to whether Republicans were underreacting or Democrats were overreacting to the health threat but note a relationship between politics and viewpoint. Conservative-leaning news outlets, affiliated with the party in power, may have had an incentive to downplay the risk, as criticizing or disagreeing with its leaders could cost the party in an election year. Similarly, “it is also possible that the opposition party may exaggerate it [a potential pandemic] to galvanize the population to seek change or to argue that the party in power mismanages crises,” the researchers write. When party leaders and media outlets began to treat the risk differently than before, people at home in turn adjusted their beliefs and behaviors.

As countries struggle to flatten the curve of this pandemic, and consider how to react to future ones, the findings suggest policy makers need to take politics into account. If risk perceptions and, consequently, behavioral choices, are shaped by politics, all parties need to support interventions that curb outbreaks. –Martin Daks

Sociopolitical distancing

Visits to nonessential businesses, sorted by areas’ Trump support
March 8–31 average versus earlier in 2020

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<thead>
<tr>
<th>Counties’ reduction in visits</th>
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Barrios and Hochberg, 2020

“One of the many innovations coming out of this crisis is the way we work. We need to step back and think about this screen problem that we have as a society. Are we further exacerbating it by forcing people to spend their workdays looking at a screen? I hope the outcome of this crisis is not a further acceleration of remote working, but the realization that there is great value in physical human interaction.”

NICHOLAS EPLEY, JOHN TEMPLETON KELLER PROFESSOR OF BEHAVIORAL SCIENCE AND NEUBAUER FAMILY FACULTY FELLOW

Policies should prioritize human well-being

From an interview on April 3. View the video and full transcript online.

One of the real pains of this pandemic is a feeling of helplessness that affects us all. But on the social front, you have a lot of power to do good for others, just by trying to connect with them. In research my coauthors and I have done, we find that people underestimate how positively others respond when you reach out to them, and this includes not just friends and family. It’s especially true of people that you’re a little more disconnected from: old acquaintances, neighbors, or people you might walk by—6 or more feet away from—on the road.

People tend to enjoy conversations with others more than they predict, mostly because they underestimate how interested others are in engaging with them. We underestimate how positive our expressions of gratitude will feel. We underestimate how positively others will respond to compliments.

Modern technology gives us lots of options for how to have a conversation. What we find in our research is that the most important cue for creating a sense of connection is the presence of voice. The voice seems to be especially powerful because it contains paralinguistic cues that convey a presence of mind. You can hear me thinking in the way I speak to you. You can get a sense of the emotion that I’m feeling. You can get the content of my language as well.

One thing this pandemic has brought to the fore is the importance of human health in all aspects of society, including the economic aspects. You cannot have a functioning economy if people are not healthy enough to go out and work, and one of the things that we know about social connection is that it’s extremely important for human health. In fact, epidemiologists find that loneliness, or a sense of disconnection from other people, creates a psychological stressor that compromises your immune system. It can make you more susceptible to all sorts of illnesses and diseases, from the common cold to the flu. It increases cardiovascular disease and decreases cardiovascular health. When epidemiologists crunch the numbers, they find that loneliness, or social isolation, and the decrease in well-being that comes from it, is as big a risk factor for morbidity and mortality as smoking 15 cigarettes a day.

I would like to see human well-being prioritized as an important policy matter at the federal and state level. When people are feeling well and have a sense of connection to others, they are more likely to engage positively with other people, and that’s going to have meaningful consequences for how that society functions.

I have both an optimistic and a pessimistic side when thinking about the long-term outcomes of this. The pessimist in me is worried that the concern about catching a virus will push people to be even more disconnected from others than they might already be in their daily lives. The optimist in me hopes that this pandemic has caused us to realize the importance of being able to connect with other people for our well-being, and how to maintain some of those connections effectively, even at a distance.

Before the pandemic broke out, most of us psychologists had a pretty negative view of technology, recognizing that it mostly enabled us to stay disconnected from other people in the moment. Now, though, we’re having virtual dinner parties with people in other cities. My hope is that some of these events stick with us, and that we are learning how to use technology for what it’s really good for, which is connecting us at a distance. —CBR
Both Republicans and Democrats stocked up before COVID-19 hit

Americans started to stockpile food and necessities even when few people in the United States had yet felt the impact of the coronavirus pandemic firsthand, find Northwestern’s Scott R. Baker, Columbia’s R. A. Farrokhnia and Michaela Pagel, University of Southern Denmark’s Steffen Meyer, and Chicago Booth’s Constantine Yannelis.

And while there were differences in how politicians reacted to the looming crisis, both Democratic and Republican shoppers stockpiled, the research finds. In fact, the research data show that Republicans spent more than Democrats early on.

Economists have long recognized that expectations play an important role in consumption decisions. The late economist Milton Friedman posited that individuals spend on the basis of what they think they will earn in the future, not just on what they currently earn, and this has stood up to experiment. Stanford’s Luigi Pistaferri, for example, looked at Italian household consumption in 1989–91 and demonstrated that Italians reduced spending in anticipation of falling future wages and higher taxes. Another study, from 2001, found people increasing consumption ahead of tax rebates or reducing it in expectation of health troubles.

So how do people shop in anticipation of a pandemic? Baker, Farrokhnia, Meyer, Pagel, and Yannelis analyzed data from more than 44,000 anonymized bank accounts provided by a nonprofit (which they don’t name) aimed at helping people increase their savings. The data confirm that an expectation of trouble ahead drives spending decisions.

Consumers increased retail and other spending in the early weeks of March, according to the data. Household spending overall rose by 50 percent in the two weeks through March 11 and remained elevated in some categories, such as groceries, throughout the month. In other areas, such as restaurant and public-transport spending, a surge early in the month was followed by steep declines in later weeks as the seriousness of the crisis became clearer and shelter-in-place orders came into effect in some regions.

The reaction was similar regardless of income. While the data set skews toward lower-income Americans, individuals earning less than $40,000 per year, there were few differences between the ways low and higher earners reacted, according to the research.

Both sides of the aisle

Republicans spent more on groceries than Democrats in the early days of the crisis, but consumption patterns were similar across the political spectrum.

Change in grocery spending in the US as COVID-19 spread

Daily averages during early 2020, by spenders’ likely political affiliations

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Jan 10 Feb 10 Mar 10

Baker et al., 2020

The consumption reactions were also bipartisan. Using demographic data that the nonprofit had collected from its users, the researchers created a political profile for each anonymized-bank-account holder and rated individual holders on their likeliness to lean left or right politically. A woman aged 30, earning $40,000 a year, and living in Brooklyn might be given a rating of 90 on a 0–100 scale, where 0 is very likely Republican and 100 is very likely Democrat.

The researchers worked with only the bottom and top quartiles of the scale to reduce mistaken matches between demographics and politics. They find that Republicans were just as likely to stockpile in early March as Democrats were. “Some of us were expecting a big difference in the way people with different politics reacted,” says Baker, citing the starkly different positions taken by Democratic versus Republican politicians about the seriousness of the virus—and evidence from phone data that people who had voted for US president Donald Trump were less likely to observe social-distancing guidelines than those who hadn’t. “But there was actually little difference in consumption patterns.”

In fact, Republicans spent more than Democrats early in the month. “While we see significant evidence of stockpiling for both groups, the percentage increase in grocery spending by Republicans is approximately twice as large as the increase among Democrats,” the researchers write, though Baker notes this might be in part due to household size or other factors.

However, there was a gender split in reactions. Women were more prone to stockpile early in the month and to curb their restaurant visits in later weeks. Similarly, people older than 30 were more likely than their younger peers to either stockpile early or to restrict spending later.

As data accumulate, the researchers expect to learn more about how the crisis affects bill paying, how consumption patterns change in response to economic distress, and how stimulus money is spent. The data might also provide a window into how gig-economy workers are affected.

—Rose Jacobs
HOW SHOULD WE TACKLE TECH ADDICTION?

Chicago Booth’s Nicholas Epley and Marshini Chetty of the University of Chicago are joined by NYU’s Adam Alter to discuss how to address our slavish devotion to screens.

Alter: Tech addiction is a behavioral addiction, meaning any behavior that in the short run you want to enact over and over again. You do it compulsively, and you enjoy doing it, but in the long run, it harms you in some respect, affecting your psychological, social, or physiological well-being. All sorts of things happen when we are glued to our screens, such as people spending more money than they’d like. Substance addiction and tech addiction are different, but a lot of the consequences are similar. It may be less immediately unhealthy to be a tech addict, but in the long run, when you add up all the tech addicts, there are negative consequences for society in how we interact with each other. Playgrounds, restaurants, and the dinner table are degraded because we all spend so much time on screens.

Epley: Other people are deeply important for human well-being. The quality of our connections, the nature of our relationship to other people, is the biggest determinant of our happiness or well-being. Anything that distracts us from positive connections with other people has the potential to undermine our well-being. You might really enjoy your phone, but the data suggest that it doesn’t bring you the same well-being as connecting positively with another person. Experiments find that when you’re stressed, connecting with your mother over instant messaging reduces that stress a tiny bit, but only trivially compared with talking to her. My research suggests that the voice is really important for conveying the presence of another person’s mind and creating connection, whereas text lacks the paralinguistic cues that help create a sense of connection with another person.

Chetty: A lot of websites use dark patterns, a term for the user-interface design patterns that coerce you into making a decision that you may not have otherwise made. I coauthored a study of countdown timers on websites that try to get you to buy by creating a sense of urgency. We find that in many instances, some of these patterns were faked, and the timers were randomly resetting. Or, for example, if you watch an episode of a show on Netflix, at the end, the next episode automatically starts to play. In some video games, you have to play by appointment—in Pokémon Go, for example, some Pokémon are nocturnal. They’re only available at night, so even if you’re supposed to be sleeping, you have to be up to catch that Pokémon. In email notifications from social media, the “likes” are aggregated according to a variable-ratio reinforcement schedule that prompts you to constantly check your feed, because you don’t know when that counter is going to be updated.

So it’s not just that we might be susceptible to this kind of addiction, but that technology is being engineered to give you these quick fixes. These kinds of rewards are designed to keep us addicted to the technology. They play on our cognitive and behavioral biases to manipulate us into staying on the technology longer. These dark patterns have always been around—think about candy bars displayed next to the checkout line—but they can now happen on a much larger scale. They can also be personalized, to see which dark patterns an individual is most responsive to. And because this is not really being regulated, it’s problematic, and could be adding to this addiction problem.

Alter: We are much better at getting people addicted than we ever were before, which means you can be much more purposeful about designing things with that in mind. But you don’t even need to be purposeful anymore, because you can throw a billion data points at the wall and look at what sticks best, and you don’t need theory. So you don’t need to understand humans. You don’t need a degree. You don’t need a PhD. All you need is billions of data points looking at how people engage with an experience. You can do lots of little trials, see what sticks, and create a weaponized version of the experience. We didn’t have the feedback or the access to the data to do that before. We’re in a losing battle on the other side of the screen, fighting against
Chetty: Are we becoming more and more kind of addiction. That’s not a great outcome for us, that attention, it’s creating addiction—and intent. If the intent is to capture our attention, it’s really driven by the user’s method is really driven by the user’s intent. The use of the method is really driven by the user’s intent. If the intent is to capture our attention, it’s creating addiction—and that’s not a great outcome for us, that kind of addiction.

Are we becoming more and more addicted to technology all the time?

Epley: All of this just describes the scientific process. This is experimentation. Researchers and scientists have been doing this for centuries. The method isn’t problematic. Any good method can be used to ill intent. The scientific method that gave us lifesaving medicines also gave us opioids. The same scientific practice that allows us to understand what makes people happy and sad, what helps people make good choices and bad choices, and what helps people live better lives can also be designed to help a company make money. The use of the method is really driven by the user’s intent. If the intent is to capture our attention, it’s creating addiction—and that’s not a great outcome for us, that kind of addiction.

Epley: With a lot of substance addiction, the negative consequences are obvious. But not all the negative consequences of this tech use are obvious. Take texting. In our research, we find that a person’s voice is really critical for conveying the presence of mind—you sound more thoughtful, intelligent, and rational. I make a different inference about your intellectual character when I hear what you have to say than when I read the same thing. But the effect of that is not obvious. We don’t get feedback on some of the negative social consequences of technology. If I don’t talk to another passenger on the train, I don’t learn that we would have had a great conversation and she’d have been super interesting. I just learn whatever was on my email. So I don’t find out that the tech was keeping me from another wise, pleasant experience. We get really smart in the world as human beings when we get really good feedback. Technology doesn’t always give us great feedback. And it’s even harder to aggregate individual experiences to pinpoint the social consequences. The long causal chain is hard to see out there in the world. It’s hard to see all the different ways all of this stuff that’s impacting humanity at a really unprecedented level is affecting our social lives. For example, is the divisiveness that we see here in the United States partly because technology has enabled us to connect easily with folks who are part of our “tribe”? Anyone can find a Facebook group that creates endless opportunities for “us versus them” thinking.

Alter: In 2014, I wrote the proposal for my book Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked. When I spoke to a number of potential editors, some of them said, “This is just not an issue. No one cares about it. No one thinks it’s a big deal. This is a storm in a teacup.” The editor whom I worked with said, “I think you might be on to something. This is interesting. Let’s run with it. Let’s see what happens.” No one says that anymore. I used to have to spend the first 20 minutes of any talk saying, “This is the thing you should care about.” I don’t have to do that anymore. Everyone now understands that this is a concern. The consequences are not as immediate as watching someone experience heroin addiction, but certainly we’ve gotten to the point now where we are convinced as a society that this is a problem. But there’s been some evolution. When I published the book, parents said to me, “I don’t know what to do about my kids.” Now kids are saying to me, “I don’t know what to do about my parents.” Younger people are getting better at dealing with the technology. They’ve grown up with it, and it’s other generations who are struggling with it more. If I have an audience, I’ll ask them to indicate where they lie on a spectrum from 1: “I am perfectly happy with my devices” to 10: “This is destroying my life. I need to make major changes.” In almost every room I’ve ever done this, the most common response is between 6 and 8. So most adults say, “It’s not ruining my life, but it’s a real problem for me personally, and I need to do something different.”

How should we address the problem?

Alter: There are two basic approaches: the grassroots, bottom-up approach, where each individual has certain tactics to deal with the problem; and the top-down approach: government legislation, workplace policies—and you have to be hopeful the latter has to happen, either through pressure from consumers or pressure on governments, on legislatures, and so on. It’s happening in some parts of the world: East Asia, Northern Europe, Western Europe, certain parts of those regions. Not so much in the US right now. If there’s enough pressure, over time that could evolve. It seems like it’s leaning in that direction. More and more countries are introducing legislation. Perhaps the US government will do something. But because not much is happening currently at the top-down level, apart from a few isolated organizations, we as individual consumers have to do the grassroots work ourselves.

Chetty: There is a proposal in the US Senate trying to regulate the use of dark patterns. One of the patterns it’s specifically concerned with is encouraging kids under the age of 13 into compulsive gaming habits. So in the US, there does seem to be more concern about children in general being on technology. The American Academy of Pediatrics changed its guidelines for screen time. Even in the devices themselves, more operating systems have rolled out screen-time awareness tools. I agree that as an individual, you should try to curb your tech addiction, but you can’t expect everyone to do that. Not everyone is informed. Children need help to protect themselves. For the elderly, or those with cognitive impairments, regulation is needed so that someone is providing oversight for this. The proposal in the Senate is only geared toward big companies with more than 100 million monthly active accounts. They can’t go after everyone, but at least if they
make an example of some of the bigger players, hopefully others will follow suit. You can’t police everything, but I do think there’s a place for that as well.

**Epley:** Businesses need to make money to be able to sustain themselves, and as a general rule, they haven’t been great at regulating their prosocial orientation until it’s also aligned with them doing well financially. To the extent that investors start caring about these issues with their pocketbooks, then it will matter. And there are companies that are trying to do real good. Facebook, for instance, probably has good intent behind lots of its products. One thing that’s maybe not so obvious all the time, though, is how its business practices might detract from that goal. A company such as Facebook, for instance, has to make money by drawing people’s attention because that’s the only way it makes money: through ads. That’s its business model. If Facebook wanted to design a product that was systematically better for a user, it might also design a separate channel where people have to pay for a subscription service, and then it’s not incentivized to keep them as hooked. So businesses can make choices that are more socially responsible. My hope would be that as the negative social consequences of these phenomena become more widely known, companies become better at doing that.

**Has the COVID-19 crisis changed the way you think about our relationship to screens?**

**Alter:** When we’re forced to use screens, it throws into relief how important it is to understand how to maximize the benefits, to get as much good from screens as possible, and to minimize the costs. This goal that people have long had of disconnecting completely from screens, I’ve never thought that’s realistic. The key is to understand as much as you can about what screens are doing and what different aspects of screen time do to us, so you can then decide how to structure your life. Screens are not monolithic. There isn’t one thing known as “screen time.” You could sit in front of a screen doing work. You could have birthday parties in front of a screen. You could watch mindless content. One important step for everyone to take is to do an audit of what you’re doing with that screen time. Maybe track your usage for a couple of days, and try to break it down into the benefits and the costs, and what you’re actually doing. It needs to be an audit process where you say to yourself, “What does a screen mean to me right now? Are there other things I could be doing?” That will vary by the person.

**Epley:** My thinking on the impact that screens have on us has not changed, but it does highlight different aspects of the effects that screens can have on us. I study social connection in my research, and what we’ve seen over the past few months is just how good screens can be for people, as long as we use them in high-fidelity ways. We’re being asked to socially distance from each other, but that’s a misnomer. What we’re really being asked to do is to physically distance from each other. We can use technology to keep ourselves socially connected, even when we’re physically apart, as long as we use the technology optimally. That means connecting with each other using voice. Video doesn’t hurt either, but in particular, using voice to connect with somebody really creates a sense of connection to others, we find in our research, rather than texting or typing.

**Chetty:** We need to be even more conscious about the way we’re spending time on technology during the pandemic. That’s because we’re dependent on technology for many different reasons—homeschooling, connecting with other people, and entertainment. There are a few different things that we can do: one, we have to go easy on ourselves, because we might be on screens more than usual. Two, we can use technology positively, but at the same time, I can’t forget those rules that we talked about before the pandemic—if we’re not being mindful about how we’re spending the time online, it can be bad time. We need to ask ourselves: Is it productive time, is it helping us relax, or is it harmful?—CBR

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“We need to be even more conscious about the way we’re spending time on technology during the pandemic.”

— MARSHINI CHETTY
BUSINESS

In the midst of disaster, challenges, and change, executives still need to lead. Here are some strategies and factors to keep in mind.
Four ways to ensure innovation continues after the crisis

The COVID-19 crisis has prompted inspiring acts of innovation. Companies, governments, entrepreneurs, and citizens have proved how capable humans are of innovating during times of crisis. Responding to the acute public-health pandemic has forced rapid changes in health-care-delivery models. The social-distancing mandates have prompted complete workforces to adopt a virtual work model, as well as K–12 school districts and university systems nationwide to figure out how to educate students through distance learning. The slowdown of commerce has pushed small-business owners to transform their business models overnight in an attempt to stay afloat amid economic collapse.

Necessity forces companies to innovate.

However, waiting for a crisis is not a sustainable innovation strategy, and certainly no one wants a crisis for the sake of innovation. The COVID-19 pandemic provides a natural experiment that allows us to examine conditions that have prompted innovation and to observe and learn how organizations have responded. The circumstances are dire and the effectiveness of many of these innovations remains unknown. Despite this, it is worth observing what is happening and learning from it. Companies should take note of these lessons and apply them to remain innovative, whether in the midst of a crisis or in a position of strength.

Extreme examples of innovation have surfaced from the COVID-19 crisis. In one well-documented example, Wuhan’s Huoshenshan Hospital, a specialty field hospital, was built in just over a week to treat the outbreak. Although this is a great testament to human ability, it does not provide a blueprint for sustainable innovation. The financial burden and other costs—among them, structural and safety concerns and suspect labor practices—do not justify building a hospital at this speed under normal circumstances.

However, other tools used to fight the COVID-19 outbreak can and should become a replicable part of corporate innovation practices. Here are four of them:

**Tool 1: Challenging orthodoxies**
Orthodoxies are widely held and unchallenged assumptions that companies hold about their business models, products, customers, markets, and competitors. They often start as truths that hold at a certain point in time but aren’t revisited or challenged as realities change. Identifying and challenging these assumptions is a critical input for innovation. In fact, most innovations contain a broken orthodoxy at the heart of their value proposition. Zappos challenged the orthodoxy that consumers need to try on shoes before buying them. Zipcar questioned why cars needed to be rented by the day when many consumers wanted them by the hour. Rent the Runway questioned why wardrobes were limited by what women could afford to purchase. Spotify challenged the idea that consumers needed to own music in order to listen to it legally. Conversely, being blind to orthodoxies puts companies at risk for disruption.

Increasing production is only one way of solving the shortage problem. In fact, the shortage was created in part by the orthodoxy that single use is the safest and most effective solution. Most masks prevent transmission, rather than kill pathogens, and so in this case, disposal upon use may indeed be the best way to prevent further infection. That said, if masks intended for reuse could be manufactured and distributed, the capacity constraints would be less debilitating, because medical providers would need far fewer of them.

Even if an orthodoxy is obvious, sometimes business interests prevent companies from challenging it. After all, moving customers to a reusable product could risk the run of cannibalizing sales. Entrepreneurs, unburdened by deeply ingrained organizational beliefs and unconstrained by the desire to protect the interests of the existing business, are good at identifying and questioning orthodoxies. In fact, several start-ups are, as of March 2020, close to commercializing reusable-mask technology. One is Sonovia, which produces an ultrasonic fabric-finishing technology that blocks and kills pathogens and can remain effective through 100 washes. Although Sonovia was founded in 2017 in the pursuit of reducing hospital-acquired infections, it rapidly mobilized to work toward its products becoming certified to protect against COVID-19, according to its website.
Stepping back and questioning what you believe to be true about your company’s product, business model, and customers can prompt innovation. Executives should regularly ask themselves: “What orthodoxies might be limiting growth opportunities or putting my business at risk for disruption?”

**Tool 2: Forcing constraints**
There are two reasons companies often struggle to identify creative solutions to problems. The first is organizational incentives. In the pursuit of reducing risk and avoiding unknowns, companies tend to rely on established resources, well-tested business models, and proven methods. The second is neuroscience: the human brain forms neurological connections on the basis of historical data patterns and associations, much like how an artificial-intelligence algorithm is trained. Humans therefore struggle to envision scenarios that are dramatically different from past events.

Constraints can help jolt managers out of these traps and toward more transformative ideas. For example, to increase the number of patients they are triaging while also slowing the spread of infection, health-care providers have quickly increased telemedicine use in emergency rooms. These health-care providers might find that telemedicine triage is beneficial after the COVID-19 crisis abates. To facilitate the shift from in-person to online selling, the owner of a specialty clothing boutique in Chicago began styling customers through FaceTime, Apple’s videoconferencing application, rather than in the store, using the fit of items already in the customers’ closet for sizing clues. The new shopping model prompted loyal customers to begin referring friends and family from out of state. By being forced to find a different way of generating revenue, this entrepreneur actually grew her business while small businesses around her shuttered.

Constraints are beneficial, and can accelerate rather than inhibit innovation. Here is a practical example. How would you make yogurt if half of the world’s dairy cows got wiped out by a disease and milk supply dried up? Ten years ago, I asked this question to one of my clients for whom yogurt production was a significant share of its business portfolio. There are two obvious answers to this question. One, do nothing and hope that price increases can make up for a temporary reduction in sales. Two, make yogurt using something else.

Plant-based yogurts now abound, made using the milk from almonds, soy, coconut, and even oats. None of these alternative yogurts were created by category incumbents. Entrepreneurs conceived of these products in response not to dairy milk shortages but to health trends that dairy executives either didn’t want to believe or couldn’t act on.

Imagine these were normal times. Many businesses are now confronting extreme constraints, which are necessitating significant changes in their business or operating model. But under normal circumstances, businesses should force themselves to consider scenarios that might at first blush appear extreme or unlikely. For example, how would you grow your business if you had to suddenly operate under extreme constraints? How might you deliver your service for half the current cost, or with zero fixed costs? How would you acquire customers if your marketing was suddenly regulated à la the tobacco industry? How would you engineer your product if a key input were no longer available? By considering how your business would need to operate under different means or circumstances, you can surface innovative ideas that you may not have otherwise considered.

**Tool 3: Working outside of your organization**
Collaboration is the new competitive advantage. In a recent study by CB Insights Growth Collective, part of data-driven research organization CB Insights, 79 percent of high-performing companies cited a preference for innovating via partnership or acquisition, versus only 49 percent of their lower-performing peers. A 2018 Boston Consulting Group global innovation survey also finds that strong innovators were more likely to embrace ideas from external sources such as academic and company partnerships. As product ecosystems become more complex, talent acquisition becomes more fluid, and the rate of technological innovation accelerates, collaboration outside of one’s company grows increasingly essential. Yet, only 26 percent of companies surveyed had built a mature open-innovation competency, according to a 2018 study by innovation and strategy consulting firm Luminary Labs. There are many reasons for this, ranging from a fear of sharing intellectual property, to regulatory hurdles such as data privacy laws, to an outright disbelief that outside collaboration is needed.

What we have seen from the COVID-19 response is an extraordinary degree of partnership and coordination. Universities that have more-mature distance-learning programs have shared best practices and resources with those having to build e-learning solutions from scratch. In Madison, Wisconsin, a partnership between tech giant Epic, UnityPoint Health-Meriter’s Children’s Center, and UW Health has formed to provide a residential 24/7 childcare center for parents who work on the front lines of treating COVID-19. Software-as-a-service companies such as Salesforce have deployed free software to aid health-care systems in the response to COVID-19. Companies such as Amazon, which became inundated with demand during quarantines, absorbed a massive amount of employees who had been displaced from other companies. Hotel operators have coordinated with health-care organizations to repurpose room capacity for quarantine operations. These are just a few examples of the partnerships that have formed.

Collaboration is the new competitive advantage... What we have seen from the COVID-19 response is an extraordinary degree of partnership.
Altruism and humanity drive cooperation during times of crisis. However, once the pandemic passes and this spirit diminishes, remember that collaboration is good business practice. Consider how your company is tapping into the collective expertise of the 7.8 billion people who do not work for your organization and the resources that aren’t controlled by your company. Tactics for external collaboration can range from crowdsourcing new product ideas, to sponsoring open-innovation competitions to solve tough customer problems, to setting up formal technology-development partnerships with research institutions, to actively investing in outside ventures. Forming open partnerships, structures, and collaborations should be a pillar of every innovation strategy.

**Tool 4: Moving quickly, perfecting later**

Most organizations move slowly when making operational changes or commercializing innovation. This often stems from inefficient or unnecessary processes, misaligned incentives, political barriers, or hurdles created by risk-management requirements such as information-technology restrictions or legal reviews. Academic institutions are known for being especially bureaucratic and slow moving. Imagine a public K-12 district deciding to invest in e-learning tools and curricula for students who are homebound for extended periods of time with illness. This would likely require forming a special committee, asking teachers to create and pilot programs, and subjecting proposed software to lengthy IT vetting. This entire process could take years—but the current crisis has shown how quickly some districts are capable of mobilizing.

One well-funded suburban K-8 school system in Illinois authorized its IT department to configure and assign iPads, to be sent home in anticipation of school closures to every student in the district. Previously, iPads had only been lent to students in grades 5 through 8 under strict parent-district user agreements and insurance policies, but these rules were lifted. The district closed schools one day before the state-ordered mandate to enable teachers to work in teams to create a six-hour-per-day curriculum to be delivered through the iPads. Once it became clear that closures would persist beyond a couple of weeks, the teachers worked through spring break to improve offerings for the subsequent weeks of closure, iterating and improving upon what they had learned from the first week of distance learning. The cost of setting this up included one day of student instructional time plus some late nights and stress, but the district and its teachers pulled off over the course of a few days what would likely have otherwise taken years to accomplish.

Necessity-driven cases have unique circumstances, of course. A crisis changes the next-best-alternative option. Prior to the crisis, the de facto option was high-quality in-person instruction. For most school systems, distance learning was an unexplored solution to the first alternative, but under the crisis scenario, a patched-together solution has been better than nothing at all. Relative costs and benefits also change in necessity-driven circumstances. Companies in crises have a lot to lose if they do nothing, but companies not facing immediate peril may instead see risk to trying something new. Outside of a true crisis, it is difficult to replicate these unique conditions. There are, however, three practices that can accelerate the speed of innovation under any circumstances:

**Consider relaxing existing constraints and processes.** Companies often use process as a safety net for poor decision-making, but empowering skilled employees to execute quickly can produce better results. In this case, teachers were empowered to find and use any e-learning tools that they deemed beneficial. Question which actions, approvals, and decision-making processes are absolutely critical. Make streamlined special-case processes with a separate set of rules for projects that need to be sprinted.

**Give people the time and incentives to collaborate.** Consider how you are incentivizing and disincentivizing innovation efforts, and ensure that this is in line with your objectives. In the case of distance learning, the district repurposed instructional days to enable teachers to build content and delivery models in teams. Teachers had a shared goal: it was in their best interest to help students across the school end the academic year on track, so that they return next fall fully prepared.

**Don’t require perfection.** When product safety isn’t a concern, be willing to go to market with something that isn’t perfect but is good enough to do the job. Sometimes this requires changing how you measure success. If the solution is good enough to begin solving a problem, get it out there quickly and begin iterating to make it better.

The lessons we can take away from these innovative responses are only the beginning. As I write, the COVID-19 pandemic continues to both paralyze and transform life across the world. New problems are arising and new solutions are being created every day, as the effects continue to ripple throughout the economy and daily life. We are seeing how necessity can inspire innovation. But after the crisis passes, I hope that companies can use some of these tools—such as questioning orthodoxies, imposing constraints, leveraging external collaborations, and executing quickly—to continuously innovate. Perhaps some positive lessons on innovation can come from this dark and frightening time.
Supply chains are rethinking their low-cost focus

From an interview on April 14. View the video and full transcript online.

How do you prepare a supply chain for disaster? Supply-chain-management professionals have been facing incredible challenges, and they are rising to the occasion. They are under a tremendous amount of stress, and for the most part, the right product has made it to the right place at the right time in the right quantities—although the health-care supply chain has been disrupted, and in ways that are unimaginable.

Supply chains have contingency plans—they execute risk-mitigation techniques—but typically when there’s a disruption, it’s local or regionalized. Think about the Japanese earthquake and tsunami in 2011—or the 2017 NotPetya cyberattack of [shipping and logistics giant] Maersk that shut down parts of the supply chain. These were majorly disruptive events. But the difference now is that this event is global: it’s happening at all places at all times, and it’s impacting both supply and demand. That’s what has made this incredibly challenging for supply-chain-management professionals to mitigate.

I don’t think many companies prepared for a correlated disruption around the globe. Most of them have in place regional activities so that they can reposition inventory in the face of a hurricane, say. Walmart, Home Depot, and [US regional grocery chain] H-E-B have been doing this for years. These companies know how to deal with regional disruptions and are basically scanning the marketplace for any disruption that might occur. Many of them have early warning indicators. Some companies, H-E-B included, received early notification that something was going on in China, and they increased their inventory levels in their systems in anticipation of a disruption.

When it comes to thinking about what’s next for supply-chain management, I predict we will see a more formalized approach to risk mitigation. It is imperative that supply-chain-management professionals recognize the lack of visibility in the system in terms of where inventory is, what products are needed, and who has the capabilities to produce them. Medical distributors such as Medline, Owens & Minor, and Henry Schein have asked for permission from the government to collaborate, so that they can share information about where inventory is and where it’s needed.

Absent this collaboration, they don’t have enough information to make good decisions. There is no omniscient person who makes decisions on behalf of a centralized supply chain. If you have all these entities working without coordination, you won’t have the optimal supply-chain solution. But when you have companies saying to the government, “We’re going to collaborate for the purposes of this pandemic so that we can make sure that our resources are effectively allocated within the channel,” that’s a wonderful thing.

How will COVID-19 change supply chains? The most important element of this pandemic will be how we rethink the trade-offs between cost and responsiveness. When operations professors teach about supply chains, we talk about how many companies are looking for the cost-effective solution. They’re chasing the lowest per-unit cost of the good, and that sends them to places with low labor costs for their manufacturing. They also transport their goods via ship, which can take weeks to reach the United States. They are focused on building a supply chain that’s extremely cheap in order to produce goods that are sold for low prices.

But I challenge my MBA students to think about the flip side. Right now, we see clearly the value of being responsive, of shortening the lead time. We see Project Airbridge, in which FedEx is working with the government to airfreight goods, including personal protective equipment such as masks and gloves, from factories in Asia and elsewhere to the US, to cut the lead time from weeks to several days.

It’s easy to identify the costs within a supply chain: I have data on the labor and the raw material. What’s hard to estimate is the value of responsiveness. How do you estimate the cost of being understocked, or the cost of having extra inventory? Those metrics are often noisier than the cost metrics, and there are more assumptions to be made than on the cost side of the equation. That’s why we tend to overemphasize cost at the expense of responsiveness, and we’ve seen this in today’s supply chain. Part of the problem now is that we don’t have agile, resilient supply chains for some of the goods we need, where we ought to have had them in place.

Supply-chain-management professionals will think differently about how they value agility—about whether they’re willing to pay a little bit more to have a contract with a vendor that might be able to go online quickly if need arises.
Textile orders were down by 35 percent, and imports were at a five-year low. . . How quickly can companies ramp up again once demand comes back?

My expertise is in the retail space, and I predict we’ll see additional adoption of robotics sooner than we might have otherwise. In Europe and some parts of Asia, many distribution centers have extensive robotics and automation. We don’t have that in the US, but this pandemic has caused us to think differently. Walmart, for instance, is rolling out a robot that can count items and help with replenishment. We see another company bringing automation into its fulfillment centers to help pick and pack goods going to the end consumer.

How healthy are supply chains following the advent of COVID-19?

Many of these supply chains are fairly robust, and they have been smart about how they’ve been running their factories. Take consumer goods and some food and beverage companies. In the past, they might have made 100 variants of a particular product. Now they’ve said, “OK, I’m not going to make 100 variants, because for each variant, I have setup time. I’m going to only make one or two, and as a consequence, I can increase my capacity.” As a result, we might have less choice as they focus on one or two variants to maximize their capacity.

The only thing I worry about, particularly for retail, is that we’ve seen a big spike in demand for consumer goods, and we’ve seen a depletion in demand for durable goods and industrial products. The effect has been pretty large in the apparel industry, so we see a lot of displacement of workers in the apparel and fashion industries in Bangladesh and Cambodia. Textile orders were down by 35 percent, and imports were at a five-year low. These have implications for the long-term supply chain. How quickly can companies ramp up again once demand comes back?

Visibility within the supply chain is something that supply-chain-management professionals often identify as one of their biggest obstacles to performance improvement. They might be able to see one tier down the line—who’s supplying to them—but they have no visibility into the suppliers of suppliers. This affects their ability to plan and mitigate risk. In the future, we’re going to need tools to provide visibility further down into many of the subtiers of our supply chain.

In response to consumer demand, big food companies have been trying to find out the exact sources of their products. The same is true in some other industries, including apparel. Consumers are demanding to know a bit more about the source, and companies are spending the money and time to figure that out. But it is not easy.

We’ve often seen companies reactive-ly approach risk and disruption, and this situation might induce them to be more proactive and to have formal mechanisms in place. There are some stellar companies that already had the warning signals, stress tests, etc. But those that didn’t will be thinking seriously about how to put a robust risk-mitigation system in place.

Overall, the signs are that the supply chain is doing quite well. The need for transportation and warehousing has gone up. We have a logistics-performance index, which, over the past five years, had been declining, and it just went up because of the need for these things. I can’t promise that there won’t be bankruptcies and an elimination of some links in the supply chain, but we’re in a robust enough setting that the chain will keep going.

What worries me a bit more is the retail space, especially retailers that were already weak, now that we have changed our buying behavior. We’ve become much more accustomed to buying some things, including groceries and clothes, online far faster than what one would have predicted for the US. This consumer behavior, if it persists, could be problematic for some retailers. Many companies haven’t invested in digitizing the supply chain. Tractor Supply is an example of one that had been slowly rolling out the option to buy online and pick up in store. It had a methodical, well-thought-out rollout but just said, “You know what. We need to do this now.” The company rolled it out to nearly all their stores, and that is impressive. —CBR
Many organizations—from big corporations to nonprofits—suddenly find themselves facing existential threats. Facilities have been shut down, supply chains have been disrupted, and demand has collapsed. While this is all officially temporary, many organizations will not make it through the crisis.

The warfare analogy has been used by politicians, public-health officials, and the media, so it makes sense to look to military strategy for a sense of how to navigate. Military thinkers have described the battlefield as a VUCA scenario—volatile, uncertain, complex, and ambiguous.

We—an entrepreneur, and an executive officer with US Army Special Operations Command—have been working to translate these VUCA insights to a civilian setting, to help leaders think strategically during times such as these.

One night in December 2018, Major Gaines’s unit in Iraq came under rocket attack from a militia force. In an email between us, here’s how he describes what happened:

> It is amazing how quickly you wake up when someone lobbs a rocket at you in the middle of the night. Grabbing my jacket, I sprinted out of my corrugated metal housing unit, across a small courtyard, and into the headquarters building. Seconds later, the next round slammed into a nearby concrete barrier. A few months into my deployment as the operations officer for a small task force, things had been going well, and I had settled into a steady rhythm of planning sessions, coordination meetings, briefings, and, of course, a lot of email. All of those usual agenda items went right out the window, though, because in war the enemy sometimes gets a vote. That night, they cast their ballot in the form of 107 mm rockets.

The process Major Gaines followed that night consists of three simple steps: get your people and yourself to safety, put your people to work, and enter your decision space. It’s only when leaders have done these three things that they can begin to focus on strategic thinking. These steps provide the groundwork for effective decision-making.

Strategy involves addressing primary and secondary questions. The first questions for a business to answer in normal times include: How do we grow, and, how do we win? But in moments of existential threat, secondary questions take priority: How do we defend? How do we stay alive so that we can win in the future?

This is a time to focus on defense first. This three-step process can help leaders improve the likelihood that their organizations will survive. Even if you have already taken one or two of the steps on your own, it’s important to keep the whole framework clearly in mind.

**Get your people and yourself to safety**

Security is important first, last, and always. If people do not feel safe, their world will collapse, as they will focus on security at the expense of everything else. Provide security for people, and you can start to get back to work.

When training soldiers to evaluate road surfaces for improvised explosive devices, the US Army came up with the phrase...
“feet, 5, and 25.” First, check the immediate threat that’s right under your feet. Are you about to step on a trigger? Next, look 5 m around you. What is the next imminent threat to you or your people? Then, look 25 m around. What is beyond that? This also has you scanning the areas around your teammates. Perhaps you can see something that is an immediate danger to them that they cannot see. Continue expanding the horizon, looking for other threats that might present themselves.

In an uncertain situation, whether it’s in the army or a quarantined home, the cognitive load can become overwhelming. Leaders need to help address people’s mental and cognitive needs. We’re not all professional soldiers, and the current situation is more stressful than many people are accustomed to.

In the case of a business, security in uncertain times means cash. As a CEO friend emailed recently,

“Humans need food, water, shelter, safety. Businesses need SUFFICIENT CASH. The need for cash even trumps your key people. No cash means no paychecks. No paychecks, no employees. No employees, no possibility of a business.”

He continued by pointing out that businesses usually don’t fail or enter Chapter 11 bankruptcy because they lack net worth—they fail because they lack cash. “Protecting the Mothership needs to be emphasized,” he concluded.

For an organizational leader, getting people to safety requires asking a series of questions about physical, mental and emotional, and financial safety. They include:

- What does physical safety look like for me and my colleagues?
- What does physical safety mean for our capital assets, software, facilities, equipment, etc.?
- What do I need to do to ensure my own mental and emotional well-being? (Think of the airline exhortation: “Put your own oxygen mask on first.”)
- How can I support, or get support, to ensure the mental and emotional well-being of my colleagues?
- What communication do they need from me?
- What does financial safety look like?
- How do we ensure financial safety for the organization?
- What are we doing to preserve cash?
- How do I balance my employees’ need for a paycheck with the company’s need to stay solvent?

Put your people to work
Once you have secured your team, your next job as a leader is to prioritize tasks and resources—and let’s consider resources first. The COVID-19 pandemic has forced leaders and managers to work out quickly what tasks their teams are able to do despite decentralized workspaces, degraded communications, a lack of access to systems, and home setups where family life continues around them. Leaders and managers then have had to manage expectations, knowing that there is even more friction in the system that will slow down work.

The first priority in this step is to address pressing, time-sensitive work that must happen to ensure the safety of the people and the continuity of the organization. The second priority is to get back to the tasks that your team does under routine circumstances. VUCA thinking suggests that, as soon as possible, leaders should get people to recommit with standardized work. This will help settle their minds and make them productive.

Here, an organization leader can consider another series of questions:

- Whom can I assign to ensure the physical and financial safety of the people?
- Whom can I assign to focus on business continuity and survival?
- Who is already thinking about the future growth of the business and needs permission to do so?

This three-step process is what wise military leaders follow in times of imminent danger.

Enter your decision space
Once leaders have ensured their teams are on top of time-sensitive and standardized work, they can turn to the third step, to enter a decision space. This could be a physical space where they make critical decisions, but we’re primarily talking about a mental decision space. On the night Major Gaines described, he went through a mental checklist as he prepared to respond, asking himself where the attack was coming from, who was doing it, and what their motivation was. Once he had those answers, he began to formulate his response.

As a civilian leader, the strategic questions to consider in your decision space might include:

- Where do we need to conserve and hunker down because the situation is still too dynamic?
- Who or what can take our customers and market share from us now? How do we defend our market share?
- What can we do to grow now?
- Whom can we serve or sell to?
- What can we do now to prepare our organization to grow when this wave passes over us?
- What has made us uniquely valuable in the past?
- Has anything in the present changed that now makes us uniquely valuable?

The crisis will test this generation of leaders as never before. Those who can think clearly, prioritize rapidly, and prepare for the postcrisis era are most likely to pass that test. Although few of us will be confronted with IEDs on our paths, it will help to use the “feet, 5, and 25” shorthand to identify any immediate crisis, the one just up ahead, and what may be beyond that. This three-step process is what wise military leaders follow in times of imminent danger, and what business leaders should heed in the pandemic environment. Our hope is that it will help many organizations and their people navigate very different but nevertheless difficult challenges ahead.—CBR
COVID-19 will change the way we think of risk

Every social world has a peculiar rhetoric that implies a hierarchy of values as well as the activities it holds most dear. Academics talk endlessly about journal citations; television producers, the “talent” that headline their shows. Business professionals—and especially the endless parade of financiers who parachute into television shows such as CNBC’s Squawk Box for, increasingly, a six-minute Skype chat—talk a lot about risk. Risk. Risk. Risk. Hour after hour. Day by day. A cavalcade of risk takers. A catalogue of risk-taking. A banquet of risky business.

JOHN PAUL ROLLERT, ADJUNCT ASSISTANT PROFESSOR OF BEHAVIORAL SCIENCE

To anyone who isn’t a regular viewer of business-network programming, such talk seems odd and, in recent weeks, fairly repellent. It hardly requires advanced studies in financial accounting or formal logic to understand that someone who hazards a considerable sum of money on some speculative endeavor has a special claim on any rewards. Nor does it strain belief that such speculative activity is salutary to economic advancement. Still, the unapologetic celebration of risky behavior, and the tendency to endow a certain type of risk taker with extraordinary social and moral significance, is nonetheless striking in the present moment as well as with an eye to the past.

The meaning of risk

In many ways, our casual celebration of risky business would have been both perplexing and appalling to those Americans who were members of what is popularly termed “the Greatest Generation.” These are the millions of Americans who came of age during the Great Depression, before the young men among them signed up for service in World War II and the women they left behind exchanged their oven mitts for assembly lines to support President Franklin Delano Roosevelt’s “Arsenal of Democracy.”

The more that what’s at stake retreats from life-or-death matters, the more casually one may treat the very notion of risk.

Many of us need only look to our parents or grandparents to see what risk meant for this generation. My mother’s father returned home to the family farm in 1930 after financial failure wiped out his father and the bank threatened to put his youngest siblings on the street. He abandoned his private dreams for the common responsibilities of family, and in addition to farming, to make ends meet, he did everything from making moonshine to boxing for dollars to acting as a “heavy” for the very people who could foreclose on him. He succeeded, but as a great aunt once told me of that time, all she really remembered of it was the ache of hunger that never seemed to dissipate.

My father’s parents made out better (solidly lower middle class, it seems), and yet, the fact of so many banks failing when my grandparents were in their adolescence—650 or so in 1929, more than 1,350 the following year—was an experience they clearly couldn’t shake. When their parents died, nearly 70 years later, my father and his brother scoured the house for coffee cans filled with bills. To my grandparents, it seems, the dank recesses of the basement were a safer bet than the assurance of the FDIC.

They weren’t alone. For members of this generation, “risk” was associated with bare subsistence, broken dreams, and, in the case of war, violent death. Small wonder that for so many of them, every effort should be taken, however strenuous or even absurd, to see that it be avoided.

The experiences that defined the Greatest Generation are so distant now that we mostly know them secondhand. And while the decades that followed were hardly without turbulent events—the civil rights movement, Vietnam—what they lacked were traumatic experiences of tragic magnitude that virtually no one could escape.

At the same time, America’s postwar role as a global supplier of first resort saw a decades-long economic boom that not only improved dramatically the life of the average American but increasingly insulated those most fortunate from the calamities which, just a few years earlier, were commonplace among even the elite. Remove the requirements of wartime service, eliminate diseases and conditions
that once afflicted rich and poor alike, and smooth out the business cycle to more or less remove the fear of abrupt economic collapse, and suddenly the world seems secure. A lot more secure. Secure enough, indeed, to head to the casino.

For, in many respects, to the outsider trying to make sense of the financial world, this is what operating at the highest levels of American capitalism looks like. Naturally, like all analogies, this one is neither exact nor entirely fair—much of the financial sector is consumed with somber analysis, staid accounting, and the express mission of slow and steady growth.

And yet, this is hardly the world presented to us in lurid bluster on CNBC and Fox Business, networks whose attentiveness commercial elites actively solicit. There, the focus is less on humdrum, workaday requirements of building something of abiding value. Instead, viewers are bombarded by a never-ending story of big scores and unicorns, of taking gains and weathering losses, of dashing in and out of the market.

It’s all presented with the solemnity of a three-ring circus. That’s how you know the stakes are so big and so small.

**Measuring the stakes**
The more that what’s at stake retreats from life-or-death matters, the more casually one may treat the very notion of risk. When the types of existential threats that the Greatest Generation faced recede from the pressing concern of the general public, the meaning of risk may evolve and ultimately be redefined. Hence the bombast of so much business rhetoric, especially when it concerns elite players for whom the upshot of risk-taking is “much richer” or “merely rich.”

Which is not to say that the rhetoric of risk doesn’t have an edge to it. Indeed, it is often sharpened on the whetstone of cruelty for those who prove themselves less than financially fit.

Take “the losers,” the sobriquet applied by CNBC’s Rick Santelli to homeowners who fell behind in their mortgage payments as the 2008–09 financial crisis smoldered. In February 2009, the Obama administration proposed diverting funds from TARP (the Troubled Asset Relief Program) to help owners modify their mortgages to keep them from losing their houses. For Santelli, such efforts suggested the new administration fundamentally misunderstood the distributive logic of capitalism and the nature of risk.

“How about this?” Santelli snarked from the floor of the Chicago Mercantile Exchange:

Why don’t you put up a website to have people vote on the internet as a referendum to see if we really want to subsidize the losers’ mortgages? Or would we like to at least buy cars and buy houses in foreclosure and give them to people that might have a chance to actually prosper down the road, and reward people that could carry the water instead of drink the water?

Notably, it didn’t strike Santelli as a little odd to reaffirm the winners and losers of capitalism when so many of the former had effectively been bailed out themselves, just a few months earlier, when the federal government pumped trillions of dollars into the economy to shore up the financial system.

Now, nearly a dozen years after the financial crisis, the federal government has once again taken action that has socialized losses in the economy while privatizing gains. This time, the Coronavirus Aid, Relief, and Economic Security (CARES) Act, a $2 trillion relief measure that also includes beefed-up unemployment insurance and forgivable loans to small businesses, sets aside hundreds of billions of dollars for airlines, amusement parks, casinos, movie theaters, and restaurant chains as well as other major industries affected by the COVID-19 shutdown, thereby protecting the same shareholders who have enjoyed bull-market returns since the last round of bailouts.

In an age increasingly concerned with the inequitable distribution of wealth, such efforts, if a fail-safe for economic apocalypse, raise unnerving questions about how the economy might be rigged in favor of plutocratic outcomes. Such concerns have a special urgency, for, as Paris School of Economics’ Thomas Piketty observed in his vital book, *Capital in the Twenty-First Century,*
Risk will not altogether lose its claim on our imagination—but it will be put in proper moral perspective.