Pivot your business model, and other insights to help your organization survive and thrive

**Plus:**
How powerful is financial inclusion? Lessons from the Freedman’s Bank
There are two Americas, and age is the divider
“We all understand that people make mistakes, but we seem to forget this when talking about the criminal-justice system.”
It is an understatement to say that 2020 has been difficult. Even as the global pandemic that ushered in the year has subsided in some places, it is still raging or has returned in other regions. And the consequent economic crisis has only just begun to unfold. In the United States, both the pandemic and the crisis have collided with a societal uprising that is forcing a reckoning with systemic racism—and these all coincide with a national election.

It’s a truism in business that no one ever knows what lies ahead. In the stock market, boilerplate small print reminds investors that past performance is no guarantee of future results. But if it’s hard to navigate an unknown future in typical times, it’s particularly daunting now.

How should leaders respond? Chicago Booth faculty have spent plenty of time thinking about this question, yielding both useful frameworks and practical advice, a sampling of which we present in these pages. Booth’s Pradeep K. Chintagunta explains why it’s imperative for small and midsize companies to pivot their businesses as needed (page 50), and Booth’s Waverly Deutsch writes about how COVID-19 is changing key business relationships (page 54). We also have crisis-management essentials from Daniel Diermeier, who was the provost of the University of Chicago until he was appointed chancellor of Vanderbilt University this year (page 45). There is more leadership advice available in articles and videos online at Review.ChicagoBooth.edu.

To address crises effectively, it’s critical to understand them, their origins and causes, and the contexts in which they emerge. Other articles in this issue help provide these contexts. In the midst of the most pernicious public-health crisis in recent memory, while medical staff are working tirelessly to save people’s lives, we take an in-depth look at the flaws in an influential system of US hospital ratings, and a plan for fixing them (page 26). As decision makers wrestle with how to address inequality and racism in the US, we reach back into history for lessons about financial inclusion from the short-lived Freedman’s Savings Bank (page 36).

We are also trying to keep up with the flow of new research on the pandemic, and include in this issue a series of articles about the unfolding health crisis (pages 20–25). For the latest COVID-19-related research, visit our website.

In the face of extreme uncertainty, facts, data, and evidence are even more critical to effective decision-making. We are committed to playing our part in providing you with the information you need to lead your organizations through the crisis. Whether by email, or via Facebook, LinkedIn, or Twitter, please do let us know how we’re doing.

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Anita Rao, associate professor of marketing, uses an empirical lens to explore digital technology, regulation, and public policy. In recent research, she documents whether consumers will pay more for products labeled as having been made in the United States. (Page 9)

Eugene F. Fama, the Robert R. McCormick Distinguished Service Professor of Finance, is a 2013 Nobel laureate and widely recognized as the father of modern finance. In 1992, Fama and Dartmouth’s Kenneth R. French demonstrated that value stocks outperform the market. In an update of this work, the researchers find that the value premium has been much lower for the past 26 years, but they are unable to infer the extent to which this result is due to chance. (Page 10)
How leaders can rise to the challenge of COVID-19
By Daniel Diermeier

Pivoting in a time of crisis
By Pradeep K. Chintagunta with Yogesh Kansal and Pradeep Pachigolla

COVID-19 is changing key business relationships
By Waverly Deutsch

You should run more experiments
By Oleg Urminsky

WeWork is a cautionary tale for venture capitalists
By James E. Schrager

Can regulation rein in algorithmic bias?
By Sendhil Mullainathan

Kids can have their cake and their broccoli too
By Margaret Echelbarger

Chick-fil-A and the rise of activist capitalism
By John Paul Rollert

How can policy makers support COVID-19 vaccination?
The IGM Panels

Dan Adelman, the Charles I. Clough Jr. Professor of Operations Management, is a leading expert in business analytics whose research has examined hospitals, the electricity smart grid, software developers, chemical distributors, airlines, and more. He leads the Healthcare Analytics Laboratory at Chicago Booth, in which teams of students work with providers on real-world projects to improve health-care delivery. (Page 26)

Oleg Urminsky, professor of marketing, studies consumer and managerial decision-making and its implications for marketing management. He has researched loyalty programs, how identity shapes voting behavior, and the design of fundraising appeals, among other themes at the intersection of behavioral science and marketing. In this issue, he explains how businesses can avoid making costly errors. (Page 59)
Find the articles to which these comments refer at Review.ChicagoBooth.edu.

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HOW A PROFESSIONAL Prepares FOR COVID-19

Who stocked up before COVID-19 hit? (Published online, April 2020)

I did because I spent my graduate career in public health studying pandemic preparedness and surge capacity in hospitals and had been following the outbreak since January. In February, I began warning people to stock up (reasonably, not to panic buy), but few listened. I initially felt silly since SARS didn’t even reach the US. Then, when my work shut down three weeks later, I mentally prepared for the long haul. Now that we do not know if anything will stop this virus until there is a vaccine, I’m mentally preparing for this to go on until 2022.

—Jessica Leigh

DRUG TRIAL AND ERROR

Good decisions require good experiments (Summer 2020)

When you have time for such experiments, sure. But these aren’t ordinary circumstances and require extraordinary decisions to be made. Pragmatism over procedure. Lives are at stake. Preliminary data is more than enough. The drugs in question are old generics with proven safety profiles.

—Jacob Abrams

Many of the drugs [being studied to prevent COVID-19] have been used for a while for other conditions and have gone through at least safety testing. A COVID-19 vaccine, on the other hand (e.g., fast-tracked and bypassing safety/efficacy testing that would normally be in place), has not been used with people before for other conditions, and would be required for everyone on the planet. That’s not something I’m comfortable signing up for to prevent a disease that might have less than a 1 percent chance of killing me or anyone else (even the vulnerable). But, if in the unlikely circumstance that I do require hospitalization, sign me up for repurposing old drugs that have been proven safe (enough) with other conditions and “experiment” with me to see if it works for COVID-19.

—Kris Canopy

GETTING BACK TO ‘NORMAL’

How soon will life go back to normal after the crisis? (Video posted online, April 2020)

The answer depends on what “after the crisis” means. If it is as soon as malls reopen, before there is a well-tested vaccine available at scale and people have good reason to feel safe, I don’t think life will get back to normal. This year, normal is going to be a justified and responsible limitation of interpersonal engagement, even after being permitted to get out—not for everyone, of course, but for many. Check the data on Sweden—even without a full lockdown, it saw a huge decrease in commerce. But eventually, yes, people will likely value even more human interaction, after having so little for so long—after they have reason to feel safe interacting. I look forward to that time, as does almost everybody.

—Chris Treqillis
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There are two Americas, and age is the divider

People become more conservative by about 45 years old

While politics in the United States has become polarized, Americans may hold less extreme views than many people realize. Political scientists describe a “purple America,” a large moderate middle surrounded by sizable, but smaller, conservative (red) and liberal (blue) populations.

But research by Chicago Booth’s Sam Peltzman suggests that there is a neglected dimension of polarization, one driven by age: younger people are disproportionately liberal, and then drift steadily to the right, becoming just as disproportionately conservative by retirement age.

“We can say, with a great deal of confidence, that people get more conservative when they get older—and a lot more,” says Peltzman. “It’s not just a little bit. It’s a pretty big change over their lifetime.”

Though some people form their political beliefs early in life and stick with them, most of us follow a predictable and durable pattern: our political beliefs steadily become more conservative as we age, no matter what generation we belong to or what era we grew up in, the research finds.

One way to consider the relationship between age and political ideology is to take a snapshot of Americans at a fixed point in time: How do the political ideologies of
Americans drifted rightward with age

The average American was more likely to identify as politically liberal at age 25 but more likely to be conservative 20 years later.

US population's political ideologies
Select ages over the course of 1974 to 2018

25-year-olds

33.7% Liberal
40.5% Moderate
25.8% Conservative

45-year-olds

24.9% Liberal
39.3% Moderate
35.8% Conservative

75-year-olds

19.8% Liberal
39.2% Moderate
41% Conservative

Age 45 was the rough average of when most people had drifted far enough right to no longer be considered liberal. The rightward drift slowed down past that age, but did not stop. Across the GSS data, the under-45 group proved “reasonably purple,” with 30 percent of people identifying as liberal, 30 percent identifying as conservative, and 40 percent identifying as moderate. And “maroon” is a more accurate description of the over-45 group, with conservatives making up a larger share, Peltzman writes.

If the pattern persists, he adds, today’s older conservatives aren’t likely to be replaced by a crop of radical liberal voters. And young liberals should get comfortable with the fact that they’ll likely become more conservative as they age.

“All the chatterers on TV are fixated on this idea that young people have gotten more liberal, that they’re all socialists now. That’s wrong,” Peltzman says. “They’re about as liberal, on average, as they have been over the past 50 years, which leads me to believe that by the time they’re 45, a lot of this will go away.”

—Sarah Kuta

The ‘Made-in-USA’ label boosts prices, but just a little

Goods imported to the United States are required to be marked with a country of origin—“Made in China,” for example. Most US companies are not required to disclose their products’ country of origin, but a variety of consumer-goods enterprises do so anyway, advertising their products as “Made in USA.”

Some consumers will pay more for products advertising themselves as American made, suggests research conducted by Chicago Booth PhD candidate Xinyao Kong and Booth’s Anita Rao. However, the amount they’re willing to pay is not enough to get companies to invest in domestic production—though it is enough to inspire some deceptive marketing, they find.

Buying American is a symbol of personal identity and has been a focus over the years for US policy makers. The Obama administration approved a Buy American provision in its 2009 stimulus package. More recently, President Donald Trump in 2017 signed the Buy American and Hire American Executive Order, one of two executive orders intended to push federal agencies into buying American-made industrial materials for infrastructure projects such as bridges, roads, and sewers.

But how much is that “Made in USA” label worth? To calculate the made-in-America premium, Kong and Rao took two approaches. In the first, they looked at what happened to sales of four products that were made to drop the label from their marketing. The Federal Trade Commission requires that products bearing the label be “all or virtually all” manufactured in the US, and, holding all other variables constant, the researchers analyzed what happened after the four products were forced to drop the false claim. After the companies eliminated the label, weekly sales fell for three of the four brands, the researchers find. Sales fell for Gorilla Glue by 2 percent, all Loctite glue products by 6 percent, and Tramontina cookware by nearly 20 percent. Sales of the fourth brand, Gorilla Tape, experienced a trend decline after the FTC ruled that it had addressed its misleading marketing.

Kong and Rao then ran a field experiment, holding a series of eBay auctions in which they sold about 900 US-made screen protectors for phones and watches. Screen protectors were in high demand on eBay, went for relatively cheap (enabling a large number of transactions), and often sold as generic, unbranded items. The researchers varied only whether the protectors were sold with or without the “Made in USA” claim.

The mean transaction price in the experiment was 26 cents, and screen protectors advertised with the “Made in USA” label sold for 7 cents more, equivalent to a 28 percent price premium, albeit on a low-cost, commodity item. The results could be different for an item in a different category, the researchers caution, as well as for items sold in brick-and-mortar retail stores. If the experiment had involved laptops, consumers might have still paid more for a US-made laptop, but it’s unlikely the premium would have been 28 percent, Rao says.

Because auction transaction prices only reflect the market prices offered by people who won the auction, the researchers also used a statistical method to account for shoppers who viewed the listing and chose not to bid, or those who bid but lost. Doing so revealed that while a small portion of people don’t want to buy a USA-made product, the rest will pay 11 cents more, on average, than they would for a product without the claim.

A follow-up survey reveals that Republicans and people who identified as politically conservative were more likely to bid on the USA-labeled product, and they reported doing so to support US companies and workers.

However, the findings indicate that while companies already manufacturing in the US might want to use the label to capture the made-in-America premium, the premium isn’t likely to justify the investments needed to relocate overseas factories to domestic sites.

And it might inspire unscrupulous marketers, Kong and Rao warn. Their research offers a theoretical benchmark for calculating civil penalties for deceptive marketers. “We believe this finding further underscores the role of the regulator in enforcing truthful representation of the country-of-origin claim,” they write.—Brett Nelson

The value-stock premium is shrinking

In 1992, Chicago Booth’s Eugene F. Fama and Dartmouth’s Kenneth R. French rigorously demonstrated that value stocks, especially small-value stocks, had a statistically significant edge over growth stocks and the market as a whole. This finding cemented the idea that stock risk is multidimensional and that investors will require compensation for bearing risks associated with small stocks, value stocks, and so on. It also sparked a search for priced risk factors. (For more, read our Summer 2018 feature “The 300 secrets to high stock returns,” online at Review.ChicagoBooth.edu.)

Now Fama and French have revisited the subject and find that the value-stock edge has shrunk dramatically since 1991.

Investors have long shown interest in value stocks—as early as 1934, the late economists Benjamin Graham and David L. Dodd, in their classic work Security Analysis, wrote that the job of the securities analyst was “the discovery of discrepancies between the intrinsic value and the market price [of a security].” Scholars and practitioners have long noted that value stocks, which have high book-to-market ratios, outperform growth stocks, which have low book-to-market ratios. A high book-to-market equity ratio means the firm may be distressed and is judged by the market to have relatively poor earnings prospects.

But has the edge that Fama and French demonstrated dulled? The S&P Value Index has underperformed the S&P 500 over the past 10, 15, and 20 years.

Fama and French don’t speculate as to why the value premium has shrunk, but they observe: “If investors do not judge that value stocks are, on some multifactor dimension, riskier than growth stocks, discovery of the value premium should lead to its demise.” This would be consistent with the efficient-market hypothesis and fit into a more general trend of academic research destroying stock-return predictability postpublication, as documented by Georgetown’s R. David McLean and Boston College’s Jeffrey Pontiff.

To assess whether the value premium has shrunk, Fama and French constructed seven portfolios—big value, small value, and market value; big growth, small growth, and market growth; and the market as a whole. Then they compared the value premium—measured as one of the three value portfolios’ returns in excess of the market return—for the July 1963–June 1991 time period from their 1992 paper with the value premium for the July 1991–June 2019 time period. Adding this second 28-year period allowed them to retest the influential findings of their 1992 paper using an equally long time period.

They estimate that the big-stock value premium declined from 4.3 percent per year (1963-1991) to 0.6 percent per year (1991-2019) while the small-stock value premium declined from 7 percent per year to 4 percent per year. Average value premiums were larger for 1963-1991 than 1991-2019, they write.

However, the high volatility of value-stock returns prevents Fama and French from drawing any clear statistical conclusions. “The declines from 1963-91 to 1991-2019 in average premiums for the value portfolios seem large, but statistically they are indistinguishable from zero,” they write. In particular, they are unable to reject both that the value premium is still as large as it has been historically and that the value premium has been zero in recent years.

In addition, growth stocks, which seem to get the most media attention, showed no edge over the market. “Average premiums in excess of Market for the three growth portfolios are small and indistinguishable from zero for 1963-2019 and for the 1963-1991 and 1991-2019 half-periods,” they write.

Until more data are available to enable academics and practitioners to draw statistical conclusions, the debate will continue over whether the value premium has disappeared. In the meantime, the strong underperformance of value stocks relative to the market during the March 2020 stock market crash will add fuel to the fire of the value-premium debate.

—Howard Gold

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

THE FED’S NEW JOB DESCRIPTION

“The original rationale for giving central banks independence came during the fight against inflation. But the job description has changed. It’s no longer about keeping inflation low. In some cases, it’s about pumping up inflation, which is too low at this point. But even more than that now, it is about financial-sector rescues and even real-sector rescues. People are saying, ‘We can’t let these large companies go into bankruptcy. We need the Fed to lend to all these people and keep the economy alive.’ And that is a different job because the Fed is actually making political decisions. It’s making decisions about which companies live and which ones die that override market forces.”

—RAGHURAM R. RAJAN, of Chicago Booth, on the Pandemic Economics podcast, hosted by the Becker Friedman Institute for Economics at the University of Chicago
Expressing intense anger can backfire at work

Expressing anger may be a tool for attaining prestige or status in some circles. Observers associate anger with dominance, strength, competence, and smarts, according to research published in 2001.

But a study by Chicago Booth’s Celia Gaertig and Emma Levine, New York University’s Alixandra Barasch, and University of Pennsylvania’s Maurice Schweitzer suggests there’s a limit to the respect anger commands. Too much anger, particularly in relation to the offense committed, can backfire, especially on people climbing corporate or social ladders, the researchers argue. Exhibiting too much anger can harm the perceptions of competence and warmth, traits that tend to drive hiring and leadership decisions. The more intense the anger, the more likely others may suspect self-serving or harmfully intentioned motives.

The researchers conducted seven studies, some involving fake beverage tasting. In one of the studies, they asked groups of six participants to rate the best-tasting beverage presented in a lab. Both options were actually Coca-Cola, and the researchers didn’t tabulate participants’ responses, as the study was essentially just a decoy. Each group secretly included two actors, one of whom spilled soda on the other’s cell phone, eliciting an angry reaction that was either moderate or more intense. Then the participants had to pick a leader for a group activity, and in doing so rated each other’s (including the angry actor’s) competence and leadership potential.

Actors who reacted with intense anger rather than annoyance were perceived as less competent and were less likely to be selected for leadership roles. The responses held for participants who watched a video of the lab charade rather than participating in it. “Expressing high-intensity anger can be harmful for how an individual is perceived in social settings,” the researchers write.

In another experiment, the researchers had people on Amazon Mechanical Turk read about negative workplace scenarios and the level of anger displayed by the people involved. Again, the results suggest that the intensity of anger plays a role in how observers perceive the person who expresses it. MTurk respondents viewed too much anger from people in the scenarios as indicating that they were less competent and warm, and that they had problems with self-control, the researchers find.

When anger seems unwarranted, an inability to moderate the emotion leads to particularly negative perceptions. A participant who expressed a lot of anger—particularly in response to a situation in which little harm was done—was perceived as less competent and less warm than someone expressing mild to moderate anger, sadness, or no emotion, the study finds.

To be sure, failing to express anger in circumstances that warrant it can also be a negative. In certain situations, a leader is expected to display some anger and stand up for others who have experienced harm, for example.

But in general, being able to regulate strong emotions may be helpful, and could even mean a better chance of promotion. “Although mild expressions of anger may boost status, high levels of anger expressions harm status,” the researchers write.

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.
MORE PEOPLE WILL BUY INSURANCE IF YOU REFRAME THE ODDS

WHEN HURRICANE Harvey ravaged Texas and Louisiana in summer 2017, just 17 percent of residents most affected by the storm had flood insurance. This choice might have felt reasonable to longtime residents, as the annual probability of flood had seemed small (less than 1 percent). But residents’ choice not to pay modest annual premiums ultimately cost $1.2 billion in federal disaster assistance.

To head off more such outcomes, Chicago Booth’s Shereen Chaudhry, the US Forest Service’s Michael Hand, and University of Pennsylvania’s Howard Kunreuther explored how policy makers can convey to consumers, in more compelling fashion, the true risk of large-yet-uncommon events.

One method the researchers examined involves reframing cumulative threats over longer time spans, a technique called broad bracketing. Say there’s a 1 percent chance of flood in any given year. Those odds, while unalarming on an annual basis, translate to an arresting 26 percent chance of at least one flood over 30 years, the life of a typical mortgage.

To test the effects of broad bracketing on decision-making, the researchers constructed six experiments, each with 1,200 to 2,900 participants. In all the experiments, participants were given the choice between paying a small fee (an insurance premium) or risking a much larger loss, albeit with the low probability of 1 percent.

When participants saw the cumulative probability they would experience a flood at some point over time, rather than the probability that they would experience one in the shorter run, more of them sought insurance, the researchers observe. This was true when the flood-risk bracket was broadened to 200 years (87 percent risk) or even just 10 years (10 percent risk). These numbers packed more visceral punch than the 1 percent annual risk originally presented.

The effect of broad bracketing also held when the researchers controlled for participants’ personal experiences with floods. A variety of prior studies suggest that, over time, people weigh risk by leaning primarily on their own experiences. When homeowners decide whether they should buy flood insurance each year, their choices are reinforced by whether the waters have risen in recent memory; the more years without a flood, the more cavalier homeowners become.

Yet in the online experiments that mentioned flooding, more study participants continued to buy hypothetical flood insurance when the risks were broad bracketed. And while overall demand for insurance ebbed as premiums rose, the proportionate contribution from broad bracketing persisted.

Broad bracketing is unlikely to change consumers’ behavior much unless the cumulative probabilities of a given event are large enough to grab lapels, the researchers acknowledge. They also concede the limitations of conveying risk, and its consequences, in an age of climate change. “If people believe that real-life event probabilities are dynamic and change over time,” they write, “they may place less weight on descriptive probability information.” —Brett Nelson

Why big tech mergers stifle innovation

F

acebook’s $19 billion acquisition of WhatsApp in 2014 seemed to set the stage for a 21st-century gold rush by venture capitalists seeking a big payday. Instead, the deal may have created a kill zone—a space where even the most eager investors refused to tread.

The traditional economic model where high-priced buyouts helped drive innovation in industries such as software development and computer chips may have started breaking down when big technology companies began dominating the economy in the early 2000s, according to Chicago Booth research professional Sai Krishna Kamepalli and Booth’s Raghuram G. Rajan and Luigi Zingales. Whenever Apple, Facebook, or Google acquired a startup, especially an app company, it may have created a kill zone, stifling innovation, the researchers argue.

The finding is timely, as the Federal Trade Commission in February broadened a review of big tech deals, demanding information about hundreds of smaller transactions over the past decade by Amazon, Apple, Facebook, Google, and Microsoft. FTC trustbusters as well as members of Congress, state attorneys general, and the Justice Department are looking into the tech industry’s “killer acquisitions,” in which big players eliminate competitive threats by simply buying out startups.

Before big tech, the prospect of a lucrative buyout provided ample incentive for venture capitalists to invest in business startups. VC investments helped drive innovation while generating big returns, keeping investors and the industry happy.

The kill-zone phenomenon reflects the difference between conventional businesses and digital platforms such as mobile apps, the researchers suggest. For one thing, apps don’t charge consumers money for their products, instead collecting data on users to sell to advertisers. This removes a key element from competition, as Facebook or Twitter can’t go after each other’s

Kamepalli, Rajan, and Zingales develop a model to demonstrate how the tech sector could become more innovative and attract more investment if mergers such as that between Facebook and WhatsApp were blocked. They analyze nine apps—including YouTube, Instagram, and WhatsApp—that were bought out by Google or Facebook from 2006 to 2016, in deals valued between $625 million and $19 billion. The researchers create a timeline, starting with the techies’ recognition of the software, to the merger, and ending with the startup’s software becoming mainstream. Applying the timetable and variables to an equation, the researchers conclude that acquisitions may take place at too low a price, discouraging innovation.

When a startup was bought by Google or Facebook, VC investments in the same space dropped by 46 percent in the following three years, and the number of deals dropped by 42 percent.

There could be an alternative explanation for this, Kamepalli, Rajan, and Zingales note: it’s possible that companies existed solely to be acquired. In this case, if a competitor was bought up instead, dimming its own prospects, it might have lost financing and shuttered.

While it may seem that a prohibition on acquisitions is the obvious policy response, the researchers argue that it could prevent customers from benefiting fully from larger networks. Instead, they recommend a focus on ensuring networks are interoperable, and allowing consumers to own their data whenever possible.

It is “dangerous to apply 20th century economic intuitions to 21st century economic problems,” the researchers caution, else there may be fewer incentives to innovate.—Andrew Clark

You’ve done a lot of research about the psychology of poverty. Do you see your research as supplying answers to any of today’s problems? My coauthors and I have really tried to emphasize one of the main perspectives of social psychology: the power of the situation. As a society, we often try to pathologize things about people who are poor, but our work suggests that a lot of problems are situational. Someone who has more means can think more clearly about things in front of her. As people lose their jobs or deal with stress from COVID-19, for example, that taxes mental bandwidth. And there are ways in which we are criminalizing a lack of bandwidth and the effects of being in a hard situation.

What’s an example? We’ve been doing work in New York City, in partnership with the Mayor’s Office of Criminal Justice, to try and reduce the number of people who fail to appear in court for low-level offenses. For certain offenses such as public consumption of alcohol or disorderly conduct, or even biking on a sidewalk, you might not be arrested but you’ll receive a citation and have to appear in court. If you miss the court date, a warrant will be issued for your arrest. That’s when a minor offense becomes a much bigger deal.
The criminal-justice system treats a missed court date as an intentional failure to show up, but in some cases it could be that people just forgot. We redesigned the summons form and sent text messages to make it easier for people to remember, and that helped. Both interventions were more effective for residents living in poorer neighborhoods, which makes sense because of the way poverty taxes mental bandwidth. When you’re already juggling so much, some things are going to slip your mind. In some cases, punishing people for missing court might really be punishing them for having a lot of competing demands.

This made me rethink other work I did, which involved getting teenagers to pause and reflect before acting. All teens should be pausing and reflecting; it’s not that poor kids need to do it more. But it might be even harder for kids growing up in a disadvantaged neighborhood. There are so many things they need to pay attention to, and the cost of not pausing before acting is higher. They might get caught up in the criminal-justice system because of a mistake that stemmed from being mentally overwhelmed.

Q3 Should this inform a rethinking of criminal justice? Whichever way the conversation about police funding goes, there’s still this whole other set of things we ought to be investing more in. And we should be making sure our criminal-justice system recognizes the fact that it’s dealing with people who make mistakes, not necessarily people who are intentionally trying to break the law. With crime, we assume greater intentionality. We all understand that people make mistakes, but we seem to forget this when talking about the criminal-justice system.

AFTER A CREDIT DOWNWATCH, EMPLOYEES TURN TO LINKEDIN

WHEN A COMPANY’S credit rating deteriorates, employees start networking.

At companies for which a rating downgrade is likely, employees increase their contacts on LinkedIn, in a potential bid to insure against worsening conditions at work, according to Harvard PhD candidate Jeff Gortmaker, Chicago Booth’s Jessica S. Jeffers, and the New York Federal Reserve Bank’s Michael Junho Lee.

The researchers used anonymized data from LinkedIn, the online professional networking platform with more than 645 million global users. To analyze employee connections, employment histories, and other characteristics, they tapped LinkedIn’s Economic Graph Challenge program, which provides data to researchers studying economic issues.

Because networking links between platform users are time-stamped at the time of creation, Gortmaker, Jeffers, and Lee were able to measure average weekly connection rates for employees at every company represented in their sample, which was limited to large, publicly held companies.

They calculated the total connections made by employees of the company in a given week and divided that by the company’s total number of employees. So, for example, a company of 1,000 people who made 5,000 contacts in a given week would have a per-employee connection rate of five.

Additionally, since employment histories contain standardized information on positions held, the researchers could examine connection rates by seniority, occupational skill, and occupational mobility.

They focused on workers’ responses to downwatches—or announcements that precede a likely or impending corporate credit rating downgrade by Standard and Poor’s or Moody’s. In the weeks following a downwatch announcement, there was a significant increase in networking efforts for workers at the affected companies. Skilled employees tended to connect more than others, and the reactions to downwatches were stronger as seniority increased.

Some workers ended up leaving the company within the coming year, and others stayed. Those who left had the highest increases in networking activity, but people in both groups increased their LinkedIn connections.

The researchers argue that the spike in networking among employees who stuck with the company indicated that they were cultivating outside options as a way to hedge against worsening financial conditions.

In addition to analyzing the effects of downwatches, the researchers examined responses both to other negative signals, such as missed earnings reports, as well as to positive signals, including upwatches. But none of these generated significant reactions.

Employees may react to negative signals even if a company is far from bankruptcy, the findings suggest. Moreover, businesses that take on debt bear a unique labor cost, as companies financed entirely by equity don’t have to worry about how employees will react to a downwatch or downgrade.

—Martin Daks

What drives deposit rates after bank mergers? Not just market power

Antitrust authorities have the job of keeping markets healthy, which involves reviewing prospective mergers to make sure they foster, rather than harm, competition. Typically, authorities try to detect and nix deals that would give a company too much power in any one market.

But they generally focus on how a merger would change local-market concentration, and this may not always be conducive to the best decisions, write Chicago Booth’s João Granja and the Bank of Canada’s Nuno Paixão.

The assumption underlying this regulatory approach is that when a company’s local market power increases significantly, consumers in that market will see a corresponding price increase. But Granja and Paixão saw a different pattern when they looked at US banking.

In the past two decades, this sector has experienced significant consolidation. After the 1994 Riegle-Neal Interstate Banking and Branching Efficiency Act removed many restrictions on banks operating across state lines, big mergers and smaller consolidations reduced the number of financial institutions accepting deposits in the United States by half, to fewer than 5,000. In general, any bank merger or acquisition likely to result in a significant level of local market concentration triggers a regulatory review—the fear being that if an acquiring bank gains too much power in a market, it can lower the rates it offers depositors.

But local concentration by itself was not the primary driver of rate changes, the researchers argue. They analyzed branch-level data on deposit interest rates from RateWatch, an S&P Global company that surveys bank branches and collects weekly rates paid on deposits. They looked at data on 1,614 deals from 2006 to 2016 involving 7,500 branches that were acquired by 863 distinct banks.

While the fear was that an acquiring bank would gain power and then lower rates, in fact, regardless of local concentration and an acquirer’s local market power, a branch’s postmerger rates tended to converge toward those of its acquirer. The banks in the study paid uniform or near-uniform interest rates on deposits across their branch networks. And because uniform pricing is so strong throughout the banking sector, even when a bank gained market power in an area, it seemed reluctant to lower rates there but not elsewhere. Acquisitions did lead to lower rates on deposits when the acquirer offered lower rates than the branches it acquired—but the opposite was also true: when the acquirer offered higher deposit rates than the acquired branches, those branches saw their rates increase.

“This fact that banks adjust the deposit rates of the acquired branches toward their own rates is the most important factor in determining the evolution of local prices following a merger,” says Granja. In the year following a merger, the spread between the local bank’s rates and the acquirer’s rates narrowed by an average of 9.5 to 10.2 basis points, or about 18 percent. Moreover, these reductions in the absolute difference spilled over to competing institutions in local markets.

By focusing on the local concentration effects rather than the convergence effect the researchers identify, regulators could make two errors, the study highlights. First, regulators could force some acquirers to divest themselves of branches where, because of postmerger convergence, rates would actually rise. Second, regulators could fail to stop a merger that might not result in a bank gaining significant local power but could nonetheless lead to lower rates.

The findings could potentially inform more-general antitrust policy making, too, beyond the banking sector. “Antitrust is important, but the way we do it has inherent limitations,” says Granja. Regulators, he notes, need to take into account other factors that drive prices in particular industries, especially as technologies and these industries evolve.—Martin Daks
Do both brands benefit from co-branding?

Some Dell laptops have an Intel processor inside, and some Betty Crocker brownie mixes use Hershey’s chocolate. The idea behind such co-branding is to generate synergies and marketing efficiencies. Does the strategy really work?

Yes, suggests research by Chicago Booth PhD candidate Yewon Kim and Booth’s Sanjog Misra and Bradley Shapiro—although it works better for some parties than others. And a difficult reality for managers and researchers is that predicting the magnitude of such a collaboration effect is nearly impossible.

The researchers studied brand collaboration in an unusual setting. Rather than analyze data involving commercial products, Kim, Misra, and Shapiro looked at three major museums all located in the same US city. While arts institutions aren’t typical commercial products, the fast-growing arts industry represented $704 billion in spending in 2013, compared with $619 billion for construction and $270 billion for utilities, write the researchers, citing data from the National Endowment for the Arts and the US Bureau of Economic Analysis.

The researchers don’t identify the museums involved, citing a nondisclosure agreement, but write that during the time period they studied, “one major museum with a highly recognized brand” closed for a three-year renovation. While the work was being done, this museum collaborated separately with two other museums and held exhibitions in their buildings, with both the primary museum’s and the partners’ branding. The participating institutions shared their collections as well as their curatorial staffs. Exhibitions were displayed cohesively, mixing collections from both the primary institution and its partners. Marketing campaigns emphasized the joint nature of the exhibitions, and the collaborating institutions used the same descriptions on their websites and in other promotional materials. They jointly hosted membership events.

To gauge the effects of co-branding, Kim, Misra, and Shapiro tapped SMU DataArts, a collection of information compiled by the National Center for Arts Research, for four years’ worth of the museums’ membership sales. They find that collaborating with the major museum led to an increase in memberships at both partner museums. During the collaboration year, people who hadn’t previously been members of the partner museums joined them. Meanwhile, demand dropped among people who had previously been members.

The results highlight how hard it can be for marketers to predict the effects, much less plan on the profit impacts, of a collaboration. The museum partnerships increased demand among a new group of people, and “this makes for an interesting and difficult problem for managers,” Shapiro says, because “it is particularly difficult to predict the behavior of customers that you have never before seen in your data.” Standard models of consumer demand consider only data from before a collaboration and don’t have the benefit of later information. “You’re counting on behavior changes among a set of customers that has never before shown up in your data. As such, it is really difficult to know what their preferences are.”

Modeling data from both before and during the collaborations to try to predict the effects of the co-branding experience told a similar story. Collaboration can benefit a lesser-known brand—and for better-known brands, it may carry the risk of brand dilution. But, crucially, the research indicates, it’s hard to know the magnitude of the effects ahead of time.

—Andrew Clark

A boost from collaboration

Memberships rose overall after two museums separately collaborated on joint exhibits with the staff of a third museum in the area that had closed for building renovations.

Yearly membership sales at museums that hosted co-branded exhibits

<table>
<thead>
<tr>
<th>Year of collaboration</th>
<th>Newcomers</th>
<th>Previous members of either museum</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>20,000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>1</td>
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<td>5,000</td>
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<tr>
<td>0</td>
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</tbody>
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* Incomplete data for these two years made it difficult to track whether households had previously bought memberships.

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Kim et al., 2019
Ever closer to an optimally cost-efficient assembly-line operation

Companies such as Dell and BMW use an assemble-to-order production strategy that keeps common components on the factory floor, ready for final assembly into the type of personal computer or vehicle that a customer orders. This is great for companies looking to satisfy a large volume of demand but that don’t want to build whole units in advance, to avoid any unsold products. However, the difficulty of estimating how much of each component to hold in stock and how to allocate components to each product can keep companies from maximizing ATO’s benefits in practice, according to Chicago Booth’s Levi DeValve and Duke’s Saša Pekeč and Yehua Wei.

A cross between two alternate production strategies

1. **Make-to-stock**: MTS managers forecast consumer demand and match anticipated orders with an inventory of fully assembled products.
2. **Make-to-order**: On the other hand, MTO systems wait for a customer’s order to arrive before starting production. Because this can include procuring parts and assembling components, MTO often results in a longer lead time.
3. **Assemble-to-order**: An ATO strategy aims to combine the best of both systems—its flexibility lets companies fulfill large orders relatively quickly with minimal unsold inventory, yet still allows customers to partially customize orders.

STAGE 1

Manage supply

Managers must decide the quantity of components to order even before they can ascertain customer demand for their products.

From burgers to cars to computers: Many kinds of assemble-to-order operations

Besides classic assembly-line businesses such as carmakers and computer manufacturers, service and retail companies can also follow an ATO strategy. For example, food-service companies have to maintain an adequate supply of fresh ingredients. For retail giant Amazon, one of its important supply decisions is which products to stock in regional warehouses so it can fulfill as many items as possible in a single order.
STAGE 2
React to demand
When customers’ orders arrive, managers must then choose how to allocate the supply of components to each product for assembly.

The manager’s objective
The aim is to minimize not only inventory costs from ordering too many components but also product shortages that result in a failure to fulfill customer demand for all products. Shortage costs can include not just revenue lost from canceled orders but also goodwill lost from customers who agreed to wait.

Calculating for modern operations
Managers of large-scale operations have an especially difficult time computing the optimal solution due to the many decisions they have to make in combination, according to DeValve, Pekeč, and Wei. To address this problem, the researchers designed a computationally efficient algorithm that can generate better decisions for:

- How much to order of each component
- How to prioritize product assembly when orders arrive

More precise than established methods
An approach that can scale up: The researchers’ technique involves balancing inventory and shortage costs to come as close as possible to the optimal cost. Their algorithm, which takes a new approach to analyzing this problem, does not degrade in performance as the problem grows in size, a crucial stability guarantee for the scale of modern applications that has been lacking in the existing algorithms.

Closer to the optimal solution: In numerical simulations, the researchers find that their algorithm outperforms existing methods—on average, it comes within 1 percent of the optimal solution compared with 5 percent to 13 percent for other methods.
Fox News causes viewers to disregard social distancing

Media reports have covered at length the social and political divisions in the United States highlighted by the COVID-19 pandemic. Images of people protesting shelter-in-place orders, at times armed and storming government buildings, clash with those of mask-wearing social-distancing adherents.

But how much of a role does media itself play in whether people will follow or reject social-distancing guidelines? Research by Columbia’s Andrey Simonov, Columbia PhD candidate Szymon Sacher, Chicago Booth’s Jean-Pierre Dubé, and Booth PhD candidate Shirsho Biswas argues that viewing the conservative-leaning Fox News channel caused people to disregard social-distancing measures and reject expert health guidance.

In early April, the Washington League for Increased Transparency and Ethics filed a class-action lawsuit against Fox News accusing the network of broadcasting misleading information about COVID-19 in February and March, including downplaying its seriousness. Although that suit has since been dismissed, the researchers aimed to measure how the persuasive effect of such broadcasts might have discouraged cooperation with expert recommendations.

The researchers used the Nielsen Local TV View to measure viewership patterns across US cable markets, with a focus on the two most-watched cable news channels, Fox News and CNN. In conjunction, they used location data from millions of US cell phones to track behavior, taking into account that stay-at-home policies allow for essential travel. The researchers analyzed data from January 1 to April 24.

The study also incorporated Nielsen’s FOCUS data, which tracks the lineup of channels across cable markets. Recognizing that a correlation between viewership and social distancing doesn’t imply a Fox News effect per se, the researchers exploited the fact that channel positions are assigned randomly across cable systems. They measured the causal effect of Fox News viewership by using only the incremental viewership due to channel positions.

Tracking viewership and channel position data across 30,517 zip codes from...
210 designated market areas, they find that a 10 percent increase in Fox News viewership within a zip code reduced the tendency to stay home by 1.2 percentage points, compared with the average before the pandemic. Between March 1 and March 13, in particular, the researchers note an increase in this behavior that was in direct contrast to the recommended guidelines from health experts.

Overall, they find the persuasion rate of Fox News viewing on noncompliance with stay-at-home guidelines to be about 12-26 percent across various social-distancing metrics. Their measurements on the effect of CNN on social-distancing behavior were statistically insignificant.

The researchers note that the study did not allow them to measure exactly how Fox News might have affected viewer behavior. Viewers may have been responding to longer-term exposure to Fox News and a more general entrenched bias against governments and institutions that would have caused them to defy official guidelines.

It’s unlikely that the measured behaviors reflect public declarations from Republican politicians downplaying the importance of social distancing, rather than statements made by Fox News anchors, the researchers write. They find Fox News effects were big even during the period when the White House was endorsing shutdown policies but several Fox News anchors and speakers were actively disputing the merits of social distancing. Also the effects appeared to be strongest in zip codes that were the most liberal in the 2016 election season. “If conservatives are already predisposed to disregard experts’ recommendations to distance, it’s not surprising that Fox News has little potential for additional persuasion,” says Dubé.

Still, a key takeaway from the research is that “such a large fraction of society is willing to listen to Fox News rather than the experts,” he says. Even in the unlikely event that the Fox News anchors are proven correct in this public-health crisis, he says, “[viewers] still should not be turning to news anchors, instead of epidemiologists and infectious disease researchers, for expert advice during a public-health crisis.”

This phenomenon could extend beyond the COVID-19 crisis. The real detriment to society, says Dubé, may be an increased distrust of experts across the board.—Rebecca Stropoli

HOW SOUTH KOREA LIMITED COVID-19 DEATHS AND DAMAGE

TO LIMIT the spread of COVID-19, many areas have imposed stay-at-home orders. Voters and policy makers have wrestled with how to balance saving lives with saving livelihoods.

That’s not a choice that had to be made in South Korea, however, which had no lockdowns and fewer than 300 deaths by the end of May. However, people had to give up their privacy, notes an analysis by Penn State’s David Argente, Chicago Booth’s Chang-Tai Hsieh, and University of California at San Diego’s Munseob Lee.

While many countries have used lockdowns to fight the virus, the South Korean government took a different tack that included widespread testing, and then quarantining only people who tested positive for the virus.

Beyond that, it created a robust contact-tracing program, detailing the places virus-infected patients had visited prior to receiving a positive test. It combed through credit-card data and cell-phone records, and then shared location information with the public via text messages and websites.

The strategy worked, the researchers find, noting that residents of Seoul used the information to strategically alter their commuting and social habits. People over 60, who are most susceptible to the virus, tended to work from home and curtailed social activities.

Younger South Koreans rerouted their commutes away from districts with more infections. They also often managed to change their routes but not their purchasing behaviors.

The researchers compared South Korea’s strategy with other actions it could have taken. According to their model, Seoul, a densely packed city of 10 million people, will see 925,000 cases, 17,000 deaths, and a 1.2 percent loss of GDP over two years if the country maintains current procedures. In all other scenarios they modeled, infections, deaths, and damage to the economy climbed. If the country were to eliminate its contact-tracing program and stop disseminating information, and instead implement lockdowns, it would see about 1.3 million COVID-19 cases and more than 30,000 deaths over two years, according to the model’s estimates.

“We find that compared to a scenario without disclosure, public disclosure reduces the number of COVID-19 cases by 400 thousand and deaths by 13 thousand in Seoul over 2 years,” write the researchers. “And compared to a lockdown that results in about the same number of cases as the full disclosure strategy, the latter results in economic losses that are 50 percent lower.”

Similar public disclosures cannot currently happen in the US because of the 1996 Health Insurance Portability and Accountability Act (HIPAA), which protects patient data and privacy. Beyond that, government collection and dissemination of such data would likely be extremely unpopular. But Hsieh suggests that Americans might at some point want to consider legal modifications.

“How much are these laws costing us?” he asks. “In South Korea, which had previous experience with a pandemic, the government gained the power to get this information and share it, and that’s been hugely important for them.”

—Brian Wallheimer


COVID-19 WILL END SOME JOBS AND TRANSFORM OTHERS

The COVID-19 pandemic has triggered massive job losses across the globe. In the United States, from March and through early May, more than 36 million workers sought unemployment aid. But the jobs that ultimately return won’t necessarily be the same as those lost, suggests research by Autonomous Technological Institute of Mexico’s Jose Maria Barrero, Stanford’s Nicholas Bloom, and Chicago Booth’s Steven J. Davis. They find that the economic shock caused by COVID-19 and the measures to contain it are changing the labor market.

The researchers reached their conclusions using the monthly Survey of Business Uncertainty (SBU), a forward-looking survey of senior executives, as well as news reports of hiring. Walmart added 150,000 employees by the middle of April, and announced plans to hire 50,000 more, as demand for essential household staples surged. Companies including Amazon, Instacart, and Domino’s Pizza hired additional people to make deliveries to customers who were sheltering in place. Some business organizations are cooperating to help speed the reallocation of workers and jobs. Supermarket chain Kroger joined with Marriott International, Sodexo, and Sysco to hire laid-off food-service and hospitality employees, and CVS partnered with Delta Airlines, Gap, and Hilton to recruit 50,000 workers. The restaurant, technology, and health-care sectors are among those that may experience long-lasting reallocation effects, the researchers write.

Until schools reopen, millions of Americans can’t return to work

There’s a hole in the Trump administration’s plan to reopen the US economy in phases: childcare. Schools and day-care operations come near the tail end of resumptions during the COVID-19 pandemic, only after states have reliably demonstrated they can track and treat the disease.

This means 50 million American workers with children younger than 14 will have a serious problem going back to work, according to Chicago Booth’s Jonathan Dingel, Christina Patterson, and Joseph S. Vavra. That’s almost a third of the pre-pandemic workforce of 160 million.

“Under a policy where young workers return to work while schools remain closed, 35 million workers who are over 55 would not be able to return to work, and another 16 million who are under 55 would be constrained by child-care obligations,” they write.

Parents will have to provide alternate care for their children in order to resume working or delay their return, making economic or career sacrifices that childless peers won’t face, the researchers find. This new dimension to economic inequality will cut across economic classes, educational levels, and industrial settings, their research demonstrates.

“If the way this is handled means those with children are going to have a tough time, it’s going to be a new source of inequality tied to childcare arrangements,” Dingel says. People build their families on the reasonable assumption there will be a functioning marketplace for childcare, he adds.

The researchers analyzed data from the Census Bureau’s 2018 American Community Survey, getting a snapshot of the workforce before the COVID-19 crisis. They estimate that 11 percent of the total US workforce will lack childcare options under the reopening plan. This disproportionately affects younger workers, who are supposed to be at the vanguard of the reopening. Of workers younger than 55, about 40 percent have a child in the household. Families with two wage earners may have to make do with one so that an adult can stay home to provide childcare, the researchers say.

Older workers might step in to help, but even if they all do, there aren’t enough of them to close the childcare gap, the researchers argue. Opening schools concurrently with sending people back to work could reduce these burdens, but the researchers caution that this might not be possible without sacrificing control over the pandemic.

“We are making no attempt to evaluate any public-health benefits of school closures or make any assessment of when schools should be reopened,” they write. “Public-health policies that mitigate the spread of the virus likely have high returns for the ultimate shape of any economic recovery. We instead simply note that discussions of returning to work ought to include discussion of returning to school.” –Michael Maiello


ILLUSTRATION BY CHANELLE NIBBELINK
The SBU conducted between April 13 and April 24 asked respondents how their companies’ staffing had been affected since March 1 across five categories: permanent layoffs, temporary layoffs/ furloughs, new hires, cuts to contractors and leased workers, and additions to contractors and leased workers. They were also asked to forecast staffing needs. Between March 1 and mid-April, according to the survey, companies made staff cuts equal to 11 percent of total employment, and planned to cut another 4 percent. But at the same time, other com- panies increased staffing by a number equal to 4 percent of March 1 employment. This means that for every 10 layoffs since early March, there were also about three new hires, the researchers note.

About three-quarters of staffing cuts from March 1 to mid-May were considered temporary layoffs or furloughs, the survey indicates. Thus, many jobs may return after the pandemic. However, deep economic uncertainty and the possibility of an extended transition to the post-COVID-19 world raise the chances of permanent job losses, the researchers write.

Overall, 42 percent of pandemic-related layoffs will be permanent, the researchers estimate—but they write that efforts to retain all jobs lost to the pandemic may waste resources. Some policies that they see as potentially harmful in this regard include unemployment benefits that exceed earnings for many workers and subsidies that encourage employee retention regardless of a company’s long-term outlook. It makes more sense, they argue, to focus on policies that facilitate the swift reallocation of jobs, employees, and capital.

—Rebecca Stropoli

What percentage of the population has contracted COVID-19?

How lethal is COVID-19 compared with the common flu? To answer this in the United States, health officials first have to know how many people in a community are infected, or have been in the past. They’re using virus swab tests to identify people who have COVID-19, and they’re administering antibody blood tests to detect who has had the infection previously.

The accuracy of antibody tests is still in question, however. Inaccurate test results could produce inaccurate infection counts, which would then produce inaccurate prevalence and mortality rates. But Chicago Booth’s Panos Toulis suggests a statistical method that officials can use to arrive at more accurate counts and thereby craft more-nuanced containment policies.

Antibody testing isn’t yet widespread, so officials are trying to extrapolate from studies conducted in certain locations, including Santa Clara County, California, and New York State. In Santa Clara, researchers tested 3,330 people, of whom 50 tested positive for COVID-19 antibodies. After some reweighting to make the sample more representative of the general population, a research team led by Stanford’s Eran Bendavid estimates that 2–4 percent of the general population in the area was likely infected.

But the Santa Clara study used a standard statistical method that Toulis compares to a Swiss Army knife. It’s great if you need one tool to do many things, he says. But when possible, you reach for a tool more specific to the task at hand.

Toulis reexamined the results using a different method, aiming to eliminate unnecessary assumptions by including two unknown factors as parameters. One was the false-positive rate—if someone does not have COVID-19 antibodies, what is the probability that the test result will still be positive? The second was the true-positive rate—if someone has the antibodies, what is the probability that a test will come out positive? “Our target is disease prevalence. In between, there are these two numbers we don’t care as much about but that help solve the equation,” he explains.

This gave him three unknowns, which functioned as parameters for his problem: the true-positive rate, the false-positive rate, and the prevalence rate. He then looked at all possible values of the unknown parameters and assessed the likelihood of observed test results assuming any given values of the parameters. For example, what is the likelihood of seeing 50 positives out of 3,330 trials when the true positive rate is 85 percent, the false-positive rate is 0.8 percent, and the prevalence rate is 5 percent? He had some sense of the actual true- and false-positive rates because Santa Clara researchers, using blood collected before the COVID-19 crisis, conducted a validation study that gave them a better sense of those rates in their sample.

Toulis scanned every possible joint combination. If a particular combination was inconsistent with the data, he threw it out. The remaining combinations corresponded to a confidence set of prevalence values, which were all statistically plausible.

For example, he finds that in Santa Clara, a 2 percent prevalence rate could occur only if the testing kit used had an atypically low false-positive rate. By contrast, a prevalence rate close to 0 would happen only if there were a relatively high false-positive rate. Using the data and logic, Toulis narrowed the range of possibilities and argues that the likely true prevalence rate was somewhere between 0 and 2 percent—and between 0.3 percent and 1.8 percent if the actual false-positive rate of the test was 0.5 percent, an estimation based on validation data from the testing-kit manufacturer and the Santa Clara study authors.

Toulis sees two ways to produce even-more-accurate results: either run bigger studies involving more people, to produce more robust results with the classical statistical methods, or redo his calculations with more data to better signal the relationship between the false- and true-positive rates.

When he applies the same statistical process to data from New York State, which tested more people and produced a higher prevalence rate, he determines that in mid-April, the prevalence rate in New York was likely between 11 and 18 percent.

Toulis says that his research could help officials avoid making mistakes. “One consistent finding, for instance, is that COVID-19 prevalence still appears to be very low compared with the 70–90 percent range that is typically associated with herd immunity,” he says. “This means that reopening policies will likely fail if they start prematurely.”

—Emily Lambert
US SMALL BUSINESSES LACK A CASH CUSHION

EVEN IN A growing economy, most small businesses in the United States lack sufficient reserve capital to endure a prolonged business interruption, so a natural disaster, pandemic, or any condition that interrupts normal operations can quickly lead to job cuts and business failures. If the government wants to keep small businesses afloat, its support must be enacted quickly and generously and be easy to access, according to a survey of 5,800 small businesses conducted early during the COVID-19 outbreak in the US.

University of Illinois’s Alexander W. Bartik, Chicago Booth’s Marianne Bertrand, and Harvard’s Zoë Cullen, Edward Glaeser, Michael Luca, and Christopher Stanton have been studying small-business behaviors, decision-making, and attitudes. Their research provides a detailed look at the financial health of small businesses heading into COVID-19 and underscores the need for fast and easy-to-access government interventions when businesses are interrupted.

The researchers conducted their survey as the Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law in late March and implemented in April. By then, small-business owners, who employ 48 percent of American workers, had already cut their workforces massively, a sign of their precarious finances even ahead of the outbreak.

Three-quarters of survey respondents, who were all members of Alignable, a small-business network, reported they had cash on hand to cover expenses for no more than two months.

Survey respondents who believed the pandemic would last longer were more pessimistic about their companies’ chances of surviving. The researchers estimated that business closures could lead to almost 33 million job losses if the pandemic were to last four months, 35 million if it were to extend six months.

One bright spot in the survey is that business owners said programs such as the CARES Act could help, and indicated they would take assistance to save jobs if it were available quickly enough. Business owners polled before details of the CARES Act were made public expected to cut 40 percent of their employees by year-end. After they learned about CARES, they expected only 6 percent cuts.

Still, 28 percent of companies said they would not seek such help. While some of those owners said they didn’t need the money, about a fifth were concerned that the government would not forgive the debts, and a tenth of the owners worried that taking the aid would involve a bureaucratic tangle too gnarly to be worth the effort.

“These results suggest that clarity about the program and a streamlined process will be crucial if the government wants to ensure a high take-up rate,” the researchers write, though these conditions are difficult to achieve during times of panic, uncertainty, and fast action within a system of adversarial democracy.

―Michael Maiello

In their model, certain hubs of vital economic activity could remain open.

A strategic approach to reopening cities

With unemployment rising to its highest rate since the Great Depression and labor participation plummeting, many local-government leaders in the United States have taken steps to reopen their cities, worrying not only about the financial cost of keeping large parts of the economy frozen but also about the implications for public health, as job loss, income insecurity, food insecurity, and lack of access to health care among the unemployed can all contribute to mortality.

But research suggests that some methods of reopening local economies generally favored by policy makers, such as focusing on certain types of businesses across an entire city, are costlier than a more geographically targeted, neighborhood-by-neighborhood approach, according to Chicago Booth’s John R. Birge and Ozan Candogan and Northwestern PhD candidate Yiding Feng.

Local urban planners, in coordination with neighboring counties and state government, can reduce overall infections within a city while preserving vital economic activity by strategically keeping some neighborhoods shut down while allowing others to serve as hubs for commercial activity, the researchers find.

Policy makers have generally favored uniform approaches, regarding them as easier to implement as well as to sell to a fairness-minded public. But Birge, Candogan, and Feng find that the economic sacrifices of a blanket approach are three to four times greater than when deliberately targeting neighborhoods.

The researchers looked at quarantines and economic shutdowns in spatial and geographic terms, with the goal of finding a way to bring down overall infection rates at the lowest possible economic cost. In their model, some urban neighborhoods and public spaces may serve as hotspots for disease transmission and should be targeted for closure—and yet, certain hubs of vital economic activity could remain open, they write.

Take New York City, for example. In scenarios involving an outbreak of a highly infectious or even a moderately
infectious disease, Midtown Manhattan is such a hub for substantial economic activity that it should be strategically spared a shutdown, while other neighborhoods, including the city’s financial district in lower Manhattan, should be almost completely shuttered, according to the model. Midtown is an economic juggernaut, and the cost of shutting it down is just too high, given the opportunities to better control disease spread elsewhere, the researchers argue. “Counter to naive intuition, the neighborhoods where the economic activity should be reduced the most are not those with the largest infection rates,” they write. “Even among adjacent neighborhoods with similar economic values, it may be optimal to resume activity at those with higher infection rates depending on the structure of the spatial spread patterns between these neighborhoods and the others.” The idea is to pick key economic hubs such as Midtown, and then use largely the rest of the city to control the pandemic.

Effectively targeting urban neighborhoods will depend on coordination with other local and state governments. New York City doesn’t exist in isolation, so a refusal to halt activity by counties in New Jersey, for example, can undo even the best-laid plan for Manhattan.

Meanwhile, because of the interdependence of neighboring communities, this single-city model might be scalable to the country, enabling federal planners to more effectively deal with larger pandemics. —Chuck Burke and Michael Maiello

HOSPITAL RATINGS ARE DEEPLY FLAWED. CAN THEY BE_FIXED?

The most influential rating system rests on some faulty calculations, affecting millions of people and billions of dollars.

BY BRIAN WALLHEIMER ILLUSTRATION BY FEDERICO GASTALDI
The US Centers for Medicare and Medicaid Services (CMS) regularly releases star-system ratings for US hospitals, and did so in January 2020, on the cusp of the COVID-19 outbreak. The news about ratings did not make a lot of headlines, and was quickly buried by stories about the public-health crisis.

But the release of the ratings was an important moment for patients looking up which facilities might provide the best care for nonemergency procedures—and for the health-care industry, which has billions of dollars at stake. The pandemic has slashed hospital revenues, and hospitals with high ratings may advertise those heavily to attract non-COVID-19 patients and the dollars they bring with them. Ratings can guide patients’ decisions, shape negotiations between hospitals and insurance companies, and determine how much health-care providers get reimbursed by both the federal government and insurers.
Of the four major hospital rating systems available to patients in the US, the CMS offers perhaps the most influential one. As the health-care industry fights COVID-19 on multiple fronts, it’s worth taking a deep dive into the CMS’s ratings to understand how they affect the success or failure of a hospital. Academic researchers have scrutinized the methodology to identify flaws in the CMS system, and to come up with ideas for modifying the ratings. Their research holds the promise of producing more-accurate measurements that could better inform the decisions of patients, hospitals, insurance companies, and the federal government—and of ultimately improving the hospital system, and public health more generally.

The CMS rates a hospital’s quality of care using 51 measures centered around common, serious issues—such as heart failure and pneumonia—among Medicare patients who require hospitalization. It launched a star rating system in 2016 to provide more information about a hospital, including patient experience, complications and deaths, and value of care. Its online patient-focused Hospital Compare tool allows people to compare hospitals on the basis of their overall star ratings.

US News & World Report rates hospitals but also publishes a few annual rankings, including the best hospitals in the country, the best hospitals in each region, and the best for a few different specialties such as cancer care. “Find the Best Hospital for You” trumpets its website, advertising its guides for patients and caregivers. The Leapfrog Group, an independent health-care watchdog, biannually scores general acute-care hospitals with its Hospital Safety Grade, ranking states on the basis of the percentage of A-rated hospitals they have. Healthgrades, a company that provides information on doctors and other health-care providers, issues an annual list called “America’s Best Hospitals,” highlighting those that it deems to be in the top 5 percent for overall clinical excellence, on the basis of clinical quality outcomes for 32 conditions and procedures.

Each of these reviewers uses mostly the same data but distinct methodologies, and the results they come up with can be very different. The Johns Hopkins Hospital, for example, was, in 2019, ranked as the No. 3 hospital in the country by US News & World Report and received a top-5-percent designation from Healthgrades. But it received a B in the fall from Leapfrog and only three stars from the CMS.

The rating systems themselves get rated. Researchers from Northwestern Medicine, Sound Physicians, the Council of Medical Specialty Societies, the University of Michigan, Washington University, and University Hospitals did their own analysis and gave their highest grade to US News & World Report, which got a B. The CMS got a C.

But the ratings have a lot of influence, starting with patient decisions. Looking at a decade’s worth of nonemergency Medicare-patient hospital visits, Chicago Booth’s Devin G. Pope finds that the average hospital experiences a 5 percent change in patient volume due to fluctuations in its US News & World Report hospital rankings. He estimates that from 1993 to 2004, this accounted for 15,000 Medicare patients switching from lower-ranked to higher-ranked hospitals for nonemergency care, resulting in more than $750 million dollars changing hands. An improvement in rank for a hospital’s specialty also corresponded with a rise in both the number of nonemergency patients treated and the revenue generated in that specialty. With the explosion in online ratings that occurred since 2004, would the impact be even bigger now? “It’s possible,” says Pope. “Certainly many people are hoping to make an informed, data-driven decision these days when choosing a hospital for elective care.”

The CMS ratings have a particularly strong influence in the industry, in part because they affect a hospital’s contract negotiations with insurance companies. A better rating can give a hospital more leverage, while a drop can hurt it. A contract includes agreements on the amount insurance companies will pay for certain tests and procedures, which is enormously important to a hospital. Contracts also determine whether a hospital is considered “in network,” which in turn drives patient decisions.

“Certainly many people are hoping to make an informed, data-driven decision these days when choosing a hospital for elective care.”

— DEVIN G. POPE
The Centers for Medicare and Medicaid Services (CMS) publishes quality ratings on a scale of one to five stars for thousands of US hospitals. However, the method used to calculate these ratings is problematic, according to Chicago Booth’s Dan Adelman. To address some of its limitations, Adelman developed the Efficient Frontier Hospital Ratings system, an alternate method of generating quality scores. To illustrate how his system compares, he inputted the same data (collected over 2014–18) that the CMS used for its February 2019 release and scored more than 3,700 individual hospitals. A searchable database showing how each of these hospitals fared under the two systems is now available on the Chicago Booth Review website.

**Different methods**
The CMS and other reviewers use mostly the same data, but the results they come up with can be very different. The Johns Hopkins Hospital, for example, was, in 2019, ranked as the No. 3 hospital in the country by US News & World Report and received a top-5-percent designation from Healthgrades. But it received a B in the fall from Leapfrog and only three stars from the CMS.

**Peer groupings**
While the CMS rates US hospitals as a single homogeneous group, Adelman introduced a way to put hospitals into subgroups with similar characteristics, and then recalculate their ratings. These subgroups include:
- hospitals of similar sizes
- hospitals that serve patients in similar socioeconomic groups
- hospitals that are teaching institutions—for example, affiliated with a university

**Relevant rankings**
The example below, highlighting a set of scores for Johns Hopkins, illustrates this type of grouping. As an alternative to rating it against a full, nationwide list of 3,720 hospitals (in which it lands in the 37th percentile), Adelman’s system makes it possible to rate Johns Hopkins among a narrower grouping of 138 peer institutions—all teaching hospitals with at least 400 beds—in which it stands in the 69th percentile.

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**Efficient frontier scores for the Johns Hopkins Hospital—compared with other large teaching hospitals**
*Higher value = better performance (0=overall national average)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Mortality</th>
<th>Safety of care</th>
<th>Readmission</th>
<th>Patient experience</th>
<th>Effectiveness of care</th>
<th>Timeliness of care</th>
<th>Use of medical imaging</th>
<th>Overall score</th>
</tr>
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<td>-3</td>
<td>-3</td>
<td>3</td>
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Each of these categories: **22% of overall score**
Each of these: **4%**

= **100%**

The CMS ratings can also affect Medicare and Medicaid reimbursements, which, according to a 2019 analysis from data provider Definitive Healthcare, can comprise a whopping 30 percent of hospitals’ revenues. The 2010 Patient Protection and Affordable Care Act includes provisions to test value-based care, which determines payments to hospitals on the basis of health-care outcomes. This ties a significant portion of a hospital’s income to CMS formulas that determine how well a hospital is doing.

On top of all that, private insurance companies look to the ratings to determine if they’ll consider similar reimbursement models. If data and algorithms are producing inaccurate ratings, it could jeopardize reimbursements for hospitals.

In the end, a rating can affect a hospital’s success or failure, and this in turn has ramifications for the hospital’s immediate area and extended community. And ratings also have implications for public health. For one example, a ratings system that minimizes the impact of certain hospital-acquired infection rates when compiling scores may end up directing patients to less-safe hospitals. Those patients could then become infected and suffer medical consequences.

Problem No. 1: Instability

Yet, the CMS ratings system has flaws, research finds—and to understand these flaws, you need to unpack the underlying algorithm. The CMS considers mortality, safety, readmission rates, and patient experience, which each account for 22 percent of a hospital’s overall star rating. Three other categories—timeliness, effectiveness of care, and the use of medical imaging—count for 4 percent each. For all of these categories, the CMS takes several other measures into account. The safety-of-care category, for example, includes data on surgical-site infections from colon surgery, and the rate of complications for hip and knee replacements.

The CMS then takes overall hospital scores and clusters them into five groups corresponding to the assigned number of stars. Of the more than 4,500 hospitals in the January 2020 ratings, about 9 percent have five stars, 25 percent have four stars, 24 percent have three stars, 15 percent have two stars, and 5 percent have one star. The remainder don’t have a star score because they failed to report enough information to be rated, in some cases because they simply didn’t have enough data to report.

All the data are dumped into what statisticians call a latent variable model, which determines a score for each category and gives weight to metrics that are statistically correlated but not necessarily indicative of a hospital’s performance. The CMS has spent tens of millions of dollars developing its latent variable model. It has contracted with the Center for Outcomes Research and Evaluation at Yale, paying $73 million over five years, and with Lantana Consulting Group, for $13.5 million over the same time frame.

The model assumes that there is a single, important underlying quality trait that cannot be directly measured, but that if a few metrics in a category are correlated, they must be aligned with the variable, and are therefore given more weight. The latent variable essentially allows the algorithm, rather than people, to determine which measures are most important.

There is nothing inherently wrong with this approach. The IQ test is a classic example of a latent variable model, measuring and weighting test takers’ scores. However, according to Chicago Booth’s Dan Adelman, the key issue with the latent variable model in the CMS context is that every time the ratings are recalculated, the model may shift weight from one measure in a category to another. This “knife’s-edge instability,” Adelman says, means that a hospital could be rated differently each time the ratings are calculated, even if it has seen few changes or improvements.

This is what happened to Rush University Medical Center in Chicago, which had the maximum five stars until July 2018, when the CMS, in a preview of its new ratings calculation, dropped it to a three-star hospital. A change in the weights under the latent variable model’s safety-of-care metric hurt Rush. Before, the model had put most of the weight on the Patient Safety and Adverse Events Composite, known as PSI 90, which includes a number of factors, such as hospital mistakes, patient falls, and infection rates. But then the weight shifted to complications from knee and hip surgeries, which Adelman argues is less indicative of a hospital’s overall safety record than the wide-ranging PSI-90 score.

This shifting means hospitals are left to the mercy of a test in which the answer key can change without warning. Hospital administrators trying to improve their scores are left with no clear guidance on where to focus their efforts.
There is a small-data problem at small hospitals. Some hospitals deal with fewer heart-attack patients than others, and therefore a small hospital’s rating could be affected by one or two heart-attack deaths.

their improvement efforts. Plus, as Adelman writes, “the fundamental problem is this: even if a hospital improves along every measure relative to all other hospitals, it is still possible for a hospital’s score to decrease.”

Another issue with the model is distortion involving hospital size. Small hospitals have fewer things to report, and if a hospital doesn’t have many data related to a measure the model weights heavily, the algorithm gives the hospital an average score. This is good for small, poor-quality hospitals, as their ratings will be pulled toward the mean.

In all, the model confuses hospitals and has the potential to mislead patients. “You move the weights around a little bit, and all of a sudden all the top hospitals change. It’s kind of a funky business,” Adelman says. “If it’s wrong, you have bad hospitals that look good, and good hospitals that look bad. And you’re sending people to the wrong hospitals.”

Adelman proposes a replacement to the latent variable model—one that factors in patient volumes and measures hospitals against best performers. In his efficient frontier model, every hospital would have its own unique set of weights. The more people affected by a particular measure, the more weight is given to that measure.

Imagine Hospital A. In Adelman’s model, its weights are determined by comparing it with other hospitals that are more efficient and better performing in key dimensions. These hospitals are combined to create a virtual hospital that sits between Hospital A and an ideal hospital that achieves the maximum performance along every measure. The model constructs this virtual hospital by combining hospitals that perform most efficiently on the basis of factors such as mortality and readmissions. It then finds measure weights that score the hospital as close as possible to these efficient hospitals measured under the same weights, while also ensuring that measures impacting more people are weighted more.

In this approach, which essentially provides a stable answer key, hospitals that are improving could still see their ratings drop if national volumes of patients impacted by measures shift dramatically relative to one another. “However, infinitesimal shifts would result in only infinitesimal shifts in hospital scores (a result of math programming sensitivity analysis), not dramatic shifts in the scores and measure weights as we see in the LVM [latent variable model] approach with respect to correlations,” Adelman writes. “Thus, our approach enjoys substantially greater stability properties.”

Problem No. 2: Small-data issues
Adelman’s efficient frontier model only addresses the shortcomings of the latent variable model, while other research suggests that issues with hospital data, risk adjustment, and methodology also affect the accuracy of the CMS rating system. Here, too, the small-data problem at small hospitals creates challenges.

The CMS website offers information about hospital heart-attack mortality rates, but some hospitals deal with fewer heart-attack patients than others, and therefore a small hospital’s rating could be affected by one or two heart-attack deaths. To address this, the CMS adjusts the data, with the goal of making a fairer comparison; the outcome, however, is that small hospitals look much safer than they actually are.

The problem—say Edward I. George, Paul R. Rosenbaum, and Jeffrey H. Silber of the University of Pennsylvania; Chicago Booth’s Veronika Ročková; and INSEAD’s Ville A. Satopää—is that the model doesn’t take into account hospital characteristics such as volume or the procedures the professionals there can do. In cases in which a hospital has few heart-attack mortality data, the CMS simply estimates it to have a rate that is closer to the national average. In 2007, of all the hospitals rated, large and small, almost 100 percent were classified as “no different than the national rate.” The next year, none was worse than average, and nine were better than average.

“For any one small hospital, there is not much data to contradict that prediction,” the researchers write. But, they ask, when the CMS model claims that its mortality rate is close to the national average, “is this a discovery or an assumption?”

To find out, the researchers analyzed data from Medicare billing records for 377,615 patients treated for heart attacks at 4,289 hospitals between July 2009 and the end of 2011. This analysis suggests the actual heart-attack mortality rate is 12 percent at large hospitals and 28 percent at small hospitals. The CMS model adjusts the rate to 13 percent at large hospitals and 23 percent at small ones. It tries to compensate for the lack of data from small hospitals by borrowing information from large ones, Ročková says. “This would only work if the small and large hospitals were comparable in terms of their performance. The data, however, speaks to the contrary.”
It would be more reasonable, the researchers argue, to borrow information from hospitals of similar size. They do this, plus take into account hospital volume (number of patients), nurse-to-bed ratio, and the hospital’s technological capability—particularly its ability to perform percutaneous coronary intervention (PCI), better known as angioplasty, to improve blood flow to the heart.

In the researchers’ proposed expanded model, “hospital characteristics that generally indicate better mortality (say PCI or increased volume) can be utilized to direct patients away from specific hospitals that do not perform PCI and have small volume,” they write. “If patients instead utilized the HC [Hospital Compare tool in the CMS] model, which does not include hospital characteristics, they would not be directed away from these hospitals. While there may be some small hospitals with excellent outcomes despite not performing PCI, the vast majority of such hospitals perform worse than those larger hospitals that do perform PCI.”

Problem No. 3: The underlying data
Thus, research suggests at least two problems with how the CMS ratings are compiled, and another research project indicates there are some issues with the data that are fed into the ratings. Analysis Group’s Christopher Ody, Chicago Booth PhD candidate Lucy Msall, and Harvard’s Leemore S. Dafny, David C. Grabowski, and David M. Cutler highlight an issue with readmissions data, one of the seven measures used to inform the algorithm behind the CMS star system.

The researchers’ study isn’t about hospital ratings. Rather, it looks at another program administered by the CMS, the Affordable Care Act’s Hospital Readmissions Reduction Program (HRRP). Using a value-based care approach, the ACA contains rules that penalize hospitals for Medicare-covered avoiding readmissions.

Prior to the HRRP’s implementation, in October 2012, the government reimbursed hospitals for Medicare-covered patients on the basis of the kind of care provided. But once the HRRP went into effect, hospitals with high readmissions rates declined not only for the targeted conditions, but for others as well.

However, Ody, Msall, Dafny, Grabowski, and Cutler probe this conclusion by looking at what goes into the readmission rates, which are risk adjusted to account for the incoming health of a patient. The sicker a patient is upon her first hospital admission, the greater the likelihood she will be readmitted. In an attempt to be fair, and not have sick patients hurt hospitals’ ratings or readmission statistics, the CMS considers patient data on age, sex, and comorbidities (the simultaneous presence of two or more chronic problems) from diagnoses in the year before hospitalization.

A patient arriving at a hospital may have a severe cough, high blood pressure, diabetes, and other medical issues. Hospital staff can note these health issues, and others, on the patient’s chart. When it comes time to send the information to the CMS, as part of submitting Medicare claims, staff electronically submit codes that indicate symptoms or illnesses. The CMS uses these codes to make its risk adjustments.

About the same time that the ACA’s program went into effect, the CMS made a change to these electronic-transaction standards that hospitals use to submit Medicare claims, the researchers point out. Prior to the readmissions penalty program, hospitals could include a maximum of 10 patient-diagnosis codes in their submissions. Even if the patient had dozens of other symptoms or illnesses, the hospital staff could electronically add no more than 10 codes.

But coincidentally, just as the HRRP began, the CMS changed the rules and allowed for up to 25 diagnosis codes, which helped doctors paint a more accurate picture of a patient’s health. “We document that around January 2011, the share of inpatient claims with nine or 10 diagnoses plummeted and the share with 11 or more rose sharply,” the researchers write. Prior to the rule change, more than 80 percent of submissions had nine or 10 diagnosis codes. After the change, 15 percent had nine or 10 codes, while 70 percent of submissions had 11 or more. There was little change in the number of submissions with eight or fewer codes. Rather, doctors included more codes and better indicated all the health issues patients presented.

The CMS didn’t take this into account when evaluating the effect of the HRRP—and the diagnosis-code change may account for about half of the supposed progress made by hospitals in reducing readmissions, the researchers write. The additional codes helped show that many patients were sicker than they would have looked previously. And while about half of

Research suggests at least two problems with how the CMS ratings are compiled, and another project indicates there are some issues with the data that are fed into the ratings.
The program may have unfairly penalized certain hospitals, including ones that treat poorer and less-healthy patients, who are readmitted more frequently.

hospitals’ overall decline in readmissions may have been due to hospitals doing a better job, the other half resulted from both recording more accurate data and recognizing the health of incoming patients, the researchers conclude.

They note that the program may have unfairly penalized certain hospitals, including ones that treat poorer and less-healthy patients, who are readmitted more frequently. Say two people, one affluent and one poor, both had heart attacks and went to two different hospitals. Doctors at each hospital would have entered no more than 10 data points indicating what was wrong with their patients, so that in the system, the patients looked similar. In fact, though, there was more wrong with the poor patient, who was more likely to be readmitted.

“Pay-for-performance schemes expose participants to the risk of unstable funding, in ways that may seem unfair or contrary to other social goals,” the researchers write. “In the case of the HRRP, the program was found to have initially penalized hospitals that cared predominantly for patients of low socioeconomic status—hospitals that are more likely to be safety-net providers already operating on tight budgets.”

The system change addressed this problem, in part—but it remains an issue, as hospital staff are still limited as to how many codes they can input, even if the limit is higher than it was before. Even as hospitals serving a poorer, sicker population submit more data on the health of their patients, they are still more likely to suffer from high readmission rates and be penalized, the researchers say. And the incoming health of patients doesn’t necessarily reflect the quality of hospital care.

Readmission rates may similarly impact the number of stars a hospital receives from the CMS—but also illustrate how incomplete data and analysis can skew ratings. Patients comparing hospitals on the CMS website see “unplanned hospital visits” as one of the seven categories they can use for evaluation. Under that, hospitals are scored for readmissions for heart issues, pneumonia, hip and knee replacements, colonoscopies, and more. These data affect hospital reimbursement but also how patients and insurance companies view a hospital.

The CMS generally releases hospital ratings twice a year. When it issued ratings in February 2019, however, 15 months after the previous ones, it announced that it would be taking public stakeholder comments on potential changes to the rating system, an indication that there could be a chance to correct some of the problems in the methodology.

The CMS’s announcement suggested the latent variable model could be on the chopping block, potentially to be replaced with “an explicit approach (such as an average of measure scores) to group score calculation.” Other potential changes included assigning hospitals to peer groups, modifying the frequency of ratings releases, and developing a tool that would allow users to modify ratings according to their preferred measures.

But there’s no guarantee that the latent variable model will be scrapped or significantly changed. As for the other problems researchers have identified, Ročková for one said that although representatives of the CMS have shown positive interest in their proposed model, it has not yet been incorporated into their current recommendation system.

Adelman argues that there should be a moratorium on all hospital ratings during the pandemic. Even poorly rated hospitals are full of medical staff—many demoralized by equipment shortages, furloughs, and pay cuts—working tirelessly and risking their own lives to save the lives of others. Because of this, and because there are no measures related to COVID-19 responsiveness or preparedness, publicly rating hospitals at this time is not appropriate, Adelman says.

The CMS, through a spokesperson, says that it will go through “appropriate rulemaking” for any changes to the star-rating methodology.

“The agency, with its vast network of partners in health-care delivery and on behalf of people with Medicare benefits, patients, and their families, most certainly celebrates and appreciates the amazing work that medical staff (and many others) have been doing,” reads a statement from the CMS, adding that it “has responded by offering unprecedented waivers and flexibilities to remove barriers, expand telehealth, and allow all providers, and especially hospitals, to focus on patient care.”

The CMS is assessing how COVID-19 has impacted data reporting, according to the agency. But for now, the current ratings stand. In spite of its flaws, for the foreseeable future, the CMS rating system will continue to drive patient decisions, shape hospital budgets, and influence public policy. —CBR

Go to Review.ChicagoBooth.edu to find citations for research mentioned in this article.
How powerful is financial inclusion?

The story of the Freedman’s Bank suggests that fighting for trustworthy bank access can improve outcomes but isn’t enough to close the racial wealth gap.

BY ÁINE DORIS  ILLUSTRATIONS BY MATT CHASE
The tumult of 2020 has prompted many people to look back in time for historical parallels and precedents, from the violent and racially driven US protests of 1968, to the economic pain of the Great Depression, to the flu pandemic of 1918, to the politicization and political upheaval of the American Civil War. What challenges have Americans encountered in the past? How did the country overcome them, or fail to do so?

In the vast array of documents, sources, and events to unpack, there is a bank, formed in the waning days of the Civil War, that is getting some attention from researchers. In 1865, the same year it passed the 13th Amendment to abolish slavery, Congress set up a bank for newly emancipated Black Americans—nearly 4 million people freed from slavery—to accelerate their economic empowerment. The Freedman’s Savings and Trust Company opened in New York, and its headquarters swiftly moved to Washington, DC, with a further 37 branches established in quick succession across 17 US states.

Its records are revealing, among other things, lessons about financial inclusion. In the nine years of its existence, the Freedman’s Bank, as it was known, had a measurably positive effect on its customers, suggests research by Babson College’s Luke C. D. Stein and Chicago Booth’s Constantine Yannelis. During a period in US history when the opportunity seemed to exist, at least briefly, for Black Americans to move toward legal equality, Freedman’s Bank account holders were more likely to be literate, attend schools, work, have higher incomes, and own more real estate.

But the bank’s records also highlight the devastating effects wrought by financial failure, and provide a window into the long history of exclusion and racism that culminates in the current wealth gap between Black and white Americans. “The main lesson and takeaway I see is that access to financial institutions is important, but it is unlikely that it is a necessary or sufficient condition to close the racial wealth gap,” says Ohio State’s Trevon Logan. “It’s not as if people are unbanked because they have hundreds of thousands of dollars under mattresses. They lack the resources to have a bank account.”

A bank of opportunity
Some of the research into the Freedman’s Bank stems from a visit by Chicago Booth’s Constantine Yannelis to the US Treasury in fall 2018. Due to a temporary security issue, the main entrance was closed, and Yannelis was routed to exit the building via an annex that two years earlier had been renamed “The Freedman’s Bank Building.” Having never heard of the bank, Yannelis looked it up.

The first Freedman’s Bank opened on April 4, 1865. As University of California at Irvine’s Mehrsa Baradaran explains in her 2017 book *The Color of Money: Black Banks and the Racial Wealth Gap*, the government originally proposed distributing land to people who had been enslaved, but faced a violent backlash from Southern whites. “Instead of land, freed slaves got rights that they could not use due to their economic and political status at the bottom rung of society. They also got a savings bank, which was another form of diversion that would be repeated in the next century,” Baradaran writes.
Life in places where Freedman’s was gaining a foothold

Comparing a group of Freedman’s Bank account holders with a similarly situated group who did not have accounts, the researchers find that the Freedman’s customers were generally wealthier and better educated.

Freedman’s Bank locations
- Branches opened over 1865–70 period
- Branches whose records didn’t survive
- Branches planned but never opened

Black Americans still opened accounts with the Freedman’s Bank at a “phenomenal” rate, according to the US National Archives and Records Administration. Customers, almost entirely newly freed Black Americans, could open an account with as little as 5 cents, and interest was paid on deposits of $1 or more. Most deposits were small, less than $60 on average. More than 100,000 people became customers—farmers, cooks, barbers, nurses, carpenters—many of them likely taking home their first paychecks. Among them, Dilla Warren, a 50-year-old woman from Chowan County, North Carolina, opened an account on November 2, 1869, according to the National Archives’ Prologue Magazine. Warren made a living sewing, knitting, washing, and ironing, and her records list 11 children, all of whom had either died or been sold into slavery. Warren left instructions that on her death, the remaining money in her account should pass to the son of her deceased brother, Andrew, likely because he was her only living or traceable relative.

In the bank’s archives, Stein and Yannelis saw an opportunity to study the effects of financial inclusion. What happens when a group of people is given access to a financial institution? Some research has asked this through experiments in developing countries, Yannelis says, but the Freedman’s Bank records offered a trove of US data about people essentially granted such access overnight. Moreover, because branches opened at different times, it was possible for the researchers to isolate effects in individual communities.

Stein and Yannelis analyzed surviving account-register records that had been microfilmed by the National Archives and later digitized in CD-ROM format by FamilySearch, a nonprofit genealogy association, obtaining data from 107,197 accounts across 27 Freedman’s Bank branches, totaling 483,082 nonunique individuals—roughly 12 percent of the 1870 Black population in the American South. They lined these records up with a sample from the 1870 census containing information on schooling, literacy, employment, and wealth among Black Americans. (Literacy data was collected by the Census Bureau at the time.)

The Freedman’s Bank, they determine, had a small but significant impact on the economic well-being and outlook of its account holders. An initial regression analysis finds that individuals in households with an account at the bank were 1 percentage point more likely to be literate and to attend schools. The same individuals were 2 percentage points more likely to work and to have higher incomes than their peers.

Being able to bank raised incomes, literacy levels, and landownership through one or more channels, according to the research. Among these, having an account may have allowed individuals to save to make large purchases, such as a plot of land; to invest in workers; or to open a business. It also may have helped them overcome challenges associated with irregular income and shocks, which were often tied to fickle agricultural harvests, by providing a place to make
consistent, recurring payments and save up a cash cushion. (Costs associated with withdrawals may have discouraged depositors from taking out money unless necessary, which encouraged saving.)

To test the validity of the findings, and rule out the possibility that people who opened accounts were more financially literate to begin with, the researchers conducted a number of tests, including for people who were illiterate in 1870. “We find strong effects on work, income and real estate wealth for this illiterate sample, consistent with a financial inclusion channel, rather than an educational expansion channel,” they write. They find that while people who lived close to branches saw effects, those didn’t extend to white households, nor to people who lived close to planned-but-never-opened branches. And they find larger effects for people who opened accounts earlier than people who started banking later. “While the time period may seem short, large effects from access to financial services over short time periods are consistent with work in development and household finance,” the researchers write.

A look at historical politics further confirms their results. Southern Democrats were generally hostile to the bank, its customers, and its supporters. Meanwhile, Republicans, who had set up the bank, were overall more supportive of programs such as schools and economic development. So would the data show that Republican control of an area, rather than a Freedman’s Bank branch location there, led to better outcomes for Black residents? The researchers looked at county-level Republican vote shares in the 1868 congressional elections and find what they see as more corroborative evidence that the mere presence of the bank drove better school attendance, higher literacy and property value, and more employment and income.

The access to financial services that the Freedman’s Bank was able to offer to an unbanked population had real impact at the Black American individual and household level, they argue, and this impact extended to the community in terms of its ability to accelerate education and wealth accumulation. An average county near an early bank branch had about 10,700 Black residents and 2,700 account holders, and the analysis suggests financial inclusion boosted school attendance rates by up to 5 percentage points and literacy by up to 18 percentage points, with positive effects on income, employment, and business ownership.

**The pain of failure**
The Freedman’s Bank was not to last, however. Although set up as an institution strictly dedicated to savings, the bank was soon investing its depositors’ hard-earned savings into risky railroad companies and real estate. Its coffers were largely co-opted by the First National Bank, which offloaded its liabilities onto the Freedman’s Bank books with no objection from the latter’s all-white trustees.

The Panic of 1873 was a death knell, as real-estate prices fell, loans went bad, and depositors demanded their money back. Social reformer, author, lecturer, and statesman Frederick Douglass was elected the bank’s president in a bid to save it, but he quickly became aware of the bank’s dire conditions and turned to Congress. On June 29, 1874, the bank’s trustees voted to shutter it and...
In the midst of the 2008–09 financial crisis, two government-sponsored enterprises—the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)—teetered on failure. These quasi-governmental agencies had supported the mortgage market by allowing lenders to offload home mortgage–related risks and make more loans, but they couldn't withstand plummeting home prices.

The criticism of and reaction to the ensuing bailout had strong echoes of the Freedman’s Bank, finds Grand Valley State’s Daniel C. Giedeman. Both financial failures involved institutions assumed to have implicit government backing, and both had ramifications for Black Americans, he argues.

The Freedman's Bank was formed after the US Civil War to serve formerly enslaved Black Americans. Per its initial charter, at least two-thirds of its deposits were to be invested in government securities. Congress was free to inspect the books, and passbooks and promotional literature implied government backing and an association with the US government’s Freedman’s Bureau. However, the Freedman’s Bank was technically private.

Fannie Mae and Freddie Mac, for their part, had been government agencies but were privatized in 1968 and 1970, respectively. While private, they benefited from some government provisions that gave them a leg up on competitors, hence their distinction as government-sponsored enterprises.

In the case of both the Freedman’s Bank and these GSEs, the market appeared to believe the institutions had implicit government backing. The assumption was that if they got into trouble, the US government would come to their rescue and prevent a failure.

This view was tested—and, in the case of Freedman’s Bank, was proved inaccurate. At the bank, a change in its charter opened the door to risky loans and speculation mixed with fraud and mismanagement by white officials. After the bank collapsed in 1874, depositors were partially refunded but never made whole, despite attempts to apply federal funds to the losses.

At Fannie Mae and Freddie Mac, the private-public structure created skewed incentives, as management sought to maximize returns while the market, confident in government backing, essentially gave management free rein, Giedeman writes. In September 2008, at the height of the crisis, the US government placed Fannie Mae and Freddie Mac into conservatorship. Both giant enterprises were delisted in 2010, but the government’s action prevented their bankruptcy and bailed out their debt holders for upwards of $150 billion.

Race is a theme in both failures. The Freedman’s Bank served Black Americans at a time when many white Americans were openly racist. Over a century later, many Republicans blamed the GSEs for causing the financial crisis, and “the general argument made is that Fannie Mae and Freddie Mac engaged in risky practices that led to the financial crisis because of government mandates that they provide financing to minorities,” writes Giedeman, citing editorials in the Washington Post and Boston Globe, and on Fox News. “It must be noted that the evidence does not support these claims,” he adds.

In comments that surfaced during his 2020 presidential run, former New York mayor Michael Bloomberg in 2008 blamed the financial crisis on the end of redlining and a push for banks “to make loans to everyone.”

While the GSEs were bailed out and the Freedman’s Bank was not, the downfall of both had ramifications for Black Americans, Giedeman concludes. “The failure of the Freedman’s Bank left a bitter legacy not only due to depositor losses, but also because it almost certainly precluded the establishment of other government-sponsored financial institutions that might have benefited former slaves and the under-banked population in general,” he writes. He compares that with the experiences of Fannie Mae and Freddie Mac, whose failures “potentially soured the public’s taste for government initiated financial institutions for the foreseeable future even when such institutions could play a positive role in the financial system.” Such institutions could be used, for example, to help promote homeownership among Black Americans.

The GSEs’ failures were followed by tighter lending standards and far fewer loans made for home purchases. Between 2005 and 2012, home-purchase loans made to non-Hispanic white Americans fell 56 percent, compared with 76 percent for Black Americans, according to a study by the think tank Urban Institute. Another study holds that “since the housing bust and Great Recession, the homeownership gap between black and white households has widened to its largest level in 50 years.”

—Emily Lambert

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left more than 60,000 depositors with nearly $3 million in losses. Federal deposit insurance did not yet exist, and while there was some compensation for customers, the fight to make depositors whole continued in Congress for decades, into the 20th century, to no avail. The Freedman’s Bank headquarters was torn down in 1899, replaced in 1919 by what would become the Treasury annex.

While opening Freedman’s Bank branches seems to have generated positive effects, closing them similarly generated negatives ones. “If the government and the philanthropists’ purpose was to teach the freed slaves thrift and responsibility, the lesson they actually learned was to distrust the government and philanthropists,” writes Baradaran.

The research by Stein and Yannelis adds to the argument that the Freedman’s Bank failure did long-term damage to financial trust. When they look specifically at counties that once had a Freedman’s Bank branch, using data from the 2017 Federal Deposit Insurance Corporation’s National Survey of Unbanked and Underbanked Households, they find that Black residents “are more likely to list mistrust of financial institutions as a reason for being unbanked—an association that is not present for white Americans,” Yannelis says. “It seems likely that the collapse of the Freedman’s Bank and the loss of savings has contributed to an intergenerational mistrust of banks.”

Chicago Booth’s Richard Hornbeck and Louisiana State University’s Daniel Keniston are also studying the Freedman’s Bank. They are exploring how the bank’s collapse, including the funds lost by depositors, affected depositor households and their descendants. “This may also provide some insight into how African American families would have fared differently,” Hornbeck suggests, “if those particular families had received some financial transfers in the immediate aftermath of slavery.”

Hornbeck and Keniston are merging several data sets that record how much money people had deposited in the Freedman’s Bank at the time of its collapse and what each family was reimbursed over the following decades. The researchers are tracking depositors in the Freedman’s Bank, and their descendants, from 1870 through 1940, the most-recent publicly available full census data. This project is ongoing.

An unexplored legacy

In the United States today, the racial wealth gap is wide. The net worth of a typical white family in 2016 was $171,000, nearly 10 times the $17,150 average net worth of a Black family, according to the Brookings Institution. In terms of financial services, 18 percent of Black households are without banking services, according to the FDIC, compared with just 3 percent of white households.

It’s hard to draw a direct line from the Freedman’s Bank to today, however, as the line runs through not only the racial backlash of the Reconstruction era but also Jim Crow laws, the Depression, housing segregation and racial covenants, racist federal credit policy, and more examples of institutional racism. If the Freedman’s Bank had stayed solvent, would today’s racial gap still exist? Most likely yes, says Ohio State’s Logan.

Logan is studying other aspects of the Reconstruction era, including the effects of Black politicians on public finance, finding, among other things, that exposure to Black politicians decreased the Black-white literacy gap by more than 7 percent.
EVEN WITHOUT BANKS, BLACK AMERICANS SAVED

In 1961, descendants of John Johnson went to court to claim 935 silver coins that were found at a demolition site in Washington, DC. As they explained to the judge, Johnson, a vegetable seller, had buried the coins because he didn’t trust banks. He had lost money in the Freedman’s Savings Bank failure—but that didn’t stop him from saving.

When the Freedman’s Bank collapsed in 1874, it took with it $3 million in savings from 61,000 depositors, many of them formerly enslaved Black Americans. The event did long-term damage and shook Black trust in the financial system, according to such prominent Black Americans as W. E. B. DuBois and Booker T. Washington.

But Black Americans were saving before the bank formed and continued saving after it collapsed, argues City University of New York’s Barbara P. Josiah. “Seeds of thrift sowed during enslavement blossomed and bore fruit and many African Americans bequeathed cash, real estate, and personal property worth thousands of dollars to their families and friends,” Josiah writes.

For almost a century prior to the Freedman’s Bank’s formation in 1865, groups of Black Americans got together to maintain community records, give job training, support people in need, help with burial expenses, and engage in other communal activities. Some also used funds to purchase community property. Such associations were similar to others—known as esusu, susu, partner, box hand, san, or tontine—found in West Africa and African diaspora communities.

When the Freedman’s Bank came on the scene, many of these groups as well as private individuals rallied around the new bank by trusting it with their savings. Josiah’s research focuses on the records from a Washington, DC, branch, which offer glimpses into the lives of various account holders—including Luisa Givens, a hospital cook and mother of four; Mary Baltimore, a widow who had been enslaved; Edward King, an injured Civil War veteran who had been enslaved; and many others.

The bank’s failure in 1874 devastated the account holders, who were never made whole. Johnson, for example, lost money in the Freedman’s Bank and took to burying coins because he no longer trusted banks.

But while the bank’s failure was a setback, Black Americans persevered in saving, according to the research. For example, the Freedman’s Bank failure took with it $1,100 that members of the Metropolitan African Methodist Episcopal Church had saved to put toward a new building. But their fundraising continued, and a new building with capacity for 3,000 people went up in 1886.

“When the bank failed, most depositors, only a few years removed from enslavement and at the bottom of the District’s socioeconomic ladder, did not accept defeat,” Josiah writes. “Some fell back on methods of saving they had utilized during the antebellum period by finding a hiding place for their money.” Indeed, Johnson still managed to leave his widow and other family members 10 houses and $4,400 when he died in 1925.—Emily Lambert

And there are many other factors at play and still unexplored, even just in terms of financial services, he points out. What were the wealth trajectories for Freedman’s Bank customers? Would banking have made a difference, considering that so much wealth has grown through property ownership rather than liquid bank accounts? Moreover, Black Americans denied access to banks still formed mutual-aid societies and other bank-like institutions. They did so before the Freedman’s Bank was chartered, and they continued to do so after it collapsed. (See “Even without banks, Black Americans saved,” above.) How do these nonbank institutions play into issues of trust and wealth?

It’s true that Black Americans are less likely to be part of today’s banking system. However, that’s a symptom, not a cause, of racial wealth inequality, Logan notes. Banks are important if you need them and don’t have access, but some Black families don’t have the resources to have a bank account. Others may opt to use cash and check cards rather than a checking account.

“As economists, to the extent that right now in the US we are talking about racial inequality, we don’t have in general really good ways of thinking about or analyzing racial issues. We just have not done that particularly well in the past or in the present,” says Logan. The profession currently lacks theoretical tools to study issues of race, he notes, and the scholarly community itself lacks diversity. “We don’t have a lot of knowledge of race and history and the long-term perspectives on race.”

In that sense, research into the Freedman’s Bank represents a hopeful direction, steps taken to better understand the economic legacy of American racism more broadly. Questions about financial inclusion and exclusion are part of that legacy—but just one, small part.—CBR

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How leaders can rise to the challenge of COVID-19

Crisis-management essentials for coping with emergencies

As cases of COVID-19 continue to grow across the world, leaders in business, government, and other spheres face unprecedented challenges. The disease has encroached not only on public health but on global economic well-being and on some of the most fundamental practices of modern society. It has generated great anxiety and exacted an enormous and growing human toll. And it has required virtually every organization to reinvent its processes to cope with a world in which many people simply don’t feel safe being in the same room together.

Crisis situations can overwhelm even the most experienced leaders, presenting unexpected, complex scenarios that evolve at a fast pace and in several directions. Even in cases in which contingency plans have been prepared, those plans need to be adjusted to respond to rapidly
changing circumstances. Fortunately, there are tools and perspectives leaders can use to help their organizations weather difficult times. By building trust, managing fear, and encouraging a sense of duty and community orientation, any leader—whether in business, government, or the nonprofit sector, and in organizations big and small—can better navigate the difficult path of crisis management.

Building trust
Crisis frequently happen without warning and require a response under extreme time pressure. Decision makers often find themselves drowning in data, yet truly vital information is not available. During these situations, leaders must continue to build trust, both internally and externally. Doing so generates much-needed room to maneuver and the goodwill that leaders will need to rely on when tough decisions have to be made.

Even though the desirability of trust is obvious, leaders often struggle with building and maintaining it. Research has identified four major factors—transparency, commitment, expertise, and empathy—that influence the level of trust among stakeholders involved in a crisis, summarized in what I’ve called the Trust Radar.

Transparency
Full transparency is reached when, in the mind of your audience, all relevant questions have been addressed. Your audience—not you—will determine what information is considered relevant. What is relevant will also vary for different audiences. What transparency means to an investor may not be the same for a customer. What is important to a faculty member may be irrelevant to the parent of a student. It is essential to understand what is in the heads of your respective constituencies and address those things in a language and style that resonates with them.

Transparency is not the same as full disclosure, and transparency may be reached without full disclosure. This will be the case if the leader conveys a rationale for limiting disclosure that reflects concerns shared by the relevant audience. For example, in the case of a health crisis, privacy concerns may limit what can be disclosed (e.g., the identity of an individual who has tested positive for COVID-19). Rather than simply declining to comment, leaders can emphasize the importance of patient privacy, a concern shared by the audience, as a clear and understandable reason for limiting disclosure. In other cases, relevant information may not yet be available (e.g., the number of people who may have had direct contact with an infected person or the likely infection rates). As a general rule, the rationale for limiting disclosure must pass the “reasonable person test,” meaning that it will seem justifiable to most people.

It is also possible that transparency will not be achieved despite full disclosure. That will be the case when the leader, in the attempt to fully disclose an issue, fails to be understood. Technical mumbo jumbo, a complex explanation, or legalese—even if it involves disclosing relevant information—will not be considered transparent by the general public. Rather, an audience will assume that a leader or her organization is hiding behind incomprehensible jargon rather than speaking plainly and in a straightforward manner. This is a common trap for leaders who have highly specialized knowledge, including physicians. It is important to remember that what is obvious to you may not be obvious to your audience.

Further, trying to give the impression of full transparency while hiding salient facts can lead audiences to doubt the veracity of what they are being told. There may be times when leadership does not want to release known information. If this is the case, it is important to anticipate the reaction of stakeholders if the information is brought to light through other means. Will the rationale for not disclosing the information pass the reasonable-person test? Most often, it is better to release bad information all at once rather than withhold information that will continue to trickle out over time, as an ongoing stream of bad news will undermine trust and raise additional questions about when the company knew of the new information.

Expertise
A perceived lack of expertise can undermine trust quickly. This is particularly important during health crises and natural disasters. The reputational catastrophe suffered by the US Federal Emergency Management Agency because of their bungled response during Hurricane Katrina in 2005 was not driven by the belief that FEMA had bad intentions, but that it was incompetent.

Research by Stanford’s Jennifer Aaker, University of Minnesota’s Kathleen D. Vohs, and University of Pennsylvania’s Cassie Mogilner has found that in the United States, companies are usually viewed as competent, which is not generally true in other countries. On balance, this is a benefit to a company. The US public usually does not doubt corporate ability, but it often does doubt corporate willingness to do the right thing. That said, for companies, the expectation of competence often has a threshold structure: companies get little credit for exceeding expectations, but are heavily criticized if they fail to meet them. This is particularly problematic when the public has unrealistic expectations of what companies can do.

In contrast, nonprofits are usually viewed as less competent than profit-
making companies, but more caring. This means that their audiences may be more forgiving when things do not work out as planned. However, this goodwill does not apply to problems within a nonprofit’s core competency. The Red Cross likely will be forgiven for a cybersecurity breach, but not for a contamination of its blood supply. Moreover, given their reputation for warmth and caring, nonprofits will experience a serious backlash if their actions are viewed as self-serving or financially motivated.

Leaders can address a perceived lack of expertise by bringing in third-party experts with high credibility. Experts with knowledge well outside the expected expertise of management will likely cause no perception of management incompetence. For example, a well-respected physician or public-health expert from the Centers for Disease Control and Prevention, a prestigious university, or the local health department will have medical knowledge about diseases that management typically would not be expected to have.

Crisis preparedness is a particularly important aspect of competence. The reputation of an organization and trust in its leaders will diminish significantly when the company seems unprepared.

First, stakeholders will ask, “What did the organization do to prevent this crisis?” When it is humanly possible to prevent or significantly decrease the likelihood of harm, the widely held belief will be that preventative action should have been implemented. If the company appears negligent, dismissive, or incompetent, outrage will occur. These concerns are less common during new threats, such as the COVID-19 pandemic, but are important for crises that are more familiar.

Second, stakeholders expect an organization to be prepared and “ever ready” to manage a crisis effectively when it does occur, especially if the crisis is considered foreseeable. The excuse that “we didn’t think it would happen to us” holds little credibility.

**Commitment**

At the end of the day, your stakeholders want to make sure that a crisis is addressed and that they are not negatively impacted. One problem with this expectation is that early in a crisis, it is impossible to establish even the most basic facts, let alone find a solution. This is particularly true during pandemics, in which the situation is highly dynamic and fluid, and easy solutions are not available. This is why the third factor in building trust, commitment, is so vital.

The most powerful and direct way to signal commitment is for leaders to show up in a highly visible manner and take charge. This demonstrates accountability and sends the message that nothing is more important than resolving this particular crisis.

When a Virgin train from London bound for Glasgow, Scotland, crashed after derailing because of a line defect, CEO Sir Richard Branson not only cut short a family vacation to help handle the situation personally, but also visited crash victims in the hospital and praised the train driver’s courage and actions that potentially saved more lives.

Conversely, during Hurricane Katrina, New Orleans mayor Ray Nagin and FEMA director Michael Brown were viewed by the public as uncommitted, due to their perceived lack of high-visibility personal involvement and concern.

To an efficiency-minded leader, a crisis-response ritual may look like a waste of time, the most precious resource during any crisis. Ironically, it is exactly this “inefficiency” that creates the strong symbolic value. A leader signals that nothing is more important than taking care of this crisis by showing up with the full resources of the company. That creates a sense of commitment.

Does the company’s representative always have to be your CEO? No; the right level of commitment depends on the perceived magnitude of the crisis. If in doubt, use someone higher in your management hierarchy, even if the executive is not directing the operations. The importance of perceived commitment also casts doubt on the extensive use of public-relations professionals as spokespeople. The problem with spokespeople is that they do not have operational responsibilities—they are not in charge, and stakeholders know it. People want to hear from leaders in a crisis. Depending on the crisis, it is best to use skilled media spokespeople for ongoing briefings in conjunction with the highly visible presence of the leader of the organization.

The second important commitment device is process. The definition and communication of a decision process is particularly important during crises that may last a long time yet evolve rapidly. Examples include the establishment of a task force or an ad hoc committee of the board. Hiring external experts can also serve this purpose. In general, by investing time and resources, the company signals that it takes the crisis seriously and is working to find solutions. Ideally, the details of the process are clearly communicated to your audiences, followed by regular updates.

**Empathy**

The final component of trust building, empathy, is often the most important factor of the four and the easiest to miss. Showing empathy is not the same thing as apologizing. Leaders show empathy with colleagues at work, neighbors, and family members even if they do not feel responsible for a problem. During pandemics or natural disasters, stakeholders do not see the company or organization as an
In crises in which there is a perception that the company or organization mishandled a situation, stakeholders expect an apology, but the apology must be authentic. An apology that appears formulaic, insincere, or calculated is worse than useless.

A leader’s reaching out to perceived victims with warmth and authenticity can be very effective, even without an apology. In response to Virgin’s train accident, Sir Richard Branson expressed both sorrow for the loss of life and support for the driver who helped the vast majority survive the crash. People want to know leaders and their organizations care when there is real or perceived harm. Remember that caring is behavioral; it’s not just a passive feeling. An effective crisis manager engages in behaviors that encourage people to believe the organization truly cares.

Managing fear
A particularly challenging aspect of pandemics is the fear generated by a combination of dire consequences and a lack of information. Decades of psychological research have shown that the general public does not evaluate risk in a scientific manner. Sometimes fears are based on objective risk, but, in many cases, there is a large gap between objective risk and risk perception driven by certain features of the situation. These processes are particularly important in product-safety contexts and in the introduction of new technologies such as nuclear power, genetically modified organisms, and nanotech. But they also play an important role in the context of pandemics. The likelihood of fear increases in settings that are novel, have dreadful consequences and identifiable victims, and are highly salient, perhaps because of extensive media coverage, as well as in situations where the public lacks a sense of control. In contrast, a false sense of control will lower risk perception and lead to unsafe behavior (e.g., refusal to wear a seat belt).

To manage the COVID-19 pandemic, leaders need to tread a narrow path of encouraging safe behavior without creating panic. For example, young people may have a false sense of security given the prevalence of fatalities among older adults—among infected individuals, the case fatality rate appears to be much higher among seniors than those in, say, their 20s. However, low risk is not the same as no risk, and careless behavior stemming from a perception of effective immunity among the young could still result in unnecessary deaths (as well as a more rapid spread of the virus to populations at greater risk). Pointing to specific victims of younger age can counter such overconfidence. On the other hand, providing specific actions that individuals can follow to lower the risk of infection (e.g., social distancing) will lower the likelihood of panic.

A sense of duty
Public-health crises, terrorist attacks, and natural disasters often require broad changes in individual day-to-day behavior for the common good. These challenges are particularly severe in the COVID-19 pandemic, as individuals who are asymptomatic or face low mortality risk are being asked to dramatically change their lives, often at substantial individual costs. In a situation where millions of people are asked to do what is right for the most vulnerable members of their communities, it is essential that the required sense of duty is articulated as forcefully as possible.

Statistics do not generate empathy; people do. Leaders should forcefully emphasize a strong sense of community.

View our COVID-19 collection
Our website has videos, articles, and charts on the current crisis.
lead to a severe backlash, as Starbucks learned when one of its stores in lower Manhattan charged first responders for water while they were treating victims of the September 11, 2001, terrorist attack on the World Trade Center.

Adopting a community orientation means:

- Acting with authentic concern (serving the community rather than pursuing short-term business interests)
- Acting competently (sending the right kinds of relief in a timely manner)
- Communicating in a nonself-serving way

In research I conducted with the Institute for Management Development’s Jennifer Jordan and Columbia’s Adam D. Galinsky, we called this approach the Good Samaritan Principle: caring combined with competence. A relief effort that meets these criteria can be much more valuable than financial donations of any size. Failing to meet them, no matter how genuine the intention, can do reputation-al harm. It is not just the thought that counts. Corporate caring is not a feeling; it is behavioral. Stakeholders must see and believe that your organization cares about the welfare of others by observing caring behaviors, not just empty public-relations statements of concern.

A textbook example of the Good Samaritan Principle in action is Walmart’s swift and comprehensive relief effort in the wake of Hurricane Katrina. Because Walmart understood the problem and delivered what victims needed, including water and nonperishable food, even faster than the government, the company earned significant goodwill with the public while serving an important cause.

Walmart’s actions and its ability to effectively communicate its efforts to help the hurricane victims highlighted the competence and warmth of the corporation, yielding large reputational benefits. It started with Walmart’s then CEO, Lee Scott. He reported to his corporate management team, “These are extraordinary times, and I expect an extraordinary response.” He then empowered his store managers throughout the storm-impacted areas by saying:

A lot of you are going to have to make decisions above your level. Make the best decision that you can with the information that’s available to you at the time, and, above all, do the right thing.

Stakeholders must see and believe that your organization cares about the welfare of others by observing ‘caring behaviors,’ not just empty public-relations statements of concern.

As a result, the company provided water and other supplies well before the relief efforts by the federal government took effect. Store managers and truck drivers talked directly to the media. The emotional impact of their personal stories of neighbors helping neighbors played an important role in boosting positive perceptions of Walmart and energizing the company’s employees.

Effective crisis-response strategies such as those of Walmart tend to resonate more deeply with the public and generate goodwill because they demonstrate a shift from a standard business approach to a communal mind-set. In the specific context of natural disasters, even a well-intended response may be viewed negatively if it is at odds with a community orientation. For example, if a beauty-products company were to send skin moisturizer to victims needing clean water, the public would likely pan that company for that behavior, seeing the move as self-serving. Companies also need to be careful not to overpublicize their efforts. Blowing your own horn too loudly leads the public to suspect ulterior motives.

Capturing decisive moments, as Walmart did in the aftermath of Hurricane Katrina, can create turning points that will positively shape how an organization and its leaders are perceived by the public.

The decisive moment
Every leader dreads the late-night phone call that spells trouble. No matter how prepared and experienced we are, our heart rate and blood pressure will go up, our palms will start sweating, and even our muscles will tense. These are normal and expected stress reactions when we face a severe threat or danger. A natural response is to hope the situation will pass as quickly as possible. Yet leaders who focus too much on damage control miss an important opportunity for themselves and for the organizations they lead. In a crisis, people are paying attention; it is as if the company and its leaders are on stage, the lights are bright, and everybody is looking at management’s next move. Media coverage, whether traditional or social, will only make the spotlight more intense.

How you and your company handle the decisive moment will have a lasting impact on the company’s reputation and your legacy as a leader. During a crisis, and especially during its darkest moments, your people will look to you to provide the necessary leadership.

Today, organizations are facing an unprecedented global health crisis. While the stakes are high, there is also opportunity for organizations to lead effectively, protect the health and safety of their stakeholders, and help stem the tide of the COVID-19 pandemic. Recognizing moments such as this as opportunities to rise to the most difficult challenges can energize you and your team and provide the motivation to lead through turbulent times. —CBR

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in a time of crisis

Why now is the right time for small companies to take a hard look at their business models

On April 8, two companies facing very different kinds of pressures changed their business models. First, following US president Donald Trump’s invocation of the Defense Production Act of 1950, General Motors signed an agreement to supply 30,000 ventilators to the US federal stockpile, in partnership with ventilator manufacturer Ventec. Secondly, LVMH, the luxury-goods manufacturer, announced it would be converting five of its workshops to produce face masks to supply hospitals in Paris.
GM and LVMH are hardly alone. A number of companies have pivoted or expanded their business models, either to survive the pandemic-driven economic collapse or to give back to their communities—or even to capitalize on the crisis. Pivoting is so in vogue that mentions of the word *pivot* on Twitter over the March–April period were about 50 percent higher than February’s average.

Pivots to new business models in times of crisis are nothing new. For example, in World War II, Ford built jeeps for the armed forces, which led to the sport utility vehicle; Forrest Mars Sr., who manufactured Mars candy bars, was inspired by British volunteers in the Spanish Civil War who ate small chocolate beads encased in a hard sugar shell (to ensure they did not melt in hot weather), and teamed up with Bruce Murrie to create M&M’s; and, Johnson & Johnson pivoted its bandage production to manufacture duct tape.

Not all such crisis-time innovations go on to become category-defining household names. While Ford also pivoted aggressively in another way, to building the famous B-24 bomber at its Willow Run factory, it exited that line of work immediately after the war.

Given this history, it is unclear which of today’s pivots are likely to be lasting. But for small and midsize companies suffering from the current recession, pivoting may be an imperative if the downturn drags on. Governments and banks are stepping in and trying to provide small-business loans to help these companies survive for longer. However, this might be the time for the businesses to take a hard look at themselves and assess potential ways forward after the crisis. In many cases, pivoting might be the answer.

From a marketing perspective, pivoting—defined by entrepreneur Eric Ries in his 2011 book *The Lean Startup* as a “structured course correction” of a business model—essentially entails a deliberate shift in the main strategic components of the business model: the customer, the company, and the competition (the “3Cs”). Most businesses, however, are likely to approach adaptation to the postcrisis environment with smaller tactical changes to what are known in marketing as the “4Ps”: product, price, place (where the product is marketed), and promotion.

To understand this difference, consider two cases. In that of GM and its ventilator production, the company is selling a product that is entirely new to it to a customer segment that is also entirely new to it, and using very different skills than it employs when producing automobiles. We would classify this as a pivot. Contrast this with the case of the videoconferencing company Zoom, which has also had to make changes, but changes in aspects of its product. Specifically, it has had to add more privacy features after a series of “zoombombing” incidents (involving unauthorized users interrupting meetings or classes, often with offensive material) and numerous other breaches and troubling reports. We would not classify this as a pivot.

The lesson is that small enterprises should use this lockdown as an opportunity to perform a strategic assessment of their businesses by asking questions such as:

- Are we focusing on the right sets of customers?
- Are we truly using our skills in the right ways?
- How should we be approaching the competitive landscape (as it might unfold) in the aftermath of the crisis?

Research using randomized control trials with small businesses in Uganda suggests that pivoting can lead to substantial improvements in performance two years after the pivot. In a study I conducted with Stanford’s Stephen J. Anderson and London School of Economics’ Naufel Vílcassim, 530 Ugandan entrepreneurs were paired with business coaches for six months of regular consultation. We then compared the performance of those businesses with a control group of 400 entrepreneurs who didn’t receive coaching. The business coaches encouraged their entrepreneurs to consider questions like those above and reconsider fundamental aspects of their business plans. The result was that businesses with owners who received coaching were 63 percent more likely to pivot, and ended up growing monthly sales by an average of more than 27 percent.

Naturally, this does not mean that any type of business-model change will yield positive outcomes. Research also suggests that these course corrections need to be deliberate—entailing the stopping of certain activities, the starting of other ones, and the spending of resources to facilitate the transition—as well as deliberative: the changes should come about only by carefully studying the current situation and assessing the potential consequences of the change. This will not be easy, especially when entrepreneurs and their employees are focused on short-term survival. Nevertheless, to the extent that such an exercise might be possible, this would be the right time for it. 

Written with Yogesh Kansal and Pradeep Pachigolla. Pradeep K. Chintagunta is the Joseph T. and Bernice S. Lewis Distinguished Service Professor of Marketing at Chicago Booth. Yogesh Kansal is a consultant at Boston Consulting Group and a recent graduate of Chicago Booth’s MBA Program. Pradeep Pachigolla is a PhD student at Cornell.
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COVID-19 is changing key business relationships

That makes this crisis different from past ones

No entrepreneur is a stranger to crisis. Whether it shows up as a key partnership falling apart right before a contract is signed or a global economic downturn, crisis is a fundamental part of entrepreneurship—and, in fact, often accelerates the adoption of technology and market innovations. Following the 2000 dot-com crash, the e-commerce, social media, and interactive-web-experience sectors boomed. After the 2008–09 global financial crisis, giants of the gig economy, including Uber and Airbnb, emerged and became unicorns with multibillion-dollar valuations. Analysts are already speculating about what industries and companies will be the winners post-COVID-19. Will telehealth, remote working, online education, even micromobility (transportation for one) become the new norm in a world fearing the next pandemic?

In past economic downturns, the main concern for startups was cash flow, which was stressed by longer sales cycles, lower equity-capital availability, and more-difficult-to-access debt. Entrepreneurs who could run lean and wait the crisis out emerged stronger, as evidenced by increased survival rates for companies in the years following recent crises. (For more, read “Surprising numbers behind startup survival rates,” published in the June 2017 issue and online at Review.ChicagoBooth.edu.)

Researchers typically look to past crises for forward-looking lessons that can help ameliorate the damage of the next crisis,
but the global pandemic of COVID-19 is different. It is not a regional crisis, as was the case for Hurricane Katrina, which shut down the economies of southern Louisiana and much of the Gulf of Mexico coast for months. Nor is it a purely financial one, such as the 2008–09 global financial crisis. COVID-19 is the worst combination possible, disaster plus economic crisis, and it is worldwide. With its shelter-in-place and social-distancing mandates, it is fundamentally changing key business relationships.

Early impacts of COVID-19
Although the COVID-19 crisis is still in its early days, I wanted to see what entrepreneurs were already experiencing, so in June, I surveyed 46 entrepreneurs. Twenty-one were based in the United States and 25 were international, with representation from Australia, East Asia, Europe, India, Mexico, and Singapore. Half ran companies more than five years old, and 22 percent ran companies less than two years old. Most of the companies had revenue of under $10 million annually, with four over that amount and 10 still pre-revenue. Twenty-one companies in the survey were small, with fewer than 10 employees, and only five had more than 100 employees. I asked whether these companies, because of COVID-19, had been affected by any of a range of issues related to revenue, access to capital, human resources, or supplier and customer terms—19 issues in all.

The picture that emerged was mixed. By and large, the companies I surveyed were not in a capital crunch—at least they weren’t yet. Only five entrepreneurs reported needing capital and being unable to obtain it. Two of these had tried, unsuccessfully, to access the US government’s Paycheck Protection Program, but nine entrepreneurs had been able to access PPP funds or their country’s equivalent, and another three reported that they’d secured the capital they needed from other sources.

A handful of companies had seen credit terms change with suppliers and customers, but those terms had changed more often in their favor than in that of their suppliers or customers.

More companies reported changes in their product mix, supplier base, customer count, employee situation, and revenue—but here, too, the results were mixed. While nearly twice as many companies had seen an atypical decline in revenue than an atypical increase, about the same proportion had added to rather than discontinued offerings from their product mix. And a quarter of the entrepreneurs reported that the COVID-19 situation allowed them to hire talent they would not have been able to access in a typical market. Less than 20 percent of the companies had made layoffs.

When I sorted companies by predominantly positive impacts (accessing capital, adding talent, increasing customers and/or revenue) versus those with mainly negative experiences (failing to get needed capital, experiencing layoffs or declines in customers and/or revenue) and those with mixed results, the sample split nearly evenly, with just a few more companies thriving than suffering.

I wanted to see what entrepreneurs were experiencing. The picture that emerged was mixed.
COVID-19, beyond creating financial uncertainty, is fundamentally altering how startups operate.

Material information
Visit our website to read other columns for entrepreneurs.

Entrepreneurs’ pandemic response
A survey of 46 entrepreneurs suggests that the COVID-19 crisis may not be following the pattern of recent economic downturns.

How entrepreneurs’ companies were faring amid the COVID-19 crisis
June 2020 survey

<table>
<thead>
<tr>
<th>Thriving</th>
<th>Mixed</th>
<th>Suffering</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>35%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Share who said that, because of the crisis, they . . .

- Gained customers: 48%
- Lost customers: 33%
- Added offerings: 43%
- Discontinued offerings: 17%
- Experienced atypical revenue declines: 28%
- Experienced atypical revenue increases: 15%
- Hired talent normally not available: 26%
- Laid off employees: 17%
- Lowered salaries: 15%
- Changed suppliers: 22%

Share who said that, because of the crisis, their relationships changed with . . .

- Employees: 67%
- Customers: 65%
- Suppliers: 41%
- Executive team: 41%
- Investors: 30%
- Board of directors: 24%
- No one: 13%

A unique impact on relationships
This pandemic-created crisis may not follow the pattern of recent downturns at all. COVID-19, beyond creating financial uncertainty, is fundamentally altering how startups operate. In-person businesses such as consumer services and retail companies have been required to stop engaging with customers for extensive periods of time and to implement health measures and reduced contact for the foreseeable future. Companies in huge white-collar sectors, including business services and technology, have been forced to enable their employees to work...
from home, which in some cases has required big investments in technology infrastructure and changes to workflow and management processes. And essential, labor-intensive industries such as manufacturing, health care, grocery, and agriculture are being stressed by ineffective health precautions that leave their employees vulnerable to the disease.

Given the need for less in-person contact, every critical relationship an entrepreneur must develop and maintain has changed. I asked our survey participants about their relationships with their board of directors, investors, suppliers, customers, employees, and fellow executive-team members, to understand if these relationships had changed, and how so. Only 13 percent of the entrepreneurs reported no changes, while two-thirds said relationships with employees and customers were different.

For 15 percent of the entrepreneurs, the mere fact that all communication has now become virtual constituted a relationship change. Some cited a need for more-frequent communication to maintain relationships, and others talked about needing more morale and team building to keep employees connected and engaged. Just under a quarter had to change suppliers, and many were spending more time negotiating with their partners, oftentimes seeing that both sides were demonstrating more flexibility than usual. For many survey participants, COVID-19 has lengthened sales cycles and increased the importance of customer service, while others stressed the need to be flexible on pricing, terms, and fulfillment processes. Interacting with each of these constituents may, in some ways, have changed forever. Sixty percent of investors told the NFX survey team that even after the crisis was over, they would be willing to fund a company without meeting the founding team in person—despite the fact that over half of them had never done that before. This represents a huge change to the critical formation phase of such an important relationship. In the B2B sales world, Mary Shea, principal analyst with Forrester Research, forecasts that in-person meetings may decline by as much as 80 percent post-COVID-19 as companies discover that digital interactions are effective and much less costly.

Can your employment strategy predict your post-COVID-19 future?
Remote work will be a significant trend beyond the immediate crisis. An IBM Institute for Business Value survey of

### Entrepreneurs’ employment strategies

Survey respondents’ companies mostly lined up with the star blueprint for tech startups, as defined by the Stanford Project on Emerging Companies.

#### Five models of hiring and employee management

<table>
<thead>
<tr>
<th>Star</th>
<th>Commitment</th>
<th>Bureaucracy</th>
<th>Engineering</th>
<th>Autocracy</th>
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<tbody>
<tr>
<td>Talent and potential</td>
<td>Values and cultural fit</td>
<td>Skills and experience</td>
<td>Skills and experience</td>
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<tr>
<th>Basis for coordinating and controlling work</th>
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<tr>
<td>Professionality</td>
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<tr>
<th>Reasons employees feel an attachment to the company</th>
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<tbody>
<tr>
<td>Interesting work</td>
</tr>
</tbody>
</table>

### Share of companies following each model in 2020 ...

- Star: 43%
- Commitment: 24%
- Bureaucracy: 10%
- Engineering: 7%
- Autocracy: 2%

Other: 14%

### Share of companies following each model in 2002 ...

- Star: 9%
- Commitment: 14%
- Bureaucracy: 7%
- Engineering: 31%
- Autocracy: 7%

Other: 33%

### Entrepreneurs’ hiring strategies

**Share of June 2020 survey respondents**

<table>
<thead>
<tr>
<th>Primary factors in selecting talent</th>
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<tr>
<td>Values and cultural fit: 48%</td>
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Deutsch, 2020; Baron and Hannan, 2002
The one area where many entrepreneurs seemed to be making changes was to their management tactics.

I eliminated four companies from my sample that had no employees, and used Baron and Hannan’s coding method to organize the remaining 42 companies into their employment-blueprint models. Unlike the companies in the SPEC sample, a majority of my participants fell into either the star or the commitment model. I have no answer as to why the two samples would be so different in that respect, but hopefully this bodes well for the founders in my survey.

Entrepreneurs in my sample leaned heavily on fit and potential for talent selection, professionalism and metrics for control, and the work and culture for attachment.

When asked if any of these strategies had begun to change because of COVID-19 and the new remote reality, 40 percent said no. The one area where many entrepreneurs seemed to be making changes was to their management tactics, or how they controlled and coordinated work. Many with more-structured management styles that involved metrics and monitoring reported having to offer employees a bit more flexibility, and to be more aware of employees’ personal situations. By contrast, some founders who had been relying on the personal professionalism of their employees or peer pressure to ensure the job was getting done found themselves putting more emphasis on communication and metrics.

In the comments section of a question, only one entrepreneur reported that workers seemed less motivated since the beginning of the crisis (and attributed it to the government offering higher-than-usual unemployment payments), but six mentioned that employees seemed increasingly loyal. These six may have discovered an important lesson. After the survey, one told me this story:

When I took the survey, I wasn’t very worried about cash. I am now. Our pipeline sucks. Our company will survive, but something will need to give. In any other time, I would have talked this through with the team. Instead, I took a big salary cut and kept running the numbers. I was stressing out, not sleeping, and not being honest with my team about the toll it was taking on me. I finally decided I just had to solve it myself.

I was about to lay people off while I could still afford severance so I wouldn’t have to make across-the-board pay cuts. Before I met with my team, I thought, “This isn’t right. It’s not who we are. We value transparency and team problem-solving here.” So, instead, I called everyone together and told them exactly where we were and gave them three options: (a) take pay cuts, (b) voluntarily exit with severance, or (c) do nothing and hope for the best. I expected the tears, the sadness. What I did not expect is that not one of them was scared about his or her job. And not one of them wanted the severance option. Their concern was for the company. They all wanted to stay and figure it out. Now they are talking to their families about what kind of a pay reduction they can manage.

Long story short: crisis makes you panic. When you panic, you think you have to do something and you make mistakes. But this is why you created your company values in the first place. They work in hard times, not just in the good times.

One key takeaway from Baron and Hannan’s research is that trying to change your employment-blueprint model is destabilizing. In the companies that they observed making big changes, employee turnover grew, valuations suffered, and failure rates increased by more than 200 percent. All of this may provide a warning for entrepreneurs in the time of COVID-19: in this crisis, which is altering relationships in unprecedented ways, your product, supplier, and customer mix may change permanently. But when it comes to one of your most critical constituents—your employees—you may want to stay the course. After all, these are your people, and you are in this crisis together. –CBR

Waverly Deutsch is clinical professor at Chicago Booth and the Polsky Director of the UChicago Global Entrepreneurs Network.

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this essay.
When we develop business strategies, we often rely on what we believe has worked in the past. Unfortunately, we’re often wrong.

A better way to make a decision with financial consequences is to conduct an experiment. Obviously, the idea of doing experiments is really old. Think of Galileo in the late 1500s at the top of the Leaning Tower of Pisa with two spheres of different sizes, dropping them off the side to test theories of gravity.

Experiments in the business world have been around for a long time, too, but they weren’t that prevalent in the past. In the 1960s, for example, there was a debate about whether arranging
a particular grocery-store item to have a lot of shelf facings—identical products with the label turned out toward the consumer—would cause customers to be more likely to buy the product, or to buy more of it.

That’s hard to tease apart, because things that sell in higher volume are going to get more shelf facings. So Kent State University’s Keith Cox partnered with a grocery chain over several weeks, and at different locations, he randomly varied the number of shelf facings for four products.

He found the evidence was mixed. Increasing shelf facings seemed to cause an uptick in sales of one product, but not of the other three. The results were not necessarily groundbreaking, but the idea of systematically varying things to test these causal effects is the core idea of experimentation.

You can see similar tests happening these days with the aid of technology, which has allowed experiments to explode online, where they’re often referred to as A/B testing. One of the early adopters was Amazon. The company had an internal debate about whether to give you a recommendation for something else to buy when you’re about to check out. At the time, this was controversial. The concern was that if Amazon gave customers a recommendation for another product, they might read about it and then think, “Oh, maybe I should get that too, but I’ll decide later,” and never complete the purchase.

Amazon decided to test this debate experimentally. When new customers came to the site, they were randomly assigned either to get an extra product recommendation or not. What Amazon found was a big increase in sales when it made the extra recommendation.

Amazon learned from this experiment not just the answer to one question about recommendations. The company took away something much more profound: it should use experimentation whenever feasible to make these decisions, rather than relying on a manager’s judgment or on a roomful of people debating.

Today, lots of other companies experiment all the time. Capital One supposedly does 80,000 small experiments in a typical year. Eight to 10 years ago, Google was doing 40,000–70,000 experiments a year. Now, we couldn’t even quantify how many experiments it completes, because it has moved to a continuous-experimentation mode. If you’ve been online in the past 24 hours, you probably have been a participant in one of these experiments.

That said, the use of experimentation is unevenly distributed. Companies develop certain ways of making decisions that they trust. If you didn’t come up in an experimental culture, it’s hard to change.

In businesses that don’t treat experimentation as a core value, how are people making decisions, and how do those methods stack up to experimentation?

Testing decision-making processes
In a case study, I worked with Indranil Goswami, a graduate of Chicago Booth’s PhD Program, who’s now at the University at Buffalo, to compare sources of information for decision-making in the context of fundraising. Specifically, we looked at matching offers. You’ve probably received an appeal in the mail that says, “This is a great time to donate, because for every dollar you give, we have a sponsor who’s also going to give a dollar.”

For fundraisers who plan to use this kind of matching appeal, there are a lot of decisions to make in the wording. What is the basis for these decisions? We can think about precedent: we did this last year and didn’t get a lot of angry letters, so let’s just do it again. For a more sophisticated approach, we can look to expert intuition. From their experience trying different things over time, professional fundraisers may be learning a lot about donor behavior and feedback.

We also can think about this as a marketing research problem. We could show our proposed fundraising appeal to people in a focus group or do an online survey. Finally, there may be economic models that we can use to predict what would happen.

There have been a number of studies testing matching offers. Some of them—such as a 2007 study by Northwestern’s Dean Karlan and University of Chicago’s John A. List—suggested that matching helps and more funds are raised. But other studies in other settings found a different, and a few studies found a slightly lower amount of funds raised when matching was used.

Researchers have proposed that other factors may influence whether the match is successful. The match might be seen as a quality signal. If donors are willing to support this organization and match donations, they must take the organization seriously.

There’s also speculation, though not a lot of evidence, that matching is a social cue. We do some things because we like doing them, but we may also do other things because we like being part of a group of people doing the same thing.

There also could be negative responses among potential donors to a matching appeal. Donors might think that if an organization can get a matching sponsor, it must have lots of ways of getting money, and they should instead give to an organization that needs the money more.

It’s awkward to ask people for money, so fundraisers also worry about whether an appeal is going to sound coercive or offend the recipients in some way.

There could be two additional factors at work. One is a substitution effect, particularly for repeat donors. A donor might think: last time, I gave $40, and you got $40. This time, I could give $20, and you’d still get $40. It’s like a half-off sale: the donor could spend half the money, make the same impact, and pocket the difference.

We also could think about it as a quality or a norm signal, which is that if an organization has to resort to matching, maybe its regular fundraising wasn’t going that well, and others weren’t giving.

This is a complex situation in which to make a decision. All of these interpretations and motives seem plausible, and that makes it hard for the person designing charity appeals to make a confident prediction.
Changing the frame
In our research, we partnered with the Hyde Park Art Center in Chicago for their 75th-anniversary fundraising drive to come up with different ways to implement a matching campaign. The first change we designed was a framing manipulation: if we’re worried that a matching appeal might be coercive, we could reframe it in nicer terms. There’s something a little strange about a matching manipulation, that could feel like a wealthy sponsor saying, “I’m only going to donate if you take money out of your own wallet.”

We reframed this as “Let me help you donate more.” Instead of saying that for every dollar you donate, the sponsor will donate a dollar as well, the alternative “giving credit” appeal said that for every dollar you contribute, the sponsor will add a dollar to your donation, helping you give more.

The second proposed idea was a threshold match: if we’re worried about the substitution effect, why not have the match kick in only above a certain point? In this version, the appeal communicated to repeat donors that anything you give above what you donated last time will be matched.

As much as possible, we kept the rest of the wording the same, because we were trying to isolate the effects of these different strategies.

To test the sources of information that decision makers might typically rely on, we looked at published academic research, we surveyed professional fundraisers, and we did a simple, cheap market-research study. We compared these sources with the ground truth of our field experiment with the Hyde Park Art Center, testing these different appeals.

In terms of economic models, we can think about the utility you get from donating money to a charity as having three parts. The first part is the utility you have from everything else in your life that costs money. The more you donate, the lower that gets.

The second part is what’s called pure altruism. I get utility from the fact that a good organization has the funds to run its programs, and every additional dollar it receives, whether from me or from someone else, gives me utility.

The third part is what’s called “warm glow.” I feel good about myself for being a donor, and if I give more, I get to feel even better about myself. And if I don’t give anything, even if the organization has all the money it needs, I’m missing out on this warm glow.

In a case study, we compared sources of decision-making in the context of fundraising. . . Overall, there was a negative net effect on how much money was raised, on average, per appeal sent out.

Analyzing these three sources of utility in the standard models of altruism tells us that you’re going to donate enough that the incremental dollar you give, in terms of the combination of pure altruism and warm glow, is equal to the value you would have gotten from the incremental dollar you would have instead spent on something else. If this model of utility is accurate, we can predict that appeals with a match will be more effective than not having a match.

What does the model predict about the effectiveness of our alternative appeals? We hope the giving-credit framing will make it so that the donor is giving $20 but gets to feel good about $40. If people actually interpret it this way, the model makes an unambiguous prediction: the giving-credit match will raise more funds than the regular match.

The threshold match is more complicated. The model doesn’t give us a clear prediction. If you would give at least your prior donation regardless, the threshold match will motivate you to give more. But if you’re not going to give as much as last time, the threshold match provides no matching funds, compared with a full match in the standard appeal, and so it will do worse.

Expert guidance is uncertain
We surveyed professional fundraisers with an average of 10 years of experience. We showed them five versions of the appeal: no match at all, the regular match, reframing the match as giving credit, the threshold match with regular wording, and the threshold match reframed as giving credit.

Out of these five, we asked the fundraisers to consider two versions of the appeal in terms of which would be more effective for participation and average contribution. Overwhelmingly, the professional fundraisers said including a match would be more effective than not having one.

The fundraisers didn’t have much direct experience with the giving-credit framing. But overwhelmingly, the majority said it probably would be better both for participation rates and for average contributions among those who sent in a donation.

The fundraisers were split on whether the threshold match would work well. It could help to deal with the substitution effect, or maybe it would instead demotivate or confuse people.

The last question we posed: If we do the threshold match, should we do the giving-credit framing or the standard framing? The professional fundraisers thought that whether or not we were doing the threshold match, the giving-credit framing was a good idea.

In a second survey with fundraisers, we focused only on comparing the giving-credit framing to the standard appeal. We first showed them one appeal and asked them to evaluate that one version, and then we showed them the other appeal and asked them to evaluate that one on its own.

What we find is that when we first showed fundraisers the standard appeal and then the giving-credit framing, they said giving credit was going to be more effective. But if we started off describing the giving-credit appeal and then described the standard appeal, they rated them pretty similarly.

This is strange if we think that professional fundraisers are drawing on their wealth of experience and their mental model of the donor. Their responses shouldn’t be sensitive to uninformative factors, such as the order of the comparison. Throughout behavioral science, we see that people’s judgments change with these kinds of factors when they are making up their minds on the spot, rather than relying on preexisting
knowledge. This might shake our confidence in the fundraisers.

The last potential source of information is a market-research study. We designed an online survey that a charity could implement cheaply and quickly online. First, we had respondents choose their favorite charity from a list of 20. We told participants that five people were going to be chosen to win $20, but they had to decide in advance, if they won, how much they wanted to give to their selected charity. Then we randomly assigned them to one of the five appeals.

In the results, there was no strong evidence of any significant differences. The full match plus giving credit did a little better, but it wasn’t a statistically significant difference compared with the other appeals.

So what actually happened when we ran the field study to test the effect of the appeals? We sent out 1,500 mailers. The donation rate was about 5 percent, and the median donation was $100. In the market research study, the donation rate was instead 75 percent! That’s a clear warning sign that the market-research survey might not have accurately captured the thinking of potential donors.

As it turns out, the giving-credit framing with the threshold match—both of our brilliant ideas combined—actually reduced participation. The threshold match didn’t seem to make a big difference, but the giving-credit framing significantly decreased participation. Overall, there was a negative net effect on how much money was raised, on average, per appeal sent out. I felt very bad that we cost the Hyde Park Art Center money, but our intuitions were no worse than the other sources of information they could have consulted.

We ran the experiment again, in a second fundraising campaign, this time testing only the standard match versus the giving-credit framing. We sent out 3,000 mailers, and 3 percent donated.

The first experiment wasn’t a fluke. The second time, we didn’t see a difference in average contribution, but we saw a huge effect on participation. The giving-credit framing basically cut participation in half, and as a result, net donations were half of what was raised by the standard-match appeal. In fundraising, that’s a massive effect.

So, the result of all this research is not only confirmation that the giving-credit framing is a bad idea, but that it’s a bad idea that we couldn’t really have predicted with the kinds of information available to fundraisers.

I’m not saying we should make all decisions on the basis of some field experiment. In fact, sometimes that may not be enough.

No substitute for experiments

You might argue that there’s something unique about fundraising when a field experiment shows terrible results for an idea that experts predicted would be successful. But there are examples in other contexts that are quite consistent.

In education, there’s a study looking at an intervention to have parents receive alerts on their phones when their kids miss school or don’t hand in homework. Researchers polled experts for their predictions about which of four strategies would be most effective in getting parents to sign up for the alerts, but few of the experts actually identified the right one.

In health care, there’s been almost a consensus that “hot spotting” is a good idea. The philosophy is that identifying the subset of patients who are responsible for a huge proportion of medical costs and treating them more intensively the first time they show up to the hospital will reduce costs overall.

The basis of this idea came primarily from observational data. But an experiment just published in the *New England Journal of Medicine* randomly assigning high-risk patients either to a hot-spotting intervention or to regular treatment found absolutely no difference in hospital readmission rates.

I’m not saying we should make all decisions on the basis of some field experiment. In fact, sometimes that may not be enough. There’s a lot of evidence showing that field experiments done in one context at one time with one population vary in how well they generalize to other settings. What I’m arguing for is, when possible, to conduct in-context field experiments.

This leaves us with the probably disappointing advice that I give to people in industry. When they ask me about the big new ideas from academics that they can implement tomorrow, I typically have to say that I don’t know their business well enough to make a confident recommendation about what would work in their context. What I can give them are some good ideas for experiments and advice on how to conduct them. —O.U.

*Oleg Urminsky is professor of marketing at Chicago Booth, and teaches the Experimental Marketing course on how to use experimental methods to make business decisions. This essay is adapted from a lecture given at Booth’s Kilts Center for Marketing in February 2020.*

Go to Review.ChicagoBooth.edu to see a complete list of citations for research mentioned in this essay.
Amid the many stories of business turmoil this year has produced, the legal drama surrounding WeWork and its lead investor, SoftBank Group, stands out for its roots not in disease and social distancing, but old-fashioned bad decision-making.

In early April, WeWork announced it had filed a lawsuit against SoftBank for backing out of a tender offer to purchase about $3 billion of WeWork stock, an offer made as part of a bailout package from SoftBank after WeWork’s planned initial public offering fell through last fall. About a month later, WeWork cofounder and former CEO Adam Neumann, who could have sold up to nearly $1 billion of stock as part of the tender offer, filed his own suit against SoftBank.

WeWork is a cautionary tale for venture capitalists

The notorious failure contains valuable lessons for investors
To the uninitiated, the saga of WeWork’s journey toward an IPO—which was abandoned after a precipitous decline in the company’s valuation, from $47 billion to $8 billion—must have raised a number of questions. Is it typical for failed founders to demand nearly a billion dollars for their efforts, as Neumann has done, no matter how badly things turn out? Is an entrepreneur’s compensation package directly and positively proportional to the amount of money he loses for investors? Are startup funds so abundant, borrowing costs so low, and big risks so encouraged that giant paydays are the rule even for losing CEOs?

The answers to all of the above are the same: generally, no. Most failed CEOs walk away with little or nothing. Some get a modest payout, but all lose their jobs, and most give up control over the companies they founded. It is, of course, not unusual to see companies at massive scale, and funded by massive investments, fail to turn a profit, but that’s no reason to pay out a handsome reward to unsuccessful founders. The implosion of WeWork is substantially more troubling than a simple failure of revenues to exceed expenses. The massive scale of the valuation write-down WeWork suffered is usually cause for a swift departure without a cushioned landing for the founder.

So what enabled Neumann to walk away expecting to be so very well compensated?

The answer comes down to Masayoshi Son, chairman and CEO of SoftBank. Son’s experience with WeWork contains lessons, both positive and negative, that other investors can and should internalize to avoid finding themselves dealing with similar disasters (even if few have the resources to create a catastrophe on the scale of WeWork).

**Lesson 1: Failure is the most likely outcome**

Son’s fundamental error was that he behaved as though WeWork couldn’t fail. This idea is reflected in the deal he negotiated with Neumann, who was allowed to retain vast amounts of power over his startup. This power included special voting rights that enabled him to remain in control no matter how poorly the business was run. Breaking this contract would require either a messy, yearslong lawsuit or a quickly negotiated settlement that acknowledged Neumann’s advantageous position in spite of his poor performance. Conceding this power suggests a conviction that WeWork was as sure a thing as anyone had ever seen.

But that is hardly what 40 years of VC investing have taught us.

What are the basic odds of success and failure in venture-funded deals, a metric Princeton’s Daniel Kahneman, a decision scientist, would call the “base rate”? Most analyses indicate that about one in 10 VC deals becomes a very successful business—successful enough to make up for the 90 percent of deals that don’t pan out. The rate of those successes varies by the year of the fund, the type of business, the size of the investment, and the public market’s appetite for IPOs at the time the company is ready to leave private ownership. One analysis, by the Corporate Finance Institute, puts the aggregate odds of a funded company succeeding at 8 percent.

**Lesson 2: Negotiate for disaster preparedness**

The vast majority of VC deals propose provisions to ensure control of the company can be retrieved from founder/CEOs should key milestones be missed. The drafting of these agreements is something of an art form, as they are shaped by the many ways companies can appear to be doing well yet actually be failing under the surface.

The simplest provisions revolve around making profit, under generally accepted accounting principles, a robust marker of success. An investor may also be satisfied with a cash-flow measure such as earnings before interest and taxes (EBIT). In a medical-technology company, the milestones may revolve around successful clinical trials or approvals from regulatory agencies, as both will presage profits and cash flow yet be highly predictive of success. In other cases, milestones can be constructed regarding products shipped, size of customer base, website visits, or other measures that investors believe represent real progress.

In the case of WeWork, one obvious set of milestones would have been the profitable renting of certain

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buildings. Subsequent milestones might have targeted cities such as San Francisco and New York for fully profitable operations, followed by select cities outside the United States. Each of these milestones would have paved a “path of profitability.”

Yet WeWork was presented with a mandate to scale quickly, even well before profitability had been achieved in individual markets. While at first glance this may seem foolish, the idea behind this approach is that the business has no special claim on its revenue model—no patents or other barriers to competitors’ entry—so the way to win is to gobble up market share and effectively lock out competitors.

This can be a controversial move because in many cases, locking out other players is risky, expensive, and often ineffective. In the case of WeWork, which faced large established competitors, it would seem tough to push those competitors out of the market. Further, this orientation toward boosting market share complicated what should have been a key goal for investors in their contract negotiations with Neumann: forcing WeWork’s leadership to prove the viability of the business idea prior to going through a rapid scale-up. WeWork appeared to have sailed right into the ultimate disaster of creating a very large business that did not make money while ensuring it would be very hard to remove the founder/CEO.

The lead investor is in charge of drafting appropriate change-of-control terms. It’s possible Masayoshi Son failed to do so because he felt quite certain of the future success of WeWork. But it’s also possible he was concerned that Neumann would find funding from another source and SoftBank would miss out on a deal with big potential. Fear of competing investors can lead to tough decisions for venture capitalists. That’s why it’s paramount for investors to remember Lesson 1 when their pulse starts to race: the landscape is littered with failures, many of which once looked like sure things.

**Lesson 3: Own up to a bad deal**

SoftBank’s Son did do one thing right in his handling of WeWork: he apologized for it. That’s quite unusual, given most venture capitalists understand the long odds of success on any given deal. Failure, as we’ve established, is just a part of the job. But Son acknowledged on a conference call, “I am looking back with true regret about the mistaken investment moves that I have made.” He was, perhaps, honoring a long-standing Japanese business tradition that directs those who make big mistakes to display public contrition.

Contrast that with Silicon Valley venture capitalist Tim Draper, who has made many successful investments in companies such as Coinbase, Skype, Tesla, and Twitter, and who went on national TV to defend his investment in the now-failed blood-testing company Theranos. In a televised interview, he claimed that the Wall Street Journal articles reporting highly unusual activities inside the startup were the result of a “personal vendetta” and expressed his full belief that Elizabeth Holmes, founder of Theranos, was going to “change the world of medicine” if she could be left alone to finish her work.

There are probably multiple reasons why Son made a public apology over his disastrous investment in WeWork. I imagine he is in fact very sorry this deal ever happened. Further, I believe he feels badly for the publicity he has received while losing so many billions for investors. But Son’s apology may also be an essential step toward avoiding similar mistakes in the future.

Research by my Chicago Booth colleague Ayelet Fishbach and Booth postdoctoral scholar Lauren Eskreis-Winkler suggests that people tend not to learn from failure, likely because their egos get in the way. If we are to learn from our mistakes, we must first acknowledge that they are mistakes and recognize our role in committing them.

Of course, it is left to his future investors to decide if Son has learned his lesson. Regardless, his handling of WeWork, and his apology for it, should remain in the minds of others navigating the long odds of venture investment. —CBR

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Can regulation rein in algorithmic bias?

A Q&A on managing the social impact of A.I.

Last year, you published a paper documenting how an algorithm used by health-care organizations generated racially biased results. What takeaways did that offer in terms of how algorithmic bias differs from human bias?

That paper might be, by some measures, among the strangest papers I’ve ever worked on. It’s a reminder of the sheer scale that algorithms can reach. Exact numbers are hard to get, but about 80 million Americans are evaluated through this algorithm. It’s a reminder of the sheer scale that algorithms can reach.

And it’s not for some inconsequential thing: it is an algorithm used by many health-care systems to decide which patients should get put into what are called care-management programs. Care-management programs are for people who are going to be at the hospital a lot. If you have many conditions, you’re going to be in the system frequently, so you shouldn’t have to go through the normal front door, and maybe you should have a concierge who works just with you. You get additional resources to manage this complex care.

It costs a lot of money to put somebody in a care-management program. You really want to target these programs. So the question is, who should be in them?

Over the past five years, there have been algorithms developed using health records of people to figure out who is at highest risk of using health care a lot. These algorithms produce a risk score, and my coresearchers and I wanted to know if there was any racial bias in these scores.

The way we looked for it was to take two people given the same score by the algorithm—one white and one Black. Then we looked at those two people and asked whether, on average, the white person had the same level of sickness as the Black person. What we found is that he or she didn’t, that when the algorithm gives two people the same score, the white person tends to be much healthier than the Black person. And I mean much healthier, extremely so. If you said, “How many white people would I have to remove from the program, and how many Black people would I have to put in, until their sickness levels were roughly equalized?” you would have to double the number of Black patients. It is an enormous gap.

I say it’s one of the craziest projects I’ve worked on in part because of the sheer scale of this thing. But there are a lot of social injustices that happen at a large scale. What made it really weird was when we said, “Let’s figure out what’s causing it.” In the literature on algorithmic bias, everyone acts like algorithms are people, like they’re biased [in the sense that people are]. It’s just a little piece of code. What went wrong in the code?

What we found is something that we’re finding again and again in all of our A.I. work, that every time you see that an algorithm has done something really bad, there’s no engineering error. That’s very, very different than the traditional bugs in code that you’re used to: when your computer crashes, some engineering bug has shown up. I’ve never seen an engineering bug in A.I. The bug is in what people asked the algorithm to do. They just made a mistake in how they asked the question.
In this case, we said, “OK, look, it’s way off. How do we figure out what it’s doing wrong? Well, let’s figure out what people wanted it to optimize.” They wanted to find the sick people, but how did they measure sickness? They measured it using the data they had: claims.

So sickness was measured by how many dollars patients generated, which is very subitly different. Sickness doesn’t equal dollars. They’re highly correlated, but they’re not exactly the same thing. And it turns out that if you look at total dollars spent, you don’t actually see any racial bias in the algorithm. At the same risk score, the Black patients chosen and the white patients chosen have the same average dollars spent.

Again, costs are highly correlated with health, but not across races. At the same level of health, we spend less on African Americans. So when the algorithm went to predict cost, it obviously did not find the sickest African Americans to be as appealing as the sickest white patients.

I should note, this is not a dumb thing to do. There were about five or six such algorithms built, and they all had this bug. Some were built by private companies, some were built by nonprofits, some were built by academics, but this bug was pernicious and it was everywhere because of the product-management side of it.

The way these algorithms are built is that a bunch of data scientists go in and tell these health systems, “We can build a risk score. What is the thing that you want risk on?” The health systems say, “Well, we want to find the sickest patients,” and they provide what data they have.

The health systems don’t realize the mistake. The data scientists don’t know much about the health-care domain. So between the people who know a lot about the context and the people who know a lot about the coding, something falls through the cracks. The translation from the domain to the coding is where we see problem after problem after problem.

The fact that computer code scales, however, also means that solutions scale—this is the great thing about it. Once we realized this was the problem, we built an algorithm trained to predict health. And now that is being scaled: by the end of this year, we’ll have this thing fixed for 50 million people. We’ll probably have the whole problem fixed by next year.

I’ve never worked on any social science like this, where you find such inequality, some problem at this scale, and suddenly you can then fix it. This project tells us what should frighten us about algorithms, but also what should give us enormous hope for them.

**How can regulation help address problems of algorithmic bias?**

We should separate out two kinds of bugs. The bug that I just described was bad for the business and bad for society. So there, instead of a regulator, there’s probably just a pretty good arbitrage opportunity for people with the human capital to find these problems and properly formulate solutions. For the bugs that are privately bad, there’s a huge moneymaking opportunity or career-making opportunity.

Let’s come to a different kind of bug, a bug that is privately not that bad or maybe even slightly good, but socially very bad. Should there be a regulator that will look at these algorithms and audit them? I think the answer is yes.

Think about the case of employment. The US Equal Employment Opportunity Commission is almost never able to get lawsuits through the door because it’s very hard to prove that one person discriminated. Even when we have statistical data that says the whole system is discriminatory, producing evidence that one action by one person was discriminatory is difficult to do. They’ll just say, “Sure, I didn’t hire that person, but that’s because there was this other person who was better.” But who’s to say who’s better? It’s a very complicated thing.

The advantage that regulators have for regulating an algorithm is that unlike human beings, algorithms are remarkably auditable. Notice even in the paper I described, we just took the algorithm and said, “Great, show me what you would do for this group of patients, and show me what you would do for this group of patients, and we’ll compare.” I can’t go to a human-resources manager and say, “I’m going to show you a million résumés, and I’m going to see what you did with them.” Algorithms are beautifully auditable.

One of the changes we’ll see in the next decade is, hopefully, smart regulation of all algorithms. What I mean by smart is not getting into the nitty-gritty of how they should be designed, etc., but putting safeguards in saying there’s some properties they should have. If we care, as we should, about there not being racial inequities, that’s a property that any regulator can check for in any employment algorithm or any other algorithm. It’s very checkable.

**What would a regulator need in order to check for bias in an algorithm?**

Let’s say that regulators are interested in algorithms that help employers screen whom to hire. So let’s take a concrete category of algorithms that is getting more common. These algorithms take résumés and rank them. And you’re worried, could these algorithms have some sort of biases?

A regulator needs two things. The simplest thing she needs is access to the code of that algorithm. And what she’s going to do is say, “I’m going to run a million résumés through this algorithm. I’m going to do things like take the same résumé and change it from a male to a female name.” She’s just going to run a bunch of what you might call in coding “unit tests,” but in this case, tests for whether there are differences on dimensions that you don’t want. That’s the first thing that a regulator is going to check.

The second thing a regulator will want to check is, “What was the training data used to build this algorithm? I would like that, and I would like to know if you built an algorithm that has some disparate impact for the groups I care about.”

Suppose that someone built a shoddy hiring algorithm, and all it looked at was the college you went to. It doesn’t look at whether a name is ethnic or not, so the designer may say, “Look, my algorithm is not discriminatory.” But the regulator needs to be able to look at the designer’s data and say, “No, you only looked at this. We went through your data. Here’s
a better algorithm.” And that better algorithm is no longer using just this one proxy. Why does that matter? Because if I really want to discriminate against disadvantaged groups, I would use proxies like, “Did you go to a good school?”

It’s actually shockingly easy to check for discrimination as long as the law says these things need to be stored. That would be consistent with other regulatory spaces. Take finance: you have to keep information for a long time. Auditors have to be able to come in. The Internal Revenue Service has to be able to come in.

What can you envision going wrong with algorithmic regulation?
The biggest danger here is regulatory capture. We have sectors where we’ve avoided it, but this is a sector very prone to regulatory capture. There are committed interests with dollars—the producers of algorithms—who will have the incentives to capture these regulatory agencies. Who’s on the other side? It needs to be us consumers, but what are we going to do? Transparency for algorithms is not going to bring many people out to march.

So that would be my biggest fear: this is a place where the harm that algorithms can produce is diffuse and large, but the gains from a bad algorithm are concentrated in a few actors. That sets up a bad regulatory situation.

The other place where there’s some real danger is something financial regulators have in some countries found a way to work around, which is, you want to prevent the overregulation of innovative financial products. Complicated hedges and other complex products can create large systemic risks that are hidden. But frankly, the knowledge of finance is really good on the money side, so there are a lot of people innovating things. You want them to innovate because most of it is good, but the regulators need to somehow keep out the bad ones. And how do you keep out the bad ones without keeping out the good ones?

This gets to why I was saying if regulators find themselves getting into the nitty-gritty, something has gone wrong. If, on the other hand, they have simple, transparent tests, it would be not very different from the US Food and Drug Administration. It wouldn’t bother you if the FDA commissioner and his staff didn’t know that much about biologics. The only thing they need to know about is how a drug trial is run and how we make sure it’s not run badly. They need to be expert at that activity.

We need a transparent way to test these algorithms, hopefully at a much lower cost than a drug trial, but where we all agree if they’re not passing this test, that’s not good innovation at all. In your research, you have found that there is a trade-off between how interpretable an algorithm is to people and how fair its output is. Is that a concern for regulating them?

A lot of people are familiar with the idea that algorithms are “uninterpretable.” That word is overloaded. People use it to mean at least two things that have nothing to do with each other.

One is: as a human being, how well can I understand what the algorithm is accomplishing? That’s a question as much about my cognitive limitations as it is about the algorithm. For example, it’d be easy to write down a mathematical formula that’s transparent but that almost everyone would stare at and say, “What is this thing doing?” But that’s on us. The formula is completely transparent. It’s all there. You have everything you need.

So this first definition of interpretability is common, but it is entirely a statement about human cognitive limitations.

Now let’s get to the second kind of interpretability problem: inscrutability, where we can’t even audit the algorithm. It would be a bad algorithm if that were the case. Every algorithm I know of is interpretable in the sense that you can run cases through it and see exactly what happens. And you can do that again and again. Algorithms are entirely predictable. They’re consistent. You can work with them. It’s hard for us to understand because with human beings, these two go hand in hand: someone who’s understandable to us is also predictable to us.

For auditing purposes, you don’t need the auditor as a person to understand the algorithm. You want the auditor to be able to run a bunch of things to test it. And that level of technical auditability is something all algorithms share.

Things go wrong when we ask the algorithm to be interpretable to us. When we ask algorithms to be interpretable to us, you can see naturally what’s going to happen: they really start taking on our biases, because that’s the way they’re going to be interpretable to us. Simplicity is easy for the human mind to understand, but simplicity inherently leads to inequity.—CM

Sendhil Mullainathan is the Roman Family University Professor of Computation and Behavioral Science at Chicago Booth. This transcript is an edited excerpt. The original conversation took place June 10 as part of the Thought Leadership on Crises event series hosted by Chicago Booth’s Executive MBA Program.
Before leaving her children in my care one evening, a babysitting client of mine once playfully told her young son, “There’s a party in your stomach, and the peas want to join.” I thought it so clever that I called my own mother to relay the message.

I can certainly understand why this mother was so adamant that her son eat his peas: preschoolers in the United States regularly fall short of their recommended daily intake of fruits and vegetables. At the same time, research conducted by the University of Connecticut Rudd Center for Food Policy and Obesity demonstrates that the majority of ads children view on television promote unhealthy products (e.g., fast food, sugary drinks, sweets), perhaps exacerbating existing difficulties parents have coaxing children to eat their greens. For this reason, among others, it is important to arm adults with tools and strategies to help children make healthier food choices.

As it happens, this mother was a bit ahead of the research curve. Northwestern’s Michal Maimaran and Chicago Booth’s Ayelet Fishbach have found that framing foods as “healthy” led preschoolers to both consume less and rate foods as less tasty than when those foods were framed as “yummy” or offered with no messaging at all. That is, trying to entice preschoolers to eat their vegetables because they will “make them big and strong” does not encourage them to eat more, but rather less.

Like Maimaran and Fishbach, I am also interested in improving children’s well-being. Rather than test the effectiveness of food framing on preschoolers’ consumption and taste ratings, Maimaran, University of Michigan’s Susan A. Gelman, and I examined the degree to which children’s preference for variety can be leveraged to promote better food choices.

Leveraging variety

Why variety? First, in an earlier study, Gelman and I find that children 4-12 years old preferred variety to nonvariety when selecting among objects. This suggests that children may similarly prefer varied versus nonvaried offerings of foods. Second, exposure to more varied foods during the preschool years is associated with more varied diets in adulthood, and more varied diets are often healthier. Third, research by Cornell’s David R. Just, Brigham Young University’s Joseph Price, and former BYU research assistant Jesse Lund suggests simply increasing the number of fruits and vegetables offered (i.e., offering a wider variety of foods) during lunch increases elementary school-aged children’s consumption of these items. In short, testing the ways in which we can harness children’s appreciation for variety to encourage healthy eating
preference for variety can inform efforts to help children make healthier food choices.

Across three studies with 329 children, we explored the conditions under which 4–9-year-olds would diversify their food selections of healthy (e.g., fruits, vegetables), neutral (e.g., crackers), and unhealthy (e.g., chips, candy) foods and opt for healthier combinations of foods.

In our first two studies, we tested the degree to which preference (preferring one of two items versus not) and product category (healthy, neutral, unhealthy) affected children’s variety selections. To do this, we introduced children to two foods (e.g., broccoli and carrot) on a computer screen and asked them to indicate which of the two they liked more or whether they liked them the same. We then presented children with three sets comprising those foods (e.g., broccoli + broccoli, carrot + carrot, and broccoli + carrot). The children were then asked to indicate which of the sets they would like for themselves. In the first study, foods were paired according to product type—healthy foods were paired with healthy foods, neutral with neutral, and so on. In the second study, foods were paired across two categories: healthy foods were paired with neutral foods, meaning that selecting variety now required also selecting a fruit or vegetable.

**Given no strong preference, children select variety**

In the first study, when foods were grouped by product category, we find that children across our age range were over 13 times more likely to select a variety of foods (e.g., broccoli + carrot) when they did not prefer one food to another versus when they did. This means that children who indicated liking broccoli and carrots similarly were more likely to choose the broccoli + carrot combination than two broccolis or two carrots; it was just the opposite for children who indicated preferring broccoli or carrots. Interestingly, product category didn’t matter—that is, children were similarly likely to vary their selections for healthy, neutral, and unhealthy foods.

In the second study, when healthy and neutral foods were paired (e.g., broccoli + cheese crackers), this effect was smaller. In this case, only our 6–9-year-olds were more likely to select a variety of foods after indicating no preference for either food item. We observed no difference in variety selections across preference levels by our 4-5-year-olds. This suggests that there is a limit to the degree to which varying offerings encourages preschool-aged children to diversify their selections. For this reason, parents may consider grouping less-familiar foods from the same category (such as fruits) to encourage children to increase their willingness to try both.

**The power of simultaneous selections**

In our third and final study, we tested whether the way in which children 4–9 years old selected snacks for the school week influenced not only the degree to which they diversified their selections but also increased their selection of healthy foods (in this case, fruits). To do this, we assigned children to one of two experimental groups: simultaneous (wherein children selected their five snacks for the week on one day) or sequential (wherein children selected one snack each day for the week). Because this study used real food, we only included healthy (i.e., fruits) and neutral (i.e., crackers) foods.

Children across the age range were more likely to diversify their selections when they made their snack choices all on one day versus once a day for the week. In fact, 49 percent of children in the simultaneous group versus 9 percent in the sequential group selected the maximum of five different items. Additionally, children in the simultaneous group selected more fruits than children in the sequential condition (1.87 versus 1.08). We observed no age group differences, suggesting that choice timing may be a reliable avenue through which to encourage even young children to make healthier food choices.

**Our findings suggest two strategies to help children incorporate healthier food into their diets.**

**Strategies for helping children select healthy foods**

Overall, our findings suggest two strategies to help children incorporate healthier food into their diets. First, consider introducing children to unfamiliar foods in groups to increase the likelihood that children will try multiple foods. Introducing foods in groups also increases the likelihood that children will enjoy at least one of the foods offered. Second, when giving children autonomy over their food selections, consider asking them to make multiple selections at once (e.g., snacks they will eat throughout the week) rather than asking them to make individual choices each day. Consider asking children to select from a variety of healthy snacks to increase the likelihood that they will opt to diversify their selections.

That said, it may not always be possible to prepare and offer an array of foods. In this case, parents may consider setting their children up for success by offering a desired food (e.g., orange slices) and asking children what they would like to pair with it (e.g., a graham cracker or celery stick). Additionally (or alternatively), parents can welcome their children to join in in preparing foods via their direct selection of things to eat, assembling their plate, or even shaking up the salad dressing. We know from work by Gelman and colleagues that allowing children to participate in food preparation in this way increases their consumption of those foods.

For companies, there is a pressing need to support children and their families as they work to meet their nutritional needs. As our results suggest, packaging different flavors or foods together can nudge children toward making better selections (e.g., opting for a package of blueberries and grapes versus a single bag of crackers). At the same time, given that children’s preference for variety did not differ by product type, responsible companies and marketers should not use children’s preference for variety to encourage unhealthier selections.

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Chick-fil-A and the rise of activist capitalism

Social media has changed the calculus of exit versus voice. Businesses can be famous for many things at once. Chick-fil-A is famous for savory waffle fries, splendid customer service, and financing homophobia.

This final achievement has brought the company a fair amount of unwanted attention. For instance, in October 2019, barely a week after Chick-fil-A opened its first location in England, the owners of the Oracle shopping center in Reading announced that they would not extend the restaurant’s lease beyond a “six-month pilot period.” The abortive effort left the Georgia-based company with egg on its face, but it was a smashing success for gay allies. “It’s a business based on anti-LGBT beliefs,” Martin Cooper, the head of Reading Pride, told a local newspaper. “If it was just beliefs, we probably wouldn’t be here protesting. It’s about the active engagement and where their profits are going.”

Where Chick-fil-A’s profits are going has been a thorny subject for the privately held company for some time now. At least as far back as 2010, the WinShape Foundation, a nonprofit established by S. Truett Cathy, Chick-fil-A’s founder, had made a conspicuous habit of donating to groups committed to preventing the cultural acceptance of homosexuality and, more urgently, to halting the move toward legalizing same-sex marriage. LGBTQ advocacy groups had been trying to draw attention to these disbursements when, in the summer of 2012, Dan T. Cathy, the company’s CEO and Truett’s son, decided to do them a favor. Setting aside his spreadsheets and executive summaries, Cathy shared his thoughts on gay marriage in a radio interview. “I think we are inviting God’s judgment on our nation when we shake our fist at Him and say, ‘We know better than you as to what constitutes a marriage,’” Cathy told Ken Coleman, a nationally syndicated talk-show host. “I pray God’s mercy on our generation that has such a prideful, arrogant attitude to think that we have the audacity to define what marriage is about.”

God’s mercy might also have been requested for Chick-fil-A’s social media team, which quickly found itself on the receiving end of a bombardment of incensed tweets and furious Facebook comments. The shelling was so intense—“Hate to think what they do to the gay chickens!” one critic tweeted—that shortly after Cathy’s interview, the company issued a statement reading in part: “Going forward, our intent is to leave the policy debate over same-sex marriage to the government and political arena.”

This hardly ended the affair, especially as Cathy’s comments effectively put a spotlight on the family’s philanthropic practices. The day after the company’s statement, the late Boston mayor Tom Menino wrote in a public letter that there was “no place for discrimination on Boston’s Freedom Trail” and vowed to block Chick-fil-A’s efforts to colonize Beantown, while the Jim Henson Company, home to the Muppets franchise, announced that it was suspending its collaboration with the company on children’s meals. Chick-fil-A, it seemed, had lost the support of Kermit the Frog.

Nearly eight years later, Chick-fil-A is still struggling to shed the impression that it is unwelcoming to the LGBTQ community, a very public battle it has had to fight every time the company has tried to expand north of the Mason-Dixon or establish beachheads overseas. That’s why the swift rebuke at Reading was so
The disputatious instinct
As the head honchos at Chick-fil-A have learned the hard way, we live in an age of protest, and not only because of a seemingly global wave of sociopolitical discontent. Human beings have a disputatious instinct. We love to haggle and bicker and barter—a trait that is essential to how economists have always understood the first law of motion in a market economy. Markets work because we will never be eternally satisfied with the options before us. We simply want more and better of everything.

Markets provide us one way of obtaining whatever it is we want at any given moment. They are not the only way, of course—I can purchase an iPhone from the Apple store, or I can punch your lights out and appropriate yours—but with respect to material goods, at least, markets provide a more expedient method of obtaining the heart’s desire than mendicancy, as well as a more ethical means than violence.

And yet, for everything that might commend it, this process of providing us “stuff” is not without moral consequence. How we create things, how we distribute the “stuff” we create, and the options before us. We simply want more and better of everything.

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remarked, “is the sort of mechanism economics thrives on.”

Voice is a different matter. As opposed to the neatness of exit, in which “success and failure of the organization are communicated to it by a set of statistics”—if more people buy my goods, I’m doing something right; if they stop, I’m doing something wrong—voice is “messy.” It involves the airing of grievances “rather than a private, ‘secret’ voice in the anonymity of a supermarket,” and it can be “graduated, all the way from faint grumbling to violent protest.” It is “political action par excellence,” Hirschman said, for it attempts “to change, rather than escape from an objectionable state of affairs.”

**The rise of activist capitalism**

For the isolated individual, changing some complex institution’s objectionable state of affairs is no simple matter. If I am disappointed by GM’s paltry selection of electric automobiles, I can always head across the street to Tesla, a choice that may signal to the bean counters in Detroit, in some modest, mute, and entirely indirect way, that the company should offer more of them. But if I want GM to make that change as soon as possible in a public acknowledgment that car companies must do their part to stem CO₂ emissions and combat global climate change, my power seems quite limited. Yes, I can raise my voice—I can march outside my local dealership screaming my guts out, waving a handmade sign depicting our beloved planet looking like a burnt kernel of popcorn—but we all know that the only immediate result of such activity will be shredded vocal cords. It will not include a change in company policy.

“The decision whether to exit will often be taken in light of the prospects for the effective use of voice,” Hirschman emphasized, which is why, as he would later acknowledge of his book, relative to the exit alternative, voice gets something of a short shrift.

But a lot has changed since Exit, Voice, and Loyalty was first published, for, as the senior leadership at Chick-fil-A may well appreciate, “the effective use of voice” has been democratized thanks to the advent of social media. Platforms such as Twitter and Facebook not only provide a means by which messages may be communicated the world over for free, but they have radically lowered the cost of staging a protest. No longer need one labor over poster board or pound the pavement in the rain. Shame may be brought on some company from a BarcaLounger or even the comforts of one’s bed.

Now, taking note of the experience of companies such as Chick-fil-A, some in the United States have concluded that, if social media magnifies any voice, it is that of individuals on the activist Left. And yet, the resort to social media as a corrective tool of corporate malfeasance has bipartisan appeal. Just a few months before Chick-fil-A was deported, Nike found itself on the receiving end of a social media outcry from the Right for its decision to pull a special edition Betsy Ross Flag sneaker.

The decision came after the company’s most famous spokesman, Colin Kaepernick, the former National Football League quarterback who gained notoriety for kneeling during the national anthem in protest of systemic racism, asked Nike to withdraw the shoe, which was released in the US to celebrate Independence Day.

The uproar on social media was immediate. “Nike thinks American flag is [a] symbol of oppression?” Republican Senator Josh Hawley of Missouri tweeted. “What planet are you on?” The remark kicked off a tweetstorm by Hawley that received nearly 16,000 likes and was retweeted more than 6,000 times, but what stands out about his criticism is that it goes well beyond a single decision by the company. “Nike is a symbol of everything wrong with the corporate economy,” he wrote. “They take advantage of our laws but send jobs overseas for sweatshop wages, partner [with] repressive regimes, aggressively avoid paying any US taxes, and then tell Americans to shut up and buy their stuff.”

Set aside policy specifics, there’s a broader point Hawley was trying to make that’s similar in spirit to that of the Chick-fil-A protesters: *If a company wants to do business in a community, it must meet certain standards of behavior that go well beyond moneymaking.*

This is the belief that is at the heart of what I am inclined to call activist capitalism, a commercial phenomenon made possible by the advent of social media. Emboldened by technologies that can amplify the voices of everyday people and quickly organize large assemblies in protest, consumers are increasingly calling on companies to ensure their activities are not merely consistent with the common good, but productive of it.

Naturally this phenomenon doesn’t assume, much less promise, unanimity about what constitutes the common good. If anything, insofar as corporate power and largesse may be called upon to support a particular vision, activist capitalism will probably enflame the tendency to dispute its terms. The point is not that corporations, and capitalism more broadly, will necessarily support a uniform set of values, rather that it will no longer be tenable for companies to maintain that they should be guided by none at all—none, at least, beyond the profit motive. They will have to be active participants in the larger drama of how we build and maintain a just society, and they will be held accountable, immediately and in public, for the decisions they make.

Is this development good for capitalism? That remains to be seen, but for my own part, at a time when the system seems most dubious to those entering adulthood, I see any forces that tend to socialize capitalism as making it far more likely that the strengths of the system will be conserved for years to come, and far less likely that the struts will give out entirely.—**CR**

**The resort to social media as a corrective tool of corporate malfeasance has bipartisan appeal.**

*More from the in-house ethicist*  
Visit our website to read other columns by this author.
The global scientific effort to battle COVID-19 has led to the development of a number of vaccine and treatment candidates by pharmaceutical companies and research institutions around the world. Although any safe and effective vaccine or new treatment would likely be in high demand, it’s unclear how big a financial windfall it might be for the drug’s inventors: many patients won’t be able to pay the market price for the medicine, and social pressures or reputational concerns may play a significant role in how prices are set. How much do these factors affect the financial incentives of drugmakers? What can governments do to help spur the development of treatments and vaccines? And once a vaccine exists, how should public policy support the goal of widespread vaccination? To investigate these issues, Chicago Booth’s Initiative on Global Markets consulted its European and US panels of economic experts.

See more online
All responses to these polls—including remarks from panelists and links to relevant research—can be seen at igmchicago.org.

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.
Statement A: Given the social and regulatory pressures to keep prices down for drugs and vaccines to treat COVID-19, the financial incentives for pharmaceutical companies to invest in such products are below the value of the investment to society.

Statement B: Government commitments to pay developers and manufacturers above-average costs for an effective vaccine or drug treatments for COVID-19 would accelerate production.

Statement C (European): Given the positive externalities from vaccination, an effective COVID-19 vaccine should have priority in public health-care funding even in countries where other diseases cause more death and disability.

Statement C (US): Given the positive externalities from vaccination, an effective COVID-19 vaccine should be mandatory for every US resident (except those with health exceptions, such as infants and people with compromised immunity), with the cost covered by the federal government.

All percentages are weighted according to confidence ratings that panelists assigned to their own responses.
A hospital scoring system should evaluate hospitals on the basis of how they compare to the industry’s best performers, according to Chicago Booth’s Dan Adelman. Following this principle, hospitals that take steps to emulate the ideal hospital should see their quality scores increase. Although an ideal hospital that is superior on all measures doesn’t exist, Adelman’s approach allows him to construct a realistic benchmark using a combination of actual hospitals that lie on the efficient frontier—a lineup of the best performers on different measures. He then computes a hospital’s overall score to bring it as close as possible to this virtual benchmark under the same set of weights for each measure. Evaluating a hospital in this way gives its administrators an incentive to advance toward the most efficient practices. It also ensures that a hospital’s scores will go up if it improves on most measures. To learn more about Adelman’s research, turn to page 26.
See you online

While COVID-19 has changed the location of many events, conferences, and programs, Chicago Booth and the University of Chicago continue to sponsor many opportunities for inquiry and to gain insights. The events below will all be held virtually, and more information can be found at the sites listed.

SEPTEMBER 10
CORPORATE SOCIAL RESPONSIBILITY REVISITED VIRTUAL CONFERENCE
ChicagoBooth.edu/csr-revisited
Chicago Booth hosts a conference to explore how corporate social responsibility has changed since the publication of Milton Friedman's 1970 New York Times op-ed on the role of business in society. The conference will include sessions on topics such as environmental sustainability, corporate governance, and gender and racial diversity.

SEPTEMBER 10–11
POLITICAL ECONOMY OF FINANCE 2020 VIRTUAL CONFERENCE
Research.ChicagoBooth.edu/stigler/events
In conjunction with Booth’s conference on CSR, Booth’s Stigler Center dedicates its fourth conference on the political economy of finance to exploring whether corporations should have a social purpose.

SEPTEMBER 24
WORLDWIDE BOOTH NIGHT
ChicagoBooth.edu/wbn
Continue the annual tradition of gathering with Booth alumni and students to celebrate a common connection and show Booth pride.

OCTOBER 5–14
NEGOTIATE WITH INFLUENCE: SHAPE OUTCOMES AT THE BARGAINING TABLE
ChicagoBooth.edu/ni
Learn how to negotiate to achieve more value and maximize the interests of your organization. In this executive education program, you will strengthen your negotiation skills in live virtual exercises.

OCTOBER 30–31
EARL B. DICKERSON CENTENNIAL CONFERENCE
law.uchicago.edu/dickersoncentennial
Celebrate the 100th anniversary of the graduation of Dickerson, the first African American to earn a Juris Doctor from the University of Chicago Law School.

NOVEMBER 10–19
COURAGEOUS LEADERSHIP FOR HIGH-PERFORMING ORGANIZATIONS
ChicagoBooth.edu/cl
In this executive education program, discover how to lead with courage for an agile, high-performance environment.

Since 1898, the University of Chicago Booth School of Business has produced ideas and leaders that shape the world of business. Our rigorous, discipline-based approach to business education transforms our students into confident, effective, respected business leaders prepared to face the toughest challenges. Visit ChicagoBooth.edu/programs for more information about our Full-Time MBA, Evening MBA, Weekend MBA, and Executive MBA Programs, our PhD Program, and our Executive Education courses. Chicago Booth has campuses in Chicago, London, and Hong Kong.
HOSPITAL RATINGS ARE DEEPLY FLAWED. CAN THEY BE FIXED?
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